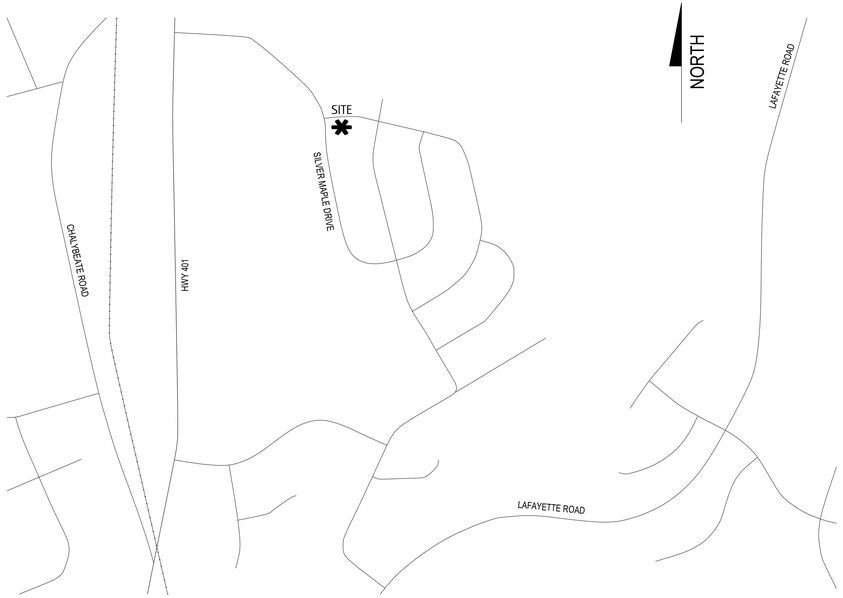
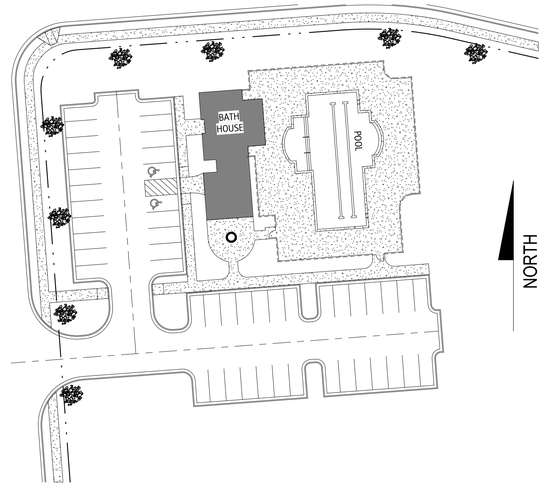


VICINITY MAP

WOODGROVE AMENITY

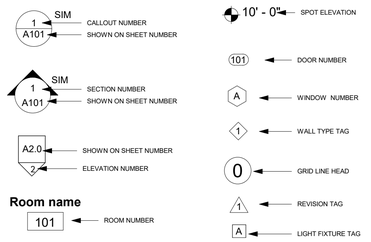
BATHHOUSE & POOL

HARNETT COUNTY, NC



SITE MAP

SYMBOLS



DRAWING INDEX

DRAWING INDEX

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DATE | REVISION | NO.

SHEET DISCRIPTION
Cover Sheet

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

G0.1

APPENDIX B BUILDING CODE SUMMARY

FOR ALL COMMERCIAL PROJECTS

Name of Project: Woodgrove Amenity
Address: Harnett County, NC **Zip Code:** 28037
Owner or Authorized Agent: Brian Jacobs **Phone #:** 919-412-4711
Email: brian@dclugston.com **Fax #:**
Owned By: ■ Privately ☐ City/County ☐ State
Code Enforcement Jurisdiction: ☐ City ☐ County ■ City/County
Name of Jurisdiction: Harnett County

PROJECT SUMMARY: A-3 New Building

Building Description: A-3, Seasonal Drain Down bath house Pool Amenity

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

Lead Design Professional/Project Coordinator: Brian Jacobs 919-412-4711

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #
Architectural:	Perry Cox Architect, PA	Perry Cox, AIA	9630	919-393-5411
Civil:				
Electrical:	Killian Engineering	Jacob L. Hamilton	048012	252-438-8778
Fire Alarm:				
Plumbing:	Killian Engineering	Jacob L. Hamilton	048012	252-438-8778
Mechanical:	Killian 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: Killian 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 ☐ Shell Building ☐ First Time Interior Completion ☐ Addition ☐ Alteration to Shell

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

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

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

NO INCREASE REQUIRED

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

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

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

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	1,856	6000	N/A	N/A	N/A	0.309	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_f = 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= 22'-4"	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
Fire District: ☐ Yes ■ No Class: ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Building Height: 22.33' Feet (Appendix D) ☐ Floor Hazard
Basement: ☐ Yes ■ No 1 Story
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	1,856	1,856

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 ergess 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 DECK	2	4	200'-0"	123'-10"	67'-0"	114'-5"

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
PUMP ROOM	156 SF	300 SF	1	0.2		0.2			
CHEM.	43 SF	300 SF	1	0.2		0.2			
ELEC.	11 SF	300 SF	1	0.2		0.2			
ENTRY	31 SF	0 SF		0.2					
HALL	123 SF	0 SF		0.2			46		
COVERED PORCH	415 SF	15 SF	28	0.2		5.6	46		
MENS	164 SF	0 SF		0.2					
WOMENS	162 SF	0 SF		0.2					
COVERED PAVILLION	708 SF	15 SF	48	0.2		9.6			
POOL	2390 SF	50 SF	48	0.2		9.6			
POOL DECK CLEAR AREA	2086 SF	15 SF	140	0.2		28			
POOL DECK	3475 SF	15 SF	232	0.2		46.4	92		
Grand total	9764 SF		499	2.4		99.8	184	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)	415 SF	15 SF	28	5.6	
COVERED PAVILLION	Assembly - Unconcentrated (tables and chairs)	708 SF	15 SF	48	9.6	
POOL	Swimming Pool water surface	2390 SF	50 SF	48	9.6	
POOL DECK CLEAR AREA	Swiming Pool Deck	2086 SF	15 SF	140	28	
POOL DECK	Swiming Pool Deck	3475 SF	15 SF	232	46.4	
Grand total				496	99.2	

PLUMBING FIXTURE REQUIREMENTS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

USE		WATERCLOSETS Male	WATERCLOSETS Female	URINALS	LAVATORIES Male	LAVATORIES Female	RINSE SHOWERS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXIST'G								
	NEW	1	4	1	2	2	1	1	1
Total Required		2	4	0	2	2	1	1	1
Total Provided		1	4	1	2	2	1	1	1

499 PERSONS / 2 = 250 M / 250 F
WATERCLOSETS: 243 MALE / 125 = 2 WC = 1 WC & 1 URINAL
243 FEMALE /65 = 4 WC = 4 WC
LAVATORY: 243 MALE / 200 = 2 LAV = 2 LAV
243 FEMALE / 200 = 2 LAV. = 2 LAV

STRUCTURAL DESIGN LOADS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

SEE STRUCTURAL PLANS

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) 3 4
Spectral Response Accele _____%g S_1 _____%g
Site Classification A B C D
Field Test Presumptive Historical Data
Basic S ...: Bearing Wall Dual w/ Special Moment Frame
Building Frame Dual w/ Intermidate R/C or Special Steel
Moment Frame Inverted Pendulum
Analysis Procedure: Simplified Equivalent Lateral Force Dynamic
Architectural, Mechanical, Components anchored? Yes No

LATERAL DESIGN CONTROL: Earthquake Wind

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

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

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

SEE MECHANICAL PLANS

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: _____

ACCESSIBLE PARKING

SEE CIVIL PLANS

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	ACCESSIBLE SPACES PROVIDED ...K W/ 5' ACCESS AISLE	VAN SPACES WITH 132" ACCESS	VAN SPACES WITH 8' ACCESS	TOTAL # ACCESSIBLE PROVIDED
TOTAL						

ELECTRICAL SUMMARY

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

SEE ELECTRICAL PLANS

ELECTRICAL SYSTEM AND EQUIPMENT

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

Lighting Schedule (each fixture type)
Lamp type required in fixture
Number of lamps in fixture
Ballast type used in the fixture
Number of ballasts in fixture
Total wattage per fixture
Total interior wattage specified vs. a... ...ding or space by space)
Total exterior wattage specifi...

Additional Efficiency Pa...
(When using the 2... ...equired for ASHRAE 90.1)
C4... ...d HVAC Equipment Performance
C4... ...d Lighting Power Density
C4... ...nhanced Digital Lighting Controls
C406.5 On-site Renewable Energy
C406.6 Dedicated Outdoor Air System
C406.7 Reduced Energy Use in Service Water Heating

ENERGY SUMMARY

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

SEASONAL DRAIN DOWN BUILDING

SPECIAL APPROVALS

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

HARNETT COUNTY HEALTH DEPARTMENT

D. CLUGSTON

PERRY GLENN COX REGISTERED ARCHITECT 9630 NORTH CAROLINA APEX, N.C.

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NO. REVISION DATE

SHEET DISCRIPTION
Appendix B

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

WOODGROVE
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G0.2

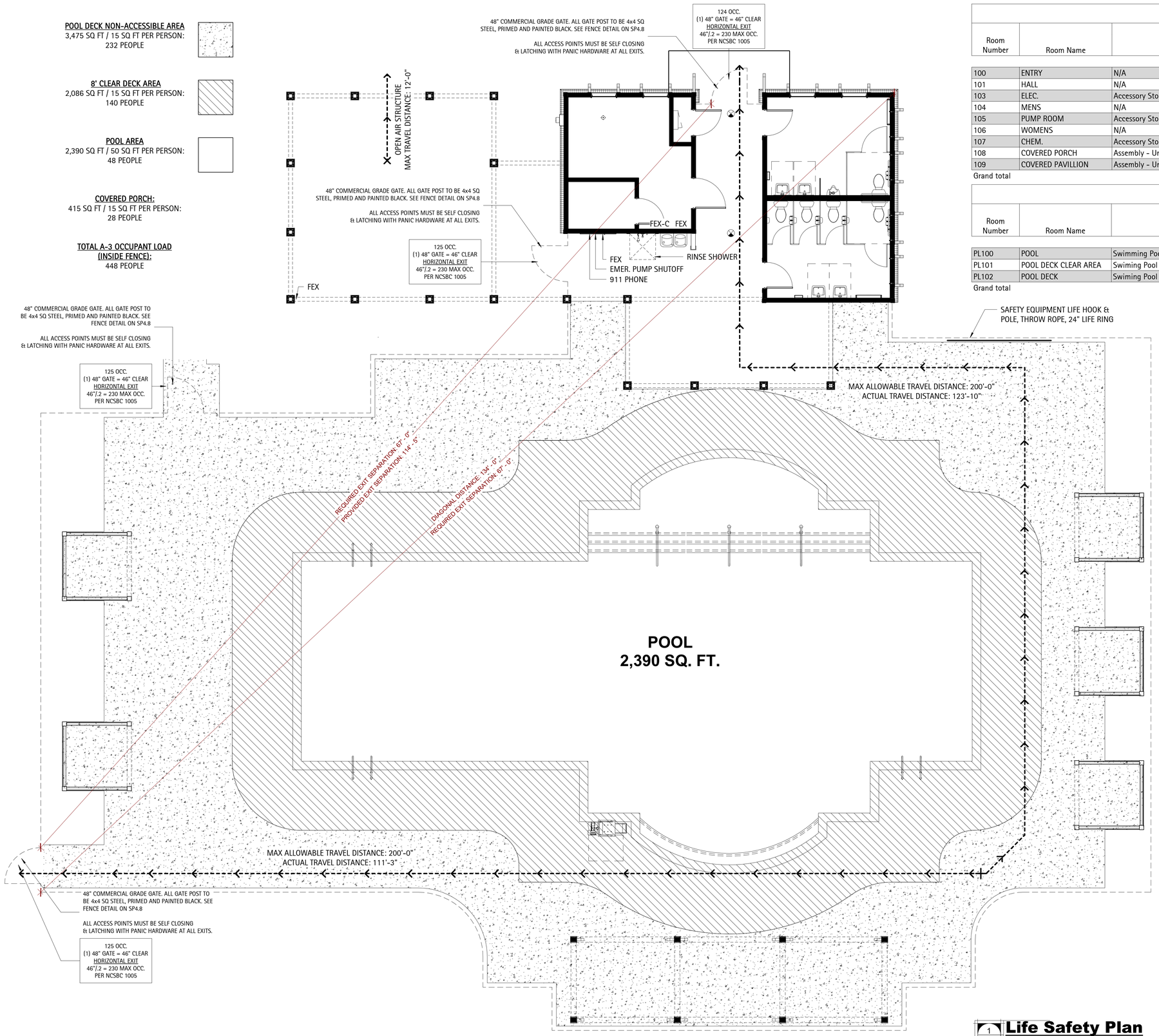
POOL DECK NON-ACCESSIBLE AREA
3,475 SQ FT / 15 SQ FT PER PERSON:
232 PEOPLE

8' CLEAR DECK AREA
2,086 SQ FT / 15 SQ FT PER PERSON:
140 PEOPLE

POOL AREA
2,390 SQ FT / 50 SQ FT PER PERSON:
48 PEOPLE

COVERED PORCH:
415 SQ FT / 15 SQ FT PER PERSON:
28 PEOPLE

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



1 G0.3 **Life Safety Plan**
3/16" = 1'-0"

OCCUPANCY SCHEDULE CLUBHOUSE

Room Number	Room Name	Type	Occupancy Area	Occupancy Load Factor	Occupancy Load Count
100	ENTRY	N/A	31 SF	0 SF	
101	HALL	N/A	123 SF	0 SF	
103	ELEC.	Accessory Storage Areas, Mechanical Equipment Room	11 SF	300 SF	1
104	MENS	N/A	164 SF	0 SF	
105	PUMP ROOM	Accessory Storage Areas, Mechanical Equipment Room	156 SF	300 SF	1
106	WOMENS	N/A	162 SF	0 SF	
107	CHEM.	Accessory Storage Areas, Mechanical Equipment Room	43 SF	300 SF	1
108	COVERED PORCH	Assembly - Unconcentrated (tables and chairs)	415 SF	15 SF	28
109	COVERED PAVILLION	Assembly - Unconcentrated (tables and chairs)	708 SF	15 SF	48
Grand total			1813 SF		79

OCCUPANCY SCHEDULE POOL

Room Number	Room Name	Type	Occupancy Area	Occupancy Load Factor	Occupancy Load Count
PL100	POOL	Swimming Pool water surface	2390 SF	50 SF	48
PL101	POOL DECK CLEAR AREA	Swiming Pool Deck	2086 SF	15 SF	140
PL102	POOL DECK	Swiming Pool Deck	3475 SF	15 SF	232
Grand total			7951 SF		420

GENERAL LIFE SAFETY NOTES:

USE:	A-3 (ASSEMBLY)
PRIMARY LOAD FACTOR:	UNCONCENTRATED TABLES & CHAIRS (15 SF)
OCCUPANT LOAD:	499 PPL
CONSTRUCTION TYPE:	V-B
SPRINKLERS:	NO
REQUIRED EXITS:	2
PROVIDED EXITS:	4
DIAGONAL DISTANCE:	134'-0"
REQUIRED EXIT SEPARATION:	134'-0"/2 = 67'-0"
PROVIDED EXIT SEPARATION:	114'-5"
REQUIRED EGRESS WIDTH:	99.8"
PROVIDED EGRESS WIDTH:	184"
MAXIMUM COMMON PATH OF TRAVEL:	75'-0"
MAXIMUM ALLOWABLE TRAVEL DISTANCE:	200'-0"
ACTUAL MAX TRAVEL DISTANCE:	123'-10"

GENERAL PLUMBING NOTES:

USE:	A-3 (ASSEMBLY)
OCCUPANT LOAD:	499 PPL / 2 = 250 PPL
REQUIRED MALE WATER CLOSETS:	2 (1 PER 125 PPL)
REQUIRED FEMALE WATER CLOSETS:	4 (1 PER 65 PPL)
PROVIDED MALE WATER CLOSETS:	2 WC & 1 URINAL
PROVIDED FEMALE WATER CLOSETS:	4
REQUIRED MALE LAVATORIES:	2 (1 PER 200)
REQUIRED FEMALE LAVATORIES:	2 (1 PER 200)
PROVIDED MALE LAVATORIES:	2
PROVIDED FEMALE LAVATORIES:	2
REQUIRED WATERCOOLERS:	2 (1 PER 500)
PROVIDED WATERCOOLERS:	2
REQUIRED SERVICE SINKS:	1
PROVIDED SERVICE SINKS:	1(HOSE BIB & FLOOR DRAIN)

	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

D. CLUGSTON

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architect, p.a.
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NO.	REVISION	DATE

SHEET DISCRIPTION
Life Safety Plan

PROJECT #:	2022002
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WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

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 immediely 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.

GENERAL NOTES

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.

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.

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.

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

MILLWORK NOTES

1. Millwork shall be fabricated and installed by a qualified woodworker with experience in commercial applications of the scope of the job. The General Contractor shall submit shop drawings and hardware catalogue cuts of all millwork and hardware for review by Architect and in accordance with the Construction Documents. Shop drawings shall show the design and the dimensions and clearly indicate at a large scale to the Architect the method and means of construction. Fabrication of millwork shall not proceed until shop drawings have been reviewed by the Architect. Shop drawings shall be submitted with 3 sets of prints. Cabinet designer/ installer shall field measure area of work after installation of gypsum wallboard for proper fitting.

2. The method of manufacturing, fabricating and installing millwork, equipment, and its structural components defined in the contract documents is representative and indicates design intent only. If the materials, details or dimensioned properties are at variance with the General Contractor's or manufacturer's recommendations, alternate details will be considered for review by the Architect. It is the responsibility of the General contractor to guarantee that the millwork and equipment will have proper support, stability and fault-free performance and provide all necessary blocking. All work shall conform to American Woodworking Institute (AWI) standards for premium grade construction.

3. All cabinets shall be of flush overlay construction with 4" satin chrome wire pulls UON. Interior surfaces of cabinets not exposed to view shall be melamine with plastic laminate edgebanding to match melamine. All cabinet exterior surfaces exposed to view shall be plastic laminate. All open cabinet shelving shall be plastic laminate with plastic laminate edgebanding to match. All counter supports shall be plastic laminate. All counters used as work surfaces and all paneling shall be balanced and have phenolic backer laminated to entire underside or back face. Cabinet doors shall have plastic laminate on all faces and edges. All casework shall comply with AWI Section 400 for premium grade construction.

4. Millwork covered with plastic laminate shall be fabricated and assembled by skilled workmen to the satisfaction of the Architect. Exposed surfaces shall be free from dents, tool marks, warpage, buckling, or open joints. All joints, corners and mitered connections shall be made tightly so the edges are entirely concealed. It is the responsibility of the General Contractor to obtain accurate field measurements and to verify dimensions and to provide shop drawings to ensure an accurate fit.

5. Only exposed hardware is specified in this document. The Contractor is to supply all other necessary hardware to complete the Work. All unspecified hardware shall be of the highest quality commercial grade heavy duty. The Contractor is to provide catalog cuts of all hardware for review by Architect. Provide plastic grommets at cabinetry and counters for wire management as noted in the drawings. Submit catalog and samples to Architect for approval.

6. Install millwork to be plumb, level, true and straight with no distortions. Shim as required using concealed shims. Provide all required blocking at new or existing construction for installation of millwork. Scribe and cut millwork to fit adjoining work. Provide sealant to match adjacent surfaces at all gaps. All exposed anchors, nail heads, screw heads, chips, indentations or imperfection in the wood surface to be painted shall be filled, sanded, sealed and prepared for painting. All lumber, particle board, finish wood, plywood, blocking, etc. shall be fire retardent treated (FRT) where required by local building codes, as interpreted by the local Code Official. No exposed fasteners.

7. The General Contractor shall be responsible for making certain that the millwork items are not delivered until areas are sufficiently dry so that the millwork will not be damaged by excessive changes in moisture content. All delivered units shall match the final approved shop drawings and samples. Units which are marred, chipped or otherwise damaged shall be repaired or replaced as determined by the Architect. Units shall be protected during shipment and installation. After installation of units in their proper location and substantial completion of the Work, all protection shall be removed and all surfaces thoroughly cleaned to the complete satisfaction of the Architect. Surfaces shall then be covered and protected.

8. Wood cabinets, countertops, trim and rails are to comply with AWI Section 400 and other applicable American Woodworking Institute Standards (AWI) for custom grade.

9. Install millwork in compliance with AWI Section 1700, Premium Grade unless otherwise indicated. Flush wood paneling shall conform to AWI Section 500, Premium. Wood veneer to have "AA" face with 3/4" MDF core. See drawings for species and cut. Veneer shall be book matched, balance match panel faces and sequence between adjacent panels. Exposed edges to be veneered same species and finish as face. Provide sound back of similar species.

10. To the greatest extent possible, furnish millwork with shop applied finishes. Defer only final touch-up, cleaning, and polishing until after installation. Shop applied finishes shall comply with AWI 1500, Premium Grade, TR-2 catalyzed lacquer, semi-filled.

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.

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

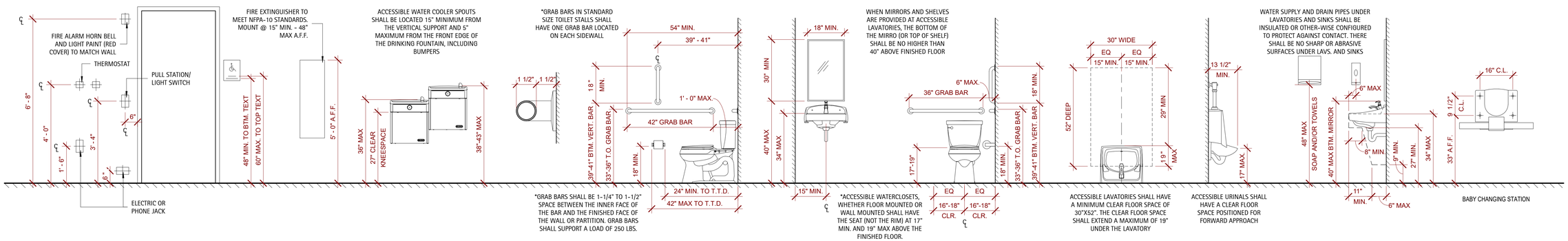
7. Mix materials and prepare surface in accordance with manufacturer's recommendations. Grind or fill concrete substrates as needed to comply with TCA allowable variations. Areas scheduled to receive tile flooring shall receive membrane application. Crack Isolation Membrane to be one-part elastomeric 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 dissimilar 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.



