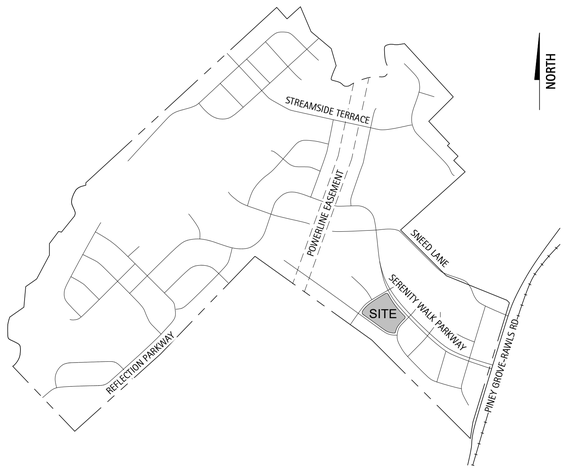
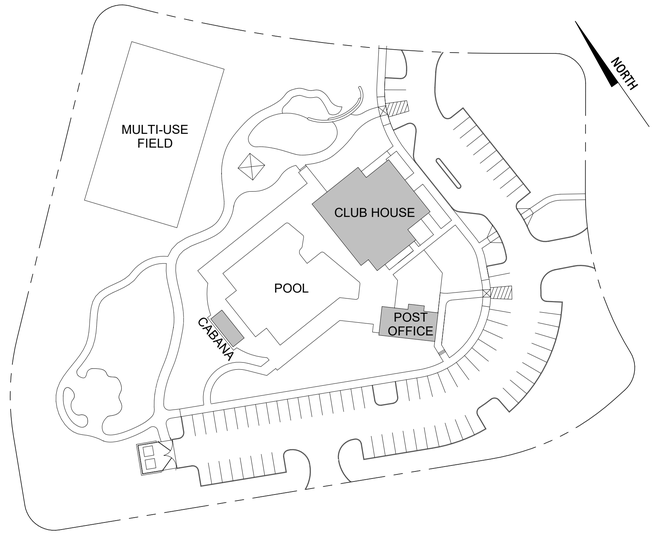


Serenity

FUQUAY-VARINA
NORTH CAROLINA



VICINITY MAP
NTS

SITE LAYOUT
1" = 60'-0"

SYMBOLS

- SIM / 1 / A101 — CALLOUT NUMBER; SHOWN ON SHEET NUMBER
- 10' - 0" — SPOT ELEVATION
- 101 — DOOR NUMBER
- SIM / 1 / A101 — SECTION NUMBER; SHOWN ON SHEET NUMBER
- A — WINDOW NUMBER
- 1 — WALL TYPE TAG
- A2.0 / 2 — SHOWN ON SHEET NUMBER; ELEVATION NUMBER
- 0 — GRID LINE HEAD
- 1 — REVISION TAG
- A — LIGHT FIXTURE TAG
- Room name / 101 — ROOM NUMBER

DRAWING INDEX

DRAWING INDEX

HINE AQUATIC ENGINEERING
405 Willow Crest Drive
Winston-Salem, NC 27107
p: 336.769.4900

Kilian Engineering, Inc.
3821 POWHATAN RD. - CLAYTON, NC 27520
TEL 252.438.8778

ROSS LINDEN ENGINEERS PC
709 W. JONES STREET - RALEIGH, NC 27603
TEL 919.832.5680 FAX 919.832.5675
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D. CLUGSTON® THE BUILDING & DEVELOPMENT CO.
2506 RELIANCE AVE. APEX, NC 27539
(P) 919.629.7290
WWW.DCLUGSTON.COM

D. CLUGSTON BUILDING & DEVELOPMENT CO.

PERRY GLENN COX — REGISTERED ARCHITECT — 9830 — NORTH CAROLINA — APEX, N.C. — 3/MAR/21

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

NO.	REVISION	DATE

SHEET DISCRIPTION
COVER SHEET

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

G0.1

APPENDIX B BUILDING CODE SUMMARY

FOR ALL COMMERCIAL PROJECTS

Name of Project: Serenity Amenity
Address: Harnett County, North Carolina **Zip Code:** 27526
Owner or Authorized Agent: Brian Jacobs **Phone #:** 919.412.4711
Email: brian@dclugston.com **Fax #:** N/A
Owned By: ☒ Privately ☐ City/County ☐ State
Code Enforcement Jurisdiction: ☐ City ☐ County ☒ City/County
Name of Jurisdiction: Town of Fuquay-Varina

PROJECT SUMMARY: 5000 sf Community Clubhouse and Pool (See sheet A8.0 for Post Office Apendix)

Building Description: A-3 UNHEATED - PRIVATE RECREATIONAL FACILITY WITH POOL FOR RESIDENCE ONLY

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:	TMTLA Asssociates	John G. Baker	1994	919-484-8880
Electrical:	Killian Engineering	Jacob Hamilton	048012	252-438-8778
Fire Alarm:				
Plumbing:	Killian Engineering	Jacob Hamilton	048012	252-438-8778
Mechanical:	Killian Engineering	Jacob 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: A. R. Hine	Alan R. Hine, PE	7011	336-769-4900

Note: Special Inspections and Inspectors to be listed at end of Appendix B

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

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

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

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

Original Occupancy:
Proposed Occupancy: A-3 Assembly

OCCUPANCY INFORMATION

Primary Occupancies:

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

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

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

☐ Non-Separated Mixed Occupancy (508.3)- The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Mixed Occupancy (508.3.3) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

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

_____ + _____ +... = _____ ≤ 1

ALLOWABLE AREA AND HEIGHT CALCULATIONS

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

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

NO INCREASE REQUIRED

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

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

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	A3	5,000	6,000	N/A	N/A	N/A	0.83	6,000 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" FT	N/A	H= 30'-10"	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
Building Height: 30.83 Feet 1 Story
Basement: ☐ Yes ☒ No
Mezzanine: ☐ Yes ☒ No
High Rise: ☐ Yes ☒ No
Class: ☐ I ☐ II ☐ III ☐ Wet ☐ Dry (Appendix D) ☐ Floor Hazard
Life Safety Plan Sheet # (if provided): G0.3

Gross Building Area:

FLOOR	EXISTING (SQFT)	NEW (SQFT)	SUB-TOTAL
FIRST FLOOR		5,098	5,098

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**		0	0				
Roof Ceiling Assembly		0	0				
Columns Supporting Roof		0	0				
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 (%)
>30'	UP,NS	NO LIMIT	NO LIMIT

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 N/A ☐ Barriers 706 ☐ Smoke Partitions 710
☐ Smoke Barriers 709 ☐ Shaft Enclosure 707

LIFE SAFETY SYSTEMS REQUIREMENTS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

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

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet # G0.3

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

EXIT REQUIREMENTS

NUMBER AND ARRANGEMENT OF EXITS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

FLOOR, ROOM AND/OR SPACE DESIGNATION	MINIMUM NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1016.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
CLUBHOUSE	2	3	200'	41'-5"	49'-7 1/2"	67'-5"

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)

OCCUPANT LOAD AND EXIT WIDTH CLUBHOUSE

Room Name	Area	Occupancy		Egress Width per Occupant(1005.3)		Required Width		Actual Width Shown	
		Load Factor	Load Count	Level	Stair	Level	Stair	Level	Stair
Front Covered Porch	668 SF	15 SF	45	0.2		9			
Entry Vestibule	131 SF	0 SF		0.2				68	
Great Room	1107 SF	15 SF	74	0.2		14.8		68	
Sales / Conference Room	264 SF	100 SF	3	0.2		0.6			
Poolside Covered Porch	776 SF	15 SF	52	0.2		10.4			
Fitness Room	540 SF	50 SF	11	0.2		2.2			
Fitness Vestibule	99 SF	0 SF		0.2				34	
UniSex	62 SF	0 SF		0.2					
Catering	186 SF	100 SF	2	0.2		0.4			
Closet	20 SF	300 SF	1	0.2		0.2			
Loft	287 SF	0 SF		0.2					
Courtyard Vestibule	129 SF	0 SF		0.2				34	
Mens Room	256 SF	0 SF		0.2					
Womens Room	354 SF	0 SF		0.2					
Grand total	4877 SF		188	2.8		37.6		204	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			Exit Width (inches)	Exit Quantity
		Area	Load Factor	Load Count		
Front Covered Porch	Assembly - Unconcentrated (tables and chairs)	668 SF	15 SF	45	9	
Great Room	Assembly - Unconcentrated (tables and chairs)	1107 SF	15 SF	74	14.8	
Poolside Covered Porch	Assembly - Unconcentrated (tables and chairs)	776 SF	15 SF	52	10.4	
Fitness Room	Exercise Rooms with Equipment	540 SF	50 SF	11	2.2	
Grand total				182	36.4	

PLUMBING FIXTURE REQUIREMENTS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

OCCUPANCY	WATERCLOSETS			URINALS	LAVATORIES			SHOWERS/ TUBS	DRINKING FOUNTAINS	
	Male	Female	Unisex		Male	Female	Unisex		Regular	Accessible
A-3[1]	2	6	1	2	3	3	1	2	3	3
Total Required	2	7	1	2	3	3	1	2	1	1
Total Provided	2	6	1	2	3	3	1	2	3	3

1 Calculations are total amentity site plumbing requirements

859 PERSONS / 2 = 430 M / 430F
WATERCLOSETS: 430 MALE / 125 = 4 WC = 2 WC & 2 URINAL
430 FEMALE /65 = 7 WC = 6 WC + 1 FAMILY
LAVATORY: 430 MALE / 200 = 3 LAV = 3 LAV
430 FEMALE / 200 = 3 LAV = 3 LAV + 1 FAMILY

STRUCTURAL DESIGN LOADS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

DESIGN LOADS:
Importance Factors: Snow (I_s) _____ Seismic (I_e) _____
Live Loads: Roof _____ psf; Mezzanine _____ psf; Floor _____ psf
Ground Snow Load: _____ psf
Wind Load: Ultimate Wind Speed _____ mph (ASCE-7) Exposure Category _____

SEISMIC DESIGN CATEGORY: A B C D
Provide the following Seismic Design Parameters:
Risk Category (Table1604.5)
Spectral Response _____%g
Site Classification B C D
Field Test Presumptive Historical Data
Basic Structural System: Bearing Wall; Building Frame; Moment Frame; Dual w/ Special Moment Frame; Dual w/ Intermidiate R/C or Special Steel; 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 _____

SEE STRUCTURAL DWGS.

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

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

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

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

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

List equipment efficiencies: _____

SEE MECHANICAL DWGS.

ACCESSIBLE PARKING

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

SEE CIVIL DWGS.

ELECTRICAL SUMMARY

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

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 watta... (space by space)
Total exterio...

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
C406.2 More Efficient HVAC Equipment Performance
C406.3 Reduced Lighting Power Density
C406.4 Enhanced Digital Lighting Controls
C406.5 On-site Renewable Energy
C406.6 Dedicated Outdoor Air System
C406.7 Reduced Energy Use in Service Water Heating

SEE ELECTRICAL DWGS.

ENERGY SUMMARY

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

ENERGY REQUIREMENTS:
The following data shall be considered minimum ... meet the energy code shall also be provided. Each designer shall ... project information for the data sheet. If the performance ... one standard reference design vs annual energy cost for the p...

Existing ... envelope complies with code: ☐ No ☐ Yes (The remainder of this section is not applicable)

SEE COM-CHECK SHEET G0.4

SPECIAL APPROVALS

(Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)
HARNETT COUNTY HEALTH DEPARTMENT
TOWN OF FUQUAY-VARINA

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

PERRY GLENN COX
REGISTERED ARCHITECT
9630
NORTH CAROLINA
APEX, N.C.
3/MAR/21

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

NO.	REVISION	DATE

SHEET DISCRIPTION
BUILDING CODE SUMMARY

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PQC/DSC

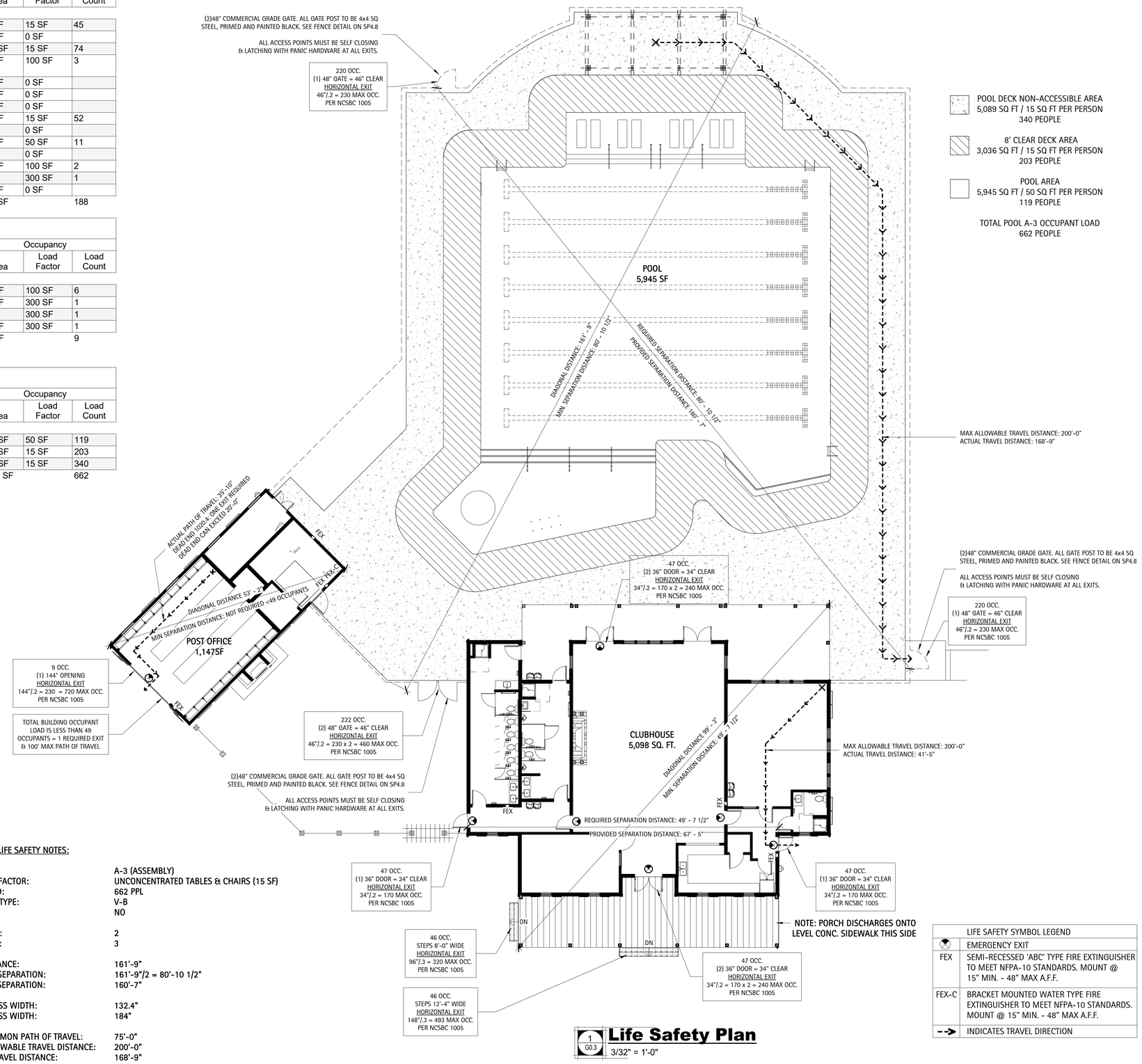
SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

G0.2

OCCUPANCY SCHEDULE CLUBHOUSE					
Room Number	Room Name	Type	Occupancy Area	Occupancy Load Factor	Occupancy Load Count
001	Front Covered Porch	Assembly - Unconcentrated (tables and chairs)	668 SF	15 SF	45
100	Entry Vestibule	N/A	131 SF	0 SF	
101	Great Room	Assembly - Unconcentrated (tables and chairs)	1107 SF	15 SF	74
102	Sales / Conference Room	Business Areas	264 SF	100 SF	3
103	Courtyard Vestibule	N/A	129 SF	0 SF	
104	Mens Room	N/A	256 SF	0 SF	
105	Womens Room	N/A	354 SF	0 SF	
106	Poolside Covered Porch	Assembly - Unconcentrated (tables and chairs)	776 SF	15 SF	52
107	Fitness Vestibule	N/A	99 SF	0 SF	
108	Fitness Room	Exercise Rooms with Equipment	540 SF	50 SF	11
109	UniSex	N/A	62 SF	0 SF	
110	Catering	Business Areas	186 SF	100 SF	2
111	Closet	Accessory Storage Areas, Mechanical Equipment Room	20 SF	300 SF	1
200	Loft	N/A	287 SF	0 SF	
Grand total			4877 SF		188

OCCUPANCY SCHEDULE POST OFFICE					
Room Number	Room Name	Type	Occupancy Area	Occupancy Load Factor	Occupancy Load Count
PH100	Post Office	Business Areas	568 SF	100 SF	6
PH101	Pump Room	Accessory Storage Areas, Mechanical Equipment Room	193 SF	300 SF	1
PH102	Chem Room	Accessory Storage Areas, Mechanical Equipment Room	51 SF	300 SF	1
PH103	Furniture Storage	Accessory Storage Areas, Mechanical Equipment Room	147 SF	300 SF	1
Grand total			960 SF		9

OCCUPANCY SCHEDULE POOL					
Room Number	Room Name	Type	Occupancy Area	Occupancy Load Factor	Occupancy Load Count
PL100	Pool	Swimming Pool water surface	5945 SF	50 SF	119
PL102	Pool Deck 8' Clear	Swiming Pool Deck	3036 SF	15 SF	203
PL103	Pool Deck	Swiming Pool Deck	5086 SF	15 SF	340
Grand total			14068 SF		662



1 G0.3 **Life Safety Plan**
3/32" = 1'-0"

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

GENERAL PLUMBING NOTES:

USE:	A-3 (ASSEMBLY)
OCCUPANT LOAD:	859 PPL / 2 = 430 PPL
REQUIRED MALE WATER CLOSETS:	4 (1 PER 125 PPL)
REQUIRED FEMALE WATER CLOSETS:	7 (1 PER 65 PPL)
REQUIRED UNISEX WATER CLOSETS:	1 (NCSBC 11.09.2.1)
PROVIDED MALE WATER CLOSETS:	2 WC & 2 URINAL
PROVIDED FEMALE WATER CLOSETS:	6 (+1 UNISEX MEETS REQUIRED)
PROVIDED UNISEX WATER CLOSETS:	1
REQUIRED MALE LAVATORIES:	3 (1 PER 200)
REQUIRED FEMALE LAVATORIES:	3 (1 PER 200)
REQUIRED UNISEX LAVATORIES:	1 (NCSBC 11.09.2.1)
PROVIDED MALE LAVATORIES:	3
PROVIDED FEMALE LAVATORIES:	3
PROVIDED UNISEX LAVATORIES:	1
REQUIRED WATERCOOLERS:	2 (1 PER 500)
PROVIDED WATERCOOLERS:	6
REQUIRED SERVICE SINKS:	1
PROVIDED SERVICE SINKS:	1(HOSE BIB & FLOOR DRAIN)

CLUBHOUSE GENERAL LIFE SAFETY NOTES:

USE:	A-3 (ASSEMBLY)
PRIMARY LOAD FACTOR:	UNCONCENTRATED TABLES & CHAIRS (15 SF)
OCCUPANT LOAD:	188 PPL
CONSTRUCTION TYPE:	V-B
SPRINKLERS:	NO
REQUIRED EXITS:	2
PROVIDED EXITS:	4
DIAGONAL DISTANCE:	99'-3"
REQUIRED EXIT SEPARATION:	99'-3"/2 = 49'-7 1/2"
PROVIDED EXIT SEPARATION:	67'-5"
REQUIRED EGRESS WIDTH:	37.6"
PROVIDED EGRESS WIDTH:	204"
MAXIMUM COMMON PATH OF TRAVEL:	75'-0"
MAXIMUM ALLOWABLE TRAVEL DISTANCE:	200'-0"
ACTUAL MAX TRAVEL DISTANCE:	41'-5"

POOL GENERAL LIFE SAFETY NOTES:

USE:	A-3 (ASSEMBLY)
PRIMARY LOAD FACTOR:	UNCONCENTRATED TABLES & CHAIRS (15 SF)
OCCUPANT LOAD:	662 PPL
CONSTRUCTION TYPE:	V-B
SPRINKLERS:	NO
REQUIRED EXITS:	2
PROVIDED EXITS:	3
DIAGONAL DISTANCE:	161'-9"
REQUIRED EXIT SEPARATION:	161'-9"/2 = 80'-10 1/2"
PROVIDED EXIT SEPARATION:	160'-7"
REQUIRED EGRESS WIDTH:	132.4"
PROVIDED EGRESS WIDTH:	184"
MAXIMUM COMMON PATH OF TRAVEL:	75'-0"
MAXIMUM ALLOWABLE TRAVEL DISTANCE:	200'-0"
ACTUAL MAX TRAVEL DISTANCE:	168'-9"

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

PERRY GLENN COX
REGISTERED ARCHITECT
9630
NORTH CAROLINA
APEX, N.C.
3MAR21

Perry Cox
architect, p.a.
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www.pcoxdesign.com

NO.	REVISION	DATE

SHEET DISCRIPTION
LIFE SAFETY PLANS

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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.

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 disimilar 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.

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

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.

COMcheck Software Version 4.1.5.3

Envelope Compliance Certificate

Project Information

Energy Code:	90.1 (2013) Standard
Project Title:	Serenity Clubhouse
Location:	Fuquay-Varina, North Carolina
Climate Zone:	4a
Project Type:	New Construction
Vertical Glazing / Wall Area:	21%
Performance Sim. Specs:	EnergyPlus 8.1.0.009 (EPW: USA_NC_Raleigh-Durham.Intl.AP.723060_TMY3.epw)

Construction Site:
Harnett County
Fuquay-Varina, NC 27526

Owner/Agent:
Greenfield Communities LLC
8601 Six Forks Road
Suite 270
Raleigh, NC 27615
919-815-6469
mbrubaker@greenfieldcommunities.com

Designer/Contractor:
Perry Cox
Perry Cox Architect, p.a.
124 Salem Town Court
Apex, NC 27502
919-363-5411
perry@pcoxdesign.com

Building Area	Floor Area
1-Community Clubhouse (Exercise Center) : Nonresidential	3560

Envelope Assemblies

Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Floor 1: Slab-On-Grade:Unheated, [Bldg. Use 1 - Community Clubhouse] (c)	274	---	---	0.730	0.520
Roof 1: Attic Roof with Wood Joists, [Bldg. Use 1 - Community Clubhouse]	3560	42.0	0.0	0.024	0.021
Skylight 1: Metal Frame:Glass, No Curb, Perf. Specs.: Product ID 4mm Clear Glass, SHGC 0.78, VT 0.82, [Bldg. Use 1 - Community Clubhouse] (b)	9	---	---	0.480	0.500
NORTHEAST					
Exterior Wall 1: Wood-Framed, 16" o.c., [Bldg. Use 1 - Community Clubhouse]	1062	21.0	0.5	0.060	0.064
Window 1: Vinyl/Fiberglass Frame, Perf. Specs.: Product ID Advanced Low-E, SHGC 0.37, VT 0.70, [Bldg. Use 1 - Community Clubhouse] (b)	107	---	---	0.250	0.350
Door 1: Glass (> 50% glazing):Nonmetal Frame, Entrance Door, Perf. Specs.: Product ID Advanced Low-E, SHGC 0.37, PF 1.60, VT 0.70, [Bldg. Use 1 - Community Clubhouse] (b)	48	---	---	0.250	0.350
SOUTHEAST					
Exterior Wall 3: Wood-Framed, 16" o.c., [Bldg. Use 1 - Community Clubhouse]	556	21.0	0.5	0.060	0.064
Window 3: Vinyl/Fiberglass Frame, Perf. Specs.: Product ID Advanced Low-E, SHGC 0.37, VT 0.70, [Bldg. Use 1 - Community Clubhouse] (b)	21	---	---	0.250	0.350
Door 3: Insulated Metal, Swinging, [Bldg. Use 1 - Community Clubhouse]	21	---	---	0.600	0.500
SOUTHWEST					
Exterior Wall 4: Wood-Framed, 16" o.c., [Bldg. Use 1 - Community Clubhouse]	1108	21.0	0.5	0.060	0.064
NORTHWEST					
Exterior Wall 2: Wood-Framed, 16" o.c., [Bldg. Use 1 - Community Clubhouse]	623	21.0	0.5	0.060	0.064
Window 2: Vinyl/Fiberglass Frame, Perf. Specs.: Product ID Advanced Low-E, SHGC 0.37, VT 0.70, [Bldg. Use 1 - Community Clubhouse] (b)	101	---	---	0.250	0.350
Door 2: Glass (> 50% glazing):Nonmetal Frame, Entrance Door, Perf. Specs.: Product ID Advanced Low-E, SHGC 0.37, VT 0.70, [Bldg. Use 1 - Community Clubhouse] (b)	24	---	---	0.250	0.350

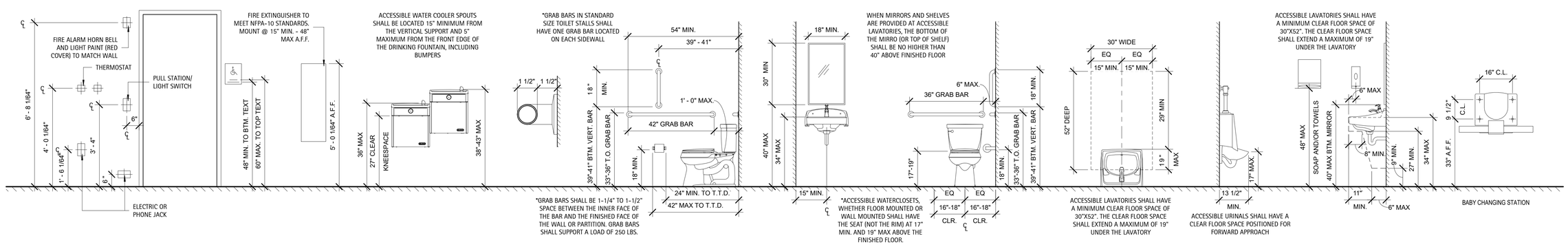
(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) Fenestration product performance must be certified in accordance with NFRC and requires supporting documentation.
(c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Envelope PASSES: Design 1% better than code