TYPICAL MOUNTING HEIGHTS

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

D. CLUGSTON

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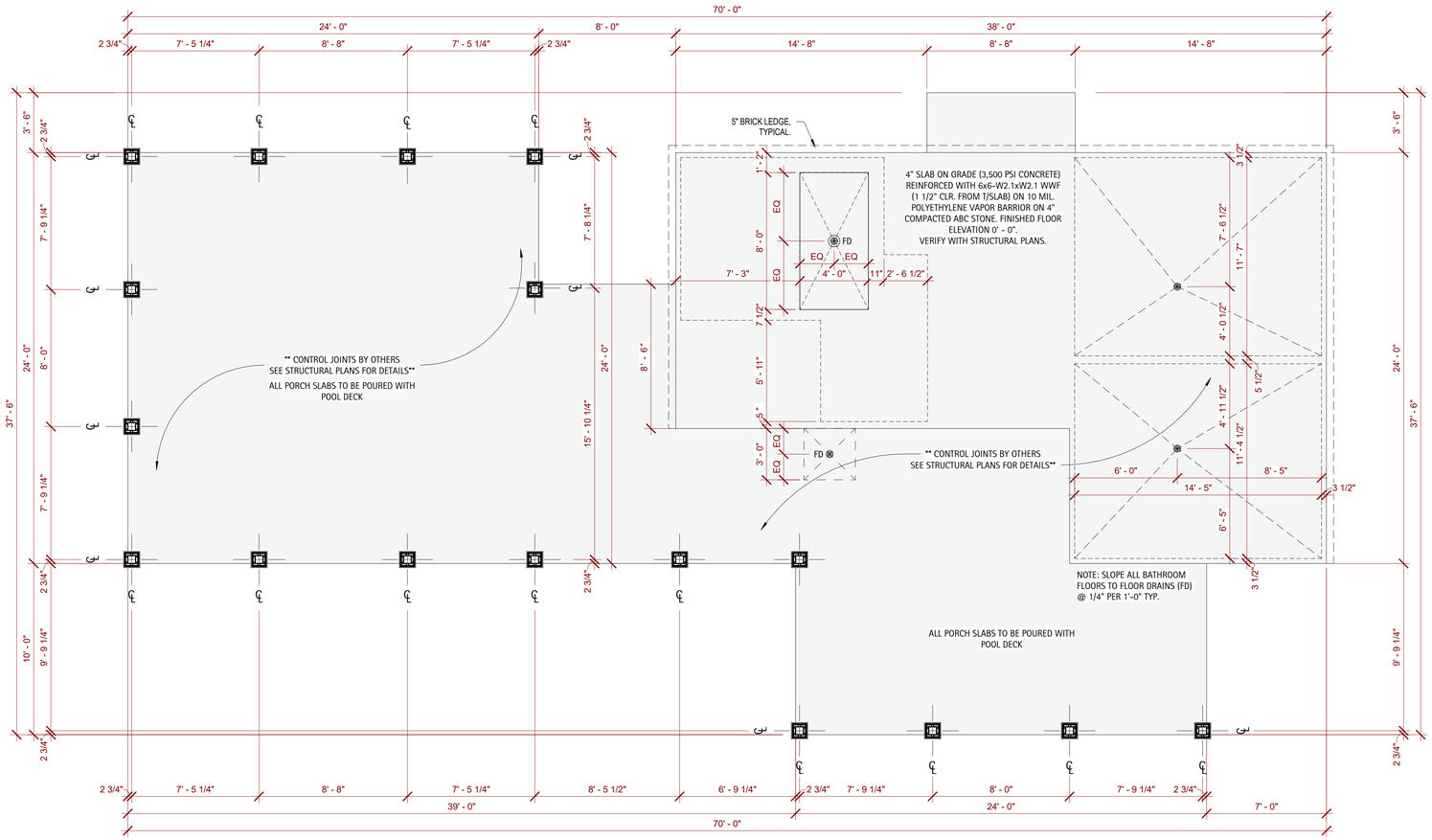
NO. | REVISION | DATE

SHEET DISCRIPTION
General Notes

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

G0.4

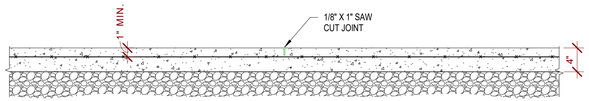


1 A1.0 Foundation Plan

1/4" = 1'-0"

NOTE: ALL JOINTS TO BE CUT w/ WET WALK BEHIND SAW TO ENSURE ALL CUTS ARE PERPENDICULAR W/ FACE OF CONCRETE

NOTE: MAXIMUM JOINT SPACING SHALL BE 10 FT. IN EACH DIRECTION UNLESS SHOWN OTHERWISE ON PLAN



2 A1.0 Detail - Typ. Sawcut Control Joint

1" = 1'-0"

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Foundation Plans & Details

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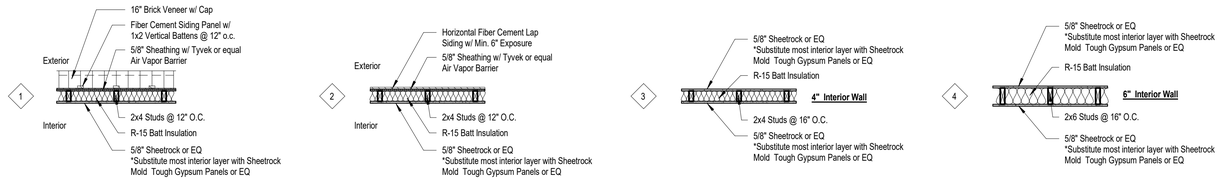
A1.0

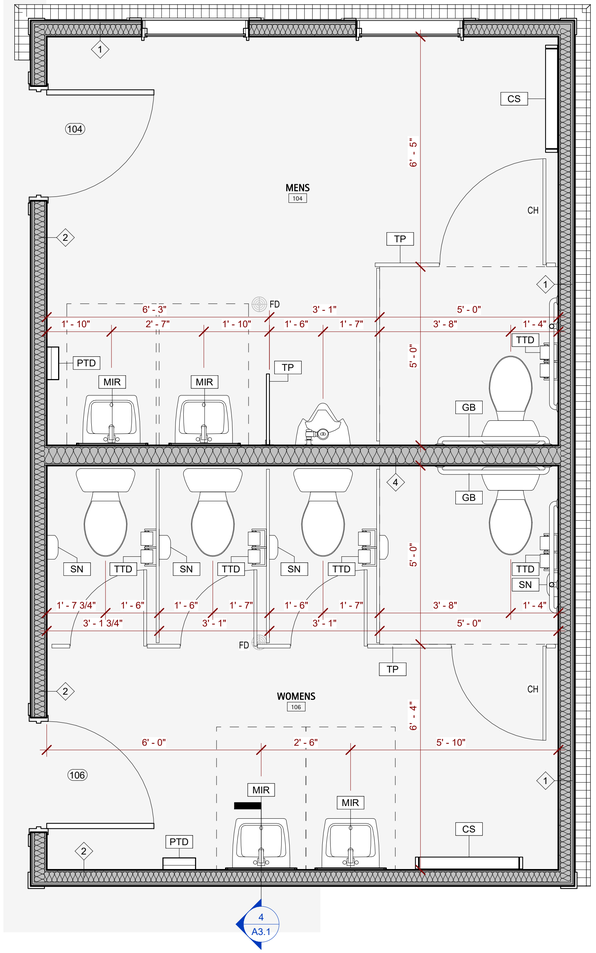
TOILET ACCESSORIES

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	AMERICAN SPECIALTIES, INC	0600
CH	SURFACE MOUNTED COAT HOOK	AMERICAN SPECIALTIES, INC	0714
PTD	SURFACE MOUNTED PAPER TOWEL DISPENSER	AMERICAN SPECIALTIES, INC	0210
SD	SURFACE MOUNTED S.S. AUTOMATIC LIQUID/GEL SOAP DESPENSER	AMERICAN SPECIALTIES, INC	0360
SN	SURFACE MOUNTED SAINITARY NAPKIN DISPOSAL (WOMEN'S TOILET ONLY)	AMERICAN SPECIALTIES, INC	0852
MH	MOP HOLDER	AMERICAN SPECIALTIES, INC	0796
CS	SURFACE MOUNTED BABY CHANGING STATION	AMERICAN SPECIALTIES, INC	9012
TP	TOILET PARTITION - FLOOR SUPPORTED W/ HEADRAIL, POWDER COATED STEEL FINISH	GENERAL PARTITIONS	SERIES 40-5

NOTE SEE SHEET G0.4 FOR TYPICAL MOUNTING HEIGHTS & CLEARANCES

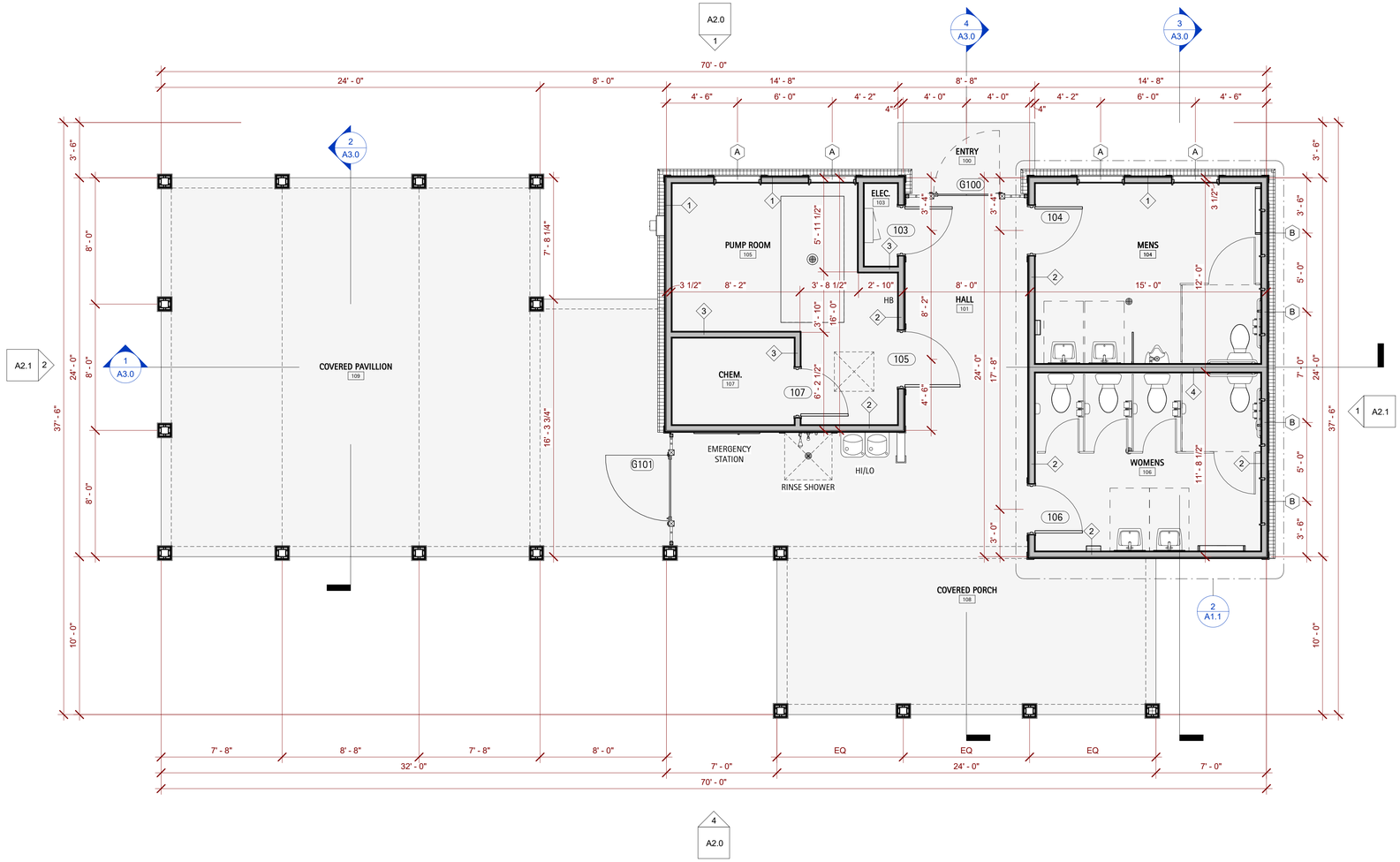
WALL TYPE DETAILS





2 A1.1 Enlarged Restroom Plan

1/2" = 1'-0"



1 A1.1 First Floor Plan

1/4" = 1'-0"

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SHEET DISCRIPTION

First Floor Plan

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CHECKED BY:	PGC/DSC

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

A1.1

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.

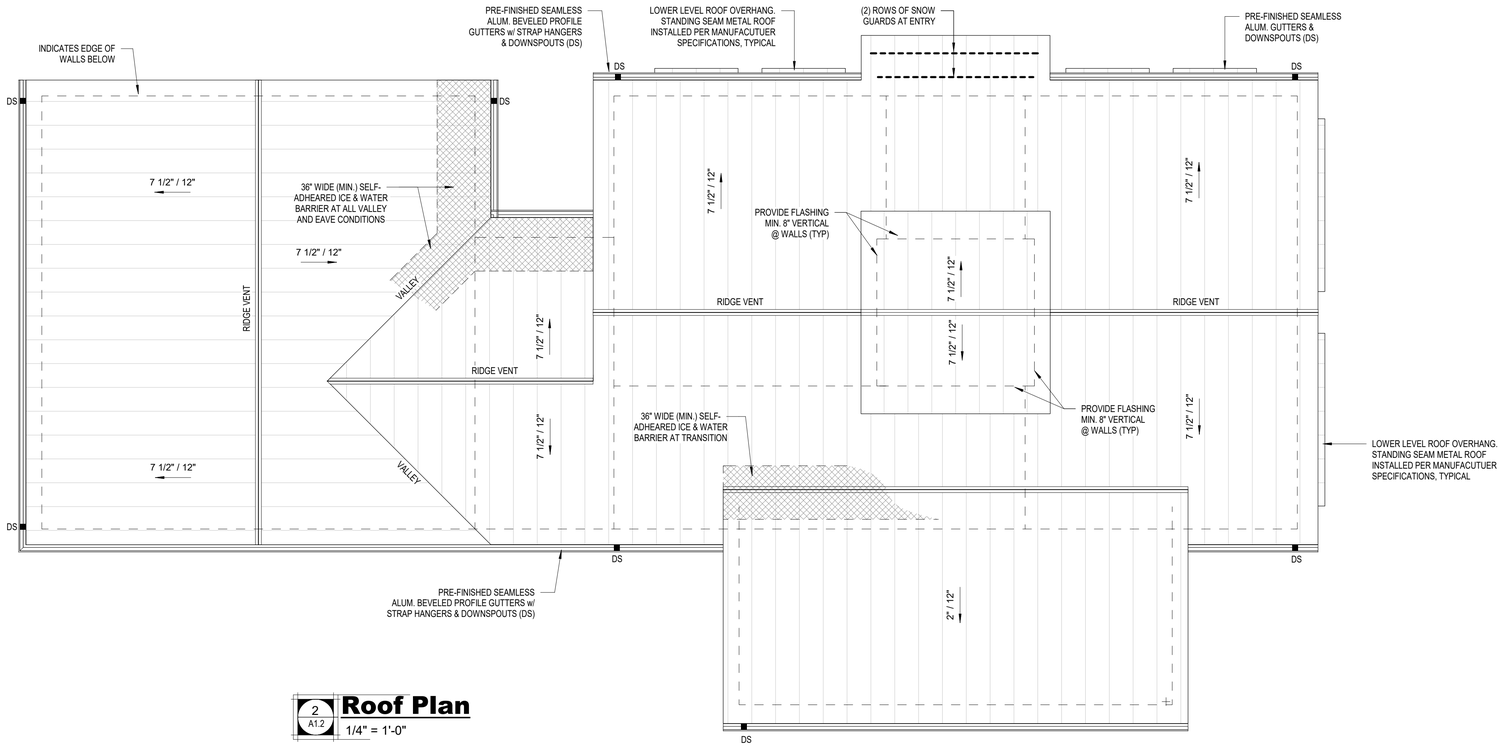
3. Asphalt shingles shall only be used on roof slopes of 2:12 or greater.

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. .



2 A1.2 **Roof Plan**
1/4" = 1'-0"

REFLECTIVE CEILING NOTES

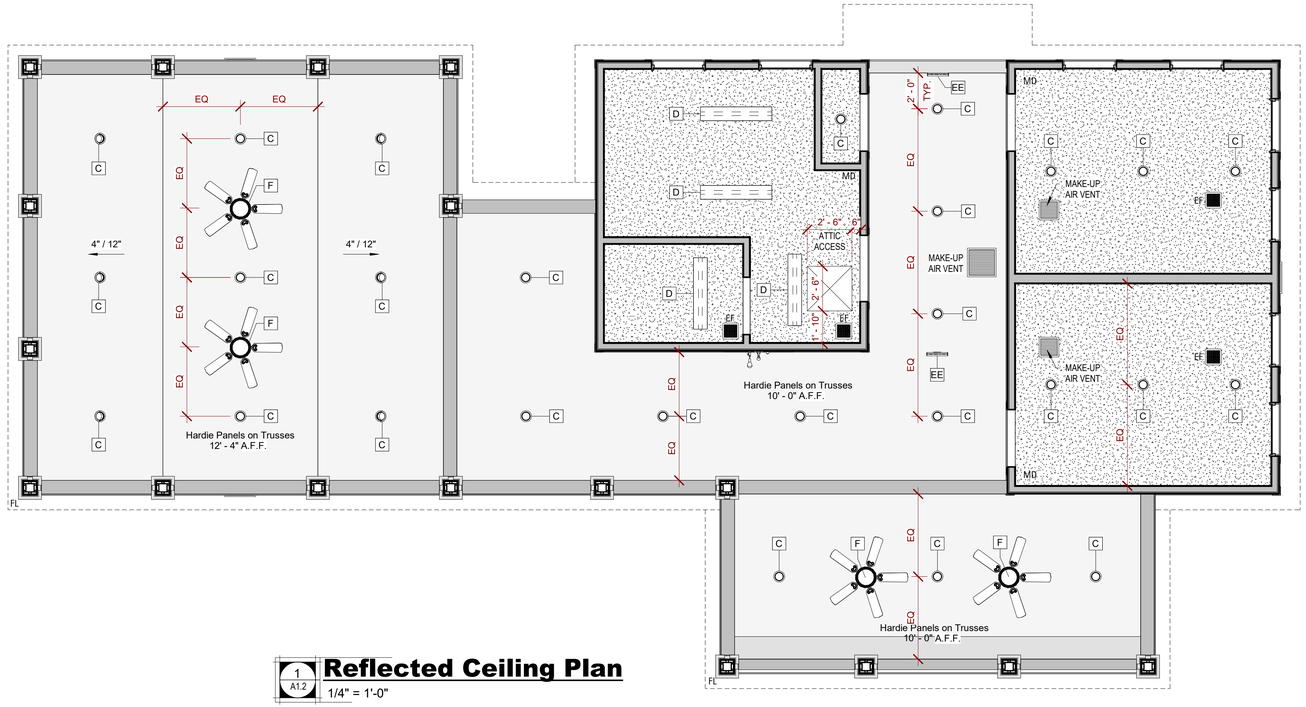
1. 5/8" GWB typical - U.N.O - Mold tough in Wet areas

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.



1 A1.2 **Reflected Ceiling Plan**
1/4" = 1'-0"

MD - MOTION DETECTOR LOCATE IN CEILING
FL - EXTERIOR FLOOD LIGHT
EE - EMERGENCY EXIT SIGN w/ SPOTLIGHTS
EF - EXHAUST FAN
A - NOT USED
B - NOT USED
C - 6" CAN LIGHT
D - 1X4 LED TROFFER
E - NOT USED
F - CEILING FAN w/o LIGHT

* VERIFY ALL SELECTIONS WITH OWNER / GC PRIOR TO ORDER

*VERIFY ATTIC ACCESS LOCATIONS WITH APPROVED TRUSS LAYOUTS AND PROFILES

D. CLUGSTON

PERRY GLENN COX REGISTERED ARCHITECT 9659 NORTH CAROLINA APEX, N.C.

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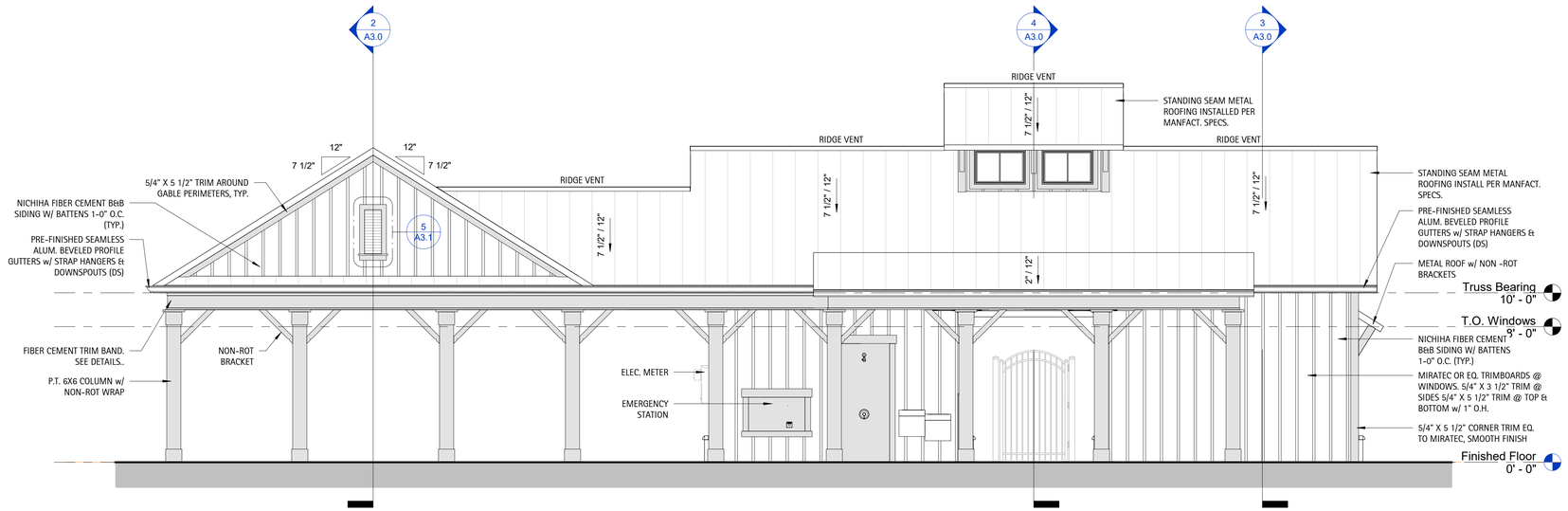
NO.	REVISION	DATE

SHEET DISCRIPTION
RCP & Roof Plans

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

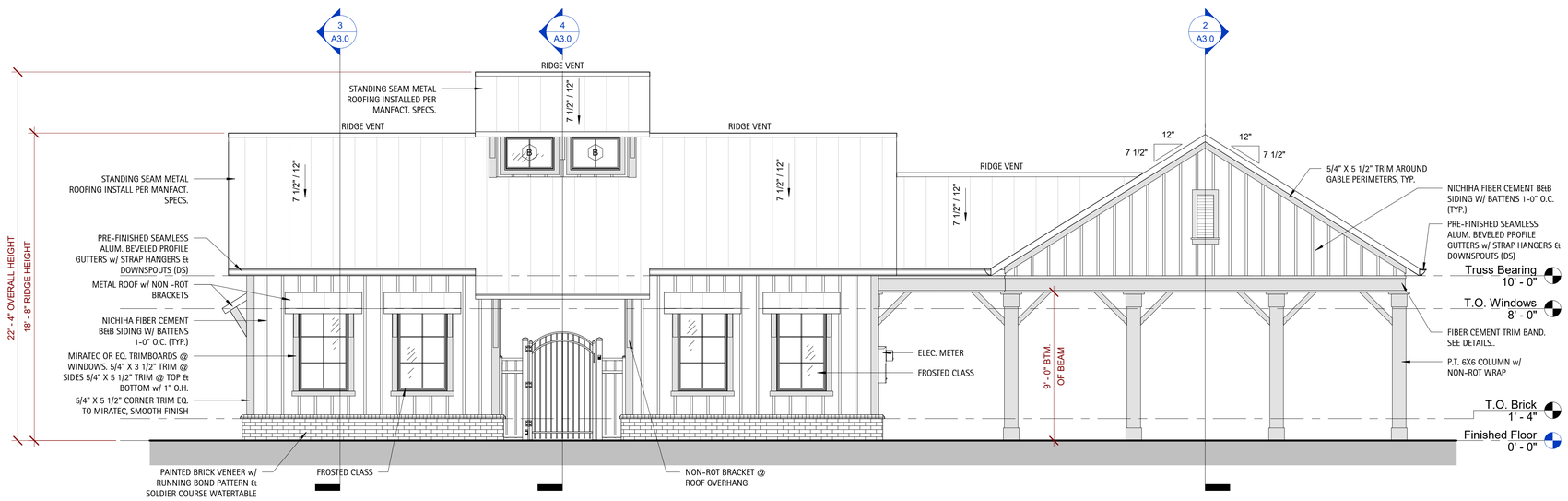
WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

A1.2



4 A2.0 Elevation - Rear

1/4" = 1'-0"



1 A2.0 Elevation - Front

1/4" = 1'-0"

D. CLUGSTON

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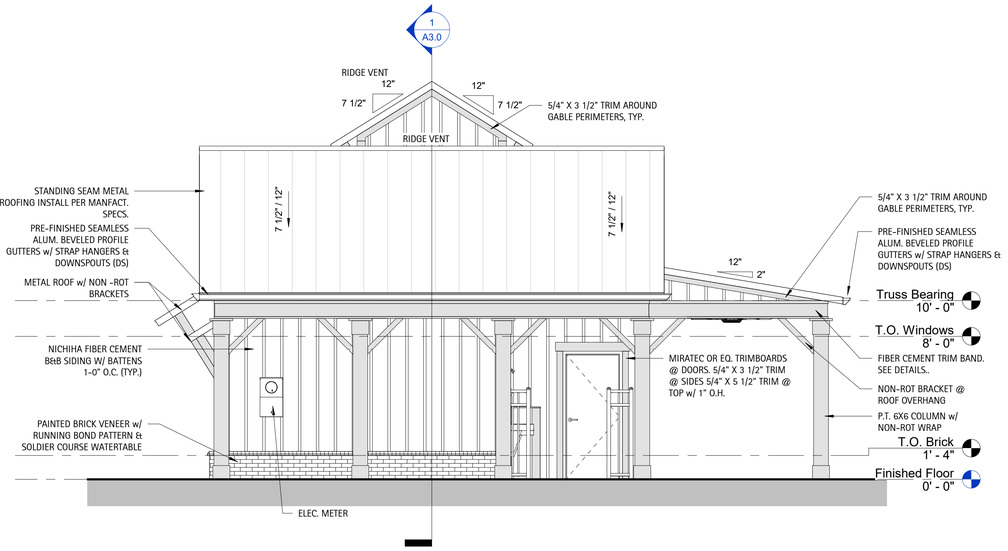
SHEET DISCRIPTION
Exterior Elevations

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

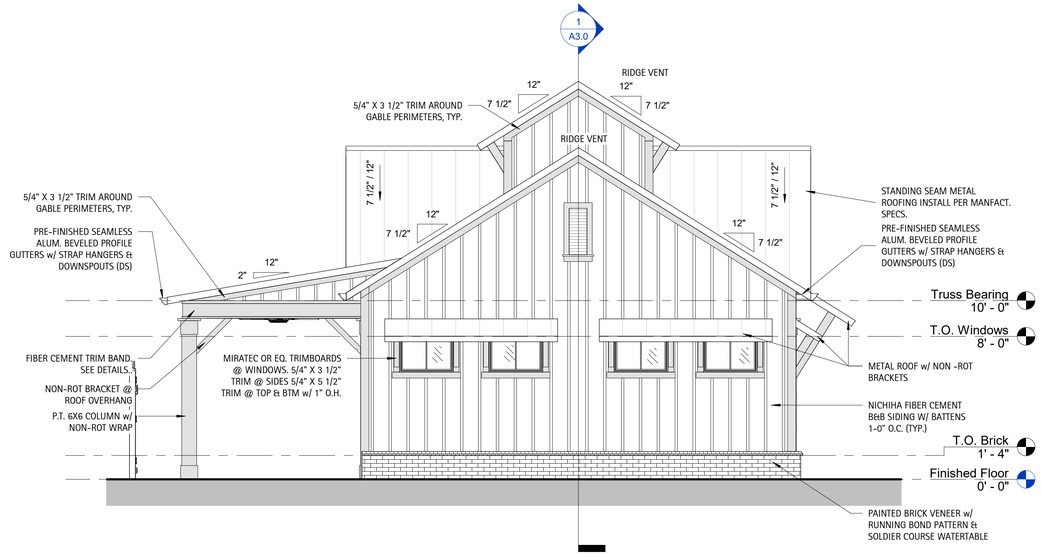
WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

A2.0



2 A2.1 **Elevation - Left**

1/4" = 1'-0"



1 A2.1 **Elevation - Right**

1/4" = 1'-0"

D. CLUGSTON

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APEX, N.C.
7/20/22

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SHEET DISCRIPTION

Exterior Elevations

PROJECT #:	2022002
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DRAWING BY:	JGM/BSJ
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WOODGROVE
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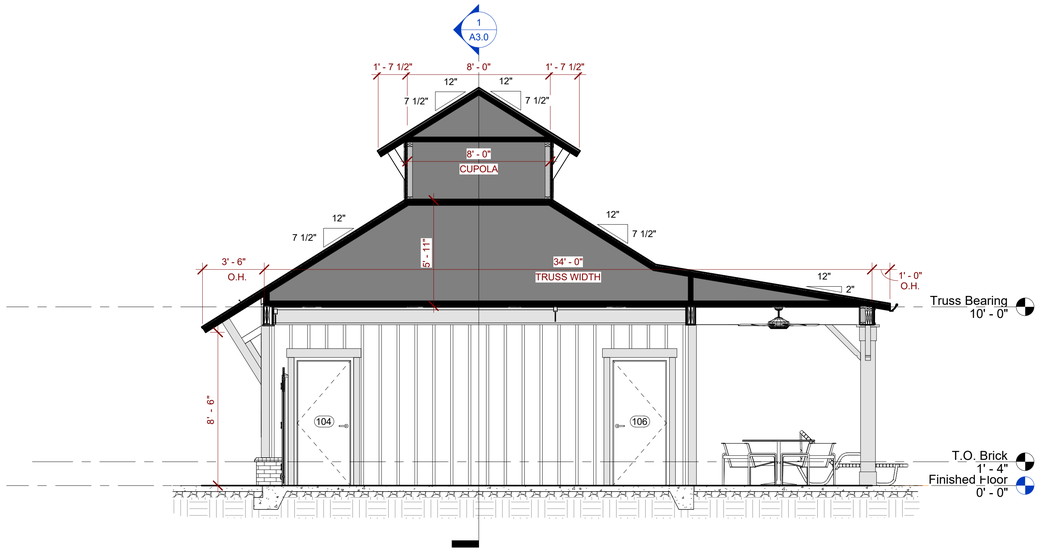
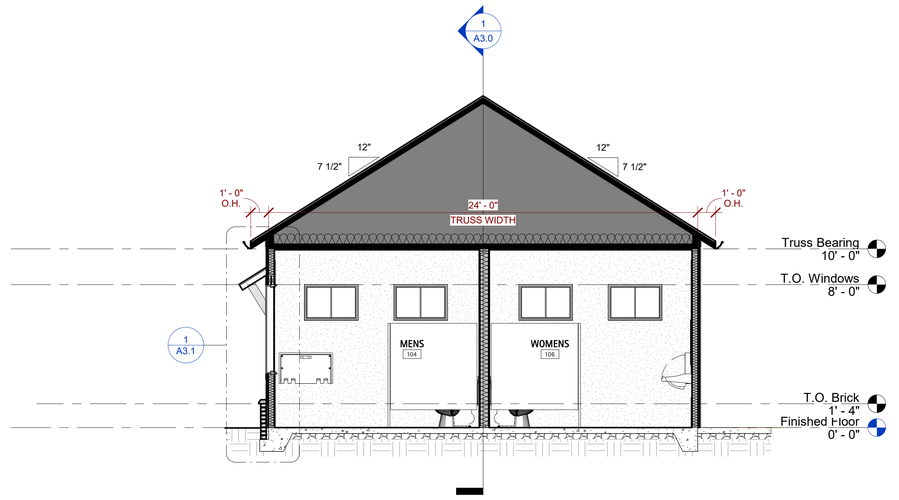
BATHHOUSE & POOL
HARNETT COUNTY, NC

A2.1



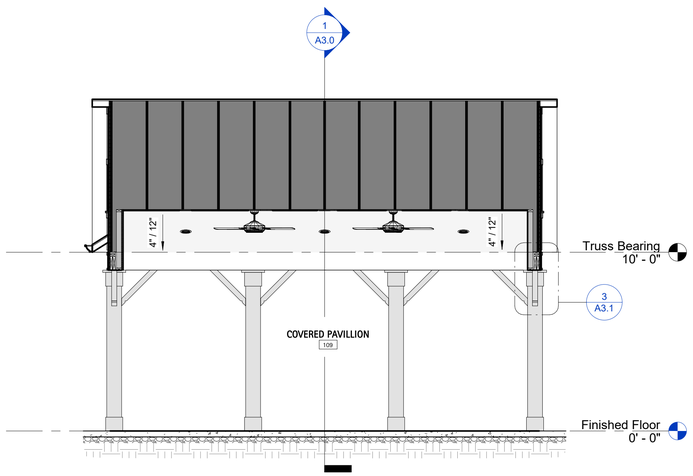
4 A3.0 **Section - Through Hallway**

1/4" = 1'-0"



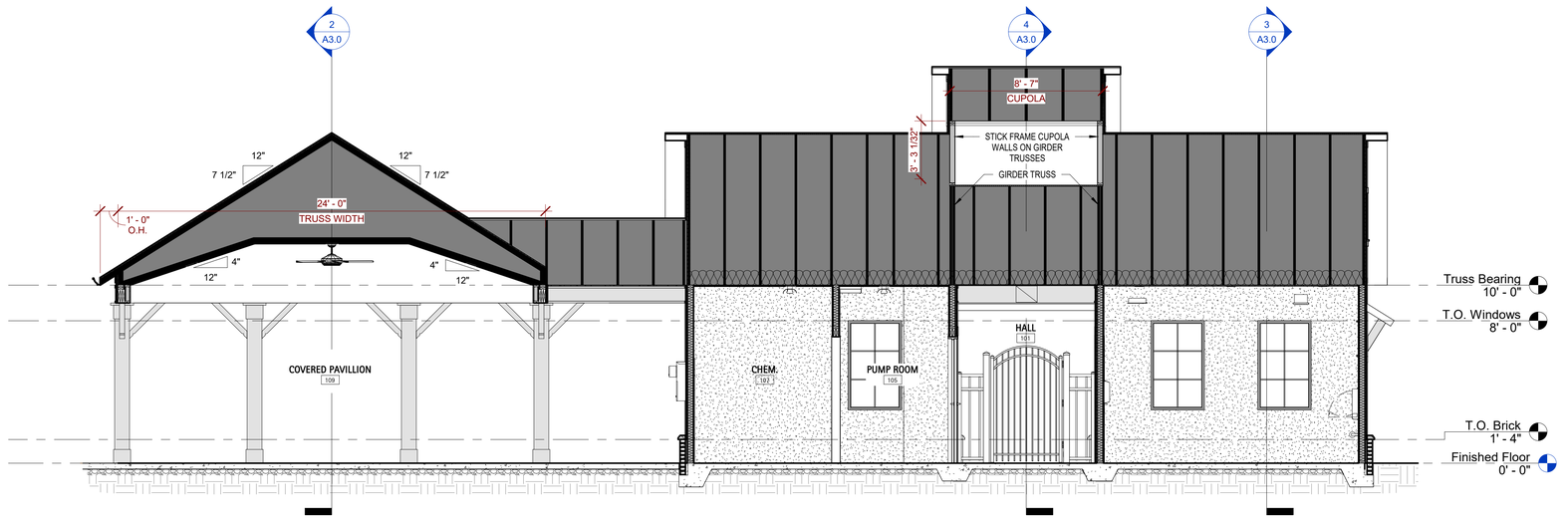
3 A3.0 **Section - Through Restrooms**

1/4" = 1'-0"



2 A3.0 **Section - Through Porch Ridge**

1/4" = 1'-0"



1 A3.0 **Section - Through Main Ridge**

1/4" = 1'-0"

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9858
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SHEET DISCRIPTION

Building Sections

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
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WOODGROVE
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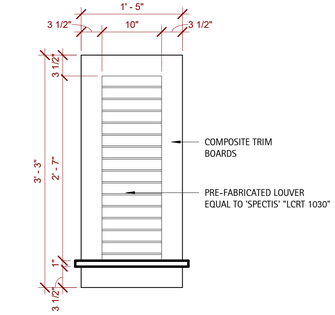
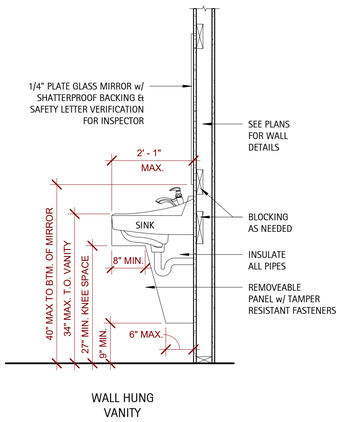
HARNETT COUNTY, NC

A3.0



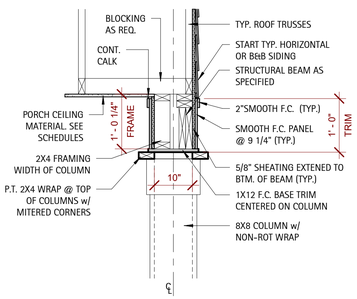
5 A3.1 Detail - Gable Vents

1" = 1'-0"



4 A3.1 Detail - Typical Sink Sections

3/4" = 1'-0"

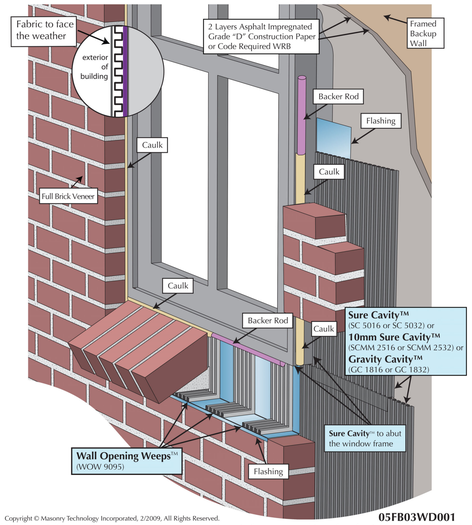


3 A3.1 Detail - Typical Trim Band

3/4" = 1'-0"

Brick Veneer at Bottom and Side of Window

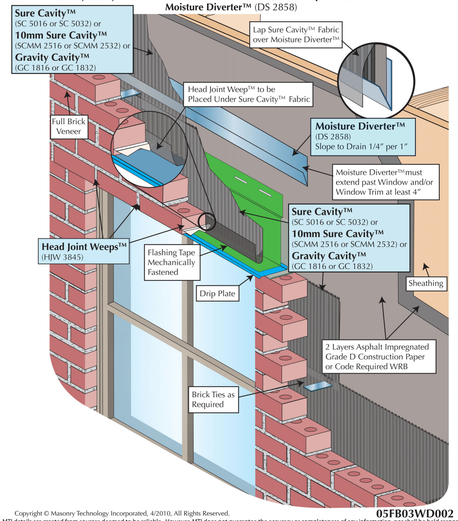
Sure Cavity™ (SC 5016 or SC 5032) or **10mm Sure Cavity™** (SCMM 2516 or SCMM 2532) or **Gravity Cavity™** (GC 1816 or GC 1832) and **Wall Opening Weeps™** (WOW 9095)



05FB03WD001

Head Joint Weeps Steel Lintel Installation with Wood Backup Wall

Sure Cavity™ (SC 5016 or SC 5032) or **10mm Sure Cavity™** (SCMM 2516 or SCMM 2532) or **Gravity Cavity™** (GC 1816 or GC 1832) and **Head Joint Weeps™** (HJW 3845) and **Moisture Diverter™** (DS 2858)

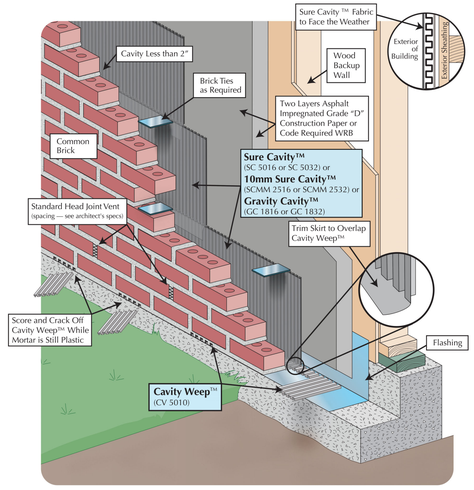


05FB03WD002

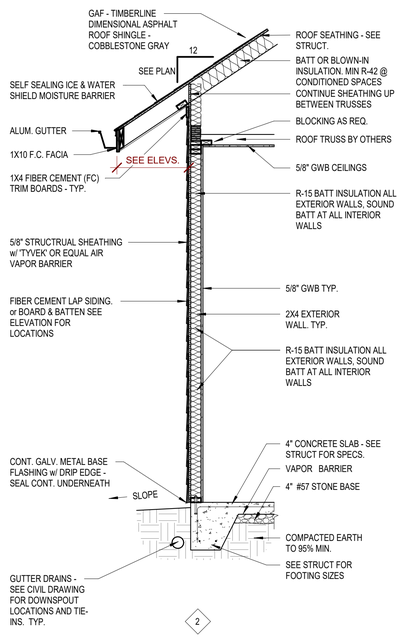
Full Brick Veneer at Bottom of Wood Backup Wall

Cavities With Less Than 2" of Remaining Airspace

Sure Cavity™ (SC 5016 or SC 5032) and **Cavity Weep™** (CV 5010)



05FB02WD001



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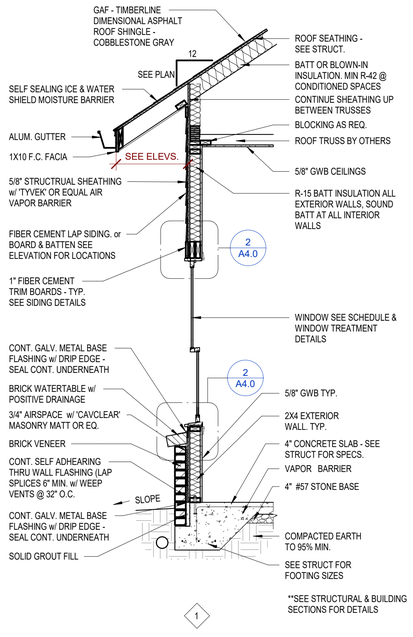

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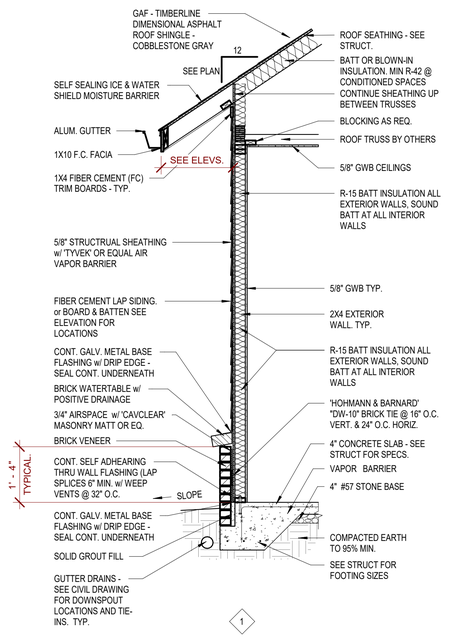

1

1 A3.1 Typical Wall Sections

1/2" = 1'-0"

D. CLUGSTON

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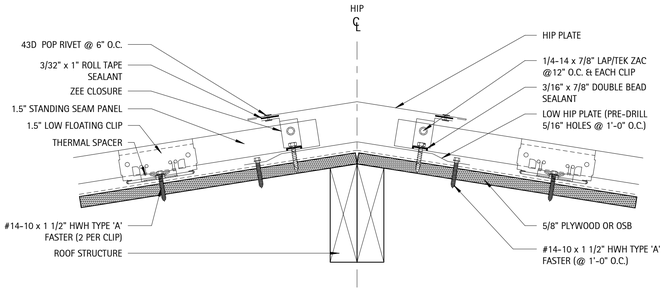
NO. REVISION DATE

SHEET DISCRIPTION
Wall Sections & Details

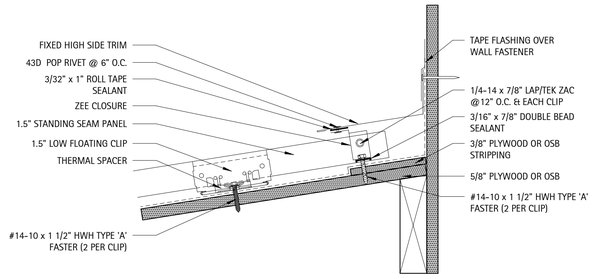
PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

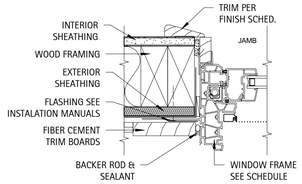
A3.1

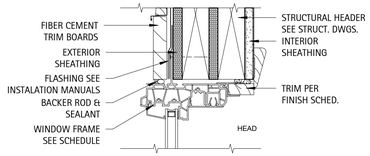


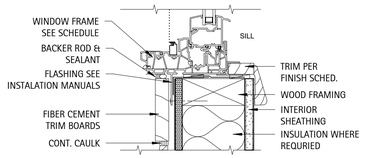
HIP / RIDGE



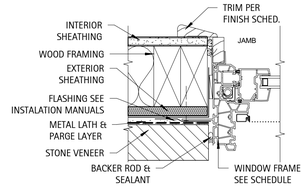
HIGH SIDE TIE-IN

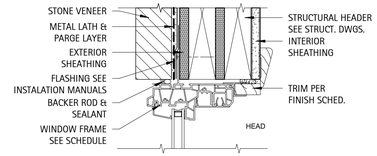


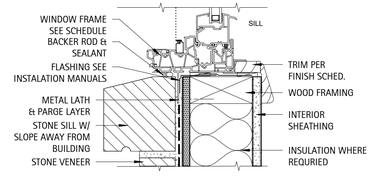




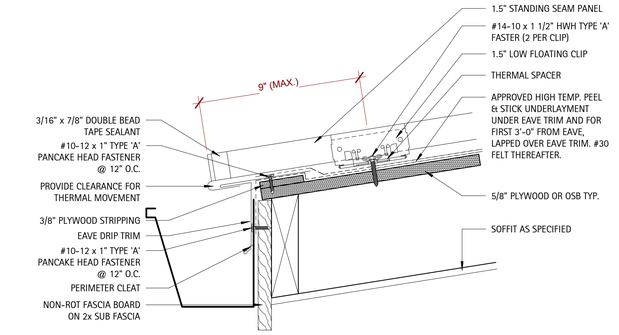
WINDOW TREATMENT @ SIDING



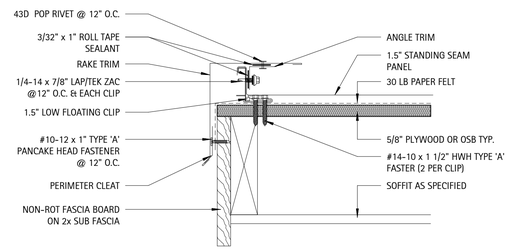




WINDOW TREATMENT @ STONE



EAVE WITH GUTTER



TYPICAL RAKE TRIM

WINDOW TREATMENT @ SIDING

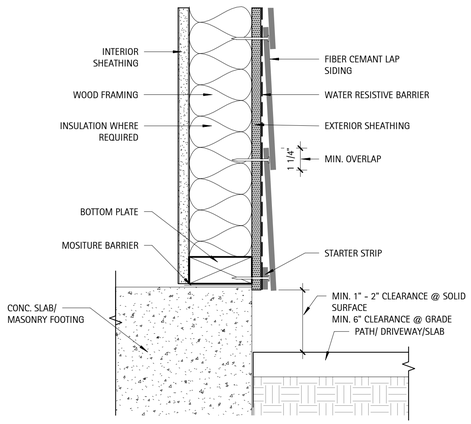
WINDOW TREATMENT @ STONE

3 A4.0 Detail - Standing Seam Roof

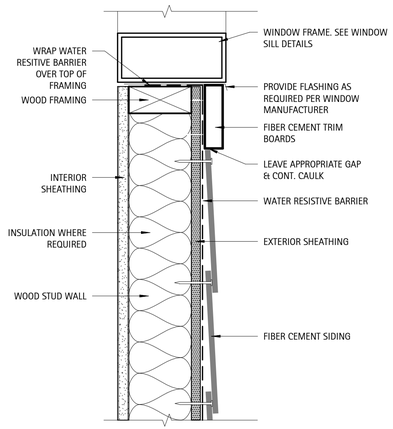
3" = 1'-0"

2 A4.0 Detail - Window Treatments

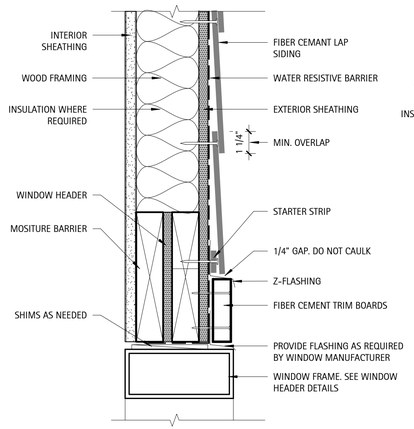
3" = 1'-0"



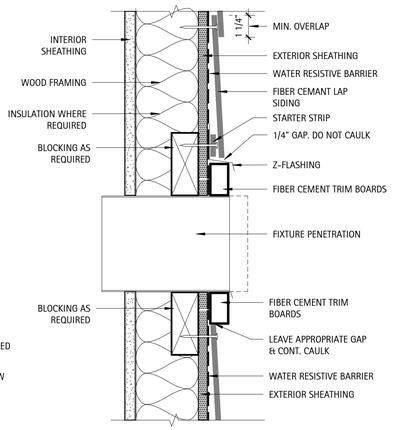
SIDING @ FOUNDATION



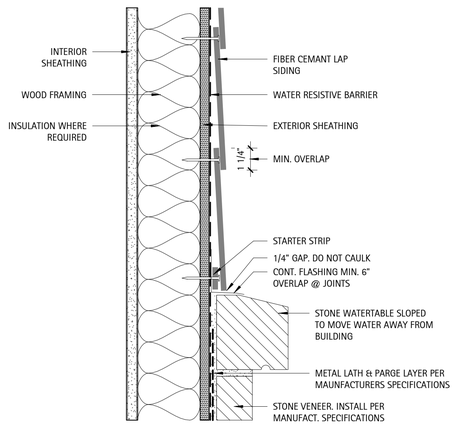
TYPICAL WINDOW SILL TRIM



TYPICAL WINDOW HEADER TRIM



TYPICAL FIXTURE TRIM



SIDING @ STONE VENEER

1 A4.0 Detail - Fiber Cement Siding

3" = 1'-0"

D. CLUGSTON

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REVISION | NO. | DATE

SHEET DISCRIPTION
General Building Details

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

A4.0

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

ROOM SCHEDULE

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Ceiling Height	Crown	Comments
100	ENTRY	Concrete - Light Broom	N/A	N/A	Hardie Panels or EQ - Painted	10'-0"	No	Slope all floors away from builidng walls at min. 1/8" per 1'-0"
101	HALL	Concrete - Light Broom	N/A	N/A	Hardie Panels or EQ - Painted	10'-0"	No	
102	STORAGE	Concrete - Light Broom	1x8 Fiber Cement - Painted	MR GWB - Painted	MR GWB - Painted	10'-0"	No	
103	ELEC.	Concrete - Light Broom	1x8 Fiber Cement - Painted	MR GWB - Painted	MR GWB - Painted	10'-0"	No	
104	MENS	Acrylic Chip Flooring	1x8 Fiber Cement - Painted	MR GWB - Painted	MR GWB - Painted	10'-0"	No	Slope all floors to drain
105	PUMP ROOM	Concrete - Light Broom	1x8 Fiber Cement - Painted	MR GWB - Painted	MR GWB - Painted	10'-0"	No	Slope all floors to sump
106	WOMENS	Acrylic Chip Flooring	1x8 Fiber Cement - Painted	MR GWB - Painted	MR GWB - Painted	10'-0"	No	Slope all floors to drain
107	CHEM.	Concrete - Light Broom	1x8 Fiber Cement - Painted	MR GWB - Painted	MR GWB - Painted	10'-0"	No	Provide non-rot chemical shelf at 16" A.F.F.
108	COVERED PORCH	Concrete - Light Broom	N/A	N/A	Hardie Panels or EQ - Painted	10'-0"	No	Slope all floors away from builidng walls at min. 1/8" per 1'-0"
109	COVERED PAVILLION	Concrete - Light Broom	N/A	N/A	Hardie Panels or EQ - Painted	Varies	No	