Envelope Compliance Statement

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

Perry Cox, Architect
Name - Title | Signature | Date



TYPICAL MOUNTING HEIGHTS

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

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

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REGISTERED
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ARCHITECT
APEX, N.C.
3/MAR/21

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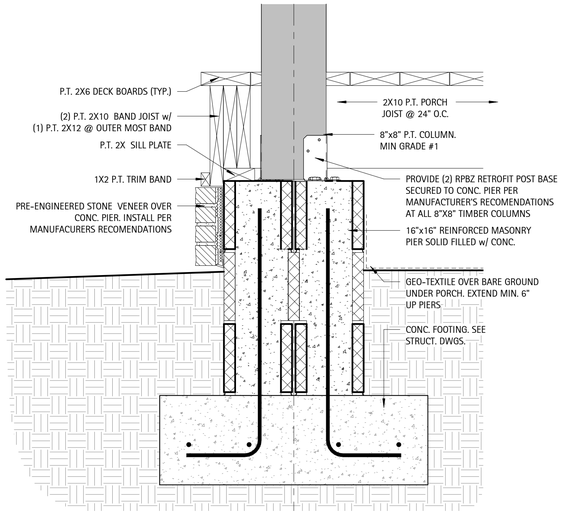
NO.	REVISION	DATE

SHEET DISCRIPTION
GENERAL NOTES

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

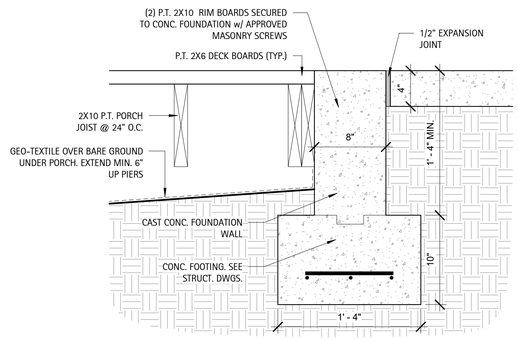
SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

G0.4



4 A1.0 Detail - Typ. Masonry Pier

1 1/2" = 1'-0"

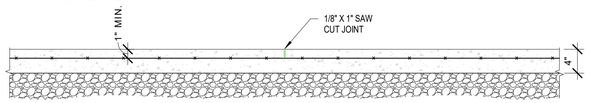


3 A1.0 Detail - ADA Transition_Concrete

1 1/2" = 1'-0"

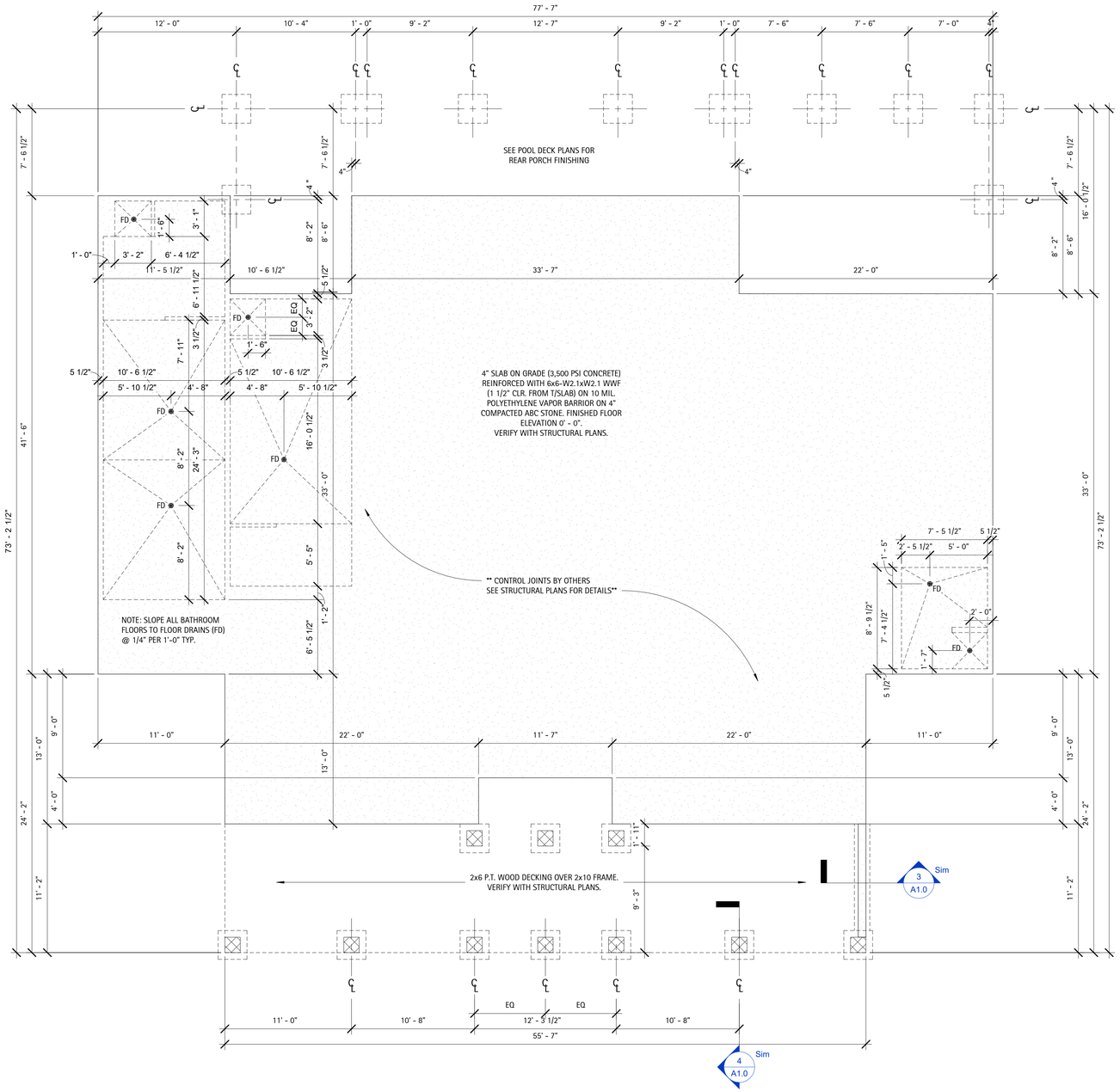
NOTE: ALL JOINTS TO BE CUT w/ WET WALK BEHIND SAW TO ENSURE ALL CUTS ARE PERPENDICULAR W/ FACE OF CONCRETE

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"



1 A1.0 Club House - Foundation Plan

3/16" = 1'-0"

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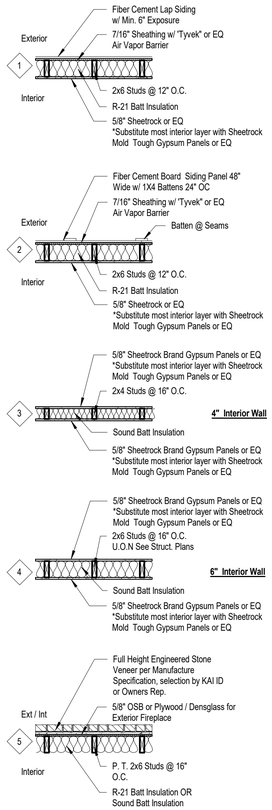
SHEET DISCRIPTION
FOUNDATION PLAN

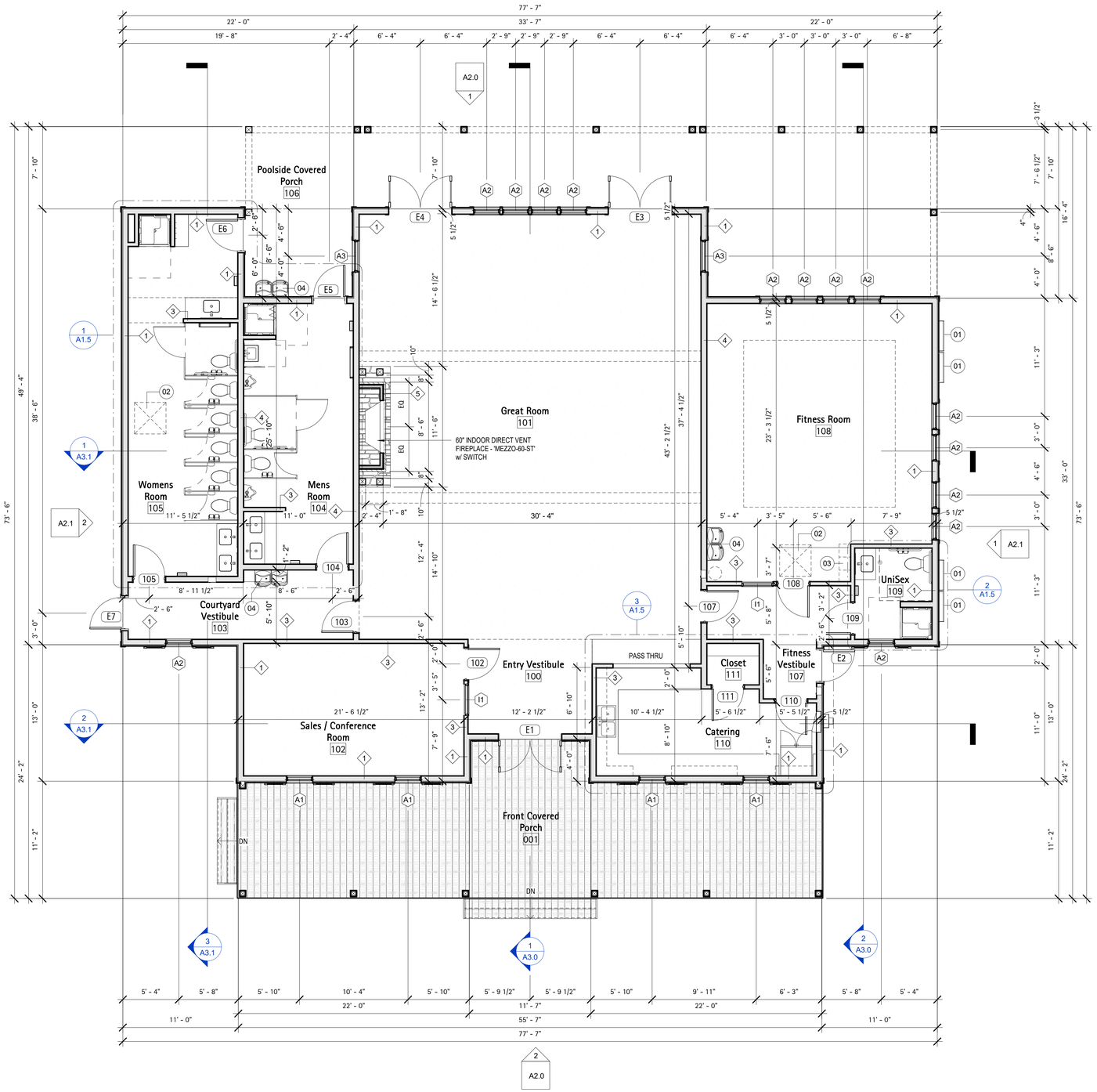
PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

A1.0

WALL TYPE DETAILS





KEYNOTES

01 4'-0" x 8'-0" WALL MOUNTED VINE TRELLIS SEE GENERAL DETAILS

02 3'-0"X3'-0" ATTIC ACCESS HATCH. VERIFY LOCATION W/ TRUSS PACKAGE

03 CUBBIES TO BE SUPPLIED BY OWNERS

04 'ELKAY' TWO STATION HI/LO WATER COOLER

1 A1.1 Club House - Main Level

3/16" = 1'-0"

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SHEET DISCRIPTION
MAIN LEVEL PLAN

PROJECT #:	2018.037
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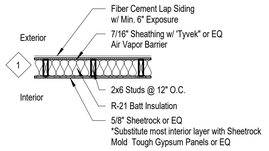
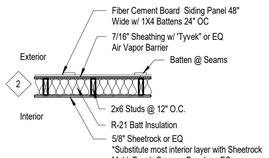
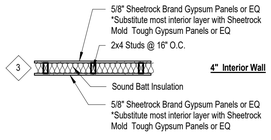
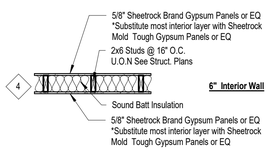
A1.1

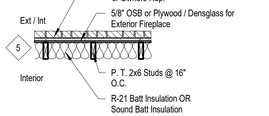
WALL TYPE DETAILS

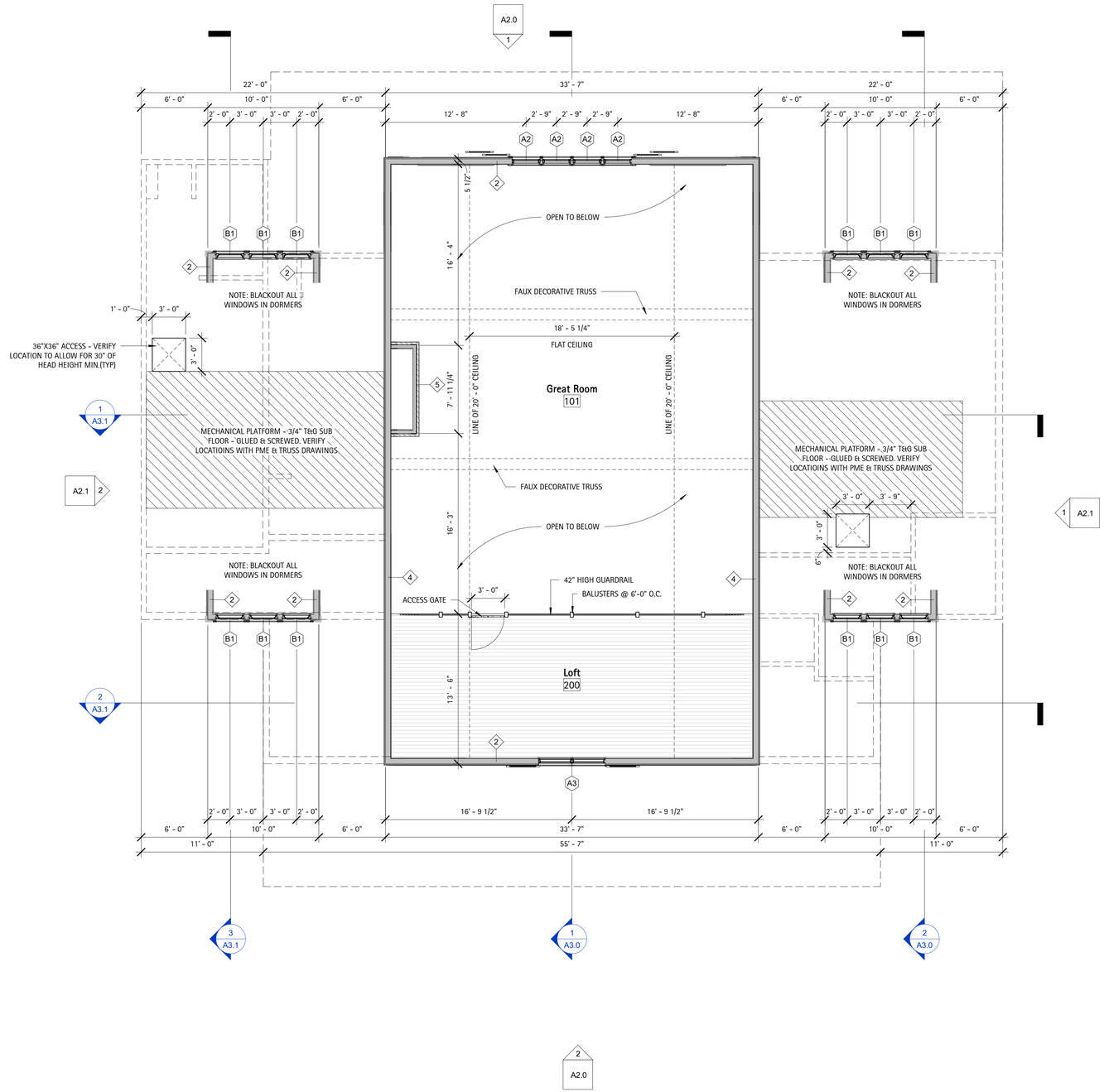












1 A1.2 Club House - Upper Level Plan

3/16" = 1'-0"

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SHEET DISCRIPTION
UPPER LEVEL PLAN

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SERENITY AMENITY
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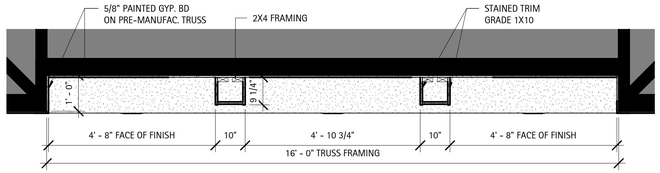
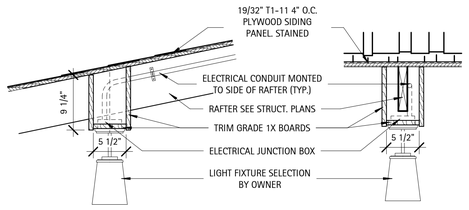
A1.2



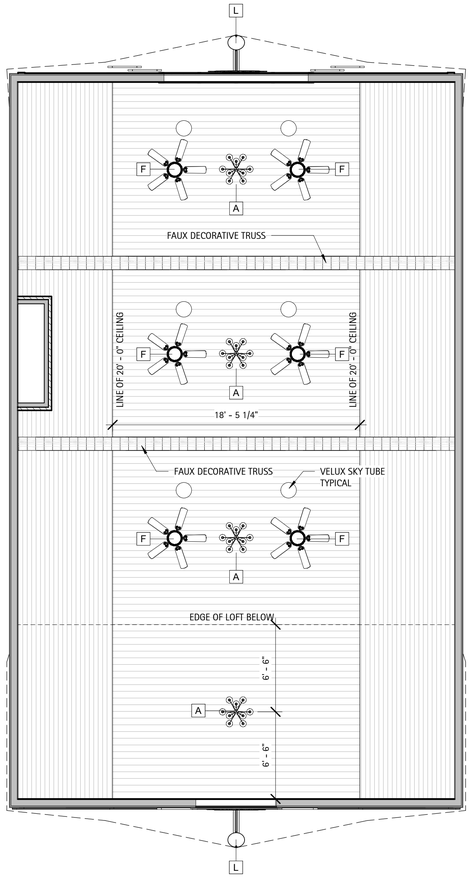
4 A1.3 Detail - Fitness Roof Tray Ceiling

1/2" = 1'-0"



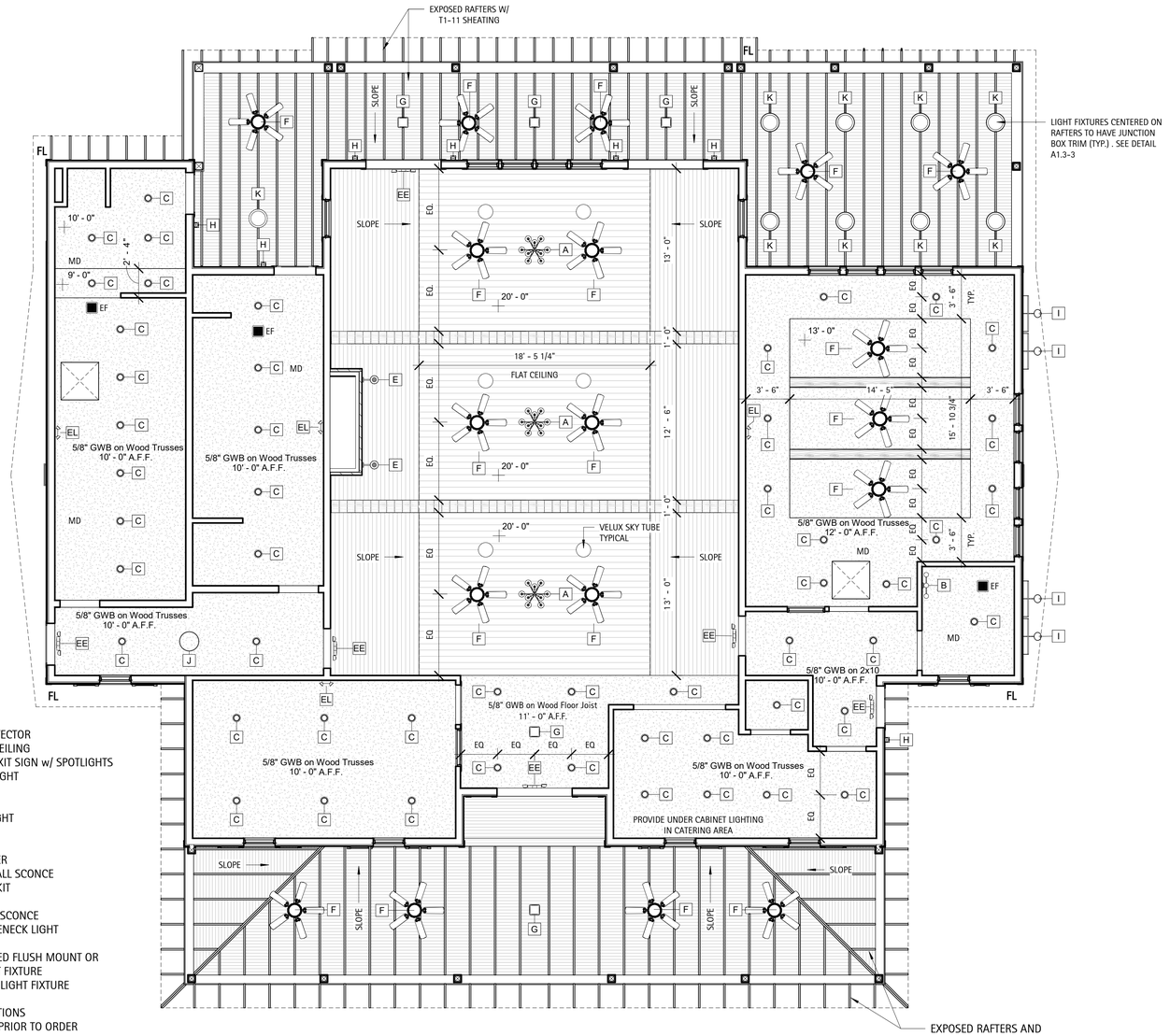
3 A1.3 Detail - Junction Box at Rafter

1" = 1'-0"



2 A1.3 Club House - Loft

3/16" = 1'-0"



MD - MOTION DETECTOR
LOCATE IN CEILING
EE - EMERGENCY EXIT SIGN w/ SPOTLIGHTS
EL - EMERGENCY LIGHT
EF - EXHAUST FAN
FL - FLOOD LIGHTS
A - DECORATIVE LIGHT
B - VANITY LIGHT
C - CAN LIGHT
D - 1X4 LED TROFFER
E - DECORATIVE WALL SCONCE
F - FAN w/o LIGHT KIT
G- PENDANT LIGHT
H- EXTERIOR WALL SCONCE
I - EXTERIOR GOOSENECK LIGHT
J - FLUSH MOUNT
K - OWNER SELECTED FLUSH MOUNT OR
PENDANT LIGHT FIXTURE
L - CUSTOM GABLE LIGHT FIXTURE

* VERIFY ALL SELECTIONS
WITH OWNER / GC PRIOR TO ORDER

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 A1.3 Club House - Main Level

3/16" = 1'-0"

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SHEET DISCRIPTION
REFLECTED CEILING PLAN

PROJECT #:	2018.037
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A1.3

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.

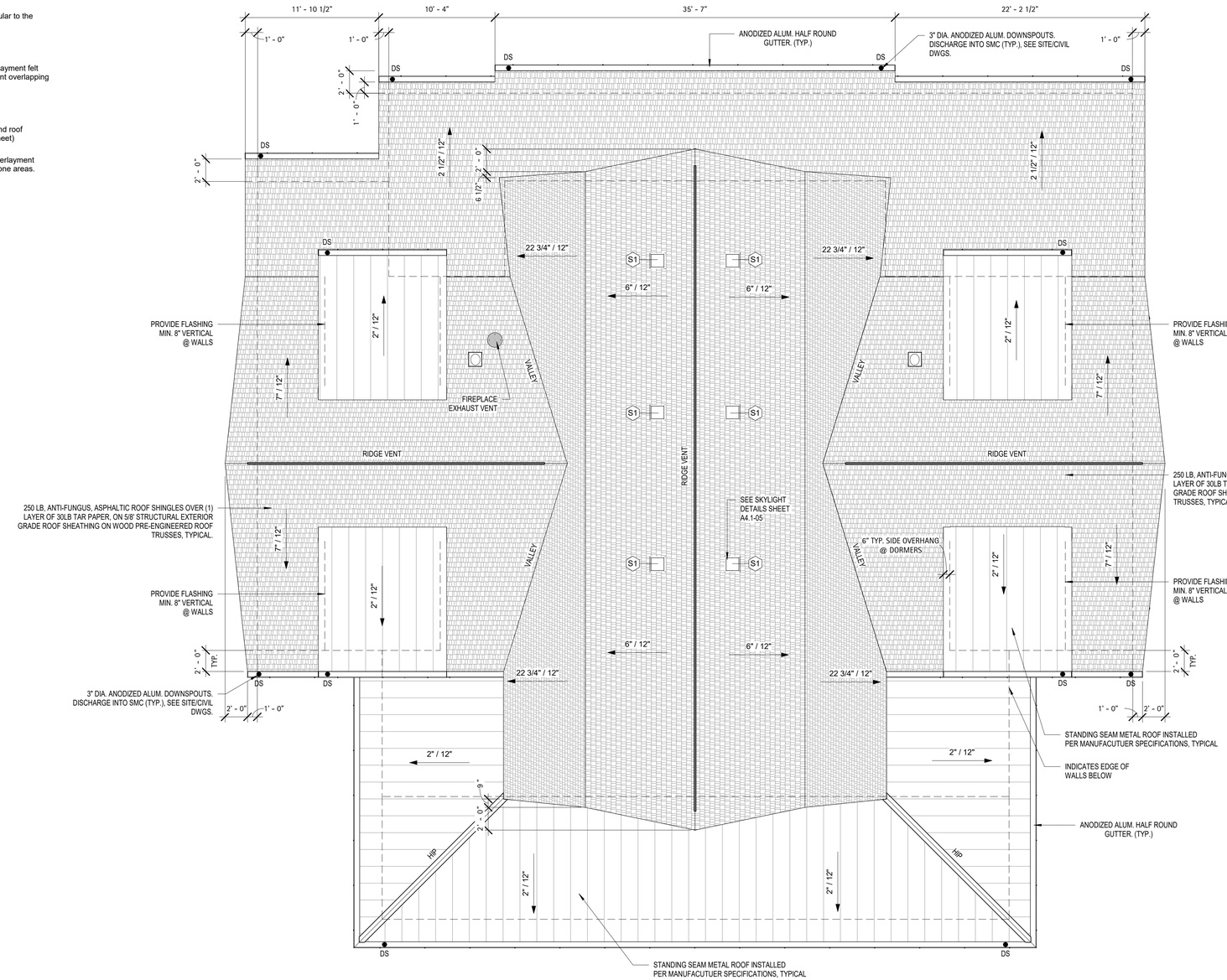
3. Asphalt shingles shall only be used on roof slopes of 2:12 or greater.