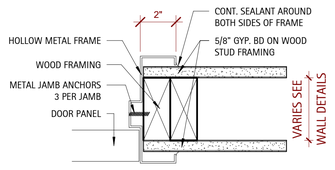
DOOR SCHEDULE

Door Number	Style	Door			Rough Width	Rough Height	Door		Frame	Fire Rating	Hardware												Comments
		Width	Height	Thickness			Material	Finish	Material		Push / Pull	Passage Set	Privacy Set	Office Set	Storage Set	Deadbolt	Panic Hardware	Closer	Weather strip	Threshold	FOB Access	Time Lock	
103	Type A	3' - 0"	7' - 0"	0' - 1 3/4"	3' - 2 1/2"	7' - 1 1/4"	Metal	Paint	HM	N/A	No	No	No	No	Yes	No	No	No	Yes	Yes	No	No	
104	Type A	3' - 0"	7' - 0"	0' - 1 3/4"	3' - 2 1/2"	7' - 1 1/4"	Metal	Paint	HM	N/A	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Timelock from dawn to dusk. Coordinate with H.O.A.
105	Type B	3' - 6"	7' - 0"	0' - 1 3/4"	3' - 8 1/2"	7' - 1 1/4"	Metal	Paint	HM	N/A	No	No	No	Yes	No	No	No	No	Yes	Yes	No	No	See Mech for Vent Req. - w/ Placards per NFPA704
106	Type A	3' - 0"	7' - 0"	0' - 1 3/4"	3' - 2 1/2"	7' - 1 1/4"	Metal	Paint	HM	N/A	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	Timelock from dawn to dusk. Coordinate with H.O.A.
107	Type B	3' - 0"	7' - 0"	0' - 1 3/4"	3' - 2 1/2"	7' - 1 1/4"	Metal	Paint	HM	N/A	No	Yes	No	No	No	No	No	Yes	No	No	No	No	See Mech for Vent Req. - w/ Placards per NFPA704
G100	Type C	4' - 0"	6' - 0"				Metal	Paint	Metal	N/A	Yes	No	No	No	No	No	Yes	Yes	No	No	Yes	No	Gate: See Pool Details
G101	Type C	4' - 0"	6' - 0"				Metal	Paint	Metal	N/A	Yes	No	No	No	No	No	Yes	Yes	No	No	Yes	No	Gate: See Pool Details
G102	Type C	4' - 0"	6' - 0"				Metal	Paint	Metal	N/A	Yes	No	No	No	No	No	Yes	Yes	No	No	Yes	No	Gate: See Pool Details
G103	Type C	4' - 0"	6' - 0"				Metal	Paint	Metal	N/A	Yes	No	No	No	No	No	Yes	Yes	No	No	Yes	No	Gate: See Pool Details

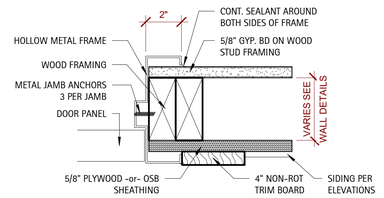
Grand total: 9

WINDOW SCHEDULE

Mark	Count	Size		Rough Width	Rough Height	Type	Finish	Head Height	Comments
		Width	Height						
A	4	3' - 0"	5' - 0"	3' - 0 1/2"	5' - 0 1/2"	TYPE A		8'-0"	Frosted
B	8	3' - 0"	2' - 0"	3' - 0 1/2"	2' - 0 1/2"	TYPE B		Varies	



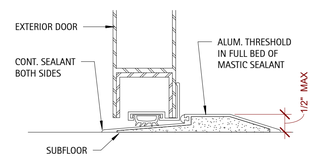
INTERIOR DOOR JAMB



EXTERIOR DOOR JAMB

4 A5.0 Detail - Typ. Door Jambs

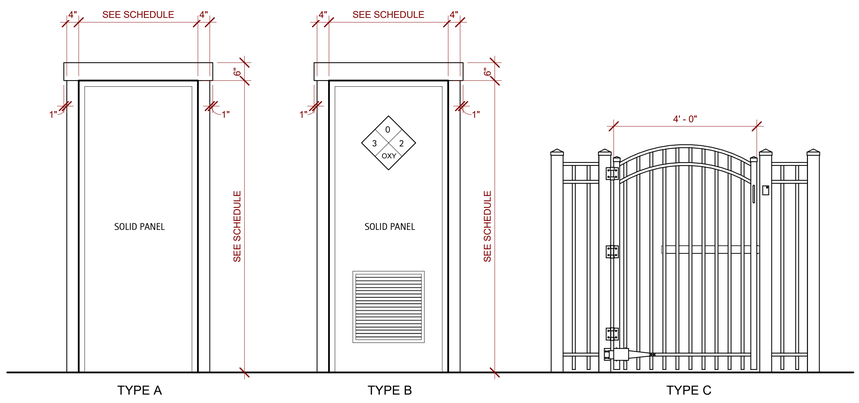
3" = 1'-0"



EXTERIOR DOORS THRESHOLD

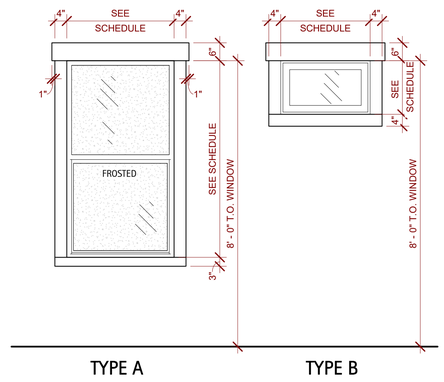
3 A5.0 Detail - Typ. Threshold

6" = 1'-0"



2 A5.0 Detail - Door Frames

1/2" = 1'-0"



1 A5.0 Detail - Window Types

1/2" = 1'-0"

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Perry Cox
architect, p.a.
124 Salem Towne Court, Apex, NC 27502
P: 919.363.5411
www.pcoxdesign.com

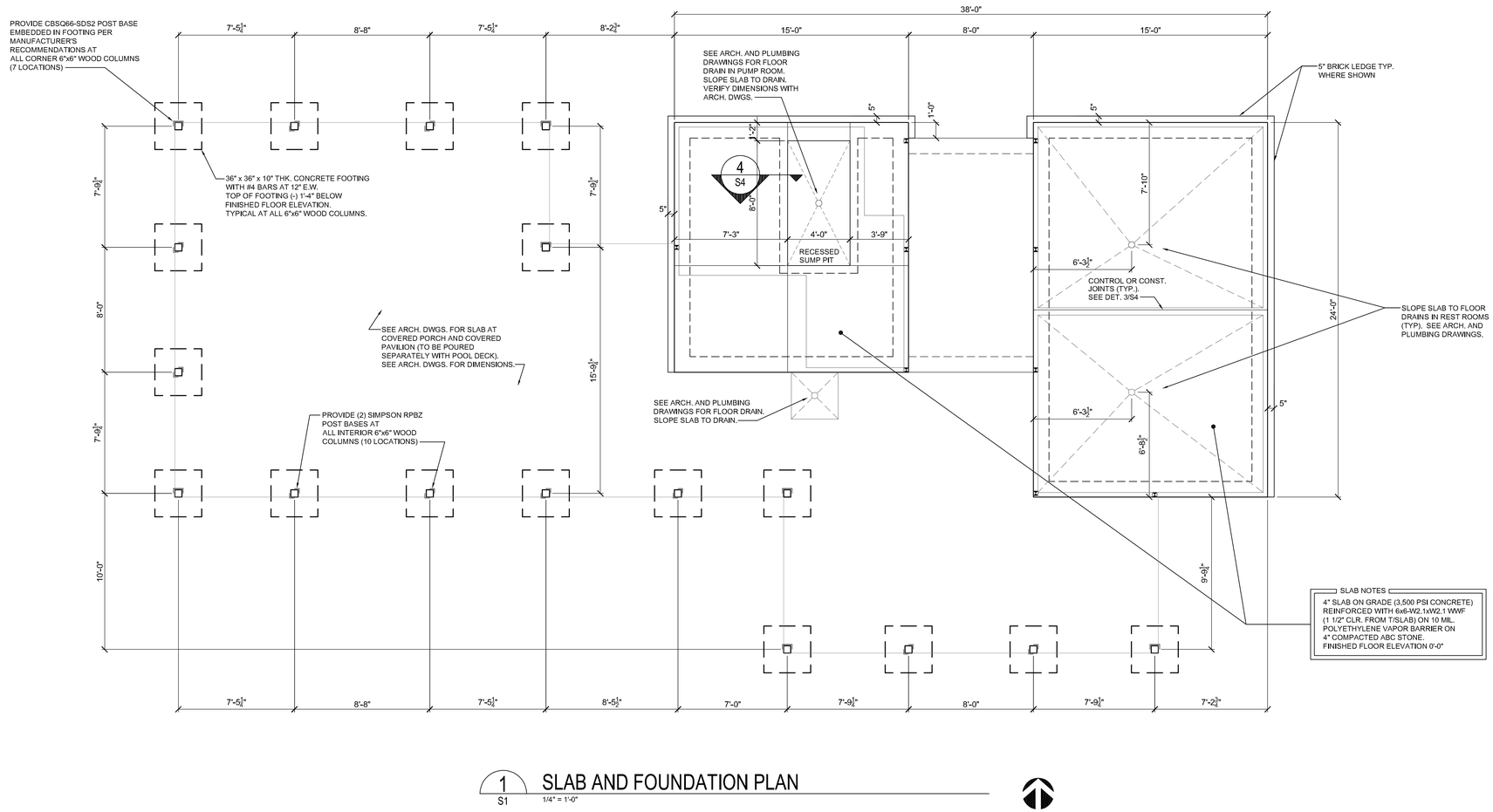
DATE
REVISION
NO.

SHEET DISCRIPTION
Schedules & Details

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

A5.0



1 S1 SLAB AND FOUNDATION PLAN

1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS
7.25.2022
SEAL NOT VALID UNLESS SIGNED AND DATED

NO.	REVISION	DATE

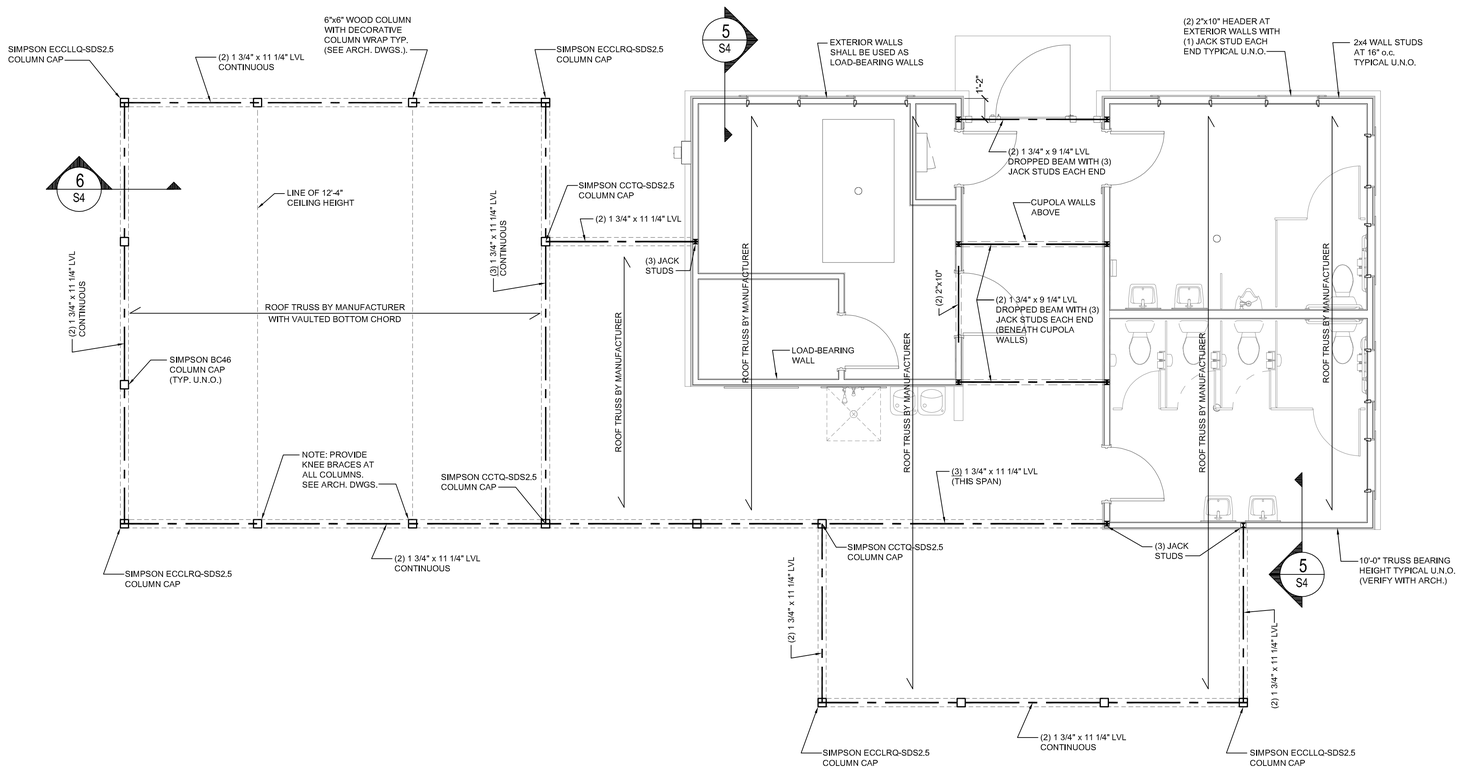
SHEET DISCRIPTION

Slab and Foundation Plan

PROJECT #:	C220702
DATE ISSUED:	07/22/2022
DRAWING BY:	BR
CHECKED BY:	BR/JM/BJ

WOODGROVE
NEST COMMUNITIES
BATHHOUSE & POOL
HARNETT COUNTY, NC

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
7.22.2022
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NO.	REVISION	DATE

SHEET DISCRIPTION

Ceiling
Framing
Plan

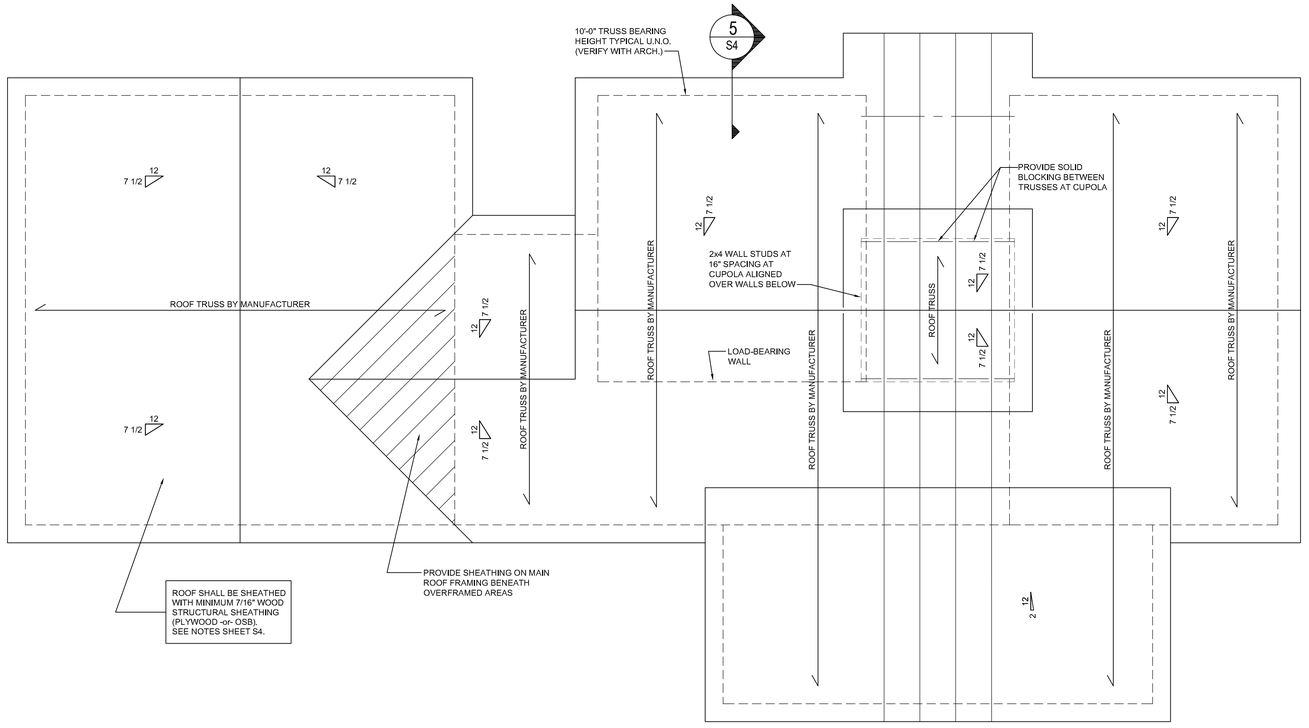
PROJECT #:	C220702
DATE ISSUED:	07/22/2022
DRAWING BY:	BR
CHECKED BY:	BR/JM/BJ

WOODGROVE
NEST COMMUNITIES
BATHHOUSE & POOL
HARNETT COUNTY, NC

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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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS
7.22.2022
SEAL NOT VALID UNLESS SIGNED AND DATED

NO.	REVISION	DATE

SHEET DISCRIPTION
Roof Framing Plan

PROJECT #:	C220702
DATE ISSUED:	07/22/2022
DRAWING BY:	BR
CHECKED BY:	BR/JM/BJ

WOODGROVE
NEST COMMUNITIES
BATHHOUSE & POOL
HARNETT COUNTY, NC

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: 117 MPH

GROUND SNOW LOAD 15 PSF

SEISMIC DESIGN CATEGORY C
SITE CLASS D
Ss = 0.190
S1 = 0.088

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 SPRUCE PINE FIR (SPF) WITH THE FOLLOWING DESIGN PROPERTIES:
Fb = 875 PSI Fv = 70 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 = 1050 PSI Fv = 95 PSI E = 1.6E6 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 117 mph (ASCE 7-10)
Exposure Category B
Wind Base Shears (for MWFRS) Vx = 4.4K Vy = 10.0K

SEISMIC DESIGN CATEGORY ☐A ☐B ☒C ☐D

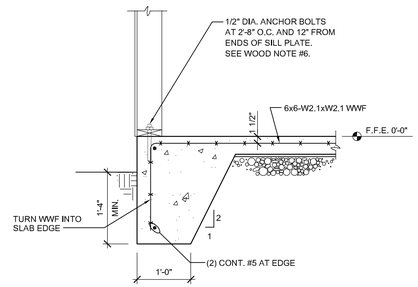
Provide the following Seismic Design Parameters:

Spectral Response Acceleration SS 0.190 %g S1 0.088 %g
Site Classification D ☐Field Test ☒Presumptive ☐Historical Data

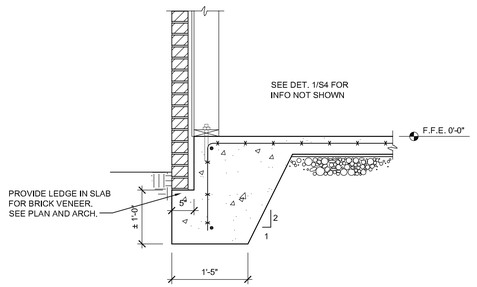
Basic structural system (check one)
X Bearing Wall ____ Dual w/Special Moment Frame
____ Building Frame ____ Dual w/Intermediate R/C or Special Steel
____ Moment Frame ____ Inverted Pendulum
Seismic base shear VX = 1.7K VY = 1.7K
Analysis Procedure ____ Simplified X Equivalent Lateral Force ____ Modal
Architectural, Mechanical, Components anchored? ____

Lateral design Control: Earthquake ____ Wind X

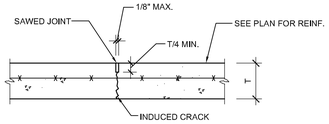
Soil Bearing Capacities:
Field Test (provide copy of test report) ____ psf
Presumptive Bearing capacity 2500 psf
Pile size, type, and capacity ____



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

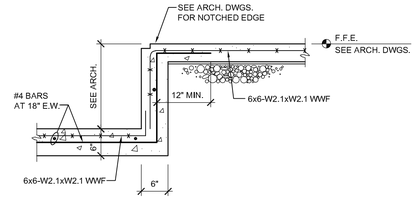


2 S4 DETAIL - SLAB EDGE WITH BRICK LEDGE
3/4" = 1'-0"

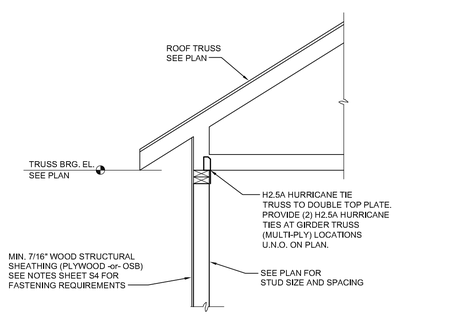


NOTES:
1. SAW JOINTS AS SOON AS CONCRETE WILL NOT RAVEL UNDER SAW BLADE.
2. ADD 20" LONG SMOOTH DOWELS WITH INSERTS AT ALL CONSTRUCTION JOINTS (IF USED).
3. CONTRACTOR'S OPTION TO CUT ALTERNATING WIRES AT JOINTS FOR ADDITIONAL CRACK CONTROL.

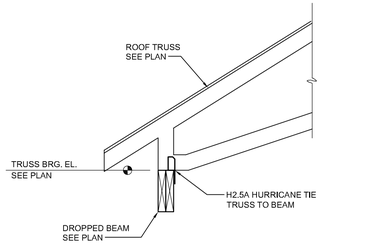
3 S4 DETAIL - TYP. SLAB CONTROL JOINT
1" = 1'-0"



4 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" PORCH

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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS
7.22.2022
SEAL NOT VALID UNLESS SIGNED AND DATED

NO.	REVISION	DATE

SHEET DISCRIPTION
Structural Notes and Details

PROJECT #:	C220702
DATE ISSUED:	07/22/2022
DRAWING BY:	BR
CHECKED BY:	BR/JM/BJ

WOODGROVE
NEST COMMUNITIES
BATHHOUSE & POOL
HARNETT COUNTY, NC

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:

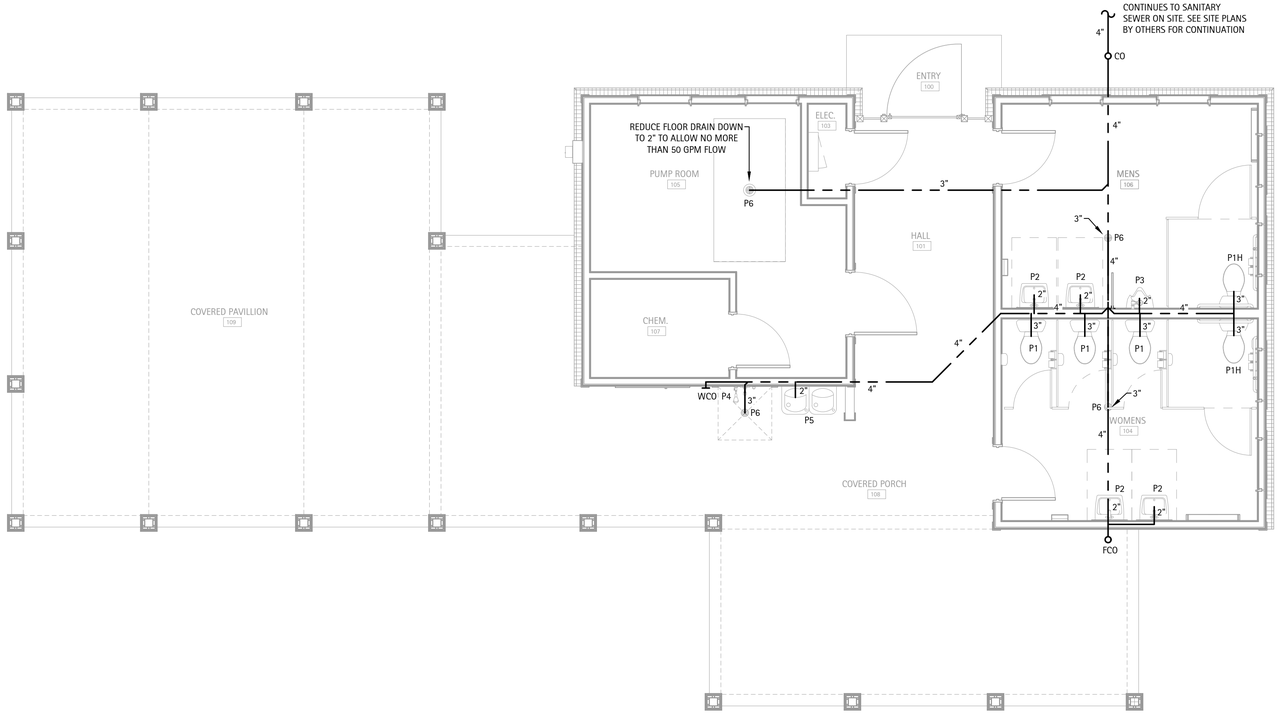
1. ALL OVERHEAD DOMESTIC WATER PIPING SHALL BE TYPE L COPPER WITH 95/5 LEAD FREE SOLDER, AND ALL BELOW GRADE WATER PIPING SHALL BE TYPE K COPPER WITH NO JOINTS. ALL PIPING SHALL HAVE MANUFACTURER'S NAME AND THE APPLICABLE STANDARD TO WHICH IT WAS MANUFACTURED CLEARLY MARKED ON EACH LENGTH. PIPING SHALL 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:

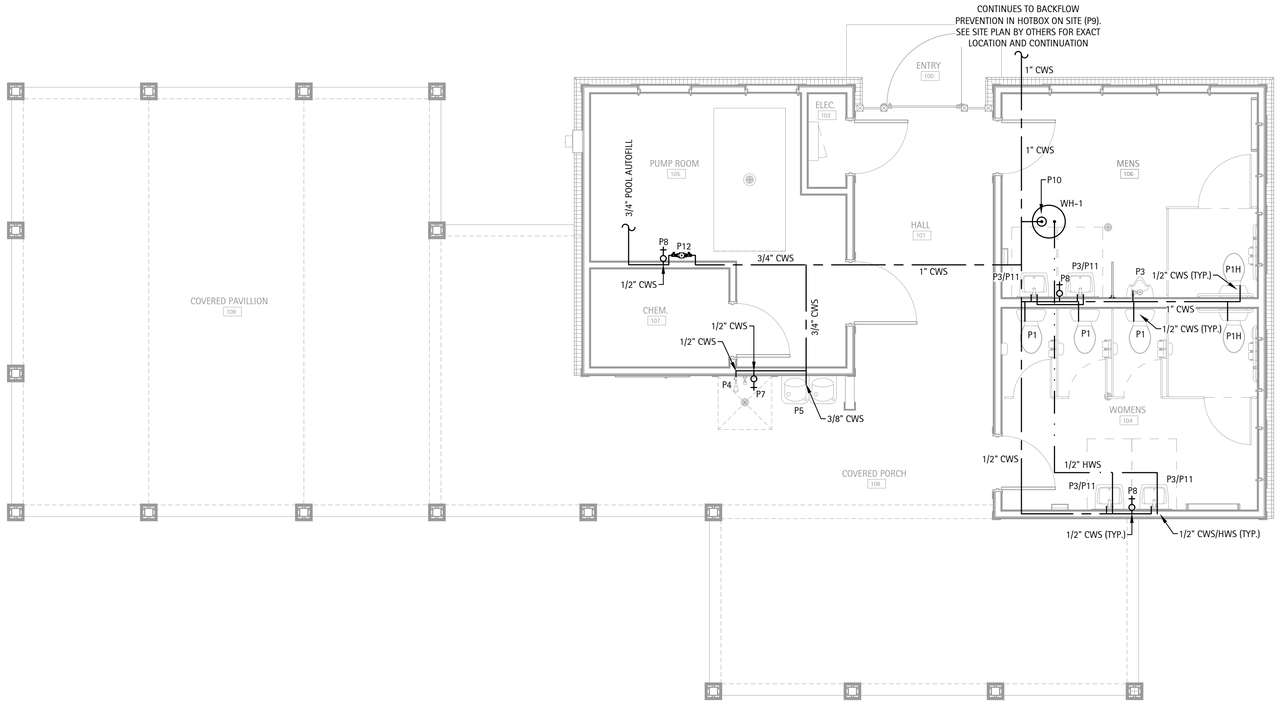
1. EXTEND DOMESTIC WATER PIPE FROM FIVE (5) FEET OUTSIDE THE BUILDING INTO THE BUILDING AS INDICATED ON THE PLANS AND INSTALL DOMESTIC WATER DISTRIBUTION PIPING TO ALL FIXTURES AND EQUIPMENT REQUIRING THE SAME. WATER SERVICE PIPE AND THE BUILDING SEWER SHALL BE SEPARATED BY 5 FEET OF UNDISTURBED OR COMPACTED 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 305.6.1. 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 917 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.

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 SCS34 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 SCS34 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-E280SAB (VERIFY EXACT FAUCET WITH OWNER).	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	FREE STANDING SHOWER	OSC PS-900-ADA OR APPROVED EQUAL	2.5 GPM METERED FREE STANDING SHOWER.	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 TRAP PRIMER CONNECTION OPTION IF NOTED.	-	-	3"
P7	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	-
P8	INTERIOR HOSE BIBB	ZURN Z1341-BFP OR EQUAL BY MIFAB OR WOODFORD	PROVIDE CHECK VALVE AND ANTI-SIPHON PROTECTION IF NOT INTEGRAL TO UNIT		1/2"	
P9	1" RPZ BACKFLOW PREVENTER	WATTS LF909 QT OR EQUAL BY CONBRACO OR WILKINS	RPZ ASSEMBLY CONSISTING OF A PRESSURE DIFFERENTIAL RELIEF VALVE LOCATED IN A ZONE BETWEEN TWO POSITIVE SEATING CHECK VALVES. THE ASSEMBLY SHALL INCLUDE TWO TIGHTLY CLOSING SHUTOFF VALVES BEFORE AND AFTER THE ASSEMBLY, TEST COCKS AND A PROTECTIVE STRAINER UPSTREAM OF THE FIRST SHUTOFF VALVE. THE ASSEMBLY SHALL MEET THE REQUIREMENTS OF ASSE 1013 AND AWWA C511	-	1"	-
P10	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
P11	THERMOSTATIC MIXING VALVE	WATTS LFMMV OR EQUAL BY LAWLER OR LEONARD VALVE	ASSE STANDARD 1069 OR 1070 APPROVED WITH 1/2 INCH FEMALE NPT INLET AND OUTLET CONNECTIONS, BRASS BODY, AND INTEGRAL MOUNTING HOLES. TAMPER RESISTANT THERMOPLASTIC ENCLOSURE. SINGLE REPLACEABLE CARTRIDGE DESIGN.	1/2"	1/2"	-
P12	3/4" RPZ BACKFLOW PREVENTER	WATTS LF909 QT OR EQUAL BY CONBRACO OR WILKINS	RPZ ASSEMBLY CONSISTING OF A PRESSURE DIF



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



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

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NO.	REVISION	DATE
1	PERMIT SET	07/25/22

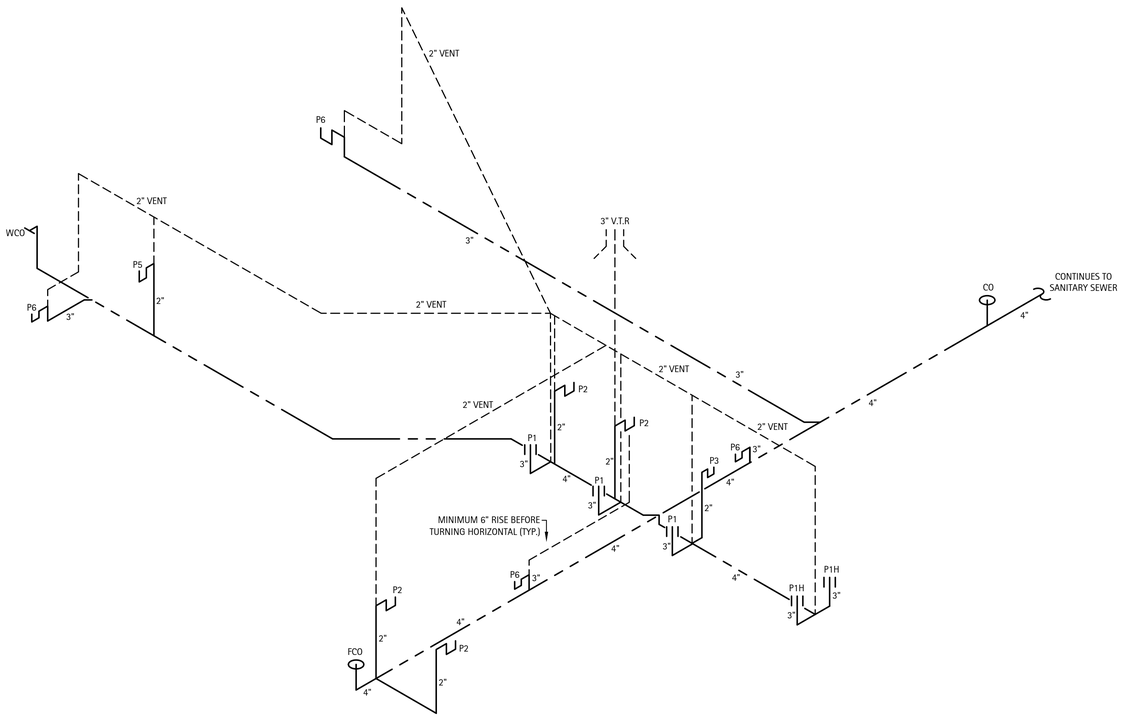
SHEET DISCRIPTION

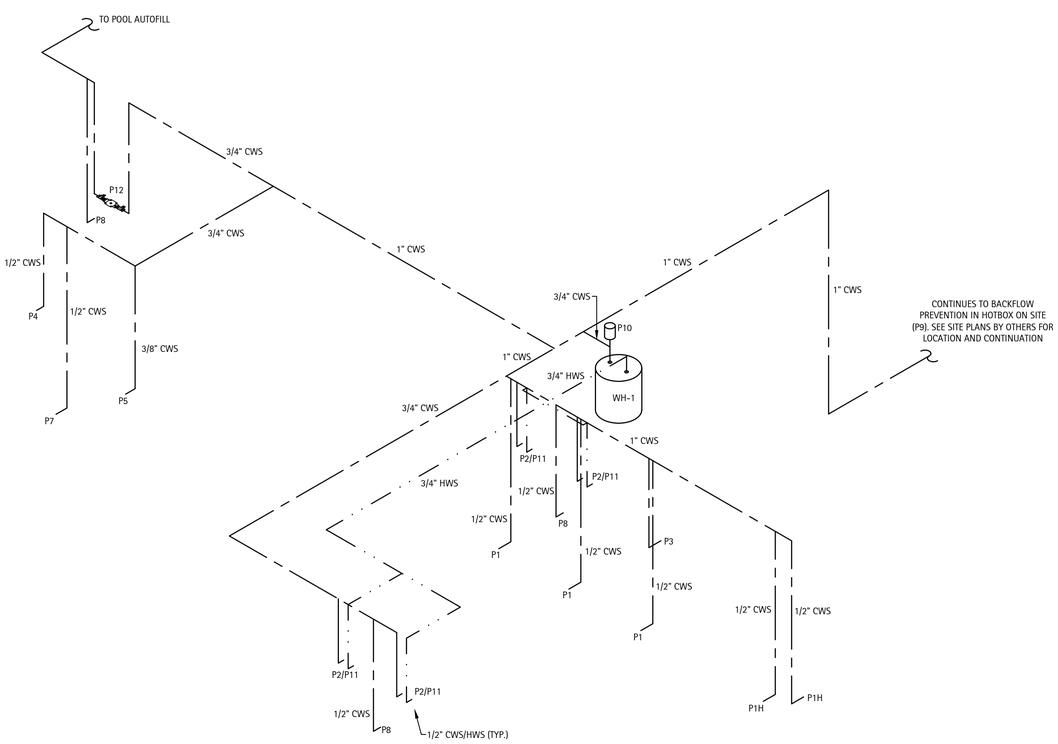
Sanitary & Water Supply Plans

PROJECT #:	22458
DATE ISSUED:	07/25/2022
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

P2





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NO.	REVISION	DATE
1	PERMIT SET	07/25/22

SHEET DISCRIPTION

Plumbing Risers

PROJECT #:	22458
DATE ISSUED:	07/25/2022
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

DWV AND WATER SUPPLY RISERS: NO SCALE | 1

P3

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.
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. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING.
12. 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.
13. MC SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING PROVIDED.
14. 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.
15. 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.
16. 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.
17. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
18. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED ROOFER. PROVIDE DOCUMENTATION.
19. 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.
20. 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. 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. 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.
6. 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.
7. 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.
8. FACTORY-MADE AIR DUCTS AND CONNECTORS SHALL COMPLY WITH UL 181-96.
9. 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.
10. 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.
11. AIR FILTERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 605 OF THE 2018 NC MECHANICAL CODE.
12. 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-6. 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. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS.
5. CONSTRUCT T's, BENDS, AND ELBOWS WITH RADII 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.
6. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE; MAXIMUM OF 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
7. IT SHALL BE THE RESPONSIBILITY OF THE MC TO SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND USING 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. INSTALL BACKDRAFT DAMPERS ON FRESH AIR AND EXHAUST DUCTS WHERE THEY PENETRATE THE THERMAL ENVELOPE PER NORTH CAROLINA ENERGY CONSERVATION CODE C402.5.5

VENTILATION CALCS

CHEMICAL STORAGE:

43 SQFT X 10' HIGH CEILING = 430 CU. FT @ 10 ACH = 72 CFM

*50 CFM PROVIDED

PUMP ROOM:

156 SQFT X 10' HIGH CEILING = 1560 CU. FT @ 10 ACH = 260 CFM

*175 CFM PROVIDED

HEX PLAN NOTES

1. EXHAUST DUCT TO TURTLE BACK ROOF VENT ON BACK SIDE OF ROOF PITCH. PROVIDE WITH INSECT SCREEN. COORDINATE EXACT LOCATION WITH G.C.
2. LOUVERED EXHAUST GRILLE INSTALLED IN GYPSUM CEILING. TURN LOUVERED BLADES TOWARDS WALL.
3. SUSPENDED INLINE EXHAUST FAN TO BE INSTALLED IN ATTIC. ENSURE ALL MANUFACTURER CLEARANCES ARE MAINTAINED. COORDINATE WITH G.C. TO PROVIDE ACCESS FOR MAINTENANCE.
4. DOOR WITH WEATHER PROOF LOUVER BY G.C. LOUVER TO BE 18"X18".
5. GRILLES AND DUCTWORK TO ALLOW FOR OUTSIDE AIR TO REDUCE NEGATIVE PRESSURE WHEN BATHROOM EXHAUST FANS ARE IN OPERATION.
6. COMBINE BATHROOM EXHAUST TO ONE 12" EXHAUST DUCT. PROVIDE BACKDRAFT DAMPER AT EACH FAN PRIOR TO COMBINING.
7. EXHAUST FAN TO BE WIRED FOR CONTINUOUS OPERATION.

EXHAUST FAN SCHEDULE

MARK	MFG / MODEL #	TYPE	ESP (in WG)	CFM	VOLT/PH	FLA	SONES	NOTES
EF-1	GREENHECK SP-A200	CEILING	0.40	179	120/1	0.43	3.0	1-3
EF-2	GREENHECK SP-A510	CEILING	0.40	364	120/1	3.30	4.0	1-3
EF-3	GREENHECK SQ-90	INLINE	0.47	362	120/1	1.20	7.4	1-6

1. PROVIDE WITH PITCHED ROOF CURB & CAP FOR FLAT OR SLOPED ROOF,OR HOODED WALL WITH BACKDRAFT DAMPER CAP AS APPLICABLE.
2. PROVIDE WITH SQUARE TO ROUND DUCT ADAPTER AS NECESSARY
3. OR EQUAL BY LOREN COOK OR PENNBARRY OR TWIN CITY
4. WIRED FOR CONTINUOUS OPERATION
5. INTEGRAL DISCONNECT
6. CORROSION RESISTANT

REGISTER & GRILLE SCHEDULE

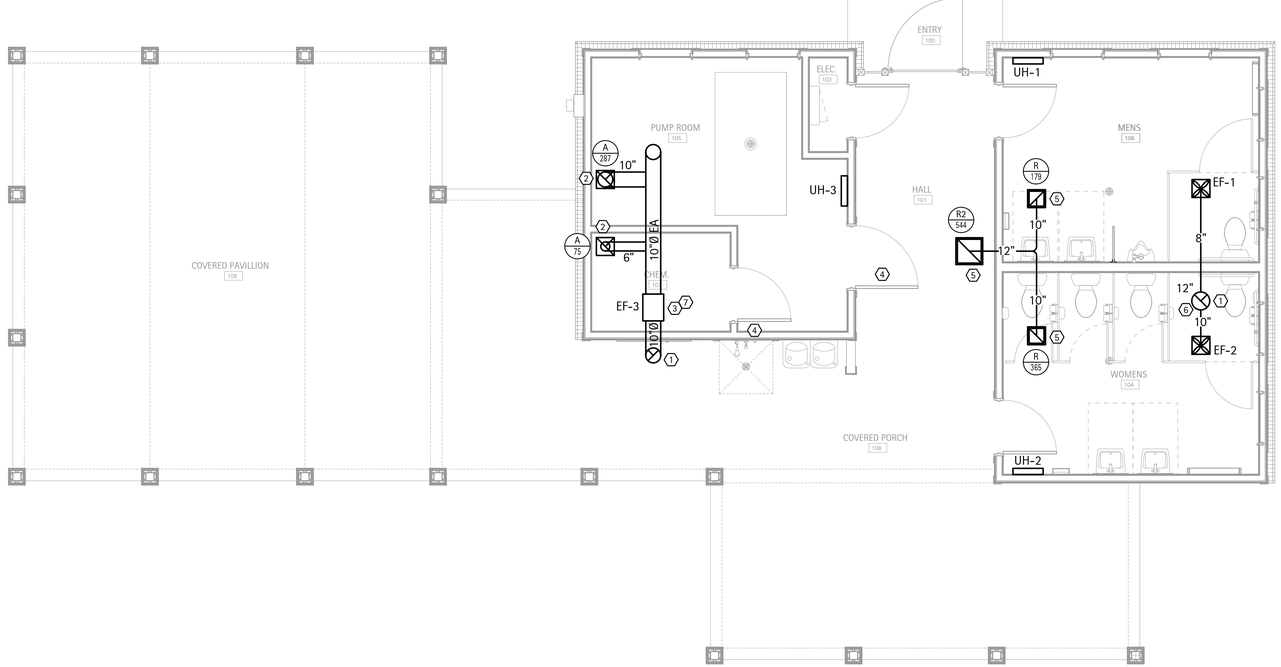
MARK	MFG	MODEL #	SIZE	MOUNTING	DESCRIPTION	NOTES
A	NAILOR	5145H	12X12	CEILING	ALUMINUM LOUVERED RETURN GRILLE	1
R	HART & COOLEY	RH45	12X12	SURFACE	ALUMINUM SURFACE MOUNT RETURN GRILLE	1
R2	HART & COOLEY	RH45	18X18	SURFACE	ALUMINUM SURFACE MOUNT RETURN GRILLE	1

1. OR EQUAL BY PRICE, METAL-AIRE, CARNES, TITUS, HART AND COOLEY, OR NAILOR.

ELECTRIC UNIT HEATER SCHEDULE

MARK	MFG / MODEL #	HEATER	VOLT/PH	HEAT	MOCP	NOTES
		KW		KW	AMPS	
UH-1-3	MARKEL/ H3317T2RPW	4.8	240/1	4.8	30.0	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)



MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE	PRESCRIPTIVE
THERMAL ZONE	ZONE 4A
EXTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	20.4°F
COOLING DESIGN DRY BULB	95.0°F
COOLING DESIGN WET BULB	75.5°F
INTERIOR DESIGN CONDITIONS	
HEATING DESIGN DRY BULB	50°F
COOLING DESIGN DRY BULB	75°F
COOLING RELATIVE HUMIDITY	50%
MENS BATHROOM	
HEATING LOAD:	9,364 BTU/H
WOMENS BATHROOM	
HEATING LOAD:	11,237 BTU/H
PUMP ROOM	
HEATING LOAD:	13,053 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.

D.CLUGSTON

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NO. | REVISION | DATE
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SHEET DISCRIPTION
Mechanical Schedules & Plan

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WOODGROVE DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

M1

GENERAL ELECTRICAL NOTES:

ADMINISTRATIVE:

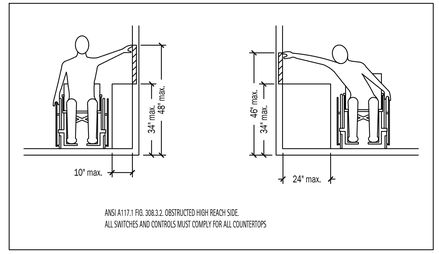
1. THE FOLLOWING ABBREVIATIONS SHALL APPLY TO NOTES AND PLANS: PC - PLUMBING CONTRACTOR, EC - ELECTRICAL CONTRACTOR, MC - MECHANICAL CONTRACTOR, GC - GENERAL CONTRACTOR, FASC - FIRE ALARM SYSTEM CONTRACTOR.
2. "PROVIDE" MEANS TO FURNISH AND INSTALL. THE ELECTRICAL CONTRACTOR SHALL ALSO INSTALL MATERIALS 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 INFERABLE 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 250.56 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, OR SOUTHWIRE COMPANY.
8. JOINTS IN SOLID CONDUCTORS SHALL BE SPLICED USING IDEAL "WIRE NUTS", 3M "SCOTCH LOCK", OR TnB "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 LUMINAIRES SHALL BE LISTED. LUMINAIRES 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. THIS IDENTIFICATION SHALL BE MADE AT EACH POINT WHERE A CONNECTION IS MADE. 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(G).
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. 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 300.50(E) 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.
10. 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 712.3.2 (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 FIRE 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 310.4.
14. ISOLATED-GROUND TYPE RECEPTACLES SHALL BE INSTALLED IN ACCORDANCE WITH 250.146(D). ISOLATED GROUND RECEPTACLES SHALL BE ORANGE IN COLOR.
15. IN ASSEMBLY AREAS EXCEEDING 100 PERSONS OCCUPANCY, WIRING METHODS SHALL COMPLY WITH NEC 518.
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.



ANSI A117.1 FIG. 308.3.2. OBSTRUCTED HIGH REACH SIDE.
ALL SWITCHES AND CONTROLS MUST COMPLY FOR ALL COUNTERTOPS

ELECTRICAL DESIGNER'S STATEMENT		
ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE PRESCRIPTIVE _X_ PERFORMANCE ___ ENERGY COST BUDGET ___		
LIGHTING SCHEDULE:		
LAMP TYPE REQUIRED IN FIXTURE:	SEE LIGHTING LEGEND	
NUMBER OF LAMPS PER FIXTURE:	SEE LIGHTING LEGEND	
BALLAST TYPE USED IN FIXTURE:	SEE LIGHTING LEGEND	
NUMBER OF BALLASTS IN FIXTURE:	SEE LIGHTING LEGEND	
TOTAL WATTAGE PER FIXTURE:	SEE LIGHTING LEGEND	
TOTAL INTERIOR WATTAGE SPECIFIED VS ALLOWED:	WATTS SPECIFIED	WATTS ALLOWED
	770.0	1715.00

OCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
BATHROOM	1750	0.98	1715.00
TOTAL	1750		1715.00

EQUIPMENT SCHEDULES WITH MOTORS (NOT USED FOR MECHANICAL SYSTEMS)
MOTOR HORSEPOWER: N/A
NUMBER OF PHASES: N/A
MINIMUM EFFICIENCY: N/A
MOTOR TYPE: N/A
NUMBER OF POLES: N/A

DESIGNER STATEMENT: TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.

FOR THE ADDITIONAL PRESCRIPTIVE REQUIREMENT REQUIRED BY C406 OF 2018 NORTH CAROLINA ENERGY CONSERVATION CODE, WE ARE CHOOSING C406.3 - REDUCED LIGHTING POWER DENSITY.

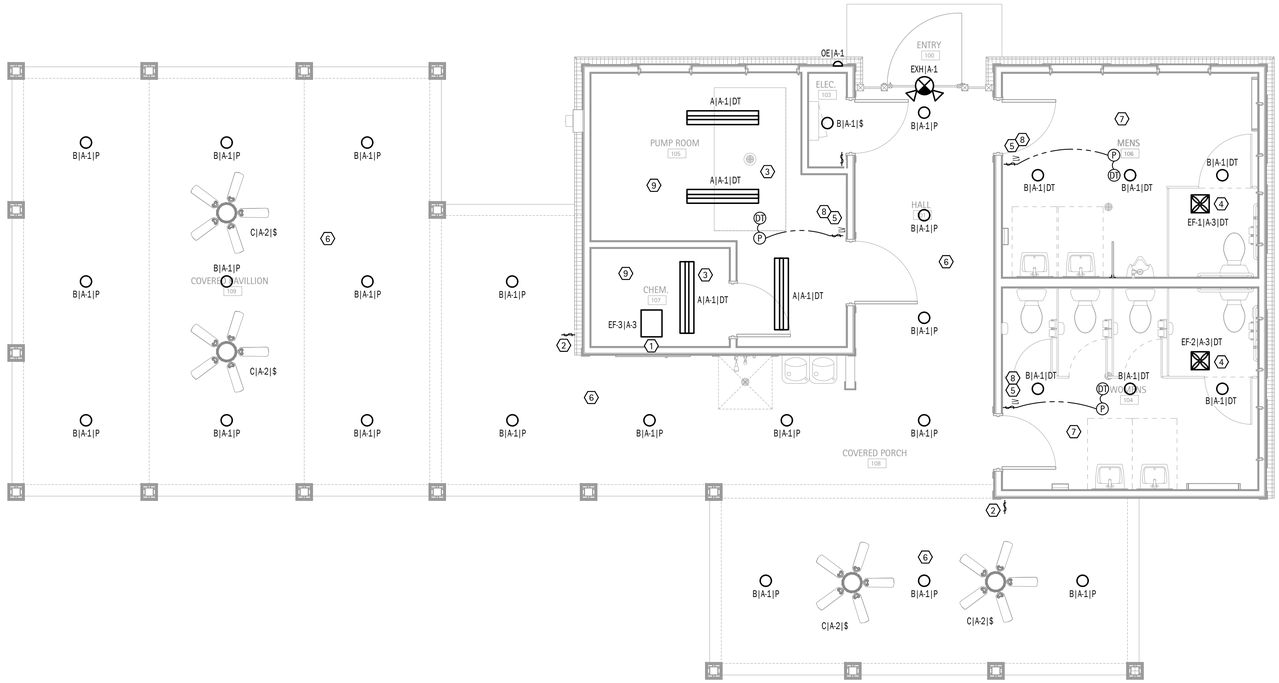
770 W SPECIFIED <= 1543 W (1715 W ALLOWED X 90%)

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.
$WM	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.
(OP)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, DT-300 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
(P)	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
(J)	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.
	EXHAUST FAN	VENT FAN, 120V, CFM AS NOTED MC TO PROVIDE AND VENT, EC TO WIRE.