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.



1 A1.4 Club House - Roof Plan

3/16" = 1'-0"

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SHEET DISCRIPTION
ROOF PLAN

PROJECT #:	2018.037
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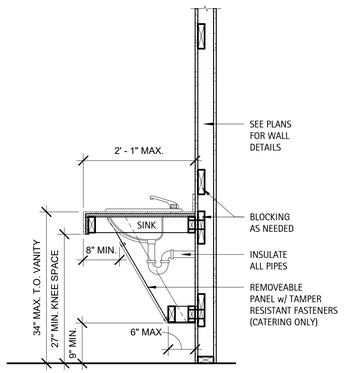
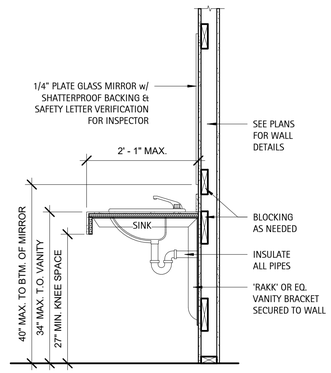
Fuquay-Varina, NC

A1.4



6 A1.5 Detail - Typical ADA Sink Section

3/4" = 1'-0"

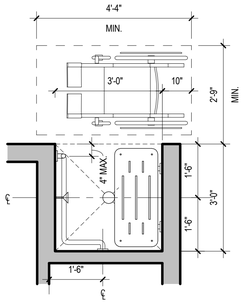


5 A1.5 Detail - Typical Vanity Section

3/4" = 1'-0"

TOILET ACCESSORIES

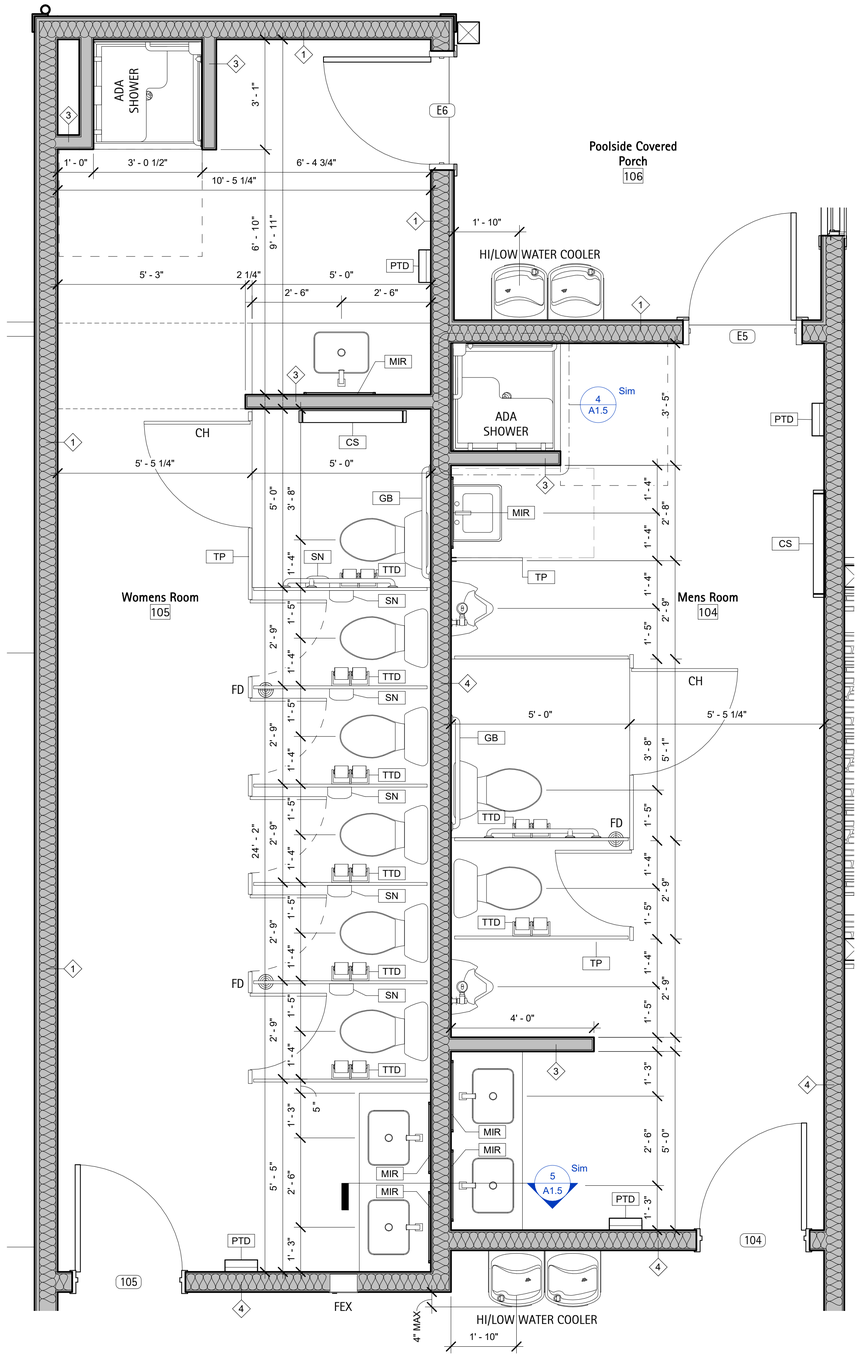
MARK	ITEM	MANUFACTURER	MODEL NUMBER
TTD	SURFACE MOUNTED DUAL ROLL TOILET TISSUE HOLDER	AMERICAN SPECIALTIES, INC	0715
GB	GRAB BAR - 1 1/2" DIA., S/S, PREENED GRIP, SNAP FLANGE 36", 42" & 18"	AMERICAN SPECIALTIES, INC	3800 TYPE-01
MIR	INTERLOK S.S. FRAMED MIRROR W/ SHATTER RESISTANT GLASS	AMERICAN SPECIALTIES, 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 SANITARY 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



4 A1.5 Detail - ADA Transfer Shower

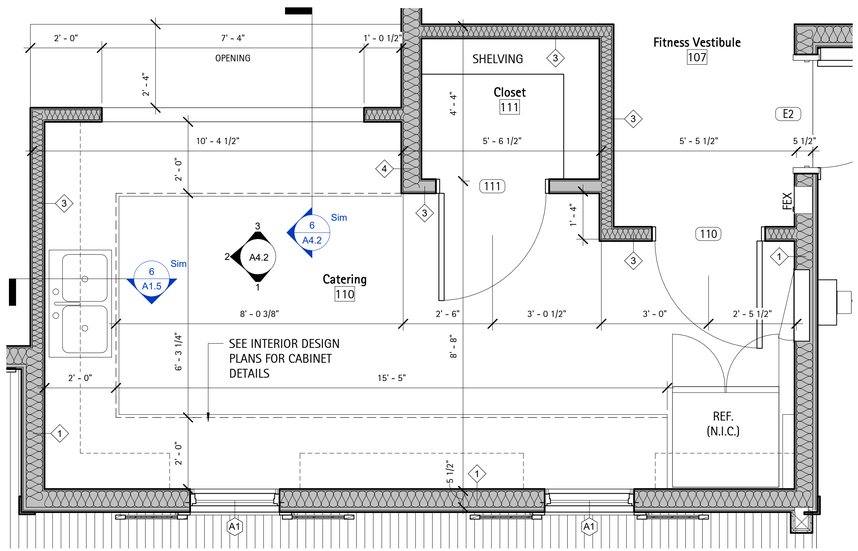
1 : 1

NOTE: SEE SHEET G0.4 FOR TYPICAL ADA MOUNTING HEIGHTS AND CLEARANCES



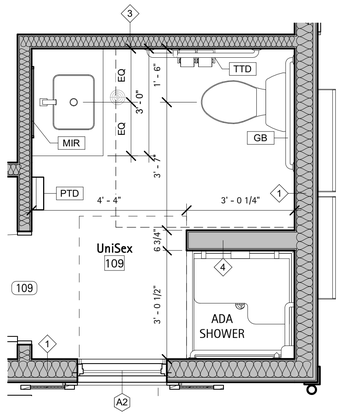
1 A1.5 Enlarged Restroom Plan

1/2" = 1'-0"



3 A1.5 Enlarged Catering Room

1/2" = 1'-0"



2 A2.5 Enalrged Family RR

1/2" = 1'-0"

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SHEET DISCRIPTION
ENLARGED PLANS

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
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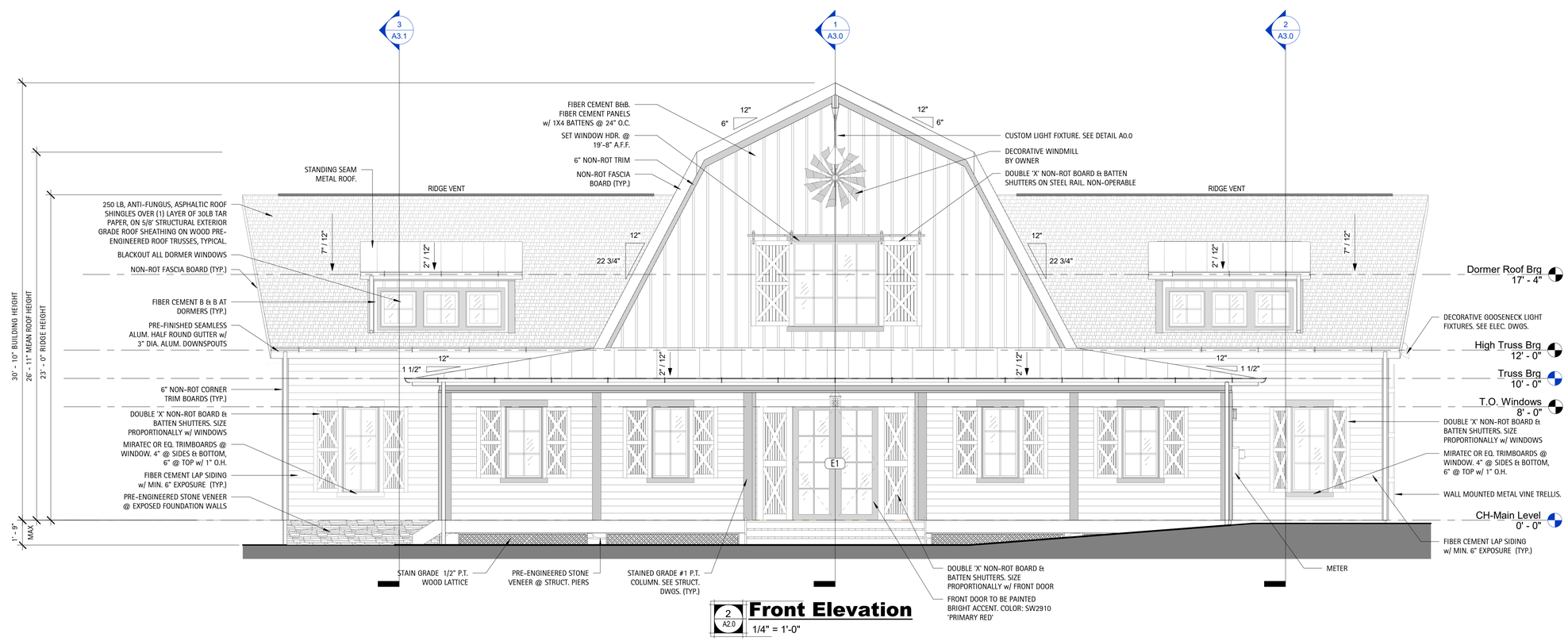
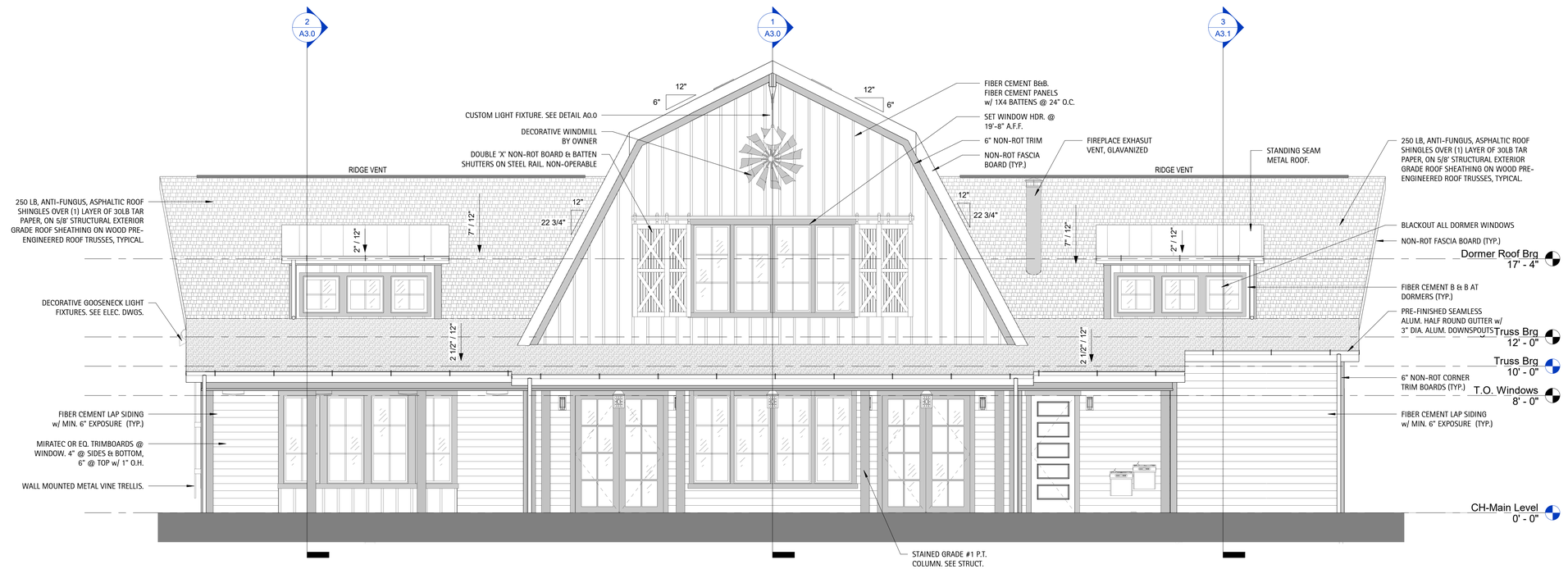
SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

A1.5



2 A2.0 **Front Elevation**

1/4" = 1'-0"



1 A2.0 **Rear Elevation**

1/4" = 1'-0"

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SHEET DISCRIPTION
CLUBHOUSE ELEVATIONS

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
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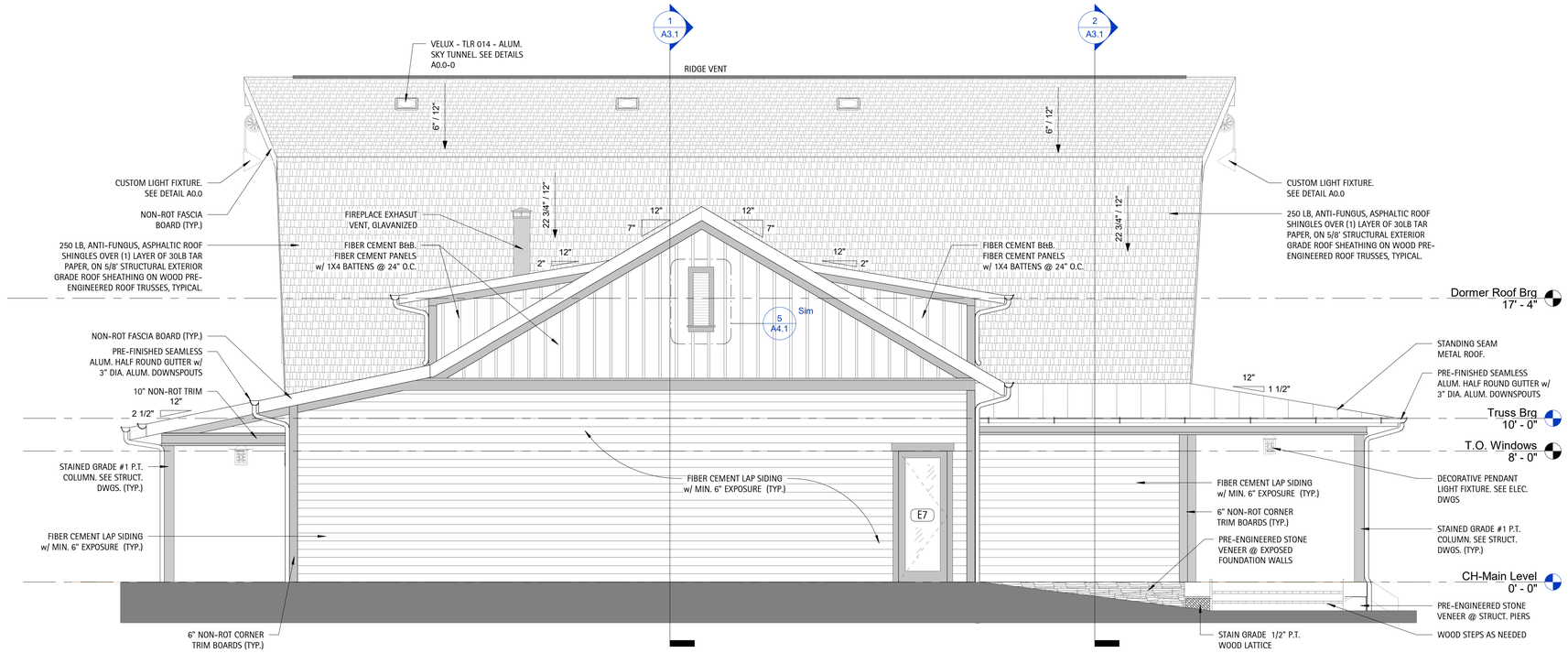
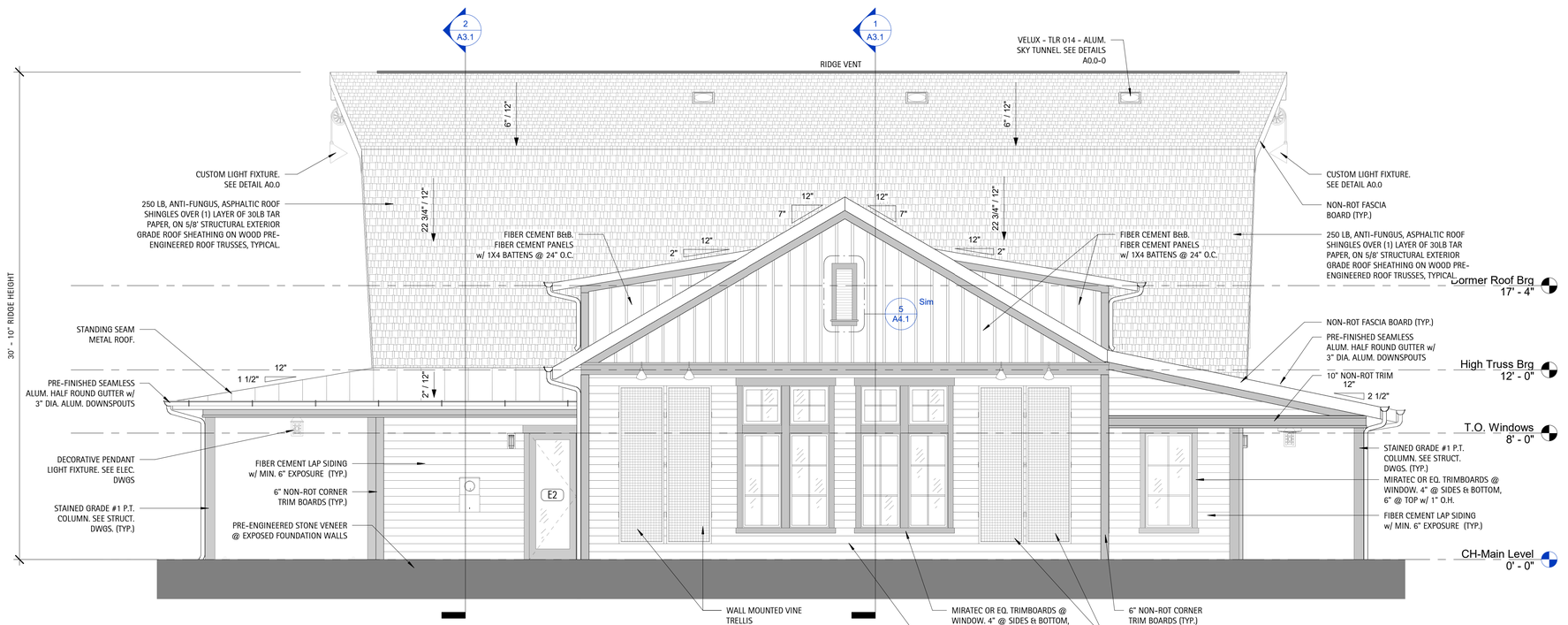
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

A2.0



2 A2.1 Left Side Elevation

1/4" = 1'-0"



1 A2.1 Right Side Elevation

1/4" = 1'-0"

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SHEET DISCRIPTION
CLUBHOUSE ELEVATIONS

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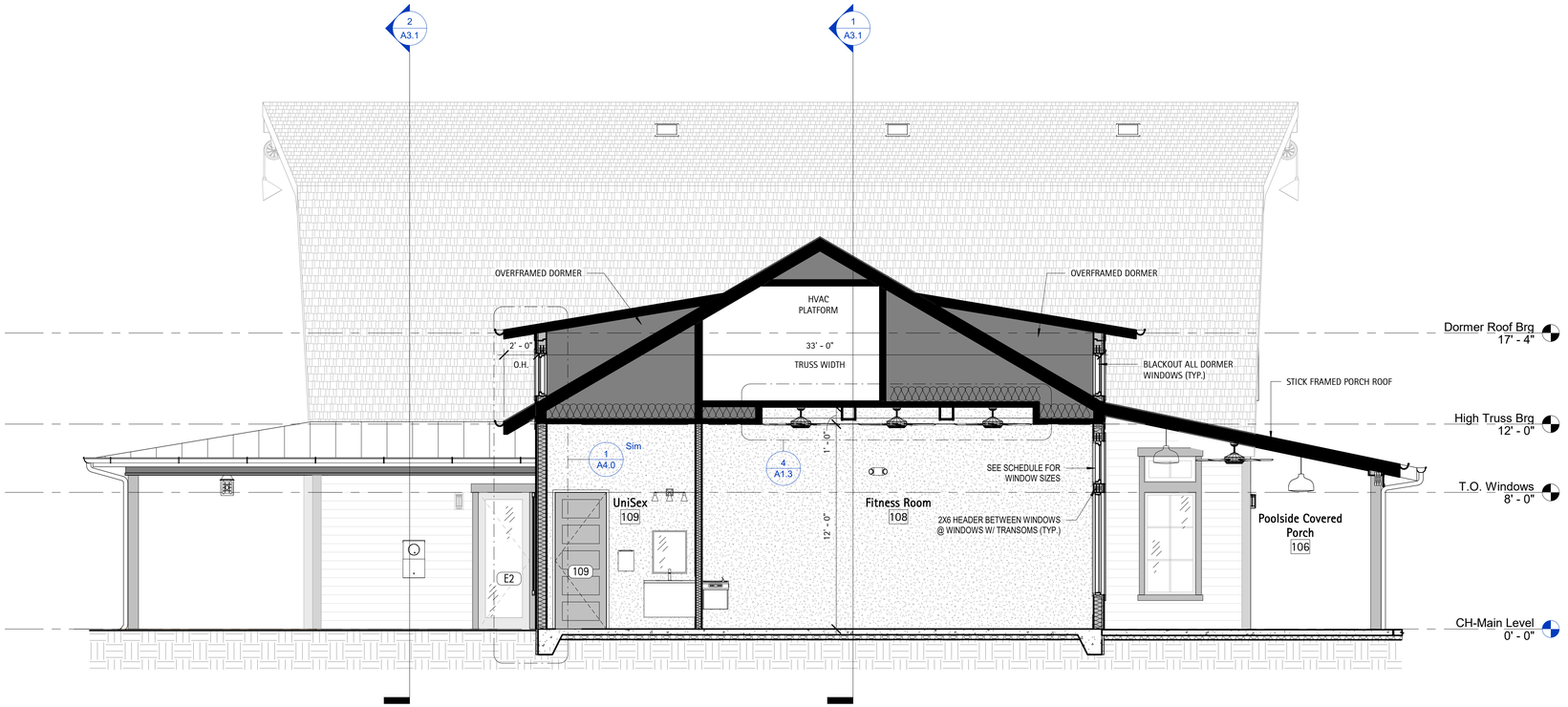
A2.1

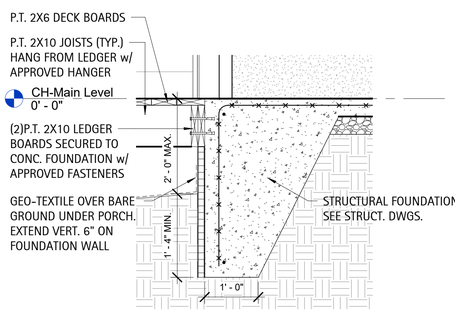


2 A3.0 Section - CH Through Fitness Room

1/4" = 1'-0"

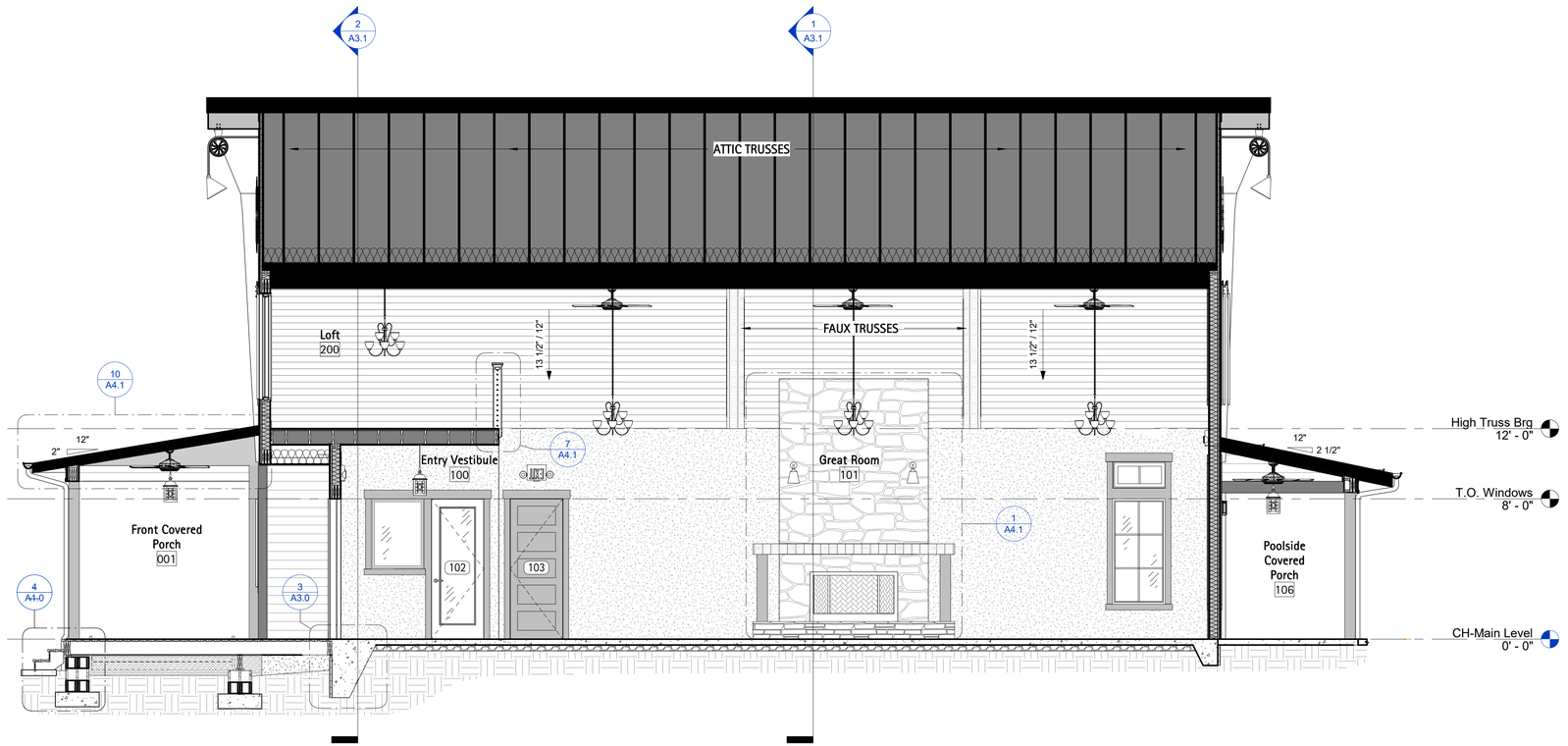
4 A3.0 Detail - Typical Porch Steps

1" = 1'-0"



3 A3.0 Detail - Ledger at Slab Edge

3/4" = 1'-0"



1 A3.0 Section - CH Through Main Ridge

1/4" = 1'-0"

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SHEET DISCRIPTION
BUILDING SECTIONS

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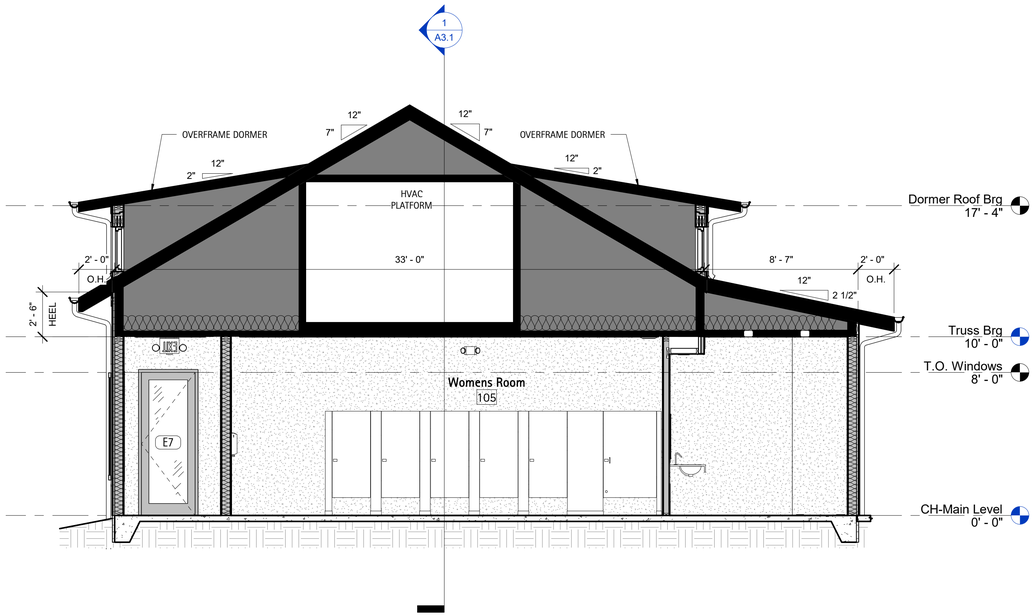
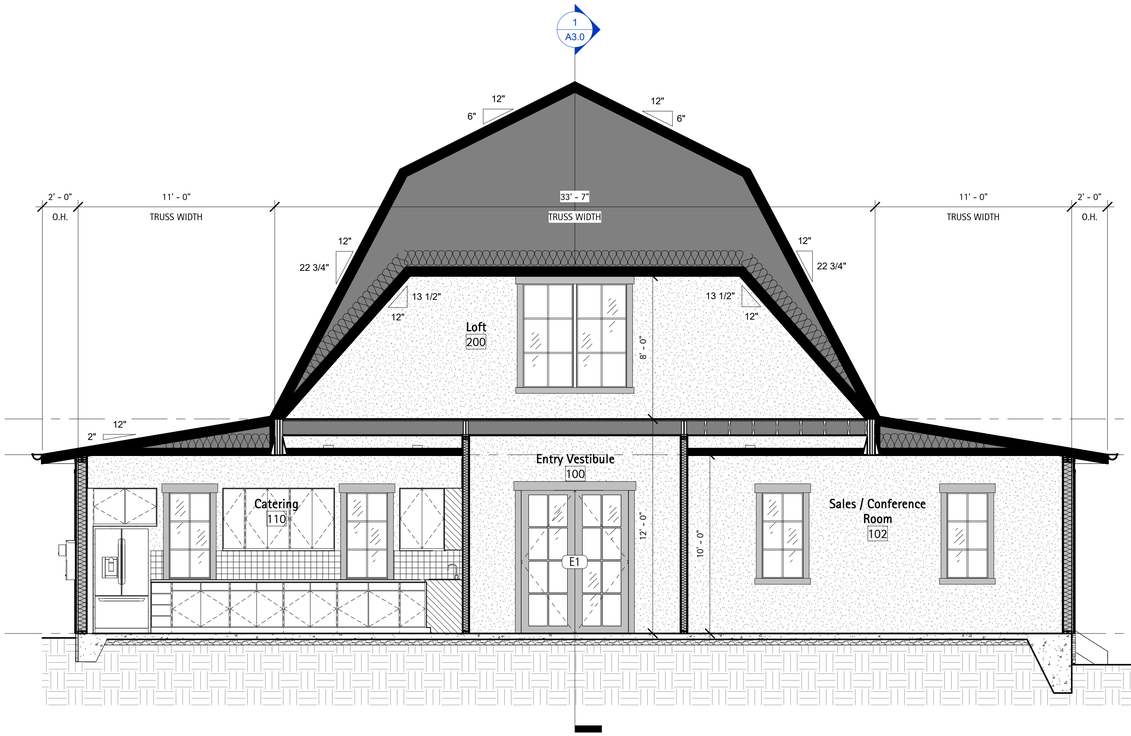
A3.0



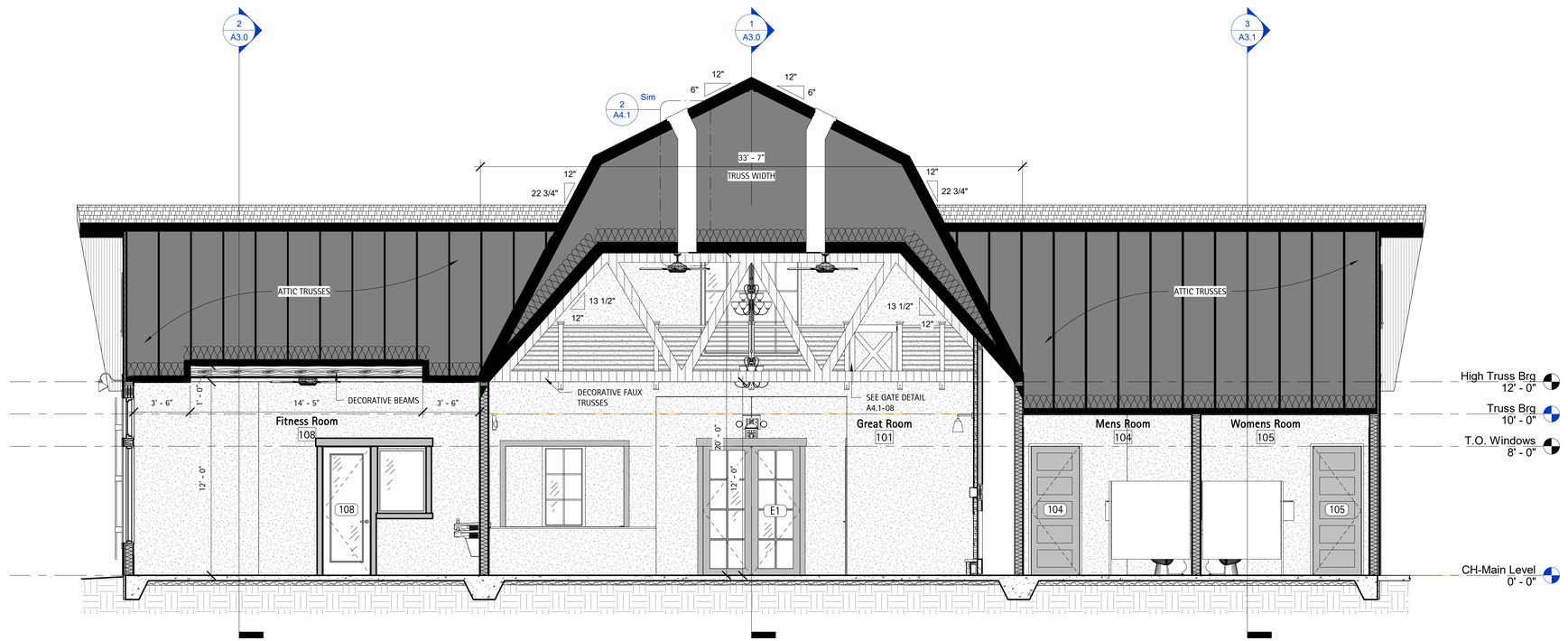
3 A3.1 Section - CH Through Restrooms

1/4" = 1'-0"



2 A3.1 Section - CH Through Office/Catering

1/4" = 1'-0"



1 A3.1 Section - CH Left to Right Facing Entry

1/4" = 1'-0"

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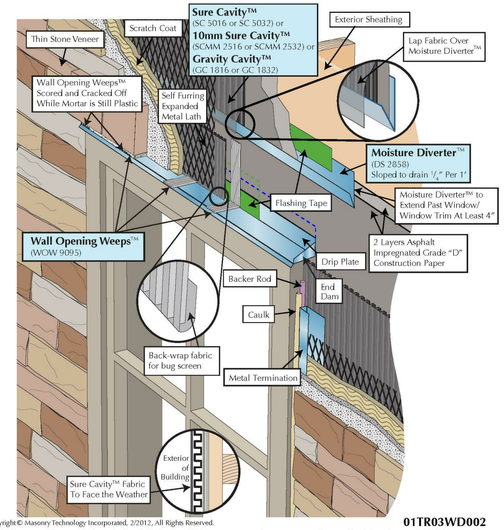
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

A3.1

Thin Stone Veneer Weep Systems and Drainage Plane with Moisture Diverter™ at Top 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) and **Moisture Diverter**™ (WSD 2858)

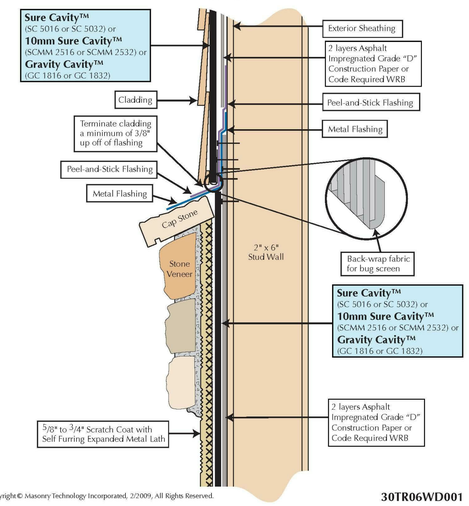


01TR03WD002

Cladding Systems to Thin Stone Veneer Installation

Sure Cavity™ (SC 5016 or SC 5032) or **10mm Sure Cavity**™ (SCMM 2516 or SCMM 2532) or **Gravity Cavity**™ (GC 1816 or GC 1832)

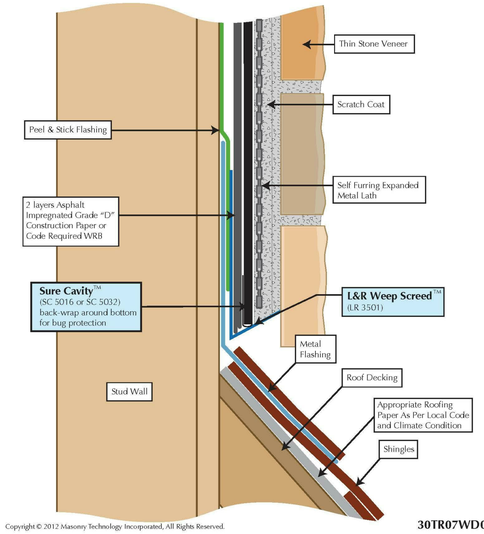
Side View



30TR06WD001

Thin Stone Veneer Side Wall to Roof Termination Detail

Sure Cavity™ (SC 5016 or SC 5032) and **L&R Weep Screed**™ (LR 3501)



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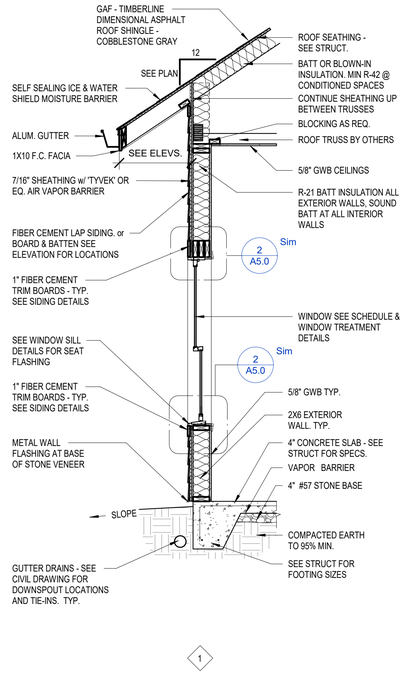

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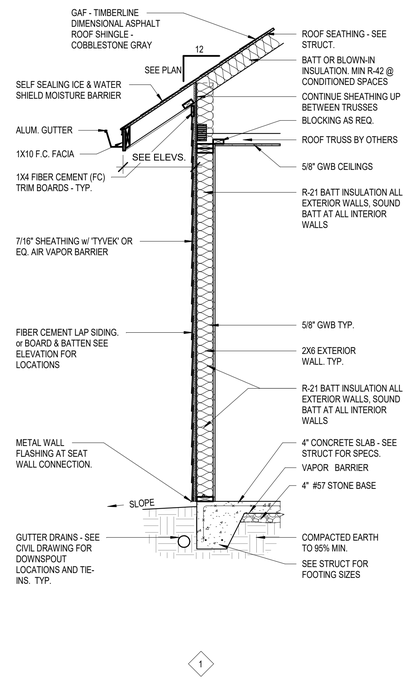

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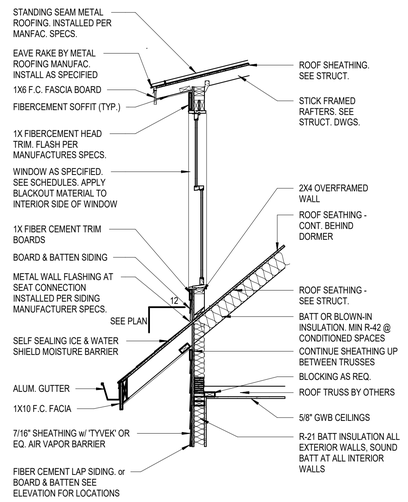
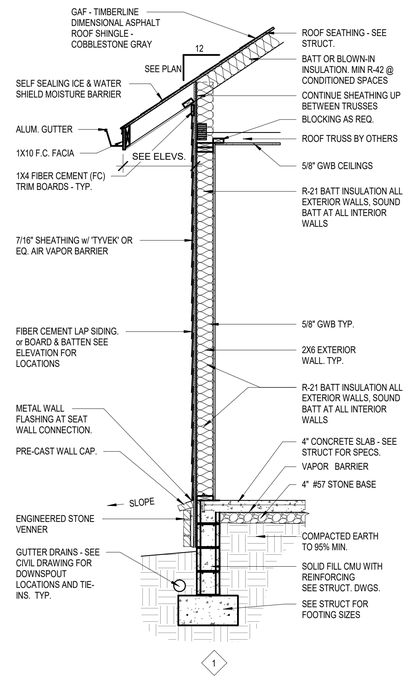


WALL SECTION NOTES

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.



1

2 A4.0 Detail - Stone Veneer on Sheathing

12" = 1'-0"

1 A4.0 Section - Typ. Exterior Walls

1/2" = 1'-0"

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SHEET DISCRIPTION
WALL SECTIONS & DETAILS

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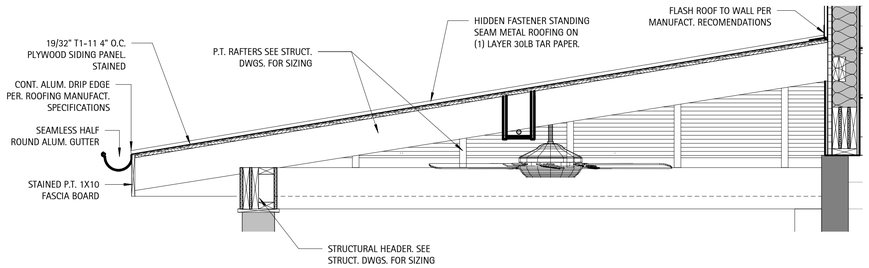
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

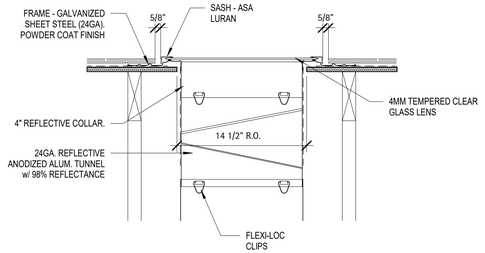
SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

A4.0



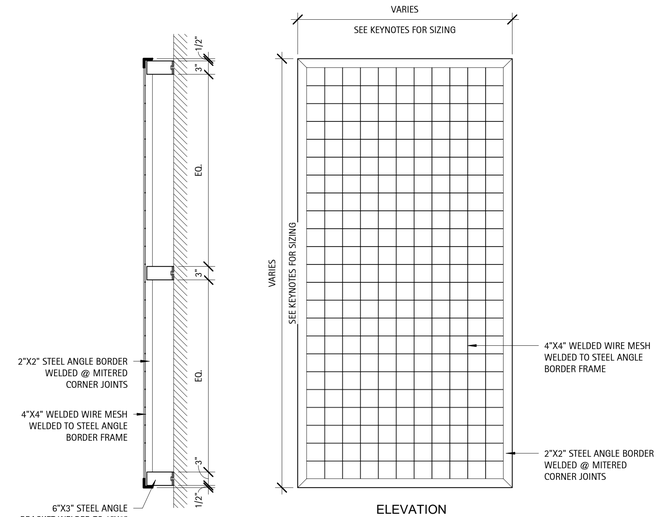
10 A4.1 Detail - Typ. Porch Roof Framing

3/4" = 1'-0"



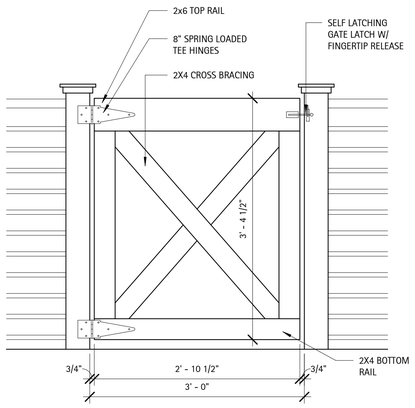
9 A4.1 Detail - Skylight Roof Flashing

1 1/2" = 1'-0"



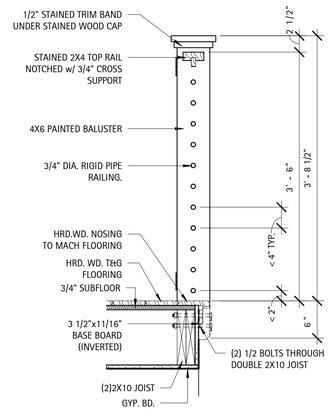
4 A4.1 Detail - Wall Trellis

3/4" = 1'-0"



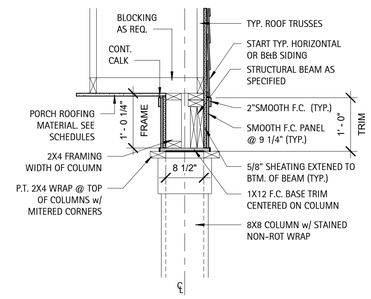
8 A4.1 Detail - Loft Gate

1" = 1'-0"



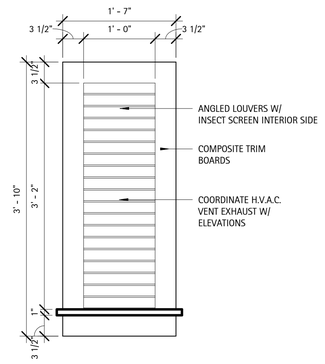
7 A4.1 Detail - Loft Railing

1" = 1'-0"



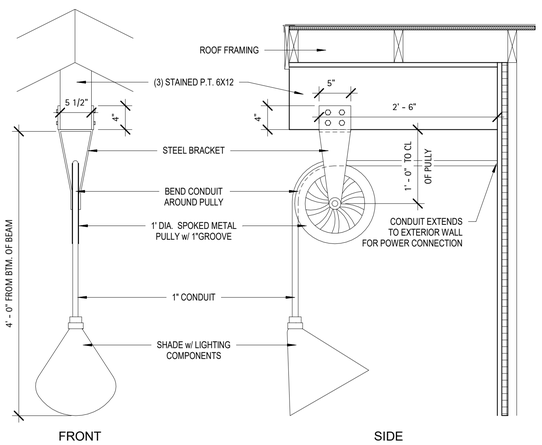
6 A4.1 Detail - Typical Trim Band

3/4" = 1'-0"



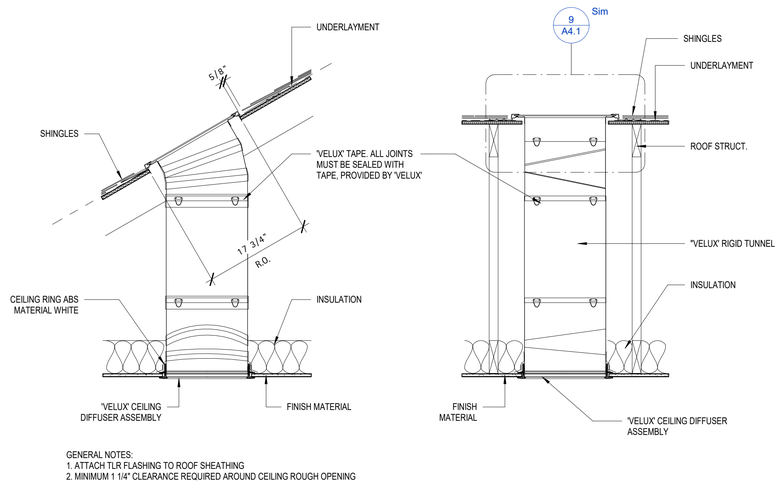
5 A4.1 Detail - Gable Vents

1" = 1'-0"