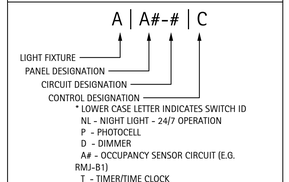
POWER DEVICE LEGEND		
SYMBOL	DESCRIPTION	REMARKS
	DATA AND TELEPHONE JACK	PHONE/DATA OUTLET. EC TO INSTALL 3/4"C WITH PULL-STRING FROM OUTLET BOX TO ABOVE CEILING FOR FUTURE USE. JACKS AND COMMUNICATION CABLING BY OTHERS.
	DUPLEX RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596.
	QUAD RECEPTACLE	QUAD RECEPTACLE OF SAME CHARACTERISTICS AS DUPLEX TYPE ABOVE.
	DEDICATED RECEPTACLE	NEMA 5-20R, HEAVY DUTY, COMMERCIAL GRADE, 125V, 20A COMPLYING WITH NEMA WD 6 AND WD 1 UNLESS OTHERWISE NOTED ON PLANS. VERIFY PLUG TYPE PRIOR TO PURCHASE & INSTALLATION. GFCI OR AFCI IF NOTED. 'WP' DENOTES WEATHERPROOF COVER. 'CH' DENOTES COUNT

LIGHTING PLAN HEX NOTES

1. EXHAUST FAN SUSPENDED IN ATTIC TO BE WIRED FOR CONTINUOUS OPERATION. COORDINATE WITH M.C.
2. PROVIDE 60 MINUTE SWITCH FOR FAN. PROVIDE IN WEATHERPROOF ENCLOSURE.
3. PUMP ROOM AND CHEM. ROOM LIGHTS TO BE TIED TO SAME MOTION SENSOR.
4. EC TO TIE EXHAUST FAN AND LIGHTING FIXTURES TO SAME CONTROL SWITCH.
5. MOTION SENSOR TO BE SET ON 20 MINUTE TIMER.
6. PORCH/PAVILION/HALL LIGHTING FIXTURE CONTROLLED VIA PHOTOCELL LOCATED ON NORTH FACE OF BUILDING.
7. EGRESS LIGHTING EXEMPT FROM RESTROOMS PER NC BUILDING CODE 1008.3.3.
8. PROVIDE LOW VOLTAGE OVERRIDE SWITCH AS SHOWN.
9. AREA IS CORROSIVE ENVIRONMENT PER NEC 680.14. FOLLOW WIRING METHODS IN NEC 680.14(B).



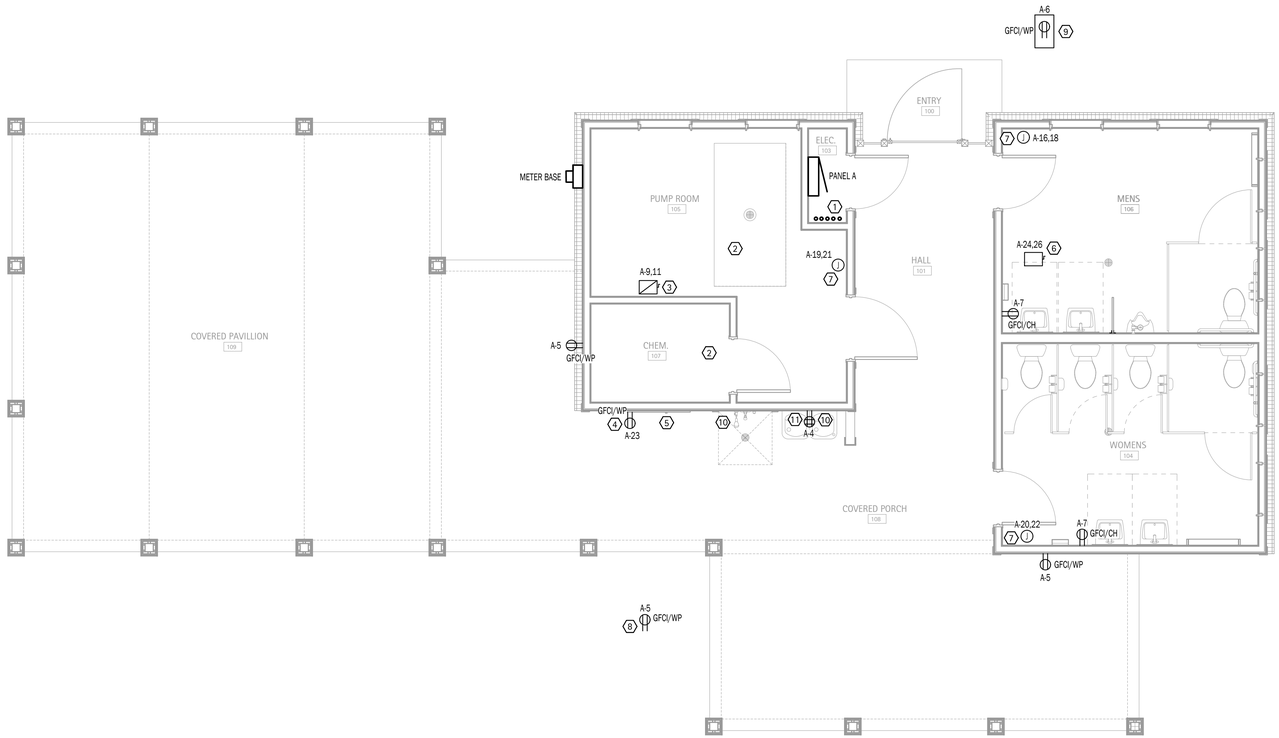
LIGHTING CIRCUIT DESIGNATIONS



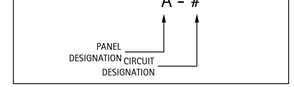
LIGHTING PLAN: SCALE - 1/4" = 1'0" | 1

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. FOLLOW WIRING METHODS IN NEC 680.14(B).
3. PROVIDE POWER TO NON-FUSED DISCONNECT FOR POOL AND FEATURE PUMPS. PUMPS MUST HAVE GFCI PROTECTION. PROVIDE GFCI BREAKER IN PANEL. DISCONNECT MUST HAVE NEMA 4X RATED ENCLOSURE. COORDINATE EXACT LOCATION AND SPEC WITH G.C. AND POOL CONTRACTOR BEFORE BEGINNING WORK. 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 BREAKERS IN PANEL. SEE PANEL SCHEDULE. SEE ARCHITECTURAL PLANS FOR LOCATION OF "PUSH IN" POWER OFF SWITCH.
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 REQUIRED 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. SEE CIRCUIT IN PANEL A (A-8).
11. GFCI PROTECTED BY BREAKER AT PANEL.



POWER CIRCUIT DESIGNATIONS



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

D.CLUGSTON

NORTH CAROLINA PROFESSIONAL SEAL 034... ENGINEER JACOB L. HAMILTON 7-25-22

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NO.	REVISION	DATE
1	PERMIT SET	07/25/22

SHEET DISCRIPTION

Lighting & Power Plans

PROJECT #:	22458
DATE ISSUED:	07/25/2022
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

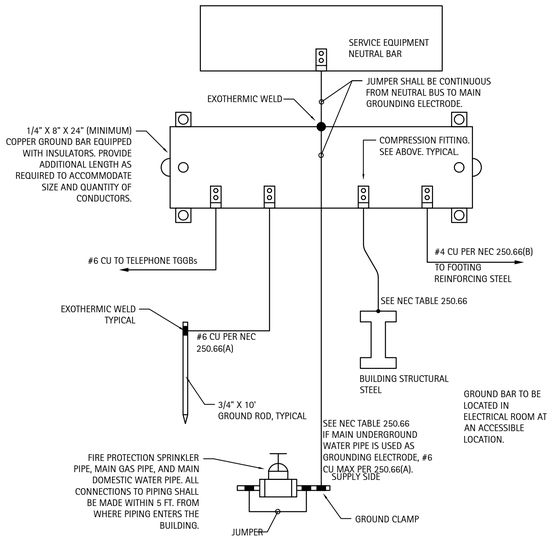
E2

PANEL A								
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	LIGHTS	20/1	0.77	A	0.34	20/1	PORCH/PAVILION FANS	2
3	EXHAUST FANS	20/1	1.06	B	0.36	20/1	WATER FOUNTAIN	4
5	PORCH/DECK RECEPTACLES	20/1	0.54	A	0.18	20/1	HOTBOX RECEPTACLE	6
7	BATHROOM RECEPTACLE	20/1	0.36	B	1.20	20/1	HEAT TRACE	8
9	5 HP POOL PUMP	60/2	3.36	A	1.20	20/1	POOL LIGHTS AND ACCESSORIES	10
11			3.36	B	1.20	20/1	POOL LIGHTS AND ACCESSORIES	12
13	SHUNT TRIP		0.00	A	0.00	20/1	POOL SPARE	14
15	POOL SPARE	20/1	0.00	B	2.40	20/2	UNIT HEATER 1	16
17	POOL SPARE	20/1	0.00	A	2.40			18
19	UNIT HEATER 2	20/2	2.40	B	2.40	20/2	UNIT HEATER 3	20
21			2.40	A	2.40			22
23	EMERGENCY PHONE RECEPT.	20/1	0.18	B	2.25	30/2	WATER HEATER	24
25	SPARE	20/1	0.00	A	2.25			26
27	SPARE	20/1	0.00	B	0.00	20/1	SPARE	28
29	SPACE		0.00	A	0.00		SPACE	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			
			15.8	A	132			
			17.2	B	143			

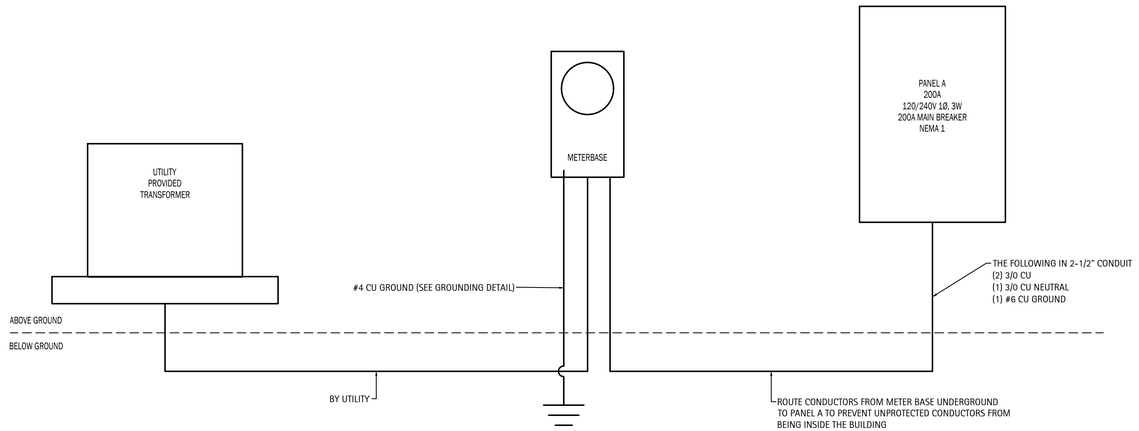
VOLTAGE/PHASE		120/240,1P,3W
BUS RATING		200A
MAIN CIRCUIT BREAKER RATING		200A MAIN BREAKER
AIC RATING		22K - EC TO VERIFY
SERVICE ENTRANCE RATED		YES
ENCLOSURE		NEMA 1
MOUNTING		SURFACE

NEC ELECTRIC DEMAND SUMMARY 120/240V,1P,3W						
EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	125%	1.23	1.23	2.45	220.12	1750 SF X 1.4 VA/SF
RECEPTACLES < 10 kVA	100%	0.72	0.72	1.44	220.44	
HVAC	100%	7.20	8.26	15.46	--	BASED ON MCA
WATER HEATER	125%	2.81	2.81	5.62	422.13	STORAGE TANK <120 GAL @ 125%
POOL EQUIPMENT	100%	5.40	6.60	12.00	430.24	LARGEST MOTOR @ 125%
DEMAND kVA PER PHASE		17.36	19.62			
DEMAND AMPS PER PHASE		145	163			

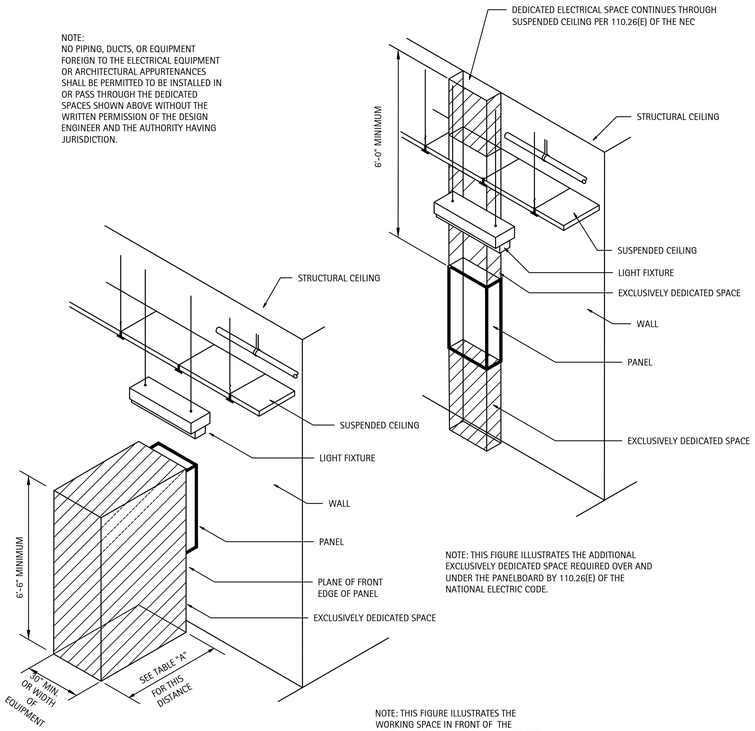
THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.



GROUNDING DETAIL-NO SCALE



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

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NORTH CAROLINA PROFESSIONAL SEAL 034181 ENGINEER JACOB L. HAMILTON 7-25-22

NO.	REVISION	DATE
1	PERMIT SET	07/25/22

SHEET DISCRIPTION

Panel Schedules & Power Riser

PROJECT #:	22458
DATE ISSUED:	07/25/2022
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

E3

POOL DECK EXIT REQUIREMENTS

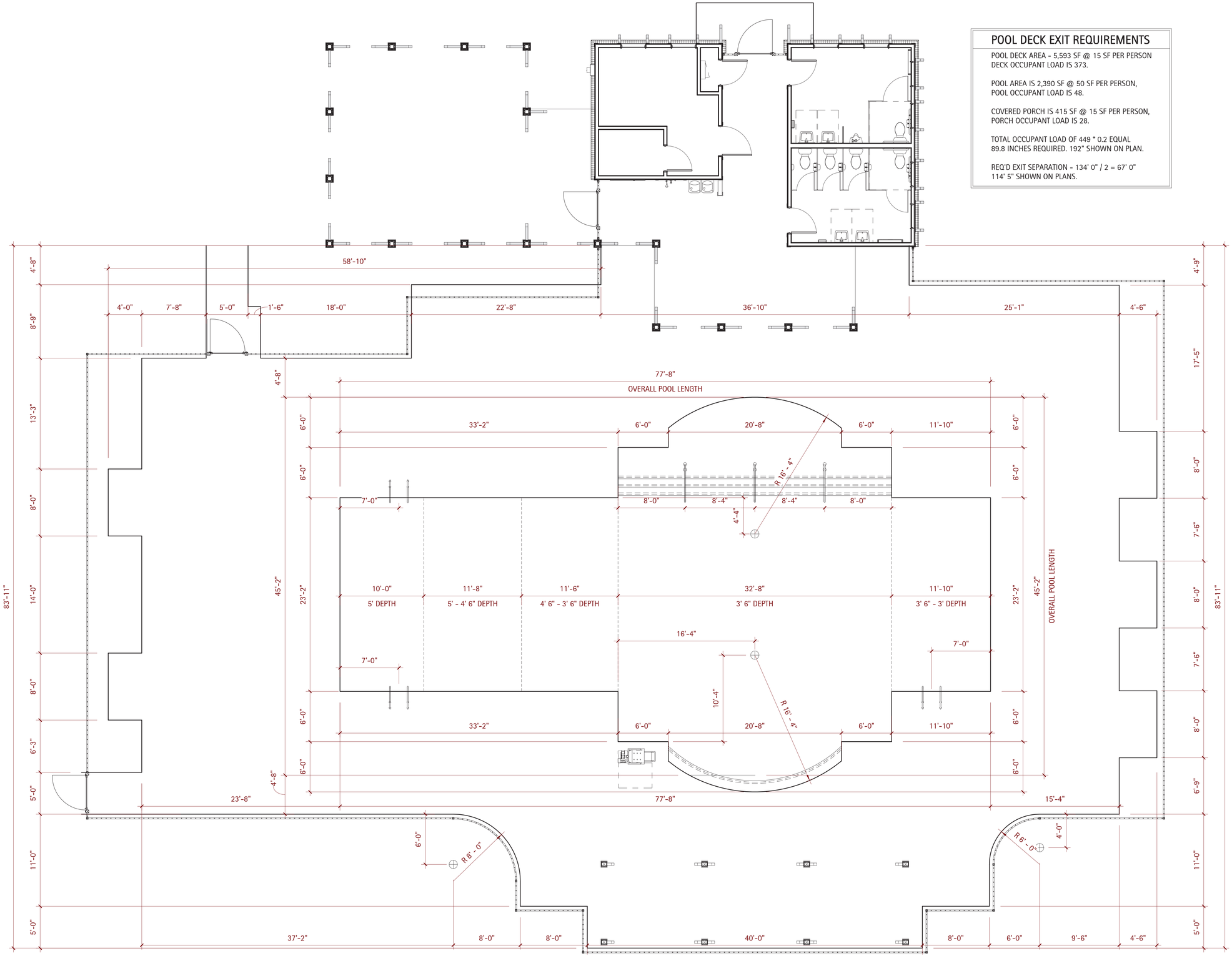
POOL DECK AREA - 5,593 SF @ 15 SF PER PERSON
DECK OCCUPANT LOAD IS 373.

POOL AREA IS 2,390 SF @ 50 SF PER PERSON,
POOL OCCUPANT LOAD IS 48.

COVERED PORCH IS 415 SF @ 15 SF PER PERSON,
PORCH OCCUPANT LOAD IS 28.

TOTAL OCCUPANT LOAD OF 449 * 0.2 EQUAL
89.8 INCHES REQUIRED. 192" SHOWN ON PLAN.

REQ'D EXIT SEPARATION - 134' 0" / 2 = 67' 0"
114' 5" SHOWN ON PLANS.



Pool Dimension Plan

1 / SP1 — 3/16" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 038182 ENGINEER JACOB L. HAMILTON 7-25-22

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NO. | REVISION | DATE

SHEET DISCRIPTION
Pool Dimension Plan

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JVD
CHECKED BY:	DSC/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

SP1

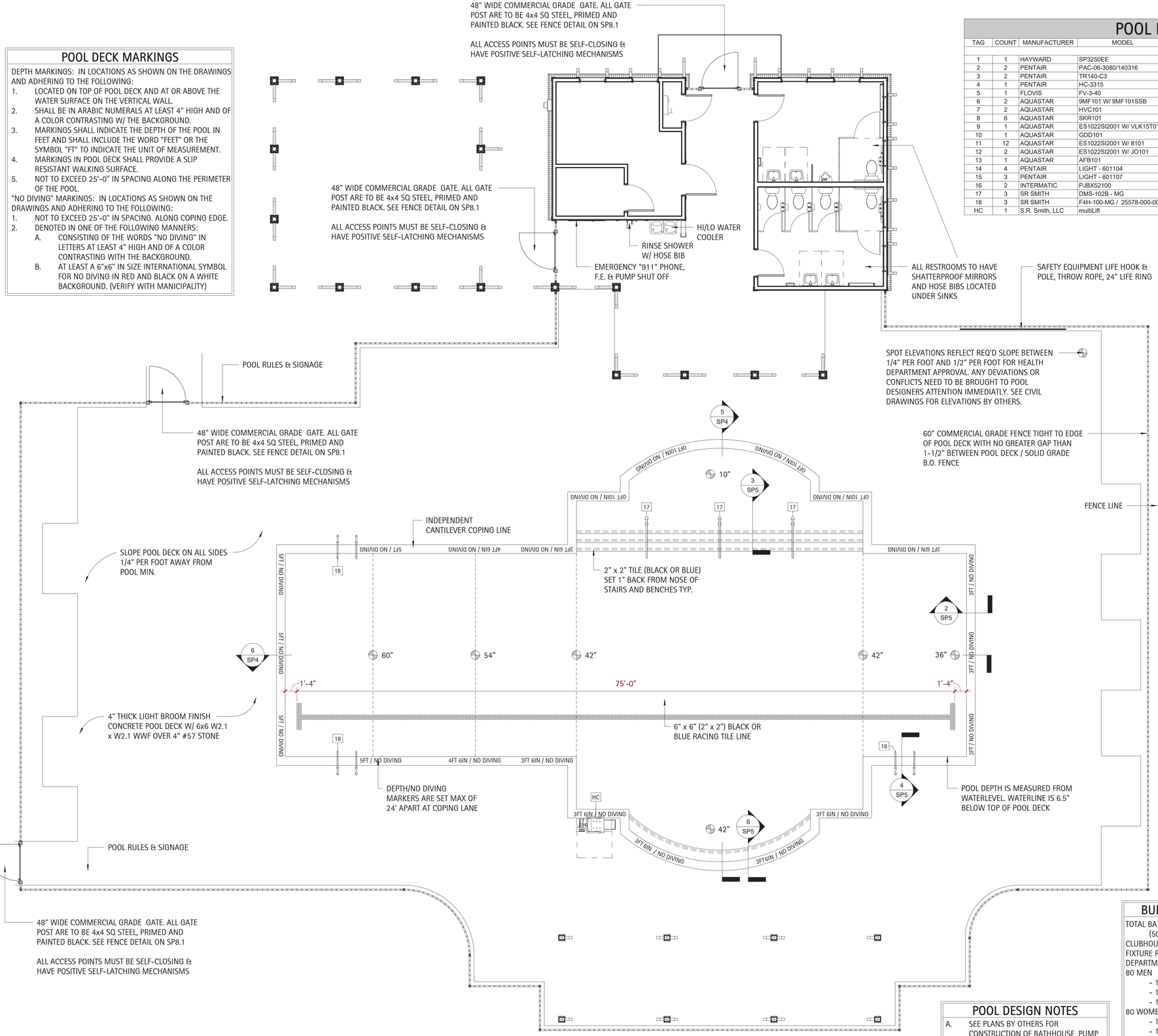
POOL DECK MARKINGS

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)



1 SP2 Overall Pool Layout Plan

3/16" = 1'-0"

POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	1	HAYWARD	SP3250EE	TRI-STAR 5 HP SELF-PRIMING PUMP W/ STRAINER BASKET + EXTRA STRAINER BASKET
2	2	PENTAIR	PAC-06-3080/140316	3" PUSH-PULL BACKWASH VALVE
3	2	PENTAIR	TR140-C3	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
4	1	PENTAIR	HC-3315	HIGH CAPACITY CHLORINE/BROMINE FEEDER
5	1	FLOVIS	FV-3-40	3 INCH INLINE COMMERCIAL FLOWMETER
6	2	AQUASTAR	9MF101 W/ 9MF101SSB	9" SQUARE VGB SUCTION OUTLET COVER W/ 3" SOCKET SUMP
7	2	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC RELIEF VALVE ASSEMBLY
8	6	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	12	AQUASTAR	ES1022SI2001 W/ 8101	RETURN WALL INLET - DIRECTIONAL
12	2	AQUASTAR	ES1022SI2001 W/ JO101	RETURN FLUSH FLOOR INLET - DIRECTIONAL
13	1	AQUASTAR	AFB101	FILLSTAR - AUTOFILL LINE - WHITE
14	4	PENTAIR	LIGHT - 601104	190W EQUIVALIENT GLOBRITE WHITE LED LIGHT
15	3	PENTAIR	LIGHT - 601107	300W EQUIVALIENT INTELLIBRITE WHITE LED LIGHT
16	2	INTERMATIC	PJBX52100	COMBO CONNECT JUNCTION BOX W/ 100W TRANSFORMER
17	3	SR SMITH	DMS-102B - MG	MARINE GRADE DECK MOUNTED HANDRAIL
18	3	SR SMITH	F4H-100-MG / 25578-000-000	MARINE GRADE DECK MOUNTED HANDRAILS W/ RECESSED STEPS
HC	1	S.R. Smith, LLC	multiLift	ADA COMPLIANT MULTILIFT WITH FOLDING SEAT

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. PETS ARE PROHIBITED IN THE POOL AREA.
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.

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 CAPABLE OF DIRECTLY DIALING 911 OR OTHER EMERGENCY NOTIFICATION SYSTEM 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 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

BUILDING FIXTURE DATA

TOTAL BATHER LOAD = 2,390 /15 = 160
(50% - 50% SPLIT) = 80
CLUBHOUSE & PUMP HOUSE MINIMUM FIXTURE REQUIRMENTS FOR HEALTH DEPARTMENT APPROVAL ARE:
80 MEN
- 1 LAVATORIES
- 1 WATER CLOSET(S)
- 1 URINAL(S)

80 WOMEN
- 1 LAVATORIES
- 1 WATER CLOSET(S)

1 SHOWER IS REQUIRED

SEE ARCHITECTURAL PLANS BY OTHERS FOR RESTROOM LOCATION & LAYOUTS

MAIN POOL DATA

POOL DIMENSIONS:	42'-2" X 77'-8" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	10" SHELF w/ 3'-5' POOL
POOL VOLUME:	62,483 GALLONS
SURFACE AREA:	2,390 SQFT.
PERIMETER:	239 LF
COPING:	BULLNOSE INDEPENDENT
REQUIRED FLOW:	174 GPM @ 65 TDH
DESIGN FLOW:	175 GPM @ 65 TDH
SHELL MATERIAL:	250 PSI SHOTCRETE
INTERIOR FINISH:	QUARTZ PLASTER
BATHER LOAD:	160 PERSONS
BACKWASH TO:	SANITARY SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
MAIN DRAINS:	(2) 4" SCH 40 PVC
SKIMMERS:	(6) 4" SCH 40 PVC
VACUUM LINE:	(1) 2" SCH 40 PVC
INLETS:	(14) 3" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	2 @ 7.06 SF (EA) = 14.14
SIZE REQUIRED:	11.67 SF TOTAL
MEDIA CIRC. RATE:	15 GPM/SF
BACKWASH RATE:	15 GPM/SF
TURNOVER RATE:	6 HOURS

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NORTH CAROLINA PROFESSIONAL SEAL 035 ENGINEER JACOB L HAMILTON 7-25-22

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NO.	REVISION	DATE

SHEET DISCRIPTION

Pool Layout Plan

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JVD
CHECKED BY:	DSC/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

SP2

UNDERWATER LIGHTING DATA

MAIN POOL AREA: 2,390 SQFT.
2,390 SF x 0.5 WATTS = 1,195 **WATTS**

LIGHTING PROVIDED (12V LED EQ.)
4 GLOBRITES @ 190 WATTS
3 INTELLIBRITE @ 300 WATTS

TOTAL PROVIDED: 1,660 WATTS

PUMP FLOW PIPE SIZING

SP3250EE PUMP FLOW AT 65 FT OF WATER IS 175 GPM, WITH SPECIFIED:
4" MAIN DRAIN PIPING VELOCITY IS 4.41 FPS.
4" SKIMMER PIPING VELOCITY IS 4.41 FPS.
3" RETURN PIPING VELOCITY IS 7.60 FPS.

POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	1	HAYWARD	SP3250EE	TRI-STAR 5 HP SELF-PRIMING PUMP W/ STRAINER BASKET + EXTRA STRAINER BASKET
2	2	PENTAIR	PAC-06-3080/140316	3" PUSH-PULL BACKWASH VALVE
3	2	PENTAIR	TR140-C3	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
4	1	PENTAIR	HC-3315	HIGH CAPACITY CHLORINE/BROMINE FEEDER
5	1	FLOVIS	FV-3-40	3 INCH INLINE COMMERCIAL FLOWMETER
6	2	AQUASTAR	9MF101 W/ 9MF101SSB	9" SQUARE VGB SUCTION OUTLET COVER W/ 3" SOCKET SUMP
7	2	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC RELIEF VALVE ASSEMBLY
8	6	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	12	AQUASTAR	ES1022SI2001 W/ 8101	RETURN WALL INLET - DIRECTIONAL
12	2	AQUASTAR	ES1022SI2001 W/ JO101	RETURN FLUSH FLOOR INLET - DIRECTIONAL
13	1	AQUASTAR	AFB101	FILLSTAR - AUTOFILL LINE - WHITE
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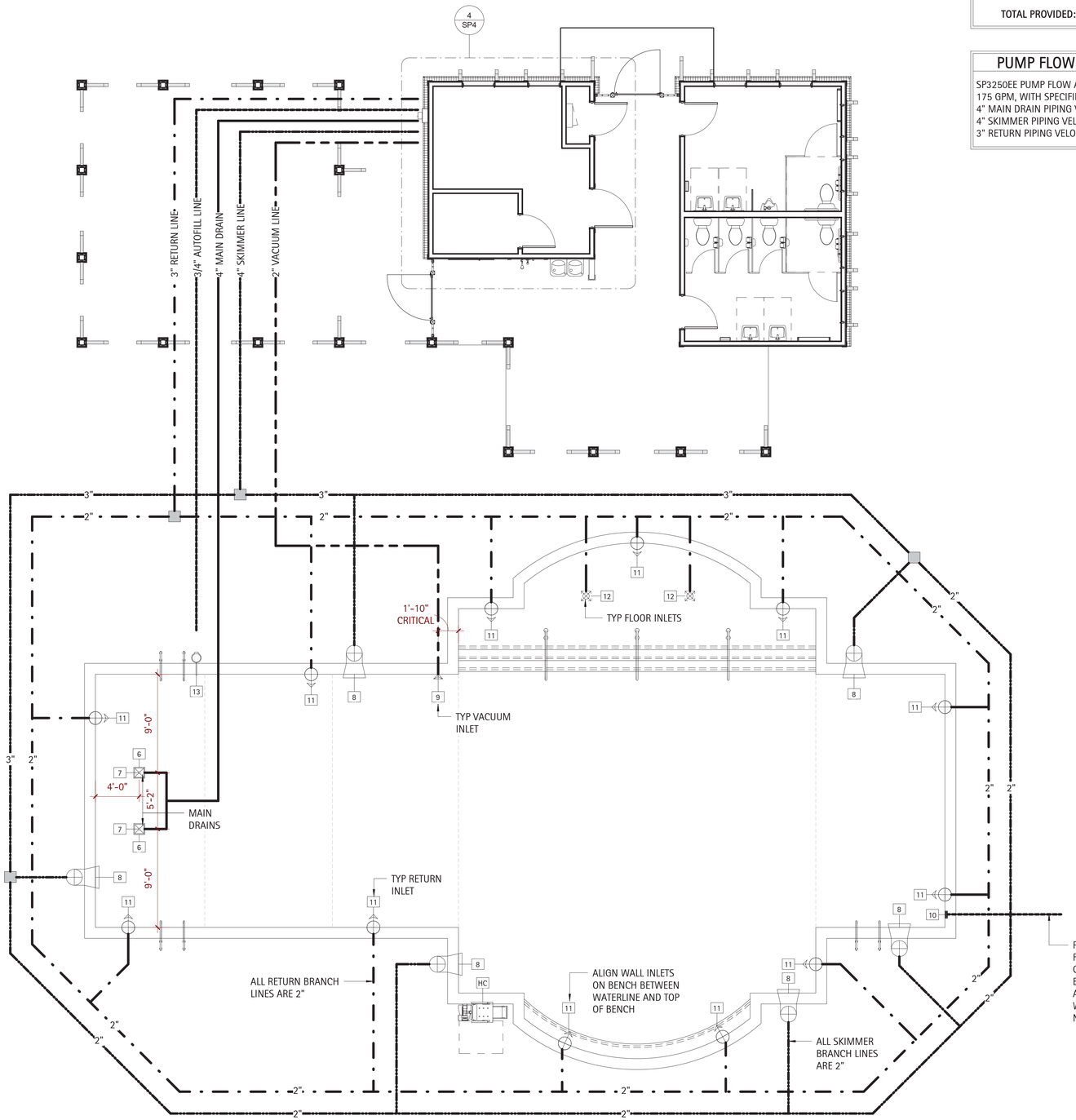
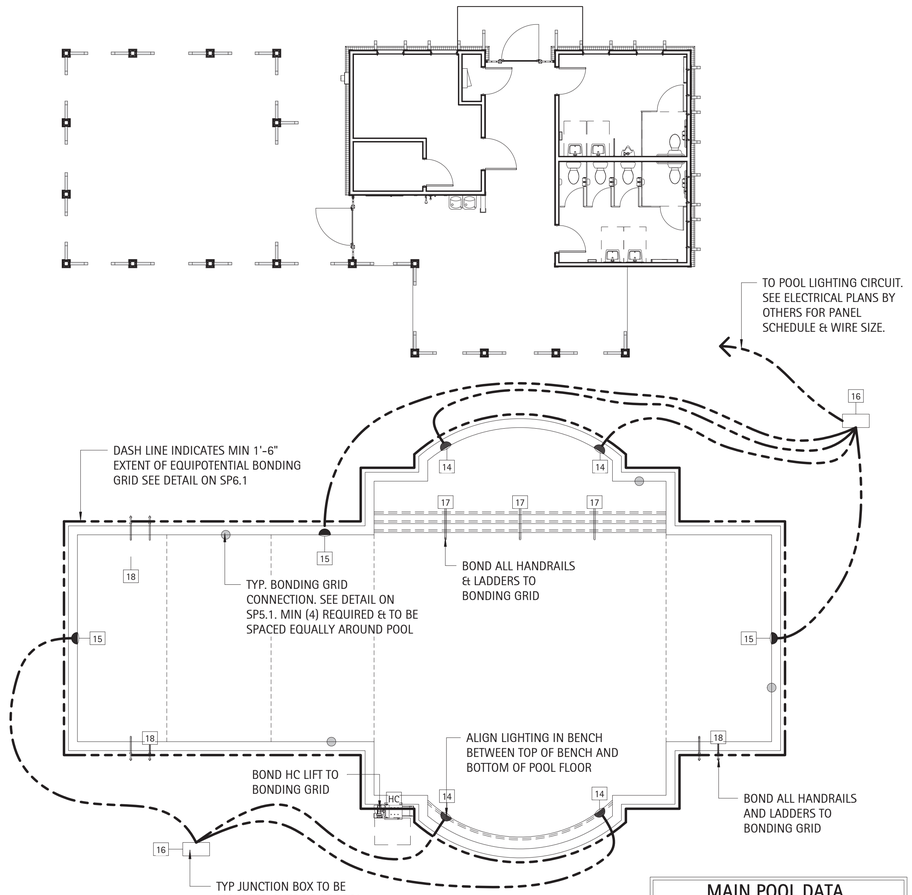
16	2	INTERMATIC	PJBX52100	COMBO CONNECT JUNCTION BOX W/ 100W TRANSFORMER
17	3	SR SMITH	DMS-102B - MG	MARINE GRADE DECK MOUNTED HANDRAIL
18	3	SR SMITH	F4H-100-MG / 25578-000-000	MARINE GRADE DECK MOUNTED HANDRAILS W/ RECESSED STEPS
HC	1	S.R. Smith, LLC	multiLift	ADA COMPLIANT MULTILIFT WITH FOLDING SEAT



2 SP3 Return & Suction Plan

3/16" = 1'-0"



1 SP3 Lighting Plan

1/8" = 1'-0"

MAIN POOL DATA

POOL DIMENSIONS:	42'-2" X 77'-8" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	10" SHELF w/ 3'-5' POOL
POOL VOLUME:	62,483 GALLONS
SURFACE AREA:	2,390 SQFT.
PERIMETER:	239 LF
COPING:	BULLNOSE INDEPENDENT
REQUIRED FLOW:	174 GPM @ 65 TDH
DESIGN FLOW:	175 GPM @ 65 TDH
SHELL MATERIAL:	250 PSI SHOTCRETE
INTERIOR FINISH:	QUARTZ PLASTER
BATHER LOAD:	160 PERSONS
BACKWASH TO:	SANITARY SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
MAIN DRAINS:	(2) 4" SCH 40 PVC
SKIMMERS:	(6) 4" SCH 40 PVC
VACUUM LINE:	(1) 2" SCH 40 PVC
INLETS:	(14) 3" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	2 @ 7.06 SF (EA) = 14.14
SIZE REQUIRED:	11.67 SF TOTAL
MEDIA CIRC. RATE:	15 GPM/SF
BACKWASH RATE:	15 GPM/SF
TURNOVER RATE:	6 HOURS

D. CLUGSTON

NORTH CAROLINA PROFESSIONAL SEAL 038 ENGINEER JACOB L HAMILTON 7-25-22

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(p)252.438.8778 | CORPORATE LICENSE C-2277

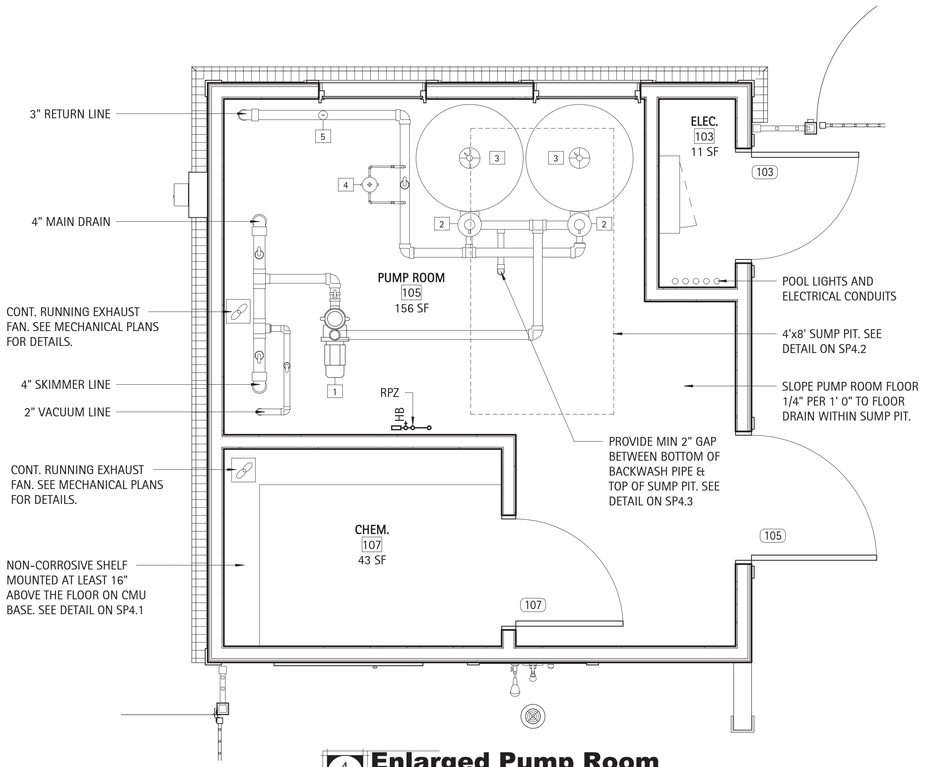
NO.	REVISION	DATE

SHEET DISCRIPTION
Piping & Electrical Plan

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JVD
CHECKED BY:	DSC/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

SP3



4 SP4 Enlarged Pump Room

1/2" = 1'-0"

CHEMICAL STORAGE DATA

CHEMICAL STORAGE REQUIREMENTS FOR A **62,463** 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

+18 SF (1 SF PER 3,000)(52,463/3,000 = 17.488)

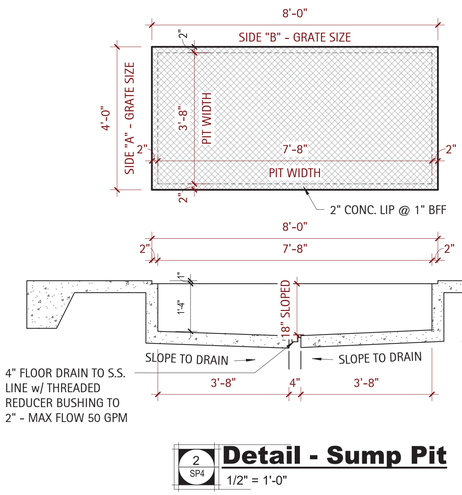
BUILDING PROVIDES MIN OF 23 SF FOR CHEMICAL STORAGE.
-SEE BUILDING PLANS BY OTHERS FOR EXACT LAYOUT. 43 SF PROVIDED.
-SEE DETAIL 1 ON SP4 FOR TYP CHEMICAL ROOM SHELVING w/ QUANTIES.

PUMP FLOW PIPE SIZING

SP3250EE PUMP FLOW AT 65 FT OF WATER IS 175 GPM, WITH SPECIFIED:
4" MAIN DRAIN PIPING VELOCITY IS 4.41 FPS.
4" SKIMMER PIPING VELOCITY IS 4.41 FPS.
3" RETURN PIPING VELOCITY IS 7.60 FPS.

POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	1	HAYWARD	SP3250EE	TRI-STAR 5 HP SELF-PRIMING PUMP W/ STRAINER BASKET + EXTRA STRAINER BASKET
2	2	PENTAIR	PAC-06-3080/140316	3" PUSH-PULL BACKWASH VALVE
3	2	PENTAIR	TR140-C3	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
4	1	PENTAIR	HC-3315	HIGH CAPACITY CHLORINE/BROMINE FEEDER
5	1	FLOVIS	FV-3-40	3 INCH INLINE COMMERCIAL FLOWMETER
6	2	AQUASTAR	9MF101 W/ 9MF101SSB	9" SQUARE VGB SUCTION OUTLET COVER W/ 3" SOCKET SUMP
7	2	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC RELIEF VALVE ASSEMBLY
8	6	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	12	AQUASTAR	ES1022SI2001 W/ 8101	RETURN WALL INLET - DIRECTIONAL
12	2	AQUASTAR	ES1022SI2001 W/ JO101	RETURN FLUSH FLOOR INLET - DIRECTIONAL
13	1	AQUASTAR	AFB101	FILLSTAR - AUTOFILL LINE - WHITE
14	4	PENTAIR	LIGHT - 601104	190W EQUIVALIENT GLOBRITE WHITE LED LIGHT
15	3	PENTAIR	LIGHT - 601107	300W EQUIVALIENT INTELLIBRITE WHITE LED LIGHT
16	2	INTERMATIC	PJBX52100	COMBO CONNECT JUNCTION BOX W/ 100W TRANSFORMER
17	3	SR SMITH	DMS-102B - MG	MARINE GRADE DECK MOUNTED HANDRAIL
18	3	SR SMITH	F4H-100-MG / 25578-000-000	MARINE GRADE DECK MOUNTED HANDRAILS W/ RECESSED STEPS
HC	1	S.R. Smith, LLC	multiLift	ADA COMPLIANT MULTILIFT WITH FOLDING SEAT

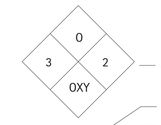


2 SP4 Detail - Sump Pit

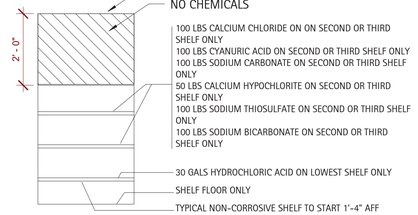
1/2" = 1'-0"

BACWASH SUMP SIZING:
PUMP GPM (BACKWASH) = 130 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



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

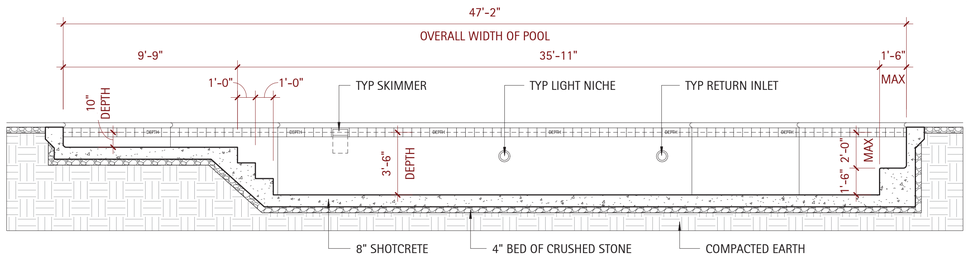


TYPICAL CHEMICAL ROOM SHELVING w/ QUANITIES

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

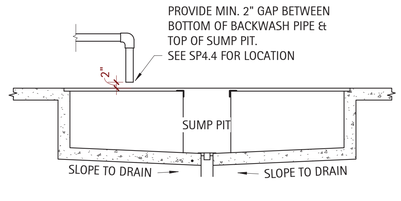
1 SP4 Detail - Chemical Storage

1/2" = 1'-0"



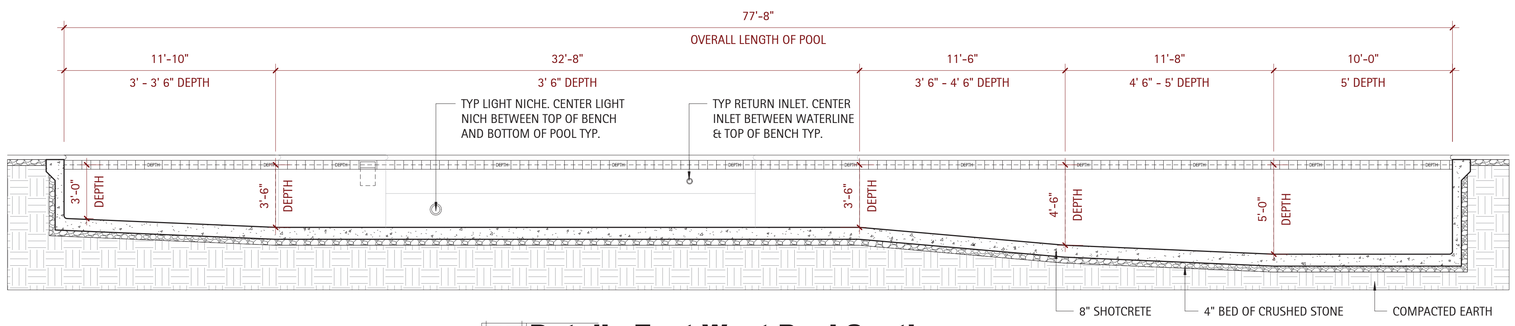
5 SP4 Detail - North South Pool Section

1/4" = 1'-0"



3 SP4 Detail - 2" Air Gap

1/2" = 1'-0"



6 SP4 Detail - East West Pool Section

1/4" = 1'-0"

MAIN POOL DATA

POOL DIMENSIONS:	42'-2" X 77'-8" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	10" SHELF w/ 3'-5' POOL
POOL VOLUME:	62,483 GALLONS
SURFACE AREA:	2,390 SQFT.
PERIMETER:	239 LF
COPING:	BULLNOSE INDEPENDENT
REQUIRED FLOW:	174 GPM @ 65 TDH
DESIGN FLOW:	175 GPM @ 65 TDH
SHELL MATERIAL:	250 PSI SHOTCRETE
INTERIOR FINISH:	QUARTZ PLASTER
BATHER LOAD:	160 PERSONS
BACKWASH TO:	SANITARY SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
MAIN DRAINS:	(2) 4" SCH 40 PVC
SKIMMERS:	(6) 4" SCH 40 PVC
VACUUM LINE:	(1) 2" SCH 40 PVC
INLETS:	(14) 3" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	2 @ 7.06 SF (EA) = 14.14
SIZE REQUIRED:	11.67 SF TOTAL
MEDIA CIRC. RATE:	15 GPM/SF
BACKWASH RATE:	15 GPM/SF
TURNOVER RATE:	6 HOURS

D. CLUGSTON

NORTH CAROLINA PROFESSIONAL SEAL 038 ENGINEER JACOB L. HAMILTON 7-25-22

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(p)252.438.8778 | CORPORATE LICENSE C-2277

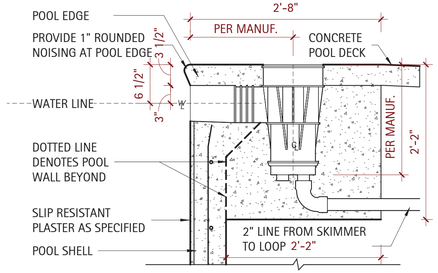
NO. | REVISION | DATE

SHEET DISCRIPTION
Enlarged Pump Room & Pool Section

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JVD
CHECKED BY:	DSC/JLH

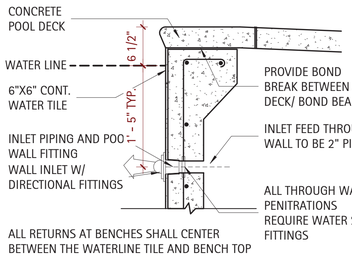
WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

SP4



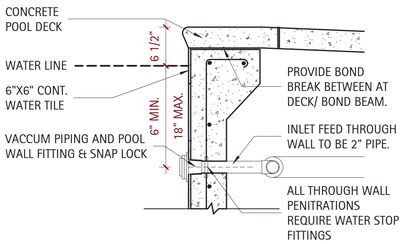
7 SP5 Detail - Pool Skimmer

1" = 1'-0"