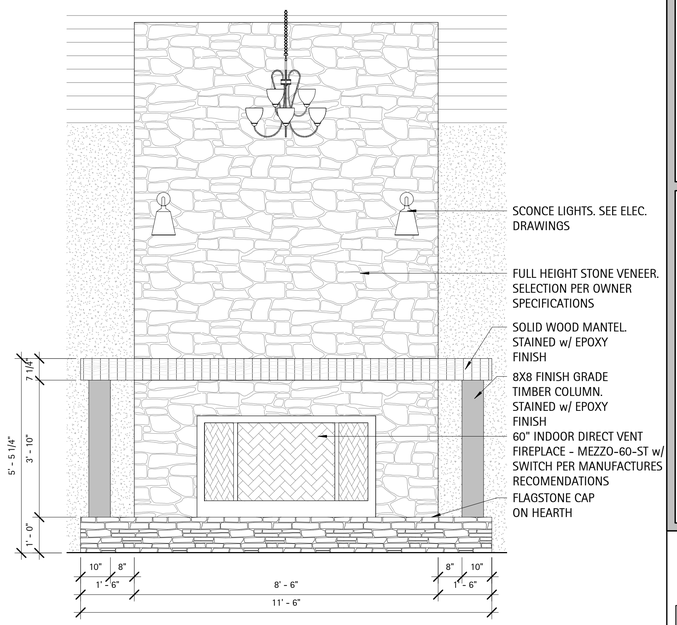
3 A4.1 Detail - Decorative Gable Light

1" = 1'-0"



2 A4.1 Detail - Skylight

1" = 1'-0"



1 A4.1 Elevation - Great Room Fireplace

1/2" = 1'-0"

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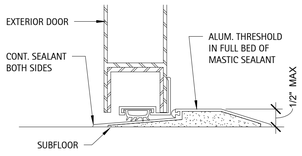
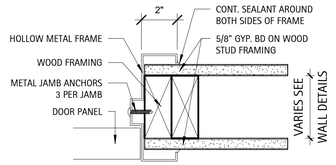
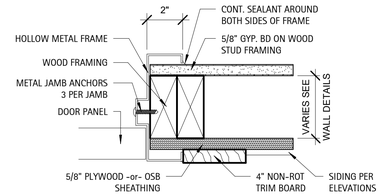


EXTERIOR DOORS THRESHOLD



INTERIOR DOOR JAMB



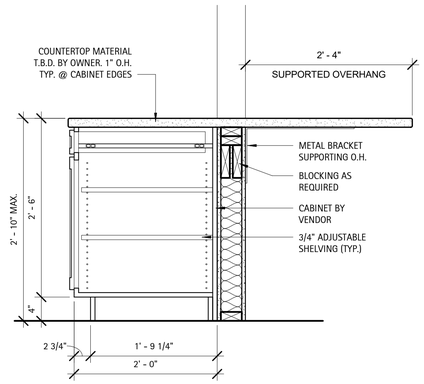
EXTERIOR DOOR JAMB

8 A4.2 Detail - Typ. Threshold

6" = 1'-0"

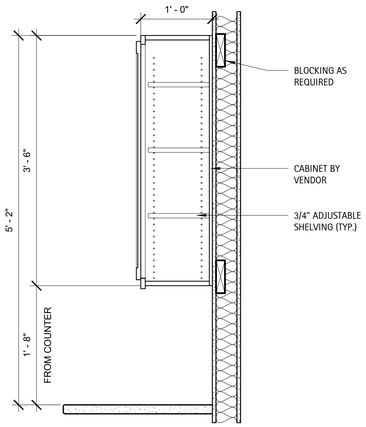
7 A4.2 Detail - Typ. Door Jambs

3" = 1'-0"



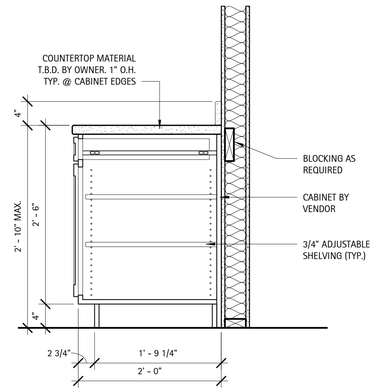
6 A4.2 Detail - Cabinets @ Bar Overhang

1" = 1'-0"



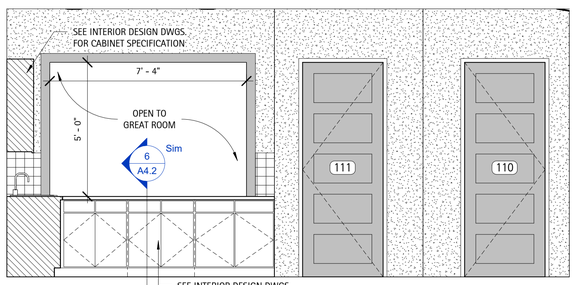
5 A4.2 Detail - Typ. Upper Cabinets

1" = 1'-0"



4 A4.2 Detail - Typ. Base Cabinets

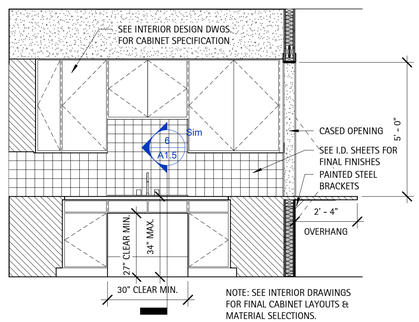
1" = 1'-0"



NOTE: SEE INTERIOR DRAWINGS FOR FINAL CABINET LAYOUTS & MATERIAL SELECTIONS. CONTRACTOR/OWNER TO VERIFY SIZE/LAYOUT PRIOR TO PURCHASE

3 A4.2 Millwork - Catering Opening Side

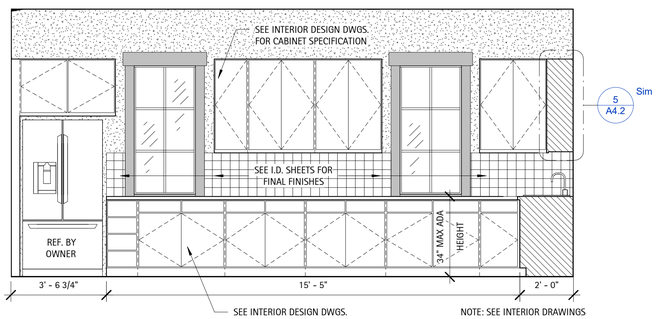
3/8" = 1'-0"



NOTE: SEE INTERIOR DRAWINGS FOR FINAL CABINET LAYOUTS & MATERIAL SELECTIONS. CONTRACTOR/OWNER TO VERIFY SIZE/LAYOUT PRIOR TO PURCHASE

2 A4.2 Millwork - Catering Sink Side

3/8" = 1'-0"



NOTE: SEE INTERIOR DRAWINGS FOR FINAL CABINET LAYOUTS & MATERIAL SELECTIONS. CONTRACTOR/OWNER TO VERIFY SIZE/LAYOUT PRIOR TO PURCHASE

1 A4.2 Millwork - Catering Ref. Side

3/8" = 1'-0"

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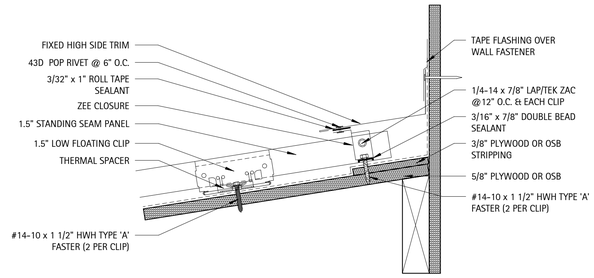
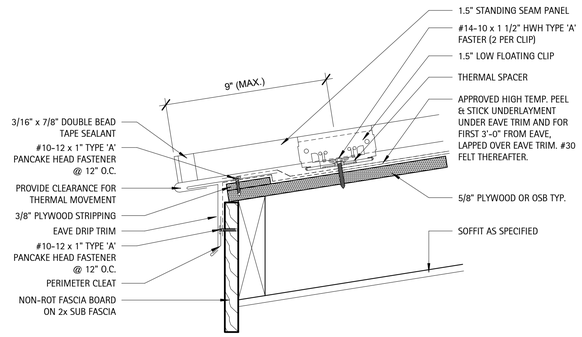
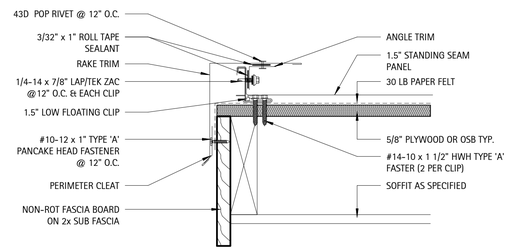
A4.2



HIGH SIDE TIE-IN



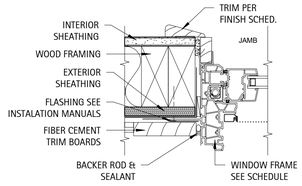
EAVE WITHOUT GUTTER

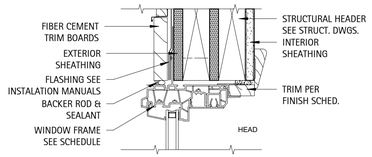


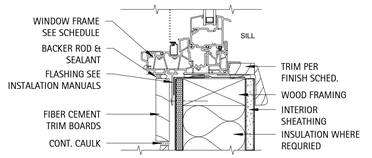
TYPICAL RAKE TRIM

3 A5.0 Detail - Standing Seam Roof

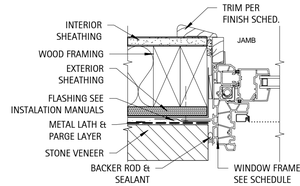
3" = 1'-0"

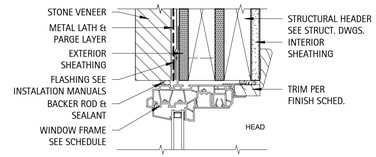


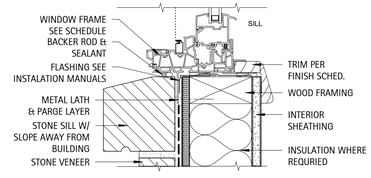




WINDOW TREATMENT @ SIDING



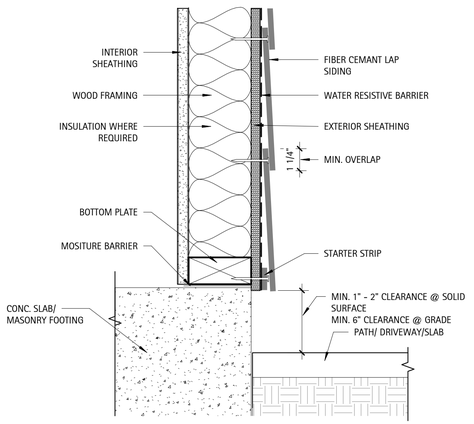




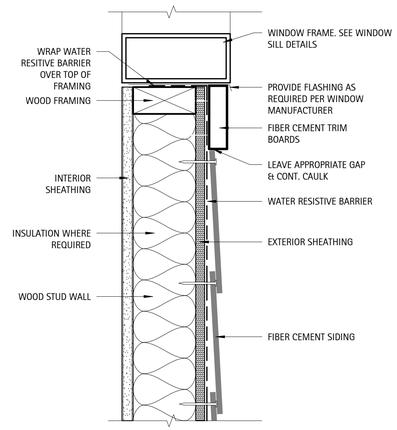
WINDOW TREATMENT @ STONE

2 A5.0 Detail - Window Treatments

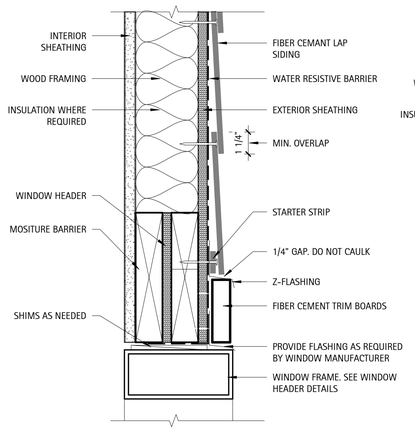
3" = 1'-0"



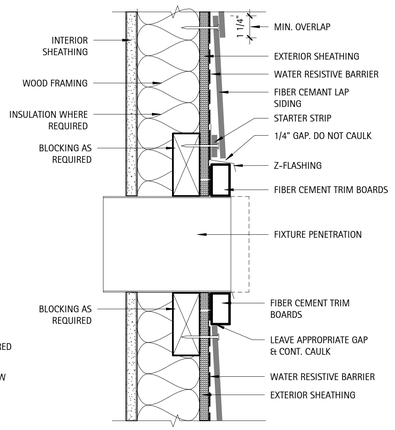
SIDING @ FOUNDATION



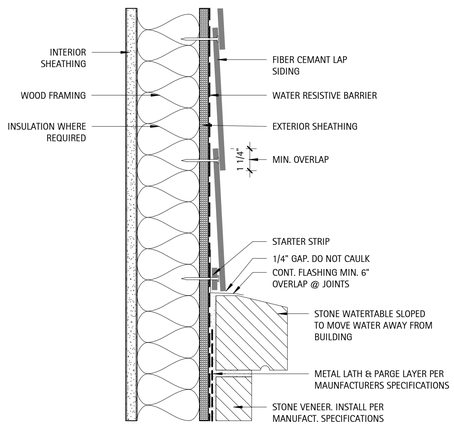
TYPICAL WINDOW SILL TRIM



TYPICAL WINDOW HEADER TRIM



TYPICAL FIXTURE TRIM



SIDING @ STONE VENEER

1 A5.0 Detail - Fiber Cement Siding

3" = 1'-0"

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Fuquay-Varina, NC

A5.0

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.

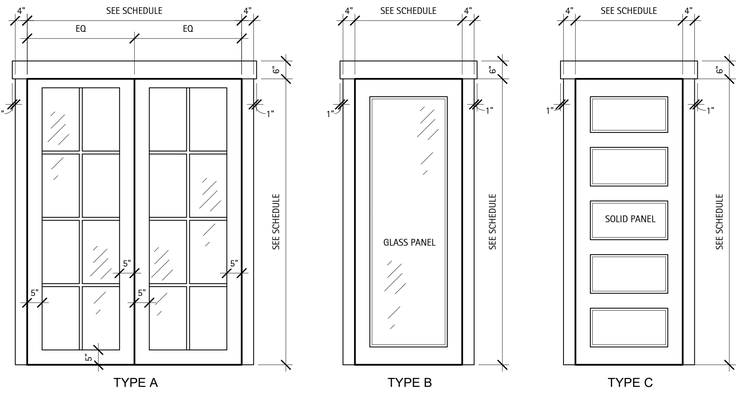
8 All interior egress doors and a minimum of one exterior egress door shall be readible openalbe from the egress side without use of a key or special knowledge.

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)

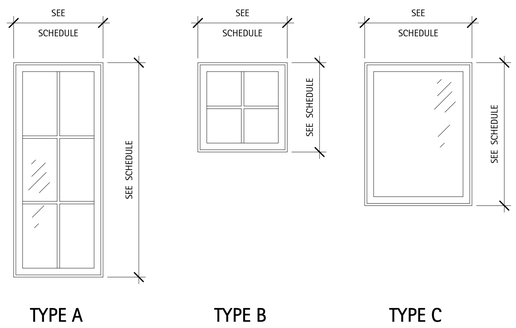
12 Door closers shall be LCN series 4040 or equivalent



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

3 A6.0 Detail - Door Frames

1/2" = 1'-0"



2 A6.0 Detail - Window Types

1/2" = 1'-0"

CLUB HOUSE ROOM SCHEDULE

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Ceiling Height	Crown	Comments
001	Front Covered Porch				STAINED T1-11	SLOPED		
100	Entry Vestibule			PAINTED GWB	PAINTED GWB	11'-0"		
101	Great Room			PAINTED GWB	TOUNGE & GROOVE	20'-0"		
102	Sales / Conference Room			PAINTED GWB	PAINTED GWB	10'-0"		
103	Courtyard Vestibule			PAINTED GWB	PAINTED GWB	10'-0"		
104	Mens Room			M.R. PAINTED GWB	M.R. PAINTED GWB	10'-0"		
105	Womens Room			M.R. PAINTED GWB	M.R. PAINTED GWB	10'-0"		
106	Poolside Covered Porch				TOUNGE & GROOVE	SLOPED		
107	Fitness Vestibule			PAINTED GWB	PAINTED GWB	10'-0"		
108	Fitness Room			PAINTED GWB	PAINTED GWB	12'-0"		
109	UniSex			M.R. PAINTED GWB	M.R. PAINTED GWB	12'-0"		
110	Catering			M.R. PAINTED GWB	M.R. PAINTED GWB	10'-0"		
111	Closet			PAINTED GWB	PAINTED GWB	10'-0"		
200	Loft			PAINTED GWB	STAINED T1-11	8'-0"		

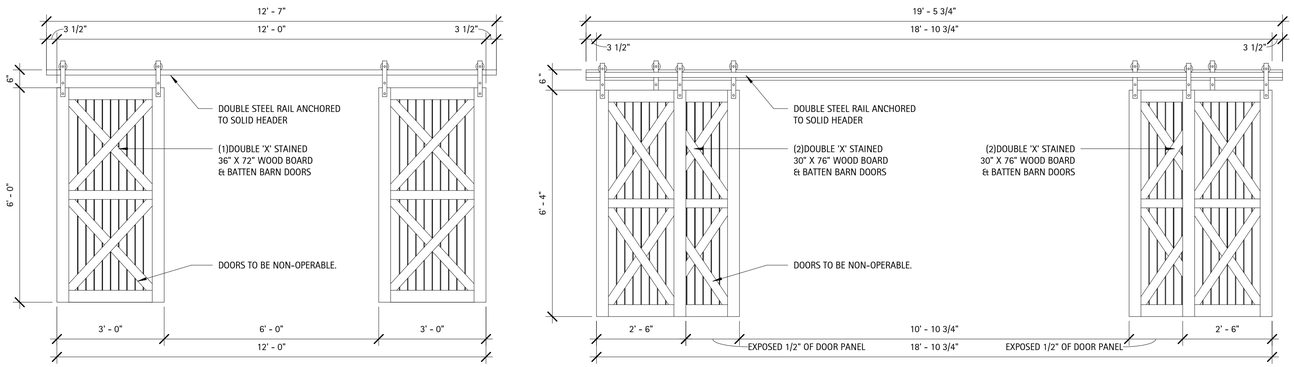
CLUBHOUSE DOOR SCHEDULE

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	
102	TYPE B	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	WOOD/GLASS	PAINT	METAL	-	No	No	No	Yes	No	No	No	No	No	No	No	No	
103	TYPE C	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	S.C. WOOD	PAINT	METAL	-	Yes	No	No	No	No	No	No	No	No	No	No	Yes	
104	TYPE C	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	S.C. WOOD	PAINT	METAL	-	Yes	No	No	No	No	Yes	No	Yes	No	No	No	No	
105	TYPE C	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	S.C. WOOD	PAINT	METAL	-	Yes	No	No	No	No	Yes	No	Yes	No	No	No	No	
107	TYPE C	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	S.C. WOOD	PAINT	METAL	-	Yes	No	No	No	No	No	No	No	No	No	No	Yes	
108	TYPE B	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	S.C. WOOD	PAINT	METAL	-	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes	
109	TYPE C	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	S.C. WOOD	PAINT	METAL	-	No	No	Yes	No	No	No	No	Yes	No	No	No	No	
110	TYPE C	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	S.C. WOOD	PAINT	METAL	-	No	No	No	Yes	No	No	No	No	No	No	No	No	
111	TYPE C	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	S.C. WOOD	PAINT	METAL	-	No	No	No	No	Yes	No	No	No	No	No	No	No	
E1	TYPE A	6' - 0"	8' - 0"	0' - 2"	6' - 2"	8' - 1"	MTL/GLASS	PAINT	METAL	-	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	
E2	TYPE B	3' - 0"	8' - 0"	0' - 2"	3' - 2"	8' - 1"	MTL/GLASS	PAINT	METAL	-	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
E3	TYPE A	6' - 0"	8' - 0"	0' - 2"	6' - 2"	8' - 1"	MTL/GLASS	PAINT	METAL	-	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	
E4	TYPE A	6' - 0"	8' - 0"	0' - 2"	6' - 2"	8' - 1"	MTL/GLASS	PAINT	METAL	-	Yes	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	
E5	TYPE C	3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	INSUL. MTL.	PAINT	METAL	-	Yes	No	No	No	No	Yes	No	Yes	Yes	Yes	No	Yes	
E6		3' - 0"	8' - 0"	0' - 1 3/4"	3' - 2"	8' - 1"	INSUL. MTL.	PAINT	METAL	-													
E7	TYPE B	3' - 0"	8' - 0"	0' - 2"	3' - 2"	8' - 1"	MTL/GLASS	PAINT	METAL	-	No	No	No	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	

Grand total: 16

CLUBHOUSE WINDOW SCHEDULE

Mark	Count	Size		Rough Width	Rough Height	Type	Finish	Head Height	Comments
		Width	Height						
A1	4	2' - 6"	5' - 0"	2' - 6 1/2"	5' - 0 1/2"	TYPE A			
A2	18	2' - 6"	6' - 0"	2' - 6 1/2"	6' - 0 1/2"	TYPE A			
A3	4	3' - 0"	6' - 0"	3' - 0 1/2"	6' - 0 1/2"	TYPE A			
B1	20	2' - 6"	2' - 6"	2' - 6 1/2"	2' - 6 1/2"	TYPE B			
B2	4	2' - 6"	1' - 6"	2' - 6 1/2"	1' - 6 1/2"	TYPE B			
B3	2	3' - 0"	1' - 6"	3' - 0 1/2"	1' - 6 1/2"	TYPE B			
B4	2	6' - 0"	1' - 6"	6' - 0 1/2"	1' - 6 1/2"	TYPE B			
I1	2	3' - 0"	4' - 0"	3' - 0 1/2"	4' - 0 1/2"	TYPE C			INTERIOR WINDOW
S1	6	1' - 2"		1' - 2 1/2"	1' - 5 3/4"	VELUX - TLR 014 - Alum. Sky Tunnel			



1 A6.0 Detail - Track Shutters

1/2" = 1'-0"

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

PERRY GLENN COX
REGISTERED ARCHITECT
9630
NORTH CAROLINA
APEX, N.C.
3MAR21

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www.pcoxdesign.com

DATE
REVISION
NO.

SHEET DISCRIPTION
SCHEDULES & DETAILS

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

A6.0

APPENDIX B BUILDING CODE SUMMARY

PROJECT SUMMARY: 1,147 sf Community Post Office and Pool Pump House

Building Description: A-3 UNHEATED - PRIVATE RECREATIONAL FACILITY WITH POOL FOR RESIDENCE ONLY

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:	TMTLA Asssociates / John G. Baker	1994	919-484-8880
Electrical:	Killian Engineering / Jacob Hamilton	048012	252-438-8778
Fire Alarm:			
Plumbing:	Killian Engineering / Jacob Hamilton	048012	252-438-8778
Mechanical:	Killian Engineering / Jacob 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: A. R. Hine / Alan R. Hine, PE	7011	336-769-4900

Note: Special Inspections and Inspectors to be listed at end of Appendix B

Building Code: [X] 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 Chapter 34 [ ] 1995 Existing Building Code

New Building: [X] New Building [ ] Addition [ ] Shell Building [ ] Alteration to Shell [ ] First Time Interior Completion

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

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

Original Occupancy:
Proposed Occupancy: A-3 Assembly

OCCUPANCY INFORMATION

Primary Occupancies:

Assembly: [ ] A-1 [ ] A-2 [ ] A-3 [ ] A-4 [ ] A-5

Hazardous: [ ] H-1 [ ] H-2 [ ] H-3 [ ] H-4 [ ] H-5

Institutional: [ ] I-1 Condition [ ] 1 [ ] 2 / [ ] I-2 Condition [ ] 1 [ ] 2 / [ ] I-3 Condition [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 / [ ] I-4

Business: [X]

Educational: [ ]

Factory: [ ] F-1 [ ] F-2

Mercantile: [ ]

Residential: [ ] R-1 [ ] R-2 [ ] R-3 [ ] R-4

Storage: [ ] S-1 Moderate [ ] S-2 Low [ ] High-piled [ ] Parking Garage: [ ] Open [ ] Enclosed [ ] Repair Garage

Utility and Miscellaneous [■]

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

Mixed Occupancy: [X] No [ ] Yes Separation: ___Hr. Exception:___

[ ] Non-Separated Mixed Occupancy (508.3)- The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

[ ] Separated Mixed Occupancy (508.3.3) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

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

_____ + _____ +... = _____ ≤ 1

ALLOWABLE AREA AND HEIGHT CALCULATIONS

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

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

NO INCREASE REQUIRED

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

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

BOTH BUILDING AND TENANT MUST BE INDICATED ON CHART BELOW

Story No.	DISCRIP. & USE	BLDG AREA PER STORY (ACTUAL SF)	TABLE 506.2 ALLOWABLE AREA (SF)	AREA FOR INCREASE FRONTAGE	SPRINKLER INCREASE	ALLOWABLE FLOOR AREA	RATE OF ACTUAL/ ALLOWABLE	MAXIMUM BUILDING AREA	SEPARATION RATING REQUIRED
Main Level	B	1147	9000	N/A	N/A	N/A	0.13	9000 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" FT	N/A	H= 21'-8"	403.3.1
Building Height in Stories	S= 2	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 [X] V-B

Mixed construction: [ ] Yes [X] No Types _____

Sprinklers: [ ] Yes [X] No [ ] NFPA 13 [ ] NFPA 13R [ ] Partially Sprinklered [ ] Special Suppression

Standpipes: [ ] Yes [X] No
Fire District: [ ] Yes [X] No
Building Height: 30.83 Feet
Basement: [ ] Yes [X] No
Mezzanine: [ ] Yes [X] No
High Rise: [ ] Yes [X] No

Class: [ ] I [ ] II [ ] III [ ] Wet [ ] Dry
(Appendix D) [ ] Floor Hazard
1 Story

Life Safety Plan Sheet # (if provided): G0.3

Gross Building Area:

FLOOR	EXISTING (SQFT)	NEW (SQFT)	SUB-TOTAL
FIRST FLOOR		1,147	1,147

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		0	0				
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**		0	0				
Roof Ceiling Assembly		0	0				
Columns Supporting Roof		0	0				
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 PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)
>30'	UP,NS	NO LIMIT	NO LIMIT

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

N/A

LIFE SAFETY SYSTEMS REQUIREMENTS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

Emergency Lighting: [X] Yes [ ] No
Exit Signs: [X] Yes [ ] No
Fire Alarm: [ ] Yes [X] No
Smoke Detection Systems: [ ] Yes [X] No
Panic Hardware: [ ] Yes [X] 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
[X] Exit access travel distance (1017)
[X] Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
[X] Dead end lenghts (1020.4)
[X] Clear exit widths for each exit door
[X] 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
[X] Location of doors with panic hardware (1010.1.10)
[ ] Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
[ ] Location of doors with electromagnetic egress locks (1010.1.9.9)
[ ] Location of doors equipped with hold-open devices
[ ] Location of emergency escape windows (1030)
[ ] The square footage of each fire area (202)
[ ] The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
[ ] Note any code exceptions or table notes that may have been utilized regarding the items above

EXIT REQUIREMENTS

NUMBER AND ARRANGEMENT OF EXITS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

FLOOR, ROOM AND/OR SPACE DESIGNATION	MINIMUM NUMBER OF EXITS		TRAVEL DISTANCE		ARRANGEMENT MEANS OF EGRESS	
	REQUIRED	SHOWN ON PLANS	ALLOWABLE TRAVEL DISTANCE (TABLE 1016.1)	ACTUAL TRAVEL DISTANCE SHOWN ON PLANS	REQUIRED DISTANCE BETWEEN EXIT DOORS	ACTUAL DISTANCE SHOWN ON PLANS
POST OFFICE	1	2	100'	45'-10"	N/A	N/A

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)

OCCUPANT LOAD AND EXIT WIDTH POST OFFICE

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
Post Office	568 SF	100 SF	6	0.2		1.2		144	
Chem Room	51 SF	300 SF	1	0.2		0.2			
Pump Room	193 SF	300 SF	1	0.2		0.2		36	
Furniture Storage	147 SF	300 SF	1	0.2		0.2		60	
Courtyard	1876 SF								
Grand total	2836 SF		9	0.8		1.8		240	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)

PLUMBING FIXTURE REQUIREMENTS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

OCCUPANCY	WATERCLOSETS: Male	Female	Unisex	URINALS	LAVATORIES: Male	Female	Unisex	SHOWERS/ TUBS	DRINKING FOUNTAINS: Regular	Accessible
A-3[1]	2	6	1	2	3	3	1	2	3	3
Total Required	2	7	1	2	3	3	1	2	1	1
Total Provided	2	6	1	2	3	3	1	2	3	3

1 Calculations are total amentity site plumbing requirements

SEASONAL DRAIN DOWN BLDG.

859 PERSONS / 2 = 430 M / 430F
WATERCLOSETS: 430 MALE / 125 = 4 WC = 2 WC & 2 URINAL
430 FEMALE /65 = 7 WC = 6 WC + 1 FAMILY
LAVATORY: 430 MALE / 200 = 3 LAV. = 3 LAV
430 FEMALE / 200 = 3 LAV. =3 LAV + 1 FAMILY

STRUCTURAL DESIGN LOADS

THIS SECTION IS REQUIRED FOR ALL PROJECTS

DESIGN LOADS:

Importance Factors: Snow (I_s) _____ / Seismic (I_e) _____

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

Ground Snow Load: _____ psf

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

SEISMIC DESIGN CATEGORY: A B C D

Provide the following Seismic Design Parameters:

Risk Category (Table1604.5)

Spectral Respons _____%g

Site Classific B C D

Basic Structural System: Field Test / Presumptive / Historical Data
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 _____

SEE STRUCTURAL DWGS.

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

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

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

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

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

List equipment efficiencies: _____

SEE MECHANICAL DWGS.

ACCESSIBLE PARKING

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

SEE CIVIL DWGS.

ELECTRICAL SUMMARY

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

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code ASHRAE 90.1 / Performance / 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 ... space by space)
Total exterior ...

SEE ELECTRICAL DWGS.

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
C406.2 More Efficient HVAC Equipment Performance
C406.3 Reduced Lighting Power Density
C406.4 Enhanced Digital Lighting Controls
C406.5 On-site Renewable Energy
C406.6 Dedicated Outdoor Air System
C406.7 Reduced Energy Use in Service Water Heating

ENERGY SUMMARY

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

ENERGY REQUIREMENTS:
The following data shall be considered minimum ... the energy code shall also be provided. Each designer ... project information for the data sheet. If the performance ... for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: [ ] No [ ] Yes (The remainder of this section is not applicable)

SPECIAL APPROVALS

(Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)
HARNETT COUNTY HEALTH DEPARTMENT
TOWN OF FUQUAY-VARINA

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

PERRY GLENN COX
REGISTERED ARCHITECT
9630
NORTH CAROLINA
APEX, N.C.
3/MAR/21

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NO. | REVISION | DATE

SHEET DISCRIPTION
POST OFFICE CODE SUMMARY

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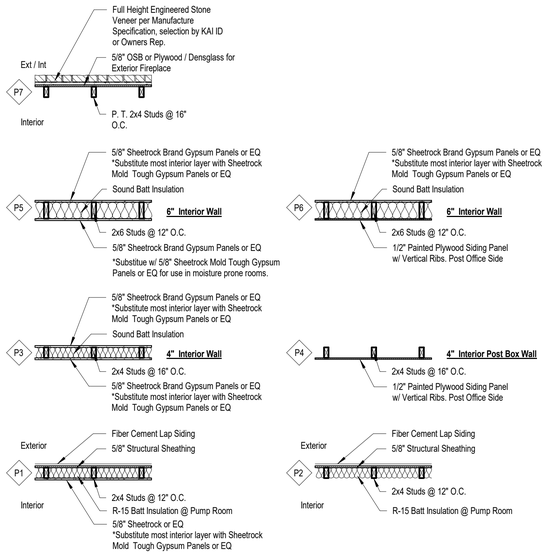
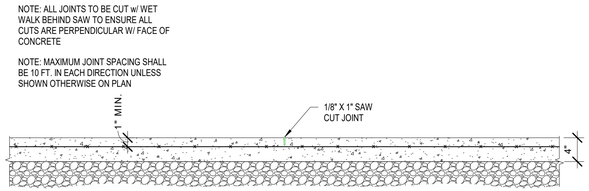
SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

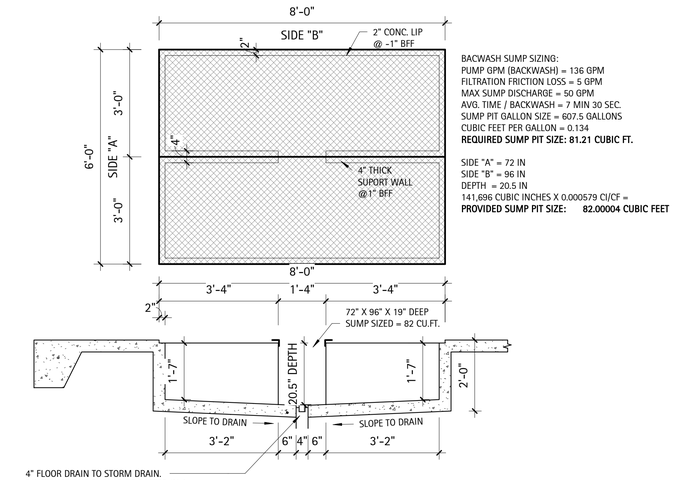
A7.0



WALL TYPE DETAILS



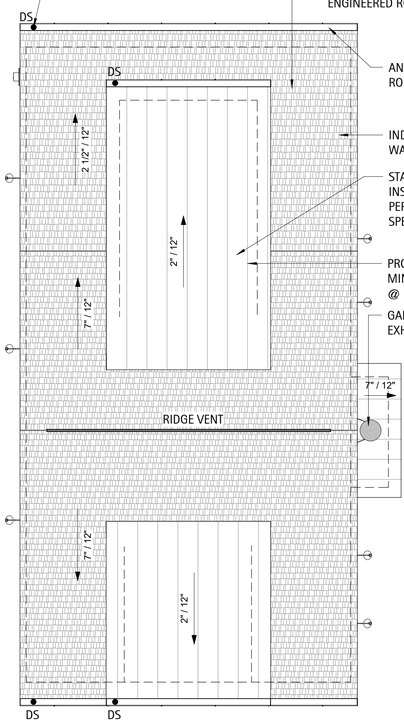
6 A7.1 Detail - Typ. Sawcut Control Joint
1" = 1'-0"



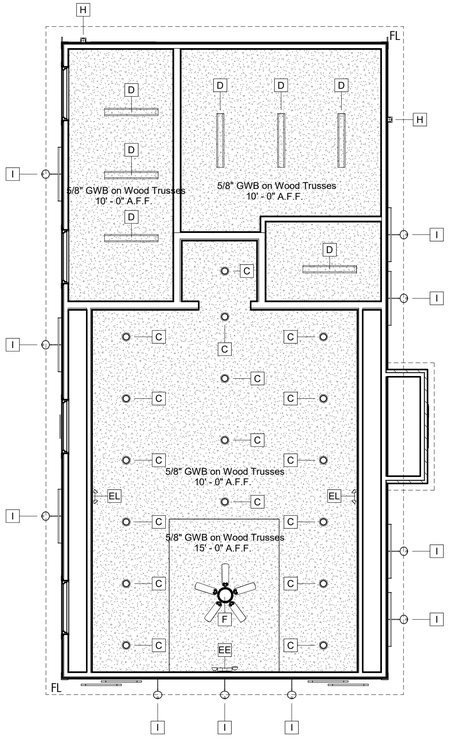
BACWASH SUMP SIZING:
PUMP GPM (BACKWASH) = 136 GPM
FILTRATION FRICTION LOSS = 5 GPM
MAX SUMP DISCHARGE = 50 GPM
AVG. TIME / BACKWASH = 7 MIN 30 SEC.
SUMP PIT GALLON SIZE = 607.5 GALLONS
CUBIC FEET PER GALLON = 0.134
REQUIRED SUMP PIT SIZE: 81.21 CUBIC FT.

SIDE "A" = 72 IN
SIDE "B" = 96 IN
DEPTH = 20.5 IN
141,696 CUBIC INCHES X 0.000579 CI/CF =
PROVIDED SUMP PIT SIZE: 82.00004 CUBIC FEET

5 A7.1 Detail - Sump Pit
1/2" = 1'-0"



4 A7.1 Post Office - Roof Plan
3/16" = 1'-0"



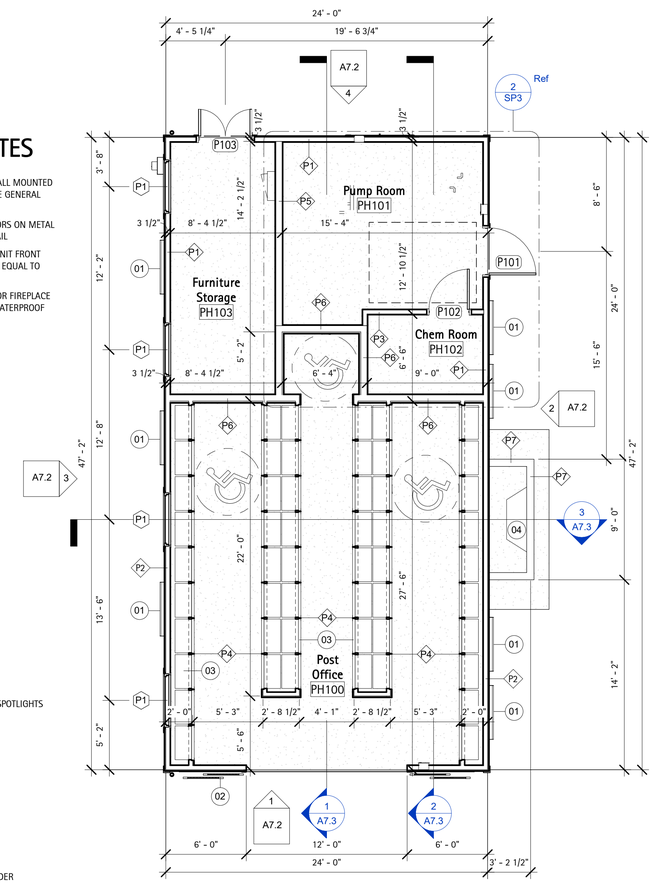
KEYNOTES

01 4'-0" x 8'-0" WALL MOUNTED VINE TRELLIS SEE GENERAL DETAILS
02 FIXED BARN DOORS ON METAL TRACK. SEE DETAIL
03 'FLORENCE' 20 UNIT FRONT LOAD MAIL BOX. EQUAL TO '4C16D-20'
04 42" GAS OUTDOOR FIREPLACE W/ LOGS AND WATERPROOF SWITCH

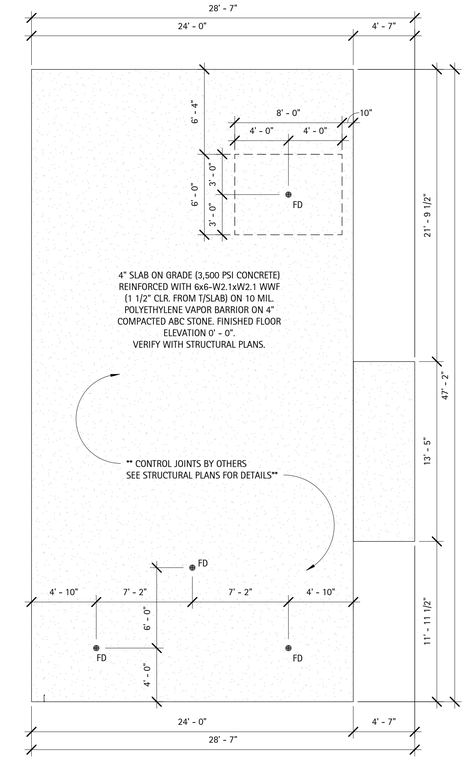
MD - MOTION DETECTOR LOCATE IN CEILING
EE - EMERGENCY EXIT SIGN w/ SPOTLIGHTS
EL - EMERGENCY LIGHT
FL - FLOOD LIGHTS
A - DECORATIVE LIGHT
B - VANITY LIGHT
C - CAN LIGHT
D - 1X4 LED TROFFER
E - DECORATIVE WALL SCONCE
F - FAN w/o LIGHT KIT
G- PENDANT LIGHT
H- EXTERIOR WALL SCONCE
I - EXTERIOR GOOSENECK LIGHT
J - FLUSH MOUNT

* VERIFY ALL SELECTIONS WITH OWNER / GC PRIOR TO ORDER

3 A7.1 Post Office - Main Level
3/16" = 1'-0"



2 A7.1 Post Office - Main Level
3/16" = 1'-0"



1 A7.1 Post Office - Foundation Plan
3/16" = 1'-0"

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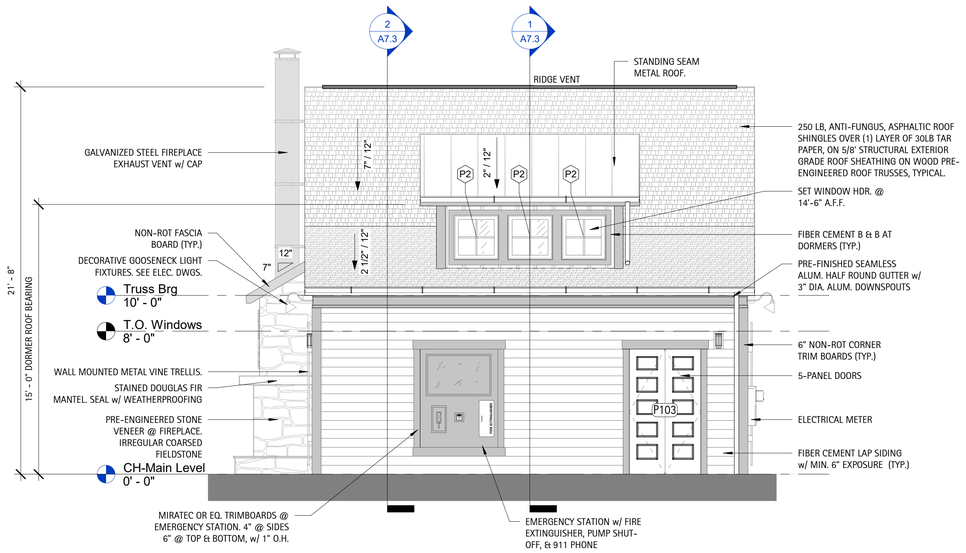
NO.	REVISION	DATE

SHEET DISCRIPTION
POST OFFICE PLANS

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

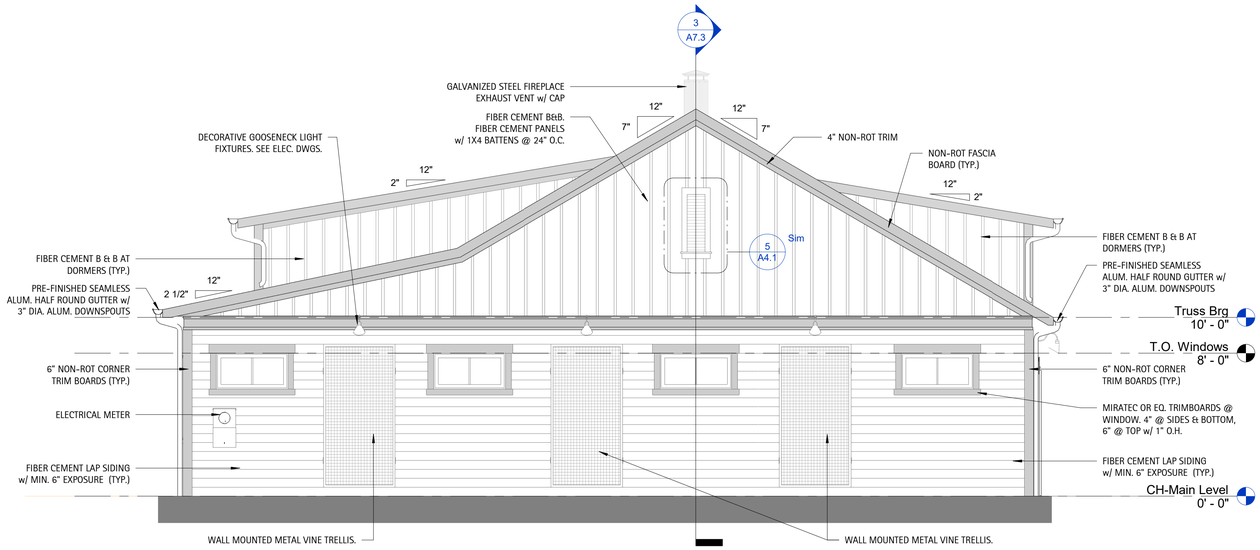
SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

A7.1



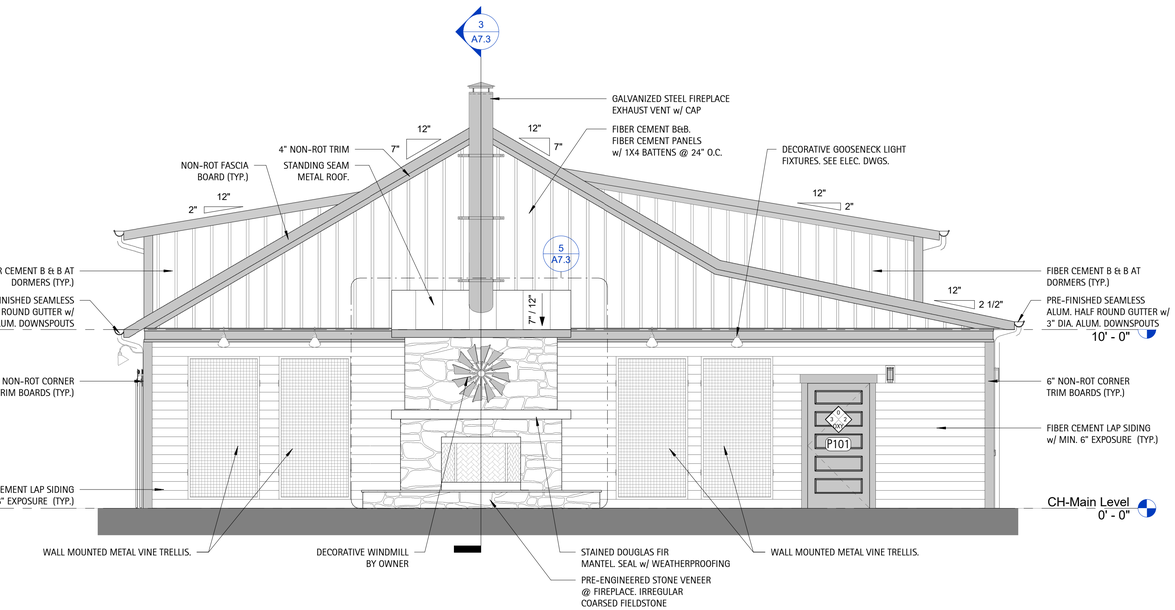
4 A7.2 Rear Elevation

1/4" = 1'-0"



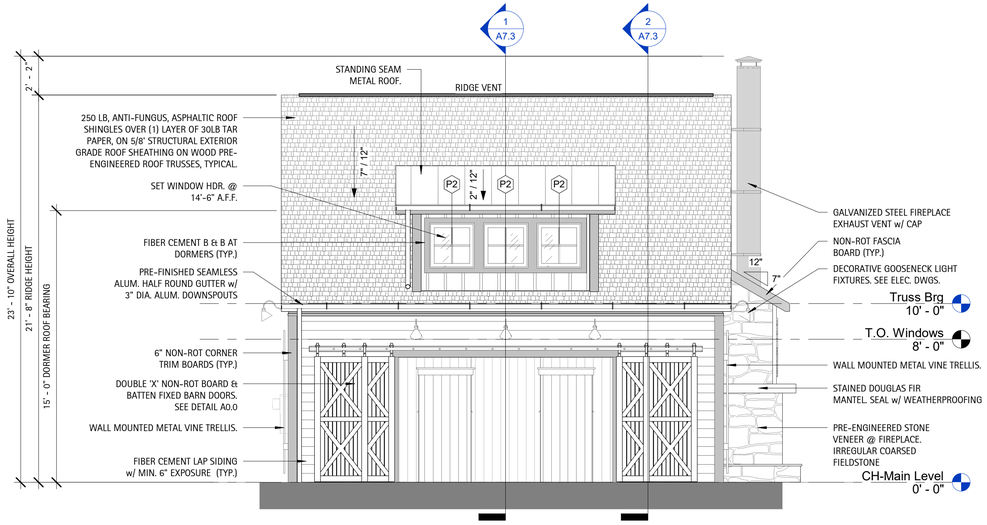
3 A7.2 Left Side Elevation

1/4" = 1'-0"



2 A7.2 Right Side Elevation

1/4" = 1'-0"



1 A7.2 Front Elevation

1/4" = 1'-0"

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SHEET DISCRIPTION
POST OFFICE ELEVATIONS

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
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CHECKED BY:	PGC/DSC

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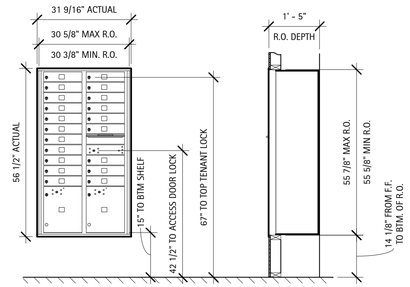
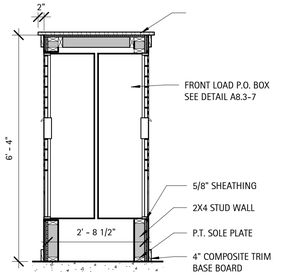
A7.2



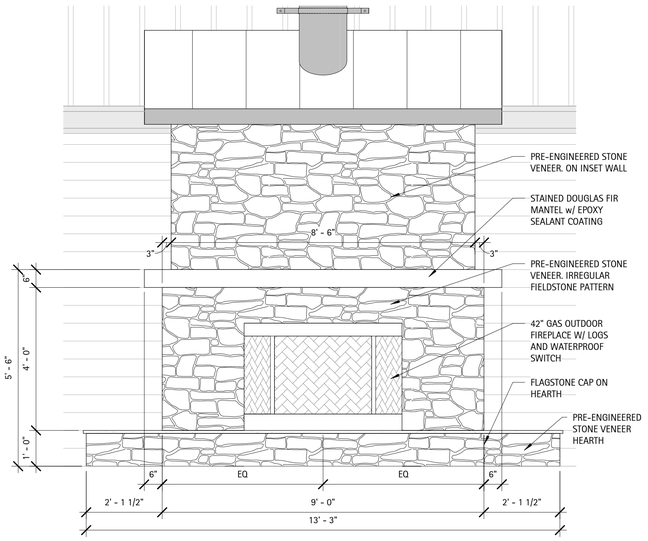
7 A7.3 Detail - Front Load Mailbox

1/2" = 1'-0"



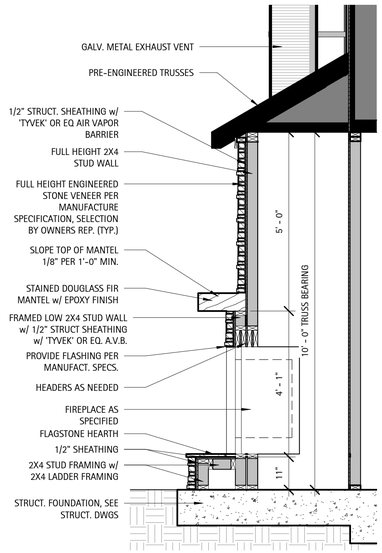
6 A7.3 Section - Enlarged Postbox Island

1/2" = 1'-0"