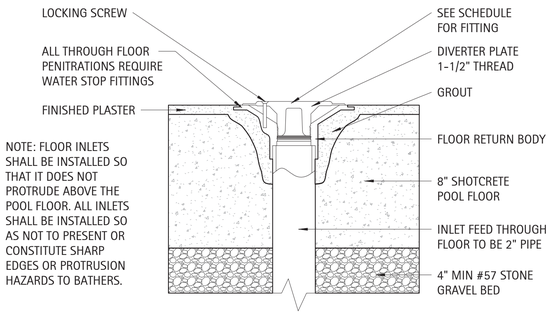
8 SP5 Detail - Return Inlet Pipe

1" = 1'-0"



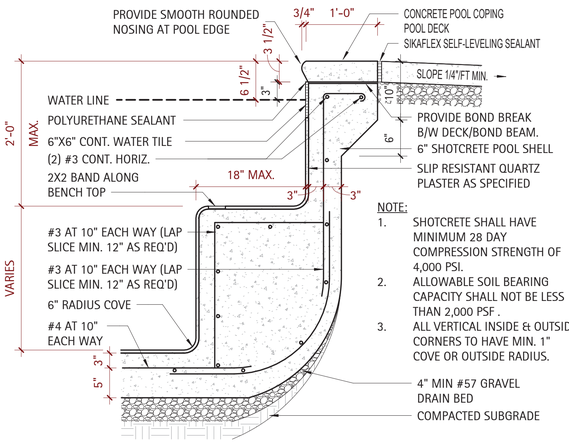
9 SP5 Detail - Vacuum Inlet

1" = 1'-0"



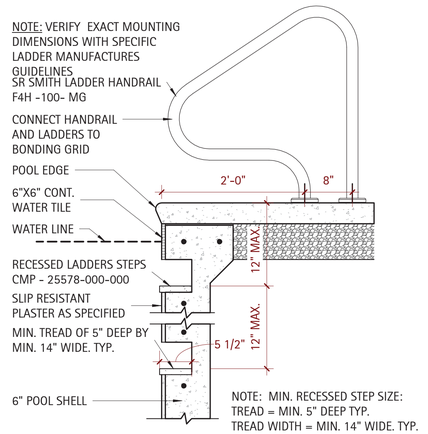
10 SP5 Detail - Floor Inlet Pipe

3" = 1'-0"



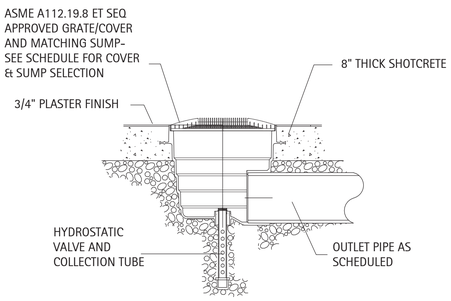
6 SP5 Detail - Pool Bench

1" = 1'-0"



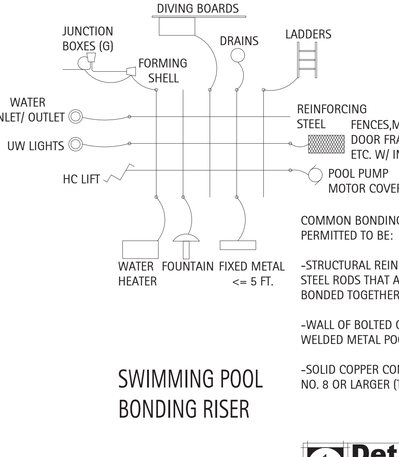
4 SP5 Detail - Ladder Steps

1" = 1'-0"



5 SP5 Detail - Main Drain

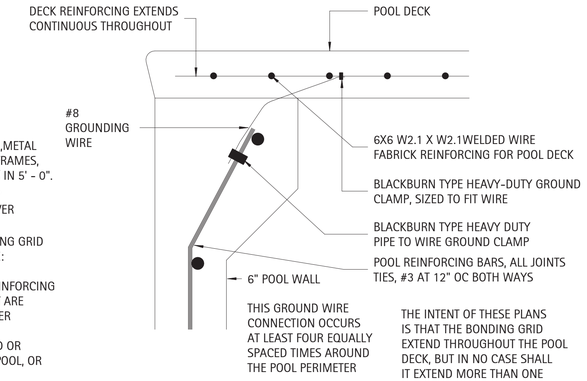
1" = 1'-0"



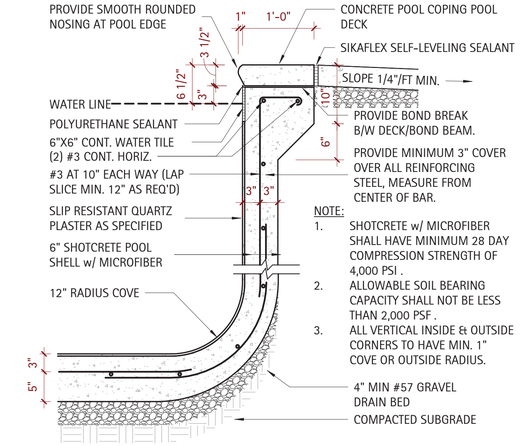
1 SP5 Detail - Pool Bonding

1" = 1'-0"

SWIMMING POOL BONDING RISER

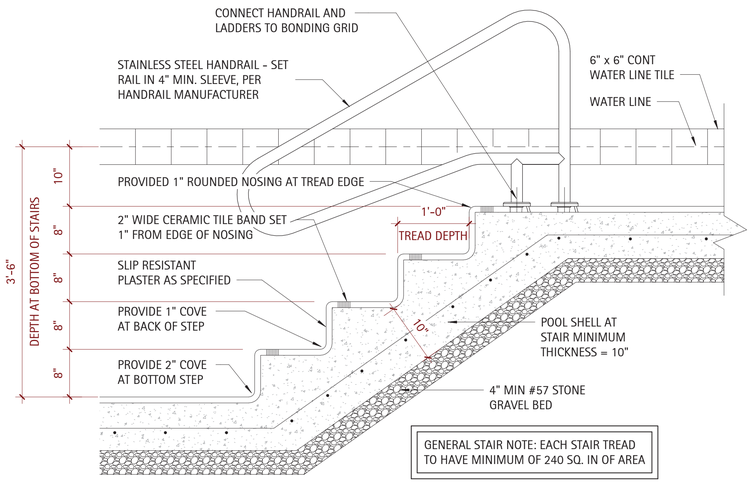


EQUIPOTENTIAL BONDING GRID DETAIL



2 SP5 Detail - Pool Wall

1" = 1'-0"



3 SP5 Detail - Pool Shelf Steps

1" = 1'-0"

D. CLUGSTON

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(p)252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 038407 ENGINEER JACOB L HAMILTON 7-25-22

NO.	REVISION	DATE

SHEET DISCRIPTION

Sections & Details

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JVD
CHECKED BY:	DSC/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

SP5

HAYWARD
We Build Better.

TriStar®
High Efficiency Pumps

THE INDUSTRY'S MOST HYDRAULICALLY EFFICIENT PUMP

DO MORE, WITHOUT PAYING FOR MORE.

When it comes to performance and value, nothing beats Hayward TriStar pumps. With best-in-class hydraulic technology, they outpace competing pumps—even those with higher horsepower. Add to that a servicer-friendly design and an easy-clean debris basket, and it's no wonder TriStar pumps continue to set the industry standard for efficiency and value.

KEY FEATURES

- **Superior hydraulic efficiency** delivers higher performance at lower horsepower
- **Extra-large, no-rib debris basket** offers greater capacity for less frequent maintenance
- **Standard union connections** (2" x 2.5") make installation and servicing fast and easy
- **Self-priming design** offers suction lift up to 10' above waterline

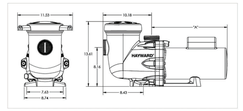
UP TO **4.0** WEF

SPECIFICATIONS

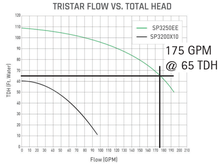
MODEL NUMBER	TOTAL HORSEPOWER	VOLTAGE	UNION CONNECTIONS	DIMENSION "A"	WEIGHTED ENERGY FACTOR (WEF)*
SP3200X10	1.1	115/208-230	2" x 2 ½"	13 ¼"	4.0
SP3250EE	5.0	208-230	2" x 2 ½"	17 ¼"	1.7

*The higher the weighted energy factor (WEF), the more efficient the pump. Visit hayward.com/regulations for more information.

TRISTAR SERIES DIMENSIONS (INCHES)



TRISTAR FLOW VS. TOTAL HEAD



TriStar pumps are listed by: UL NSF CSA

» hayward.com » 1-888-HAYWARD | Pumps » Filters » Heaters » Sanitization » Automation » Lighting » Water Features » Cleaners » Safety

eLITTRISTAR21

TAG 1 - CIRCULATION PUMP - SP3250EE - 5 HP HIGH EFFICIENCY PUMP

Valve & Filter Connection Guide

Filter Inlet - BOTTOM

	PENTAIR	STA-RITE	XF FILTERS
	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

Filter Inlet - TOP

	PENTAIR	STA-RITE
	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
140264	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

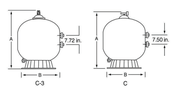
FullFloXF™ Backwash Valve Installation and User's Guide

TAG 2 - BACKWASH VALVE - P/N 260080 & FILTER P/N 140316

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.

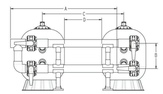



TR100 HD

Triton Commercial Series Sand Filter Specifications

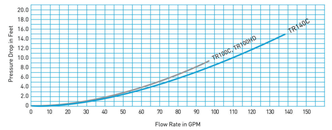
Model Number	Filter Area Sq. Ft.	Flow Rate 15 GPM/sq. ft.*	Turnover Capacity Gallons 6 Hours	Turnover Capacity Gallons 8 Hours	Dimension A	Dimension B	Media Required Sand	Media Required Sand/Gravel
TR100C	4.91	74	26,640	35,520	39 ½"	30 ½"	600 lbs.	450 lbs./150 lbs.
TR140C	7.06	106	38,160	50,880	45 ½"	36 ½"	925 lbs.	650 lbs./275 lbs.
TR100C-3	4.91	74	26,640	35,520	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"	17 ½"	48" Min.	18" Min.	2,300 lbs.
3" —TR140C	88 ½"	17 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.	3,500 lbs.

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



PENTAIR

1620 HAWKINS AVE, SANFORD, NC 27330 800.831.7133 WWW.PENTAIRCOMMERCIAL.COM

11/13 Part # P11-151 ©2013 Pentair Water Pool and Spa, Inc. All rights reserved.

TAG 3 - SAND FILTER - TR140-C3 - HIGH RATE SAND FILTER

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.)-Pool at listed flowrate	2.8	4.6	3.0
@ 100% Setting — Maximum Output Rate, Chlorine* (lbs./hr.)-Spa 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 @ 36 GPM (Chlorine-Gals)	224,000	369,000	658,500
Maximum Pool Size @ 36 GPM (Bromine-Gals)	99,200	164,000	292,600

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

AVAILABLE FROM:

PENTAIR

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

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TAG 4 - CHLORINATOR - HC3315 - HIGH CAPACITY CHLORINE/BROMINE FEEDER

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

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.

NSF - 50 CERTIFIED L1

FLOWVIS® MODELS

Feature	FV-I5	FV-I5-U	FV-2	FV-2-U	FV-25	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-8 information in the FlowVis Digital table below.

FLOWVIS® DIGITAL MODELS

Feature	FV-I5	FV-I5-U	FV-2	FV-2-U	FV-25	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 INCH INLINE COMMERCIAL FLOWMETER

9" SQUARE MOFLOW™ SUCTION OUTLET COVER AND MUD FRAME

AQUASTAR pool products

VGB CERTIFIED SPECIFICATIONS	Floor Flow Rating	Wall Flow Rating	Sump Depth	Open Area
	258 GPM at 2.3 fps	274 GPM at 2.4 fps	3" minimum	36.8 in²

FEATURES

All components meet or exceed ANSI/APSP 16-2011 and NSF/ANSI 50-2009a national standards and ASTM G154 UV testing exposure
Easily and safely retrofits to 9" square ¾" deep frames
Manufactured from superior UV-resistant engineered polymers
#316 stainless steel screws
Trademarked VGB compliance button easily identifies VGB 2008 compliant cover from on deck and underwater
Online product support including downloadable CAD files, General Certificate of Conformity, third-party certificate, installation instructions and more
Replace drain cover every five years from the date of installation
See next page for additional product configurations
8 per case

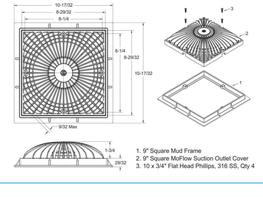

Part # 9MFxxx

Fits: AquaStar 9" standard models and American (Pentair) with ¾" deep existing frames and four screw hole pattern.

STANDARD COLORS
- 9MF101 – White
- 9MF102 – Black
- 9MF103 – Light Gray
- 9MF104 – Blue
- 9MF105 – Dark Gray
- 9MF108 – Tan

Replaces p/n 9xxx, P9xxx, SRFS9xxx, SUN9xxx, SUN9WRxxx, WAV9xxx, WAV9WRxxx

VGB 2008 Compliant



1. 9" Square Mud Frame
2. 9" Square MoFlow Suction Outlet Cover
3. 10 x 3/4" Flat Head Phillips, 316 SS, Qty 4

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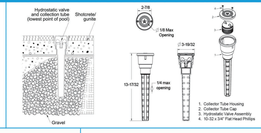
TAG 6 - MAIN DRAIN - 9MF101 - 9 INCH SQUARE VGB SUCTION OUTLET

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

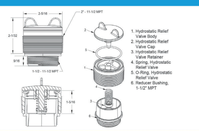
STANDARD COLORS

HVC101 HVC104
HVC102 HVC105
HVC103 HVC108

HVC05xxx – Cap and Screws

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 HV104
HV102 HV105
HV103 HV108

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TAG 7 - HYDROSTATIC RELIEF - HVC101 - 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, 53 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 SKR11NL101 (white only)

TAG 8 - SKIMMER - SKR101 - WHITE COMMERCIAL GRADE SKIMMER

D. CLUGSTON

Kilian Engineering, Inc.
PO Box 3301, Hendersonville, NC 28793 | www.kilianengineering.com
(p)252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL 038 ENGINEER JACOB L. HAMILTON 7-25-22

NO. | REVISION | DATE

SHEET DISCRIPTION
Specifications

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JVD
CHECKED BY:	DSC/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

SP6

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

40 ProStar # HWN153
REPLACES # AXV574P

Flow Gauge

41 ProStar # HWN158
REPLACES # AXV092

Hose Connector

42 ProStar # SZTHxx
REPLACES # V109

4-Foot Regular Hose

43 ProStar # SZTHLxx
REPLACES # V532

4-Foot Leader Hose

44 ProStar # HWN163xx
REPLACES # AXV414604

Wing Kit and Pod Shoes

TAG 9 - VACUUM INLET - VLK15T01 - VACUUM LINE 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 GD0101 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

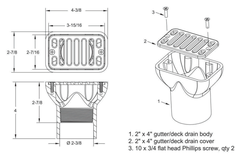
CAUTION: Not to be used as a suction outlet under any circumstances

25 per case

Grate only p/n GD0Lxxx
25 per case

Part # GDDxxx

STANDARD COLORS
☐ 101 ■ 102 ▒ 103 ▒ 104 ■ 105 ■ 108



1. 2" x 4" gutter/deck drain body
2. 2" x 4" gutter/deck drain cover
3. 10 x 3/4 flat head Phillips screw, qty 2

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TAG 10 - OVERFLOW DRAIN - GDD101 - COMMERCIAL OVERFLOW DRAIN

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

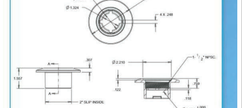
Manufactured from engineered polymer UV-resistant ABS material

250 per case

Also available in Clear (p/n ES1022SI20XX)

NEW

Part # ES1022SI20xx



Three-Piece Directional Eyeball Fitting 1½" MPT

FEATURES

Screws into 1½" FPT

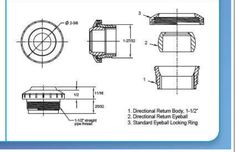
Manufactured from engineered polymer UV-resistant ABS material

250 per case

Eyeball orifice size part #s:
1" - 81xx, ¾" - 82xx, ½" - 83xx, slotted - 84xx
(i.e. 8201 = white ¾" orifice)

Also available in clear
(p/n 8100, 8200, 8300, 8400)

Part # 81xx, 82xx, 83xx, 84xx

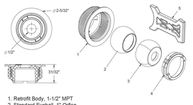


TAG 11 - RETURN INLET - 8101 - WALL RETURN INLET FITTING

AQUASTAR pool products — Flush Retro-fit Eyeball

Product Image and Dimensions

Part # JOxxx



1. Retrofit Body, 1-1/2" MPT
2. Standard Eyeball, 1" Orifice
3. Standard Eyeball, 1/2" Orifice
4. Retrofit Locking Nut
5. Retrofit Nut Wrench

FEATURES

- Threads into 1½" FPT
- Includes wrench, retro-fit nut, retro-fit socket, ½" eyeball and 1" eyeball
- Fits flush inside flush mount fittings
- Changes color of existing fitting
- Makes existing old fitting look new
- Eliminates the need to chip out the old fitting

50 per case

STANDARD COLORS

☐ JO101
■ JO102
▒ JO103
■ JO104
■ JO105
■ JO108

Comes with ½" and 1" eyeballs.

Additional orifice sizes available separately, comes with locking nut. See part numbers below:
ENBxxx - 3/4"
ENDxxx - Slotted Down-Jet

AquaStar Specific Eyeball GPM, Velocity and Head Loss Ratings

	ENxxx (1")		ENBxxx (3/4")		ENCxxx (1/2")		ENDxx (Down-Jet)	
GPM	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 12 - RETURN INLET - JO101 - FLUSH FLOOR RETURN INLET

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

¼" 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

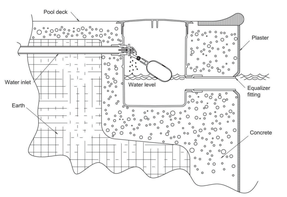
Part # AFBxxx

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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TAG 13 - AUTOFILL - AFB101 - FILLSTAR AUTOFILL

Item #: 602103
Description: GloBrite White LED Light
Voltage: 12
Wattage: 15W
Cord Length (Ft.): 50
Carton Qty.: 1
Carton Wt. (Lbs.): 6

Item #: 602104
Description: GloBrite White LED Light
Voltage: 12
Wattage: 15W
Cord Length (Ft.): 100
Carton Qty.: 1
Carton Wt. (Lbs.): 9

Item #: 602105
Description: GloBrite White LED Light
Voltage: 12
Wattage: 15W
Cord Length (Ft.): 150
Carton Qty.: 1
Carton Wt. (Lbs.): 12

Feedback

Item #: 620040
Description: Gunite Niche for GloBrite (includes white, blue, grey and tan rings
Voltage:
Wattage:
Cord Length (Ft.):
Carton Qty.: 1
Carton Wt. (Lbs.): 1.3

Item #: 620039
Description: Vinyl Niche for GloBrite (includes white, blue, and grey rings)
Voltage:
Wattage:
Cord Length (Ft.):
Carton Qty.: 1
Carton Wt. (Lbs.): 1.3

TAG 14 - LIGHT - 602104 - 190W GLOBRITE WHITE LED LIGHT

INTELLIBRITE® 5G WHITE LED
UNDERWATER LED LIGHTS FOR SWIMMING POOLS AND SPAS

PENTAIR

Featured Highlights

- The brightest most energy efficient white LED pool light on the market
- Energy efficient utilizing up to 86% less energy than comparable incandescent lights
- Superior lens geometry and innovative reflector design combine to create a wider beam and more uniform light distribution
- Pool lens can be rotated to 180 degrees to provide wide beam pattern (standard) or narrow beam pattern
- Compatible with Pentair Stainless steel and plastic niches
- Available in 120V and 12V versions
- Available in 300W, 400W, and 500W incandescent equivalencies

Eco Select — Efficiency • Convenience • Value — PENTAIR

IntelliBrite 5g White LED Pool Light

IntelliBrite® 5g White LED light offers a brighter, more energy efficient alternative to incandescent white lighting. Utilizing its array of LEDs, it is also ideal for commercial applications.

Ordering Information for Pool Lights

Product	Voltage	Cord Length (Ft.)	Incandescent Equivalency	Carton Qty.	Carton Wt. (Lbs.)
INTELLIBRITE 5g WHITE POOL LIGHTS – 300 WATT EQUIVALENT, 120 VOLT					
601100	120V	30 ft.	300W Equivalency	1	
601101	120V	50 ft.	300W Equivalency	1	
601102	120V	100 ft.	300W Equivalency	1	
601103	120V	150 ft.	300W Equivalency	1	
601104	120V	250 ft.	300W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS – 300 WATT EQUIVALENT, 12 VOLT					
601105	12V	30 ft.	300W Equivalency	1	
601106	12V	50 ft.	300W Equivalency	1	
601107	12V	100 ft.	300W Equivalency	1	
601108	12V	150 ft.	300W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS – 400 WATT EQUIVALENT, 120 VOLT					
601200	120V	30 ft.	400W Equivalency	1	
601201	120V	50 ft.	400W Equivalency	1	
601202	120V	100 ft.	400W Equivalency	1	
601203	120V	150 ft.	400W Equivalency	1	
601204	120V	250 ft.	400W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS – 400 WATT EQUIVALENT, 12 VOLT					
601205	12V	30 ft.	400W Equivalency	1	
601206	12V	50 ft.	400W Equivalency	1	
601207	12V	100 ft.	400W Equivalency	1	
601208	12V	150 ft.	400W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS – 500 WATT EQUIVALENT, 120 VOLT					
601300	120V	30 ft.	500W Equivalency	1	
601301	120V	50 ft.	500W Equivalency	1	
601302	120V	100 ft.	500W Equivalency	1	
601303	120V	150 ft.	500W Equivalency	1	
601304	120V	250 ft.	500W Equivalency	1	
INTELLIBRITE 5g WHITE POOL LIGHTS – 500 WATT EQUIVALENT, 12 VOLT					
601305	12V	30 ft.	500W Equivalency	1	
601306	12V	50 ft.	500W Equivalency	1	
601307	12V	100 ft.	500W Equivalency	1	
601308	12V	150 ft.	500W Equivalency	1	

Please refer to page 117 for CSA listed IntelliBrite Pool Lights.

UL LISTED

LIGHTING - WHITE

TAG 15 - LIGHT - 601107 - 300W INTELLIBRITE WHITE LED LIGHT

INTERMATIC®

COMBOConnect® Junction Box Transformer
Model PJBX52100

SIMPLIFY POOL, SPA AND LANDSCAPE LIGHTING INSTALLATIONS

COMBOConnect combines the simplicity of a standard junction box with the power of a 100 W low-voltage transformer. Save time and money on installation of low-voltage nicheless pool lights and landscape lighting.

FEATURES & BENEFITS:

- **Compact Size** – Great for space-constrained areas, COMBOConnect uses at least 20 percent less space than traditional components, preserving wall space and fittings. It's also compatible with direct gluing of non-metallic flexible conduit.
- **Voltage Options** – 12 or 13 volt tap option gives installers the ability to compensate for voltage drop.
- **Expandable** – Two high-voltage ports allows "daisy-chaining" between two COMBOConnect units for larger lighting projects. Low-voltage ports accept 16/2 and 18/2 AWG cord sizes, accommodating all major pool safety light manufacturers.
- **Noise Reduction** – Built-in electronic noise reduction technology helps the electrical performance of the LED lights.
- **Easy Access** – COMBOConnect provides quick access to all connection points and openings. Terminal bars allow for quick, clean and secure connections, as well as easy troubleshooting and testing.

APPLICATIONS:

- In-Ground Pools and Spas
  - Nicheless Low-Voltage Lights
- Landscape Lighting
- Fountain Lighting

COMBOConnect is listed and labeled per NEC 680.24 for use with pool and spa underwater luminaires and per NEC 411 for low-voltage landscape lighting.

SPECIFICATIONS:

- **Input Voltage:** 120 VAC
- **Input Ports:** 2
- **Output Ports:** 5 (with 1/2" 3/4" and 1" reducers)
- **Cycles:** 60 Hz
- **Output Voltage:** 12 VAC or 13 VAC
- **Mounting Bracket SKU:** PA119
- U.S. Patent #10072831

PA119

Intermatic.com

Intermatic Incorporated 7777 Winn Road, Spring Grove, IL 60081 • (815) 675 7000

TAG 16 - JUNCTION BOX - PJBX52100 - JUNCTION BOX WITH TRANSFORMER

D. CLUGSTON

Kilian Engineering, Inc.
PO Box 3301, Henderson, NC 27536 | www.kilianengineering.com
(p)252.438.8778 | CORPORATE LICENSE C-2277

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JACOB L. HAMILTON 7-25-22

NO. REVISION DATE

SHEET DISCRIPTION
Specifications

PROJECT #:	2022002
DATE ISSUED:	07/20/2022
DRAWING BY:	JVD
CHECKED BY:	DSC/JLH

WOODGROVE
DR HORTON
BATHHOUSE & POOL
HARNETT COUNTY, NC

SP7