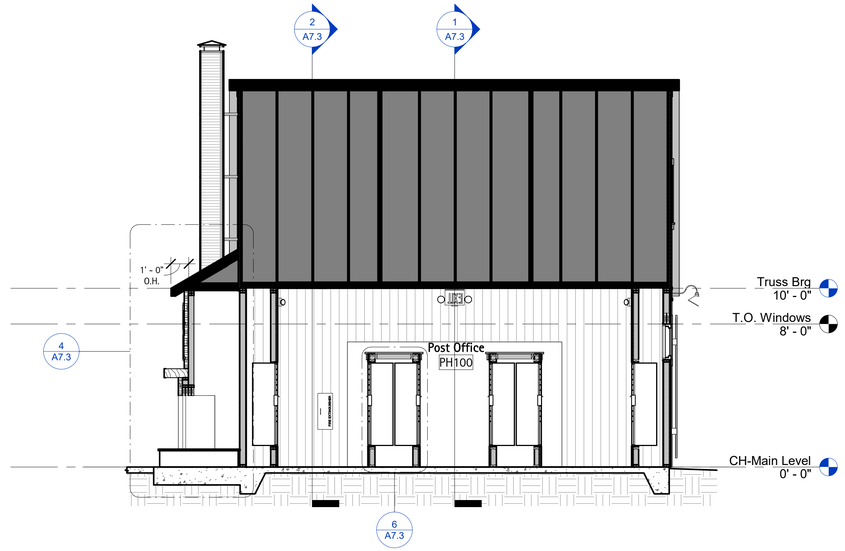
5 A7.3 Elevation - Enlarged Exterior Fireplace

1/2" = 1'-0"



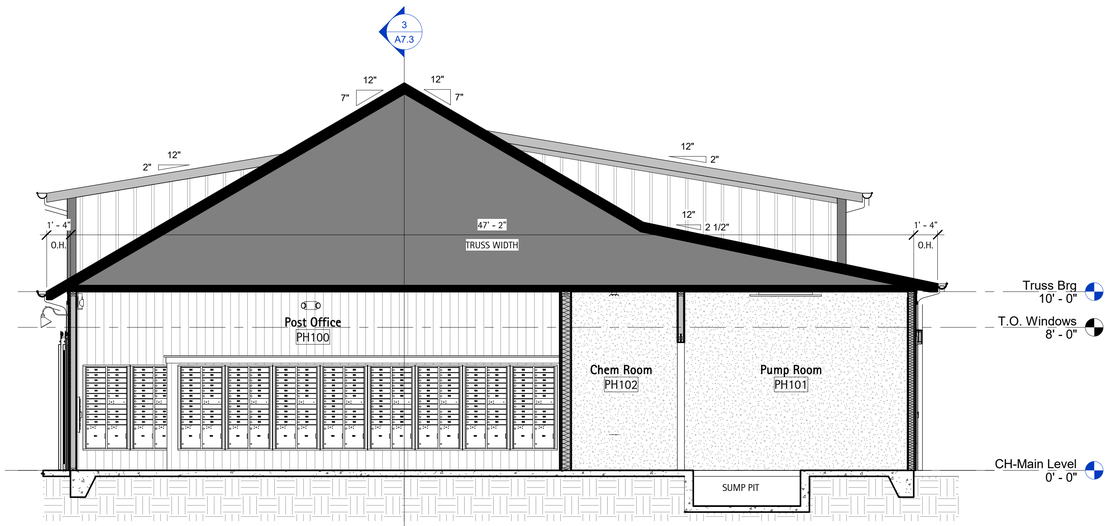
4 A7.3 Section - Exterior Fireplace Framing

1/2" = 1'-0"



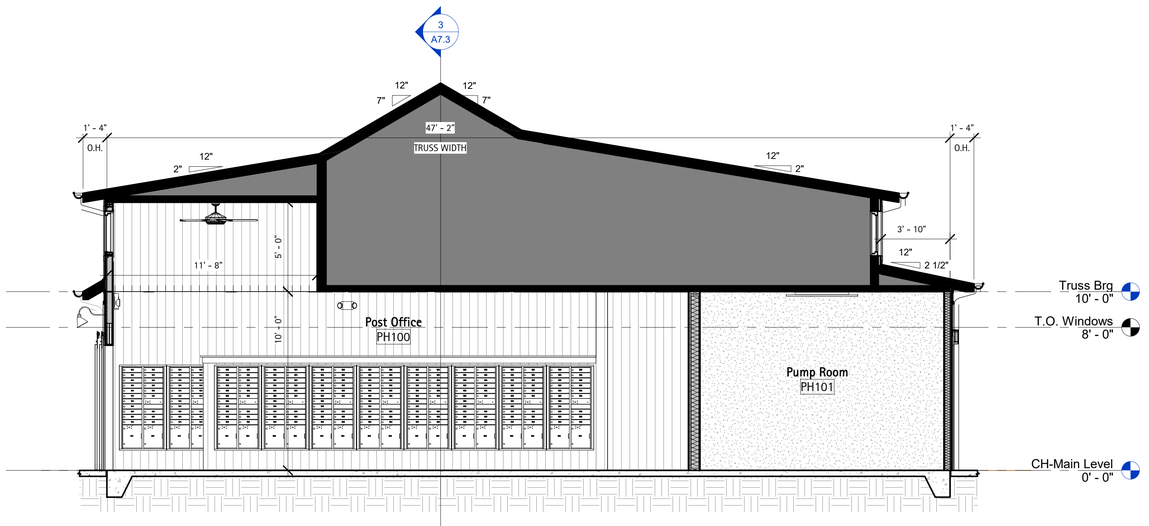
3 A7.3 Section - Through Ridge

1/4" = 1'-0"



2 A7.3 Section - Through Pump Room

1/4" = 1'-0"



1 A7.3 Section - Through Dormer

1/4" = 1'-0"

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SHEET DISCRIPTION
POST OFFICE SECTIONS & DETAILS

PROJECT #:	2018.037
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A7.3

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

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.

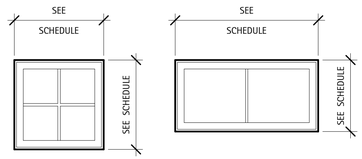
POST OFFICE ROOM SCHEDULE

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Ceiling Height	Crown	Comments
PH100	Post Office	SEALED CONC.- LIGHT BROOM FINISH	1X6 FIBER CEMENT	STAINED T1-11	M.R. PAINTED GWB	10'-0"		
PH101	Pump Room	SEALED CONC.- LIGHT BROOM FINISH	1X6 FIBER CEMENT	M.R. PAINTED GWB	M.R. PAINTED GWB	10'-0"		
PH102	Chem Room	SEALED CONC.- LIGHT BROOM FINISH	1X6 FIBER CEMENT	M.R. PAINTED GWB	M.R. PAINTED GWB	10'-0"		
PH103	Furniture Storage	SEALED CONC.- LIGHT BROOM FINISH	1X6 FIBER CEMENT	M.R. PAINTED GWB	M.R. PAINTED GWB	10'-0"		

POST OFFICE 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	Deadbo lt	Panic Hardware	Close r	Weather strip	Thresh old	FOB Access	Time Lock	
P100	TYPE C	12' - 0"	7' - 0"	0' - 1 3/4"	12' - 2"	7' - 1"	WOOD	STAINED	METAL	-	No	No	No	No	No	No	No	No	No	No	No	No	FIXED IN OPEN POSITION
P101	TYPE B	3' - 6"	7' - 0"	0' - 1 3/4"	3' - 8"	7' - 1"	INSUL. MTL.	PAINT	METAL	-	No	No	No	No	Yes	No	No	Yes	Yes	Yes	No	No	
P102	TYPE B-1	3' - 0"	7' - 0"	0' - 1 3/4"	3' - 2"	7' - 1"	INSUL. MTL.	PAINT	METAL	-	No	No	No	No	Yes	No	No	No	No	No	No	No	
P103	TYPE A	4' - 0"	7' - 0"	0' - 2"	4' - 2"	7' - 1"	INSUL. MTL.	PAINT	METAL	-	No	No	No	No	Yes	No	No	No	Yes	Yes	No	No	

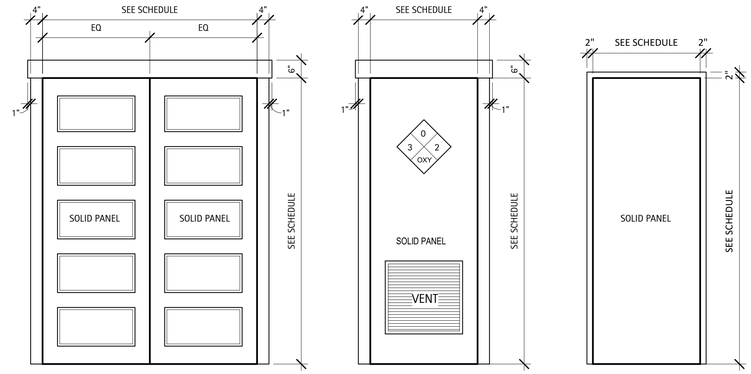
Grand total: 4



TYPE A TYPE B

POST OFFICE WINDOW SCHEDULE

Mark	Count	Size		Rough Width	Rough Height	Type	Finish	Head Height	Comments
		Width	Height						
P1	4	4' - 0"	2' - 0"	4' - 0 1/2"	2' - 0 1/2"	TYPE B		8'-0"	
P2	6	2' - 6"	2' - 6"	2' - 6 1/2"	2' - 6 1/2"	TYPE A		14'-6"	

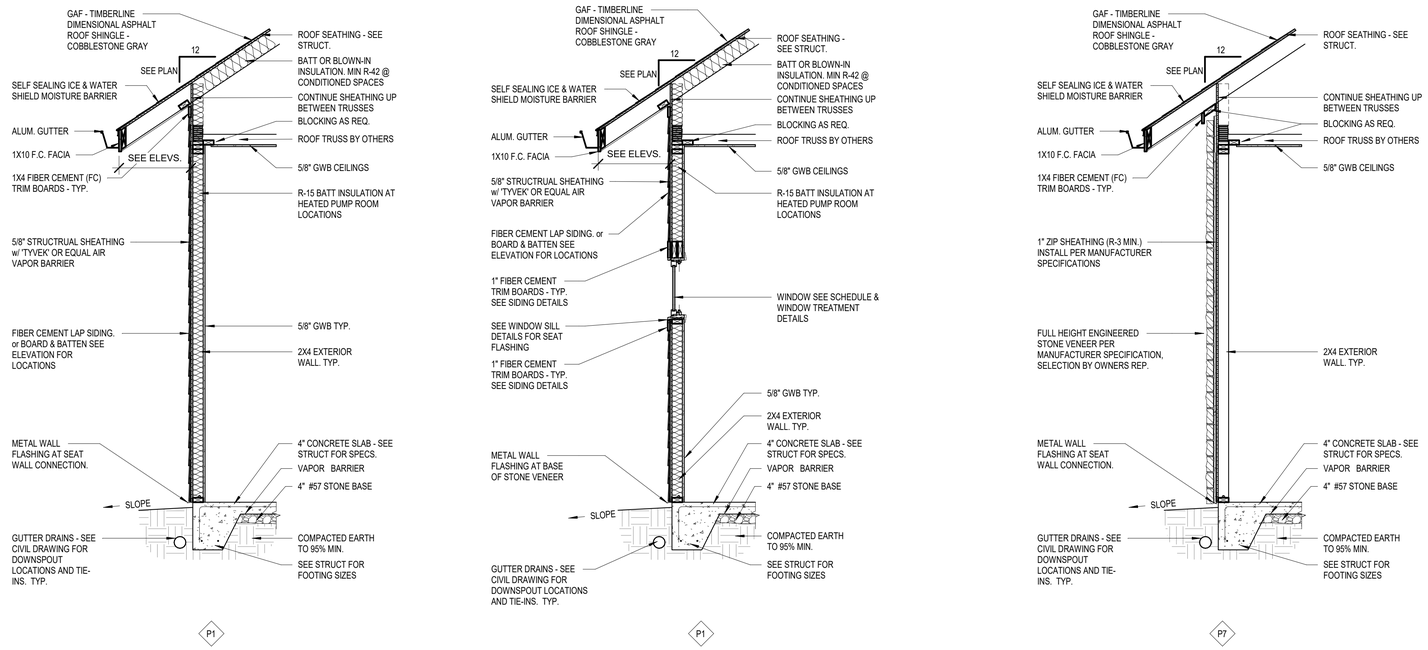


TYPE A TYPE B TYPE B-1

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

3 A7.4 Detail - Window Types

1/2" = 1'-0"

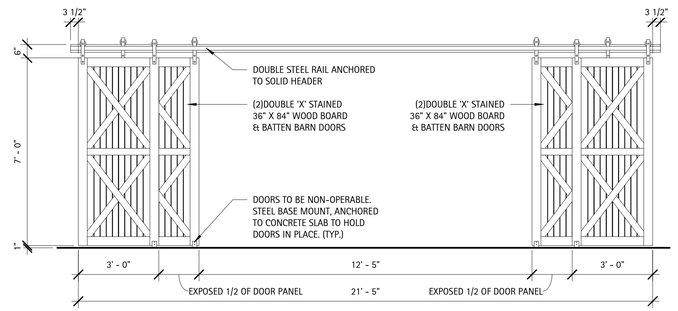


4 A7.4 Section - Typ. Exterior Walls

1/2" = 1'-0"

2 A7.4 Detail - Door Frames

1/2" = 1'-0"



TYPE C

1 A7.4 Detail - Post Office Barn Door

3/8" = 1'-0"

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SHEET DISCRIPTION
POST OFFICE SCHEDULES

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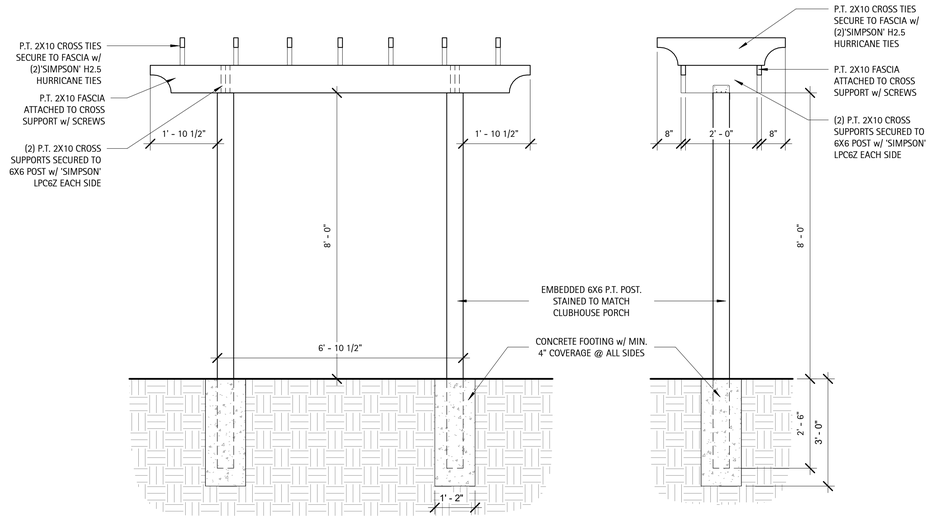
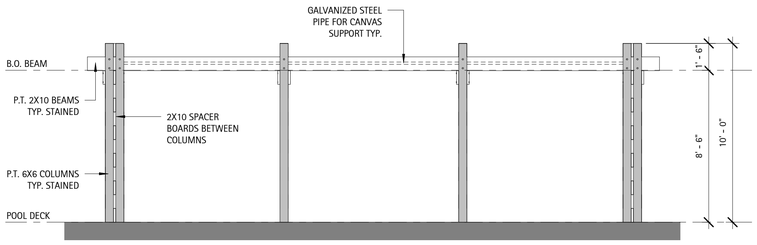
A7.4



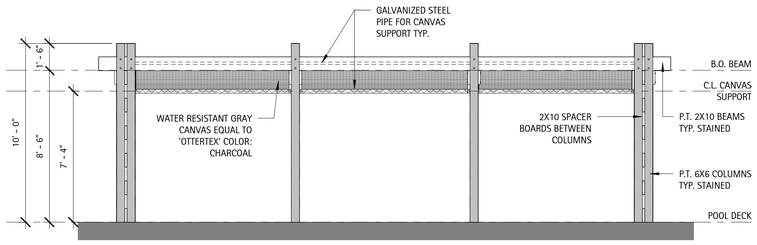
7 A8.0 Detail - Courtyard Trellis

1/2" = 1'-0"



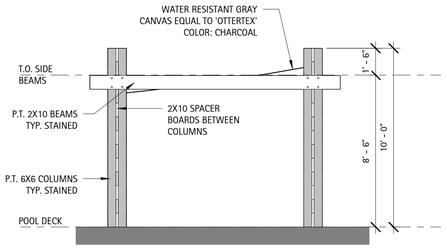
5 A8.0 Cabana - Front Elevation

1/4" = 1'-0"



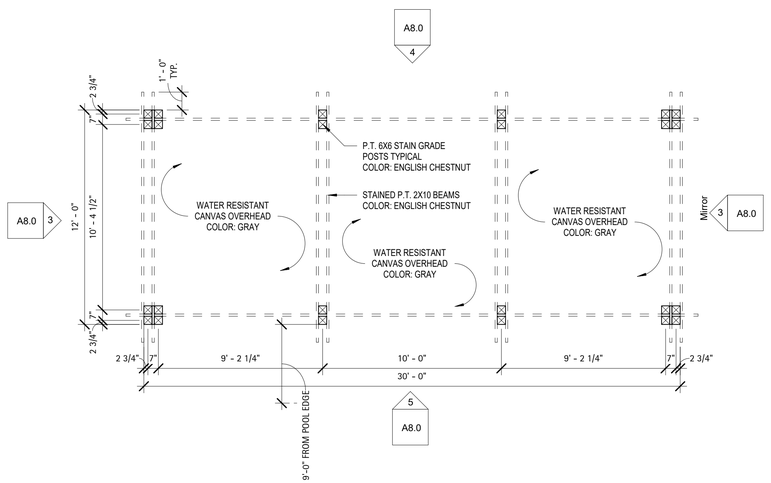
4 A8.0 Cabana - Rear Elevation

1/4" = 1'-0"



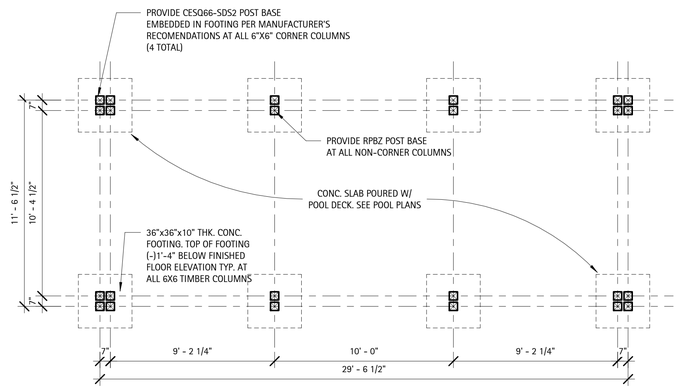
3 A8.0 Cabana - Typ. Side Elevation

1/4" = 1'-0"



2 A8.0 Cabana - Main Level

1/4" = 1'-0"



1 A8.0 Cabana - Foundation Plan

1/4" = 1'-0"

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

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

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

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

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

OCCUPANCY INFORMATION

Primary Occupancies:

Assembly: ☐ A-1 ☐ A-2 ☒ A-3 ☐ A-4 ☐ A-5

Hazardous: ☐ H-1 ☐ H-2 ☐ H-3 ☐ H-4 ☐ H-5

Institutional: ☐ I-1 Condition ☐ 1 ☐ 2 ☐ I-2 Condition ☐ 1 ☐ 2 ☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ I-4

Business: ☐

Educational: ☐

Factory: ☐ F-1 ☐ F-2

Mercantile: ☐

Residential: ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4

Storage: ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled ☐ Parking Garage: ☐ Open ☐ Enclosed ☐ Repair Garage

Utility and Miscellaneous ☐

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

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
CABANA	A-3	360	6,000	N/A	N/A	N/A	0.06	6,000 SF	N/A

1. Frontage area increases from Section 506.3 are computed thus:
   a. Perimeter which fronts a public way or open s... 20 feet minimum width = _____ (F)
   b. Total Building Perimeter = ____
   c. Ratio (F/P) = _____
   d. W = Minimum ... (W)
   e. Percent of fro... 30 = _____ (%)
2. Unlimited area applicable und...
3. Maximum Building Area = total num... one building x D (maximum 3 stories) (506.2)
4. The maximum area of open parking g... must comply with Table 406.5.4
5. Frontage increase is based on the unsprinklered area value in Table 506.2

NO INCREASE REQUIRED

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" FT	N/A	H= 10'-0"	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

Building Height: 10 Feet

Basement: ☐ Yes ☒ No

Mezzanine: ☐ Yes ☒ No

High Rise: ☐ Yes ☒ No

Class: ☐ I ☐ II ☐ III ☐ Wet ☐ Dry

(Appendix D) ☐ Floor Hazard

1 Story

Life Safety Plan Sheet # (if provided): G0.3

D. CLUGSTON BUILDING & DEVELOPMENT CO.

PERRY GLENN COX — REGISTERED ARCHITECT — 9630 — NORTH CAROLINA — APEX, N.C. — 3/MAR/21

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

NO.	REVISION	DATE

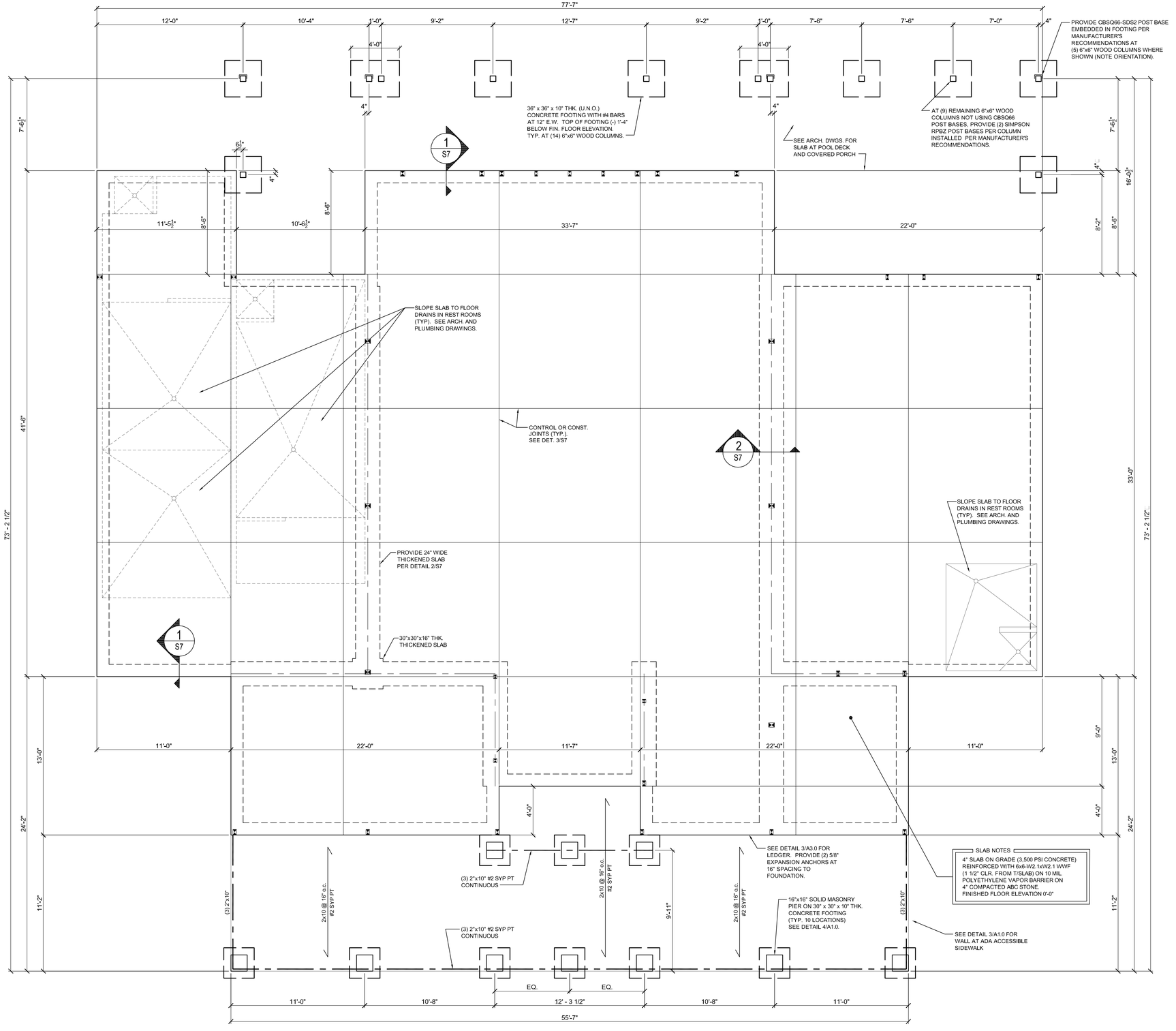
SHEET DISCRIPTION

CABANA PLANS & ELEVATIONS

PROJECT #:	2018.037
DATE ISSUED:	12/14/2021
DRAWING BY:	JGM/BSJ
CHECKED BY:	PGC/DSC

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POOL
Fuquay-Varina, NC

A8.0



1 S1 SLAB AND FOUNDATION PLAN

1/4" = 1'-0"

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

ROSS LINDEN
ENGINEERS PC
709 W. JONES STREET RALEIGH, NC 27603
TEL 919.832.5680 FAX 919.832.5675
WWW.ROSSLINDEN.COM NC LICENSE NO. C-2364

NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS 5-18-2021

SEAL NOT VALID UNLESS SIGNED AND DATED

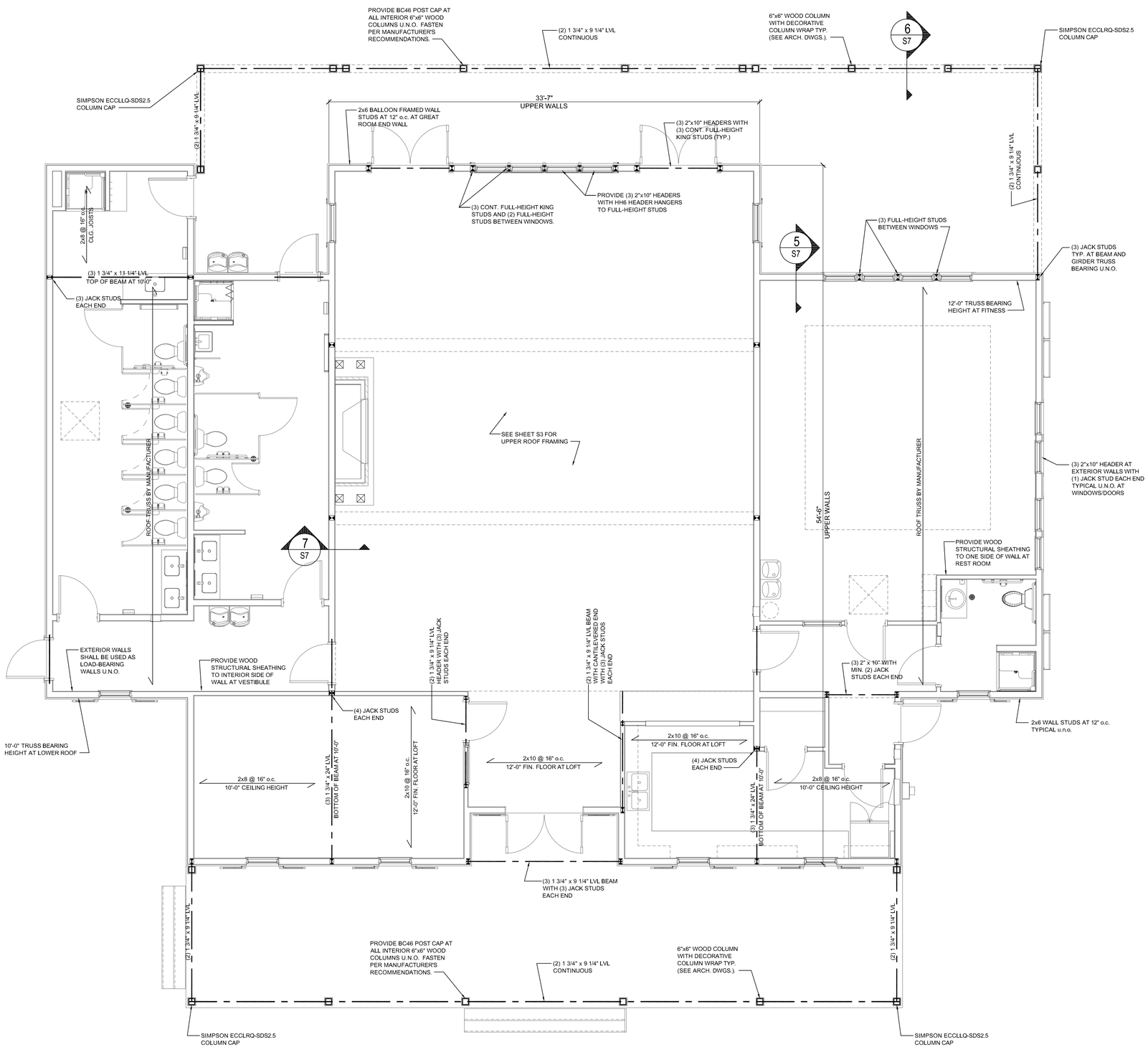
NO.	REVISION	DATE
1	VE REVISIONS	5/11/2021
2	REVISIONS	12/9/2021

SHEET DISCRIPTION
SLAB AND FOUNDATION PLAN

PROJECT #:	C200803
DATE ISSUED:	2/17/2020
DRAWING BY:	BMR
CHECKED BY:	BMR/BSJ

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

S1



1 S2 WALL AND LOWER CEILING FRAMING PLAN

1/4" = 1'-0"

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS
12-16-2021
SEAL NOT VALID UNLESS SIGNED AND DATED

2 REVISIONS 12/9/2021

NO.	REVISION	DATE
A	REVISED WINDOWS	3/5/21
1	VE REVISIONS	5/11/2021

SHEET DISCRIPTION
LOWER CLG. FRAMING PLAN

PROJECT #:	C200803
DATE ISSUED:	2/17/2020
DRAWING BY:	BMR
CHECKED BY:	BMR/BSJ

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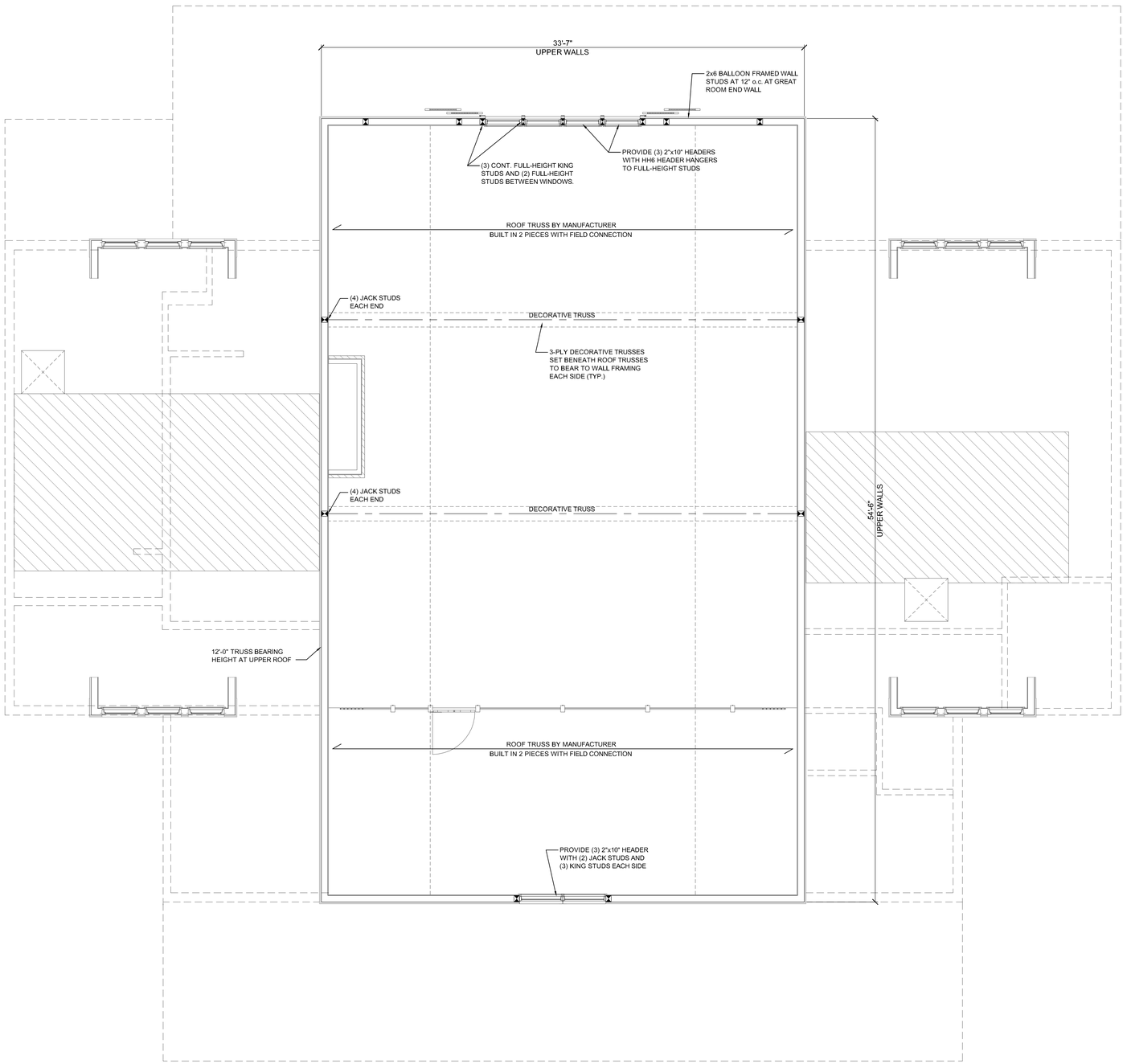
S2



1 S3 WALL AND UPPER CEILING FRAMING PLAN

1/4" = 1'-0"

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2-16-2021
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NO.	REVISION	DATE

SHEET DISCRIPTION
UPPER CLG. FRAMING PLAN

PROJECT #:	C200803
DATE ISSUED:	2/17/2020
DRAWING BY:	BMR
CHECKED BY:	BMR/BSJ

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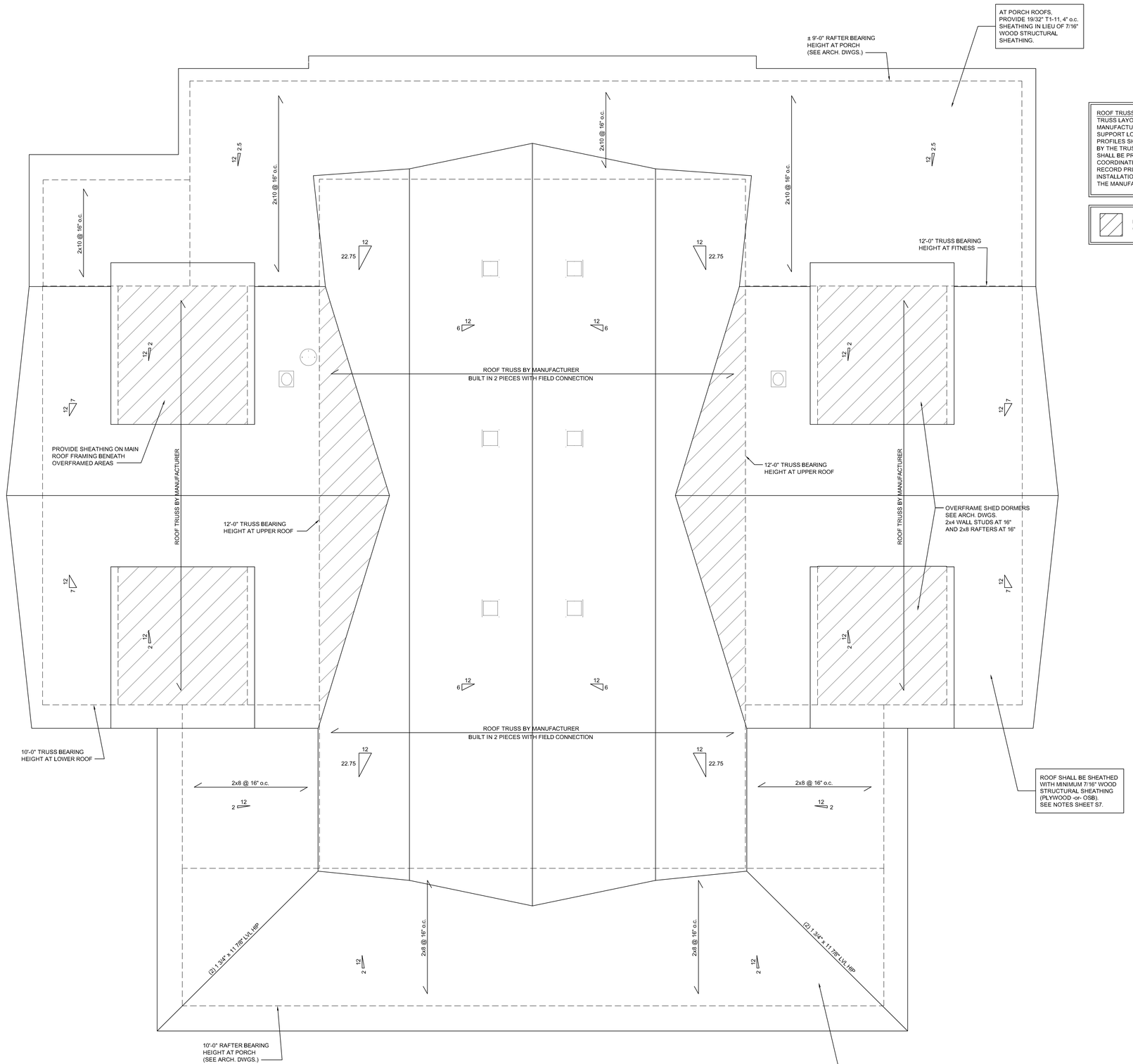
S3



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 S4 ROOF FRAMING PLAN
1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS 5-18-2021
SEAL NOT VALID UNLESS SIGNED AND DATED

NO.	REVISION	DATE
1	VE REVISIONS	5/11/2021

SHEET DISCRIPTION
ROOF FRAMING PLAN

PROJECT #:	C200803
DATE ISSUED:	2/17/2020
DRAWING BY:	BMR
CHECKED BY:	BMR/BSJ

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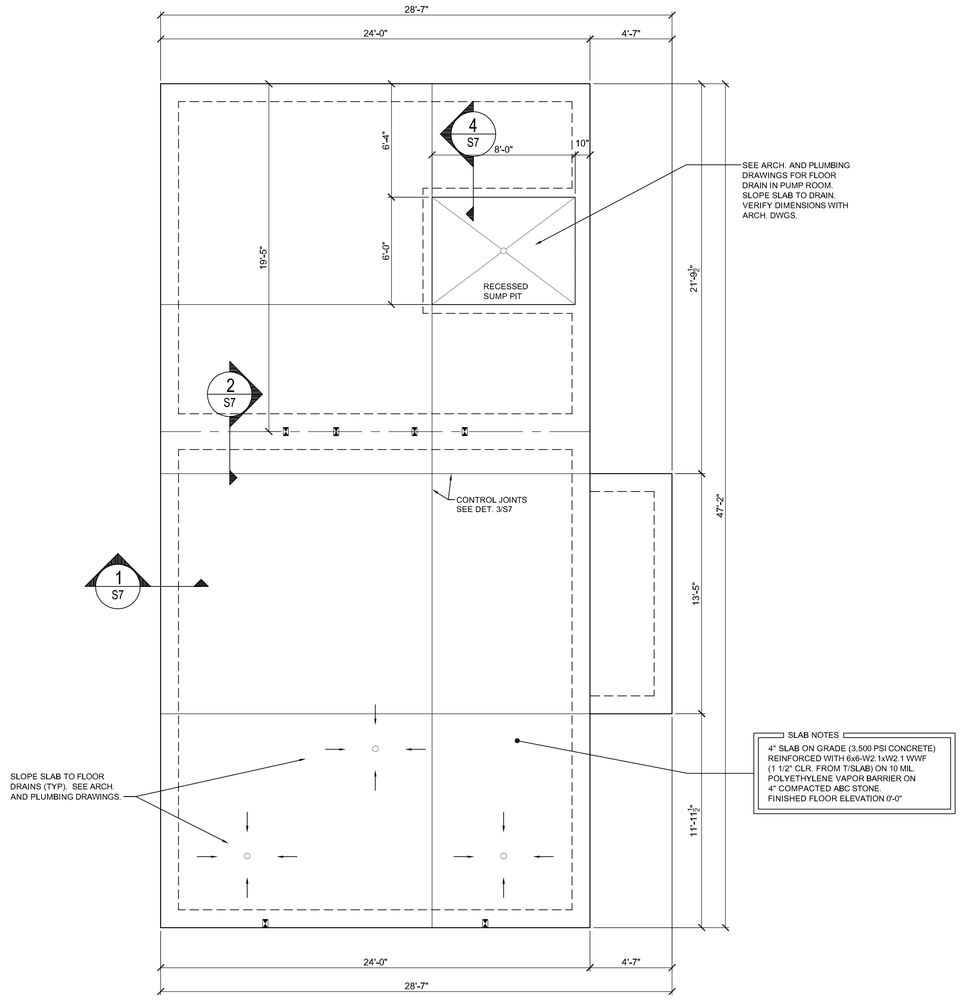
S4



1 S5 SLAB AND FOUNDATION PLAN - POST OFFICE

1/4" = 1'-0"

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2-16-2021
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SHEET DISCRIPTION
SLAB AND FOUNDATION PLAN

PROJECT #:	C200803
DATE ISSUED:	2/17/2020
DRAWING BY:	BMR
CHECKED BY:	BMR/BSJ

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GREENFIELD COMMUNITIES
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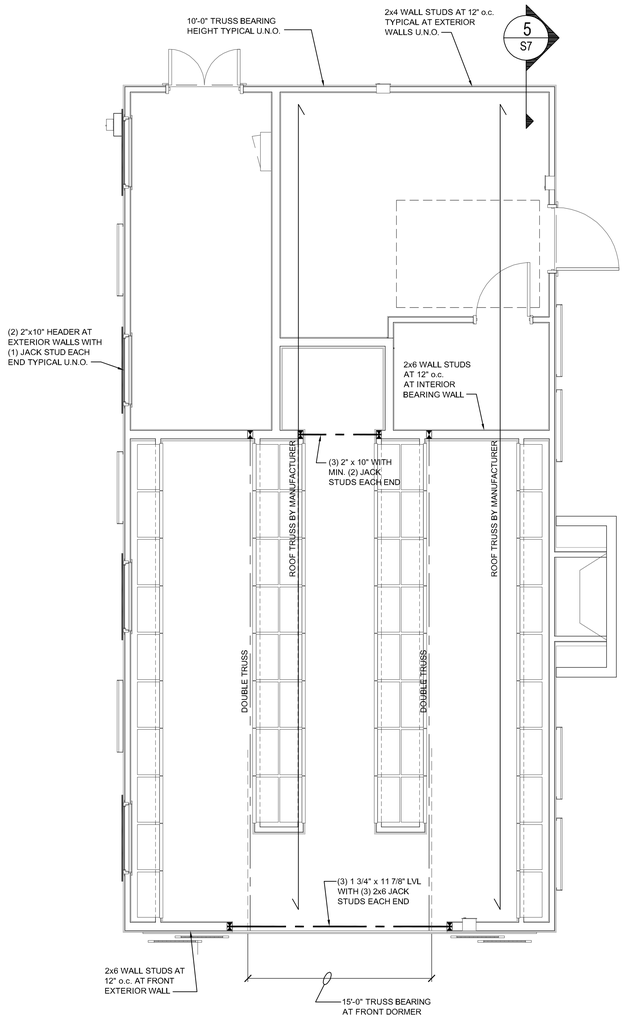
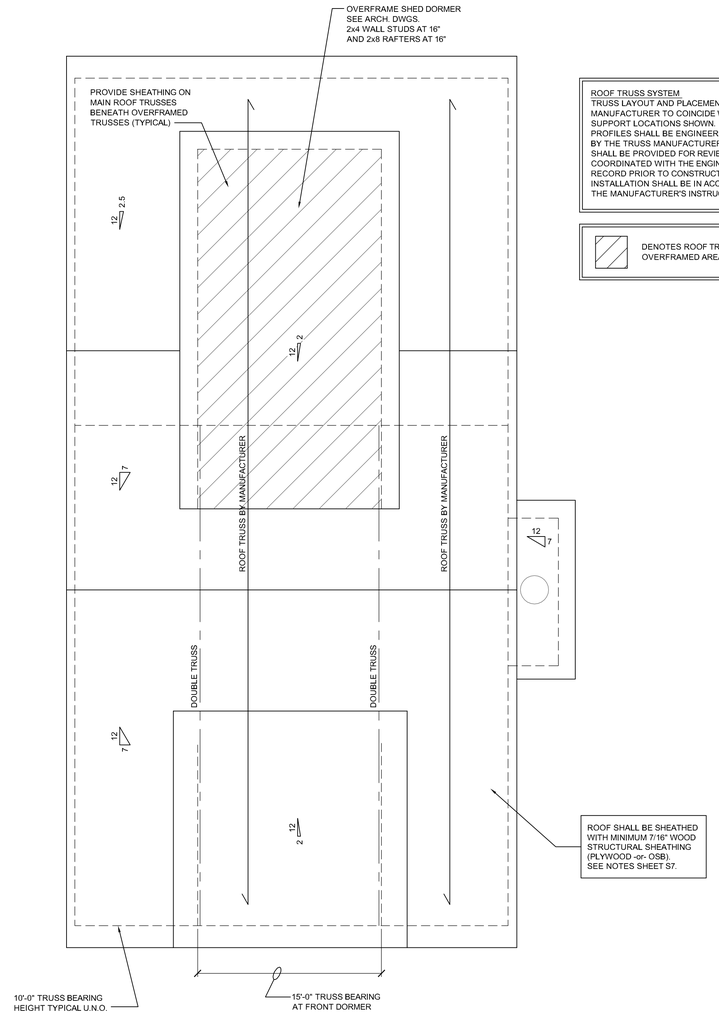
S5



1 S6 WALL AND CEILING FRAMING PLAN - POST OFFICE

1/4" = 1'-0"



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

2 S6 ROOF FRAMING PLAN - POST OFFICE

1/4" = 1'-0"

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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS 10.18.2021

SEAL NOT VALID UNLESS SIGNED AND DATED

NO.	REVISION	DATE

SHEET DISCRIPTION
FRAMING PLANS

PROJECT #:	C200803
DATE ISSUED:	2/17/2020
DRAWING BY:	BMR
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GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

S6

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: 115 MPH

GROUND SNOW LOAD 15 PSF

SEISMIC DESIGN CATEGORY B
SITE CLASS D
Sds = 0.181
Sd1 = 0.131

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.

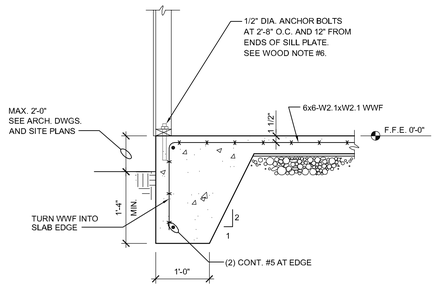
2. ALL TRUSSES SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH BCSI 1-03 "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING & BRACING OF METAL PLATE CONNECTED WOOD TRUSSES."

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.

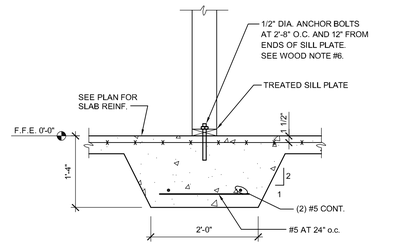
4. PROVIDE PERMANENT BOTTOM CHORD TRUSS BRACING AND WEB MEMBER PLANE BRACING IN ACCORDANCE WITH BCSI-B2 "TRUSS INSTALLATION AND TEMPORARY BRACING" AND BCSI-B3 "WEB MEMBER PERMANENT BRACING/WEB REINFORCEMENT."

ABBREVIATIONS

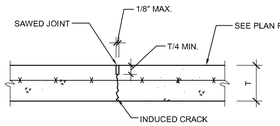
CONC	CONCRETE
CONT	CONTINUOUS
DBL	DOUBLE
DJ	DOUBLE JOIST
DSP	DOUBLE STUD POCKET
EA	EACH
FL PT	FLAT PLATE
FTG	FOOTING
HGR	HANGER
LVL	LAMINATED VENEER LUMBER
NTS	NOT TO SCALE
OC	ON CENTER
PT	PRESSURE TREATED
RS	RAFTER SUPPORT
SC	STUD COLUMN
SP	STUD POCKET
TJ	TRIPLE JOIST
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE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



1 S7 DETAIL - TYP. SLAB EDGE
3/4" = 1'-0"

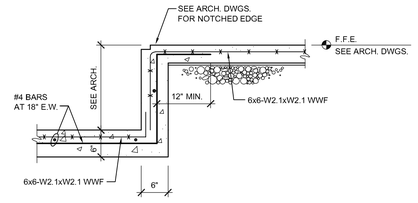


2 S7 DETAIL - THICKENED SLAB
3/4" = 1'-0"
SEE PLAN FOR LOCATIONS



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 S7 SECTION AT SUMP
3/4" = 1'-0"

STRUCTURAL DESIGN - CLUBHOUSE

DESIGN LOADS:
Occupancy Category II

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

Live Loads: Roof 20 psf
Loft 50 psf
Floor 100 psf

Ground Snow Load: 15 psf

Wind Load: Ultimate Wind Speed 115 mph (ASCE 7-10)
Exposure Category B
Wind Base Shears (for MWFRS) Vx = 19.2K Vy = 23.1K

SEISMIC DESIGN CATEGORY ☐A ☒B ☐C ☐D

Provide the following Seismic Design Parameters:

Spectral Response Acceleration SS 0.170 %g S1 0.082 %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 = 3.6K VY = 3.6K
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 _____

STRUCTURAL DESIGN - POST OFFICE

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 115 mph (ASCE 7-10)
Exposure Category B
Wind Base Shears (for MWFRS) Vx = 8.9K Vy = 4.1K

SEISMIC DESIGN CATEGORY ☐A ☒B ☐C ☐D

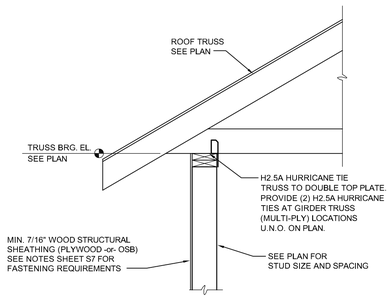
Provide the following Seismic Design Parameters:

Spectral Response Acceleration SS 0.170 %g S1 0.082 %g
Site Classification D ☐Field Test ☒Presumptive ☐Historical Data

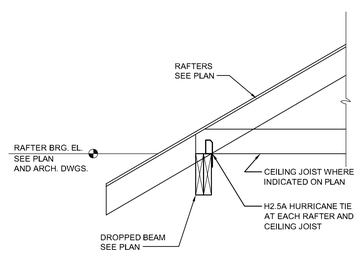
Basic structural system (check one)
X Bearing Wall ____ Dual w/Special Moment Frame
____ Building Frame ____ Dual w/Intermediate R/C or Special Steel
____ Moment Frame ____ Inverted Pendulum
Seismic base shear VX = 0.8K VY = 0.8K
Analysis Procedure ____ Simplified X Equivalent Lateral Force ____ Modal
Architectural, Mechanical, Components anchored? ____

Lateral design Control: Earthquake _____ Wind X

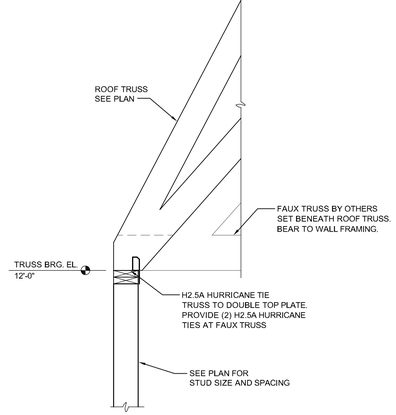
Soil Bearing Capacities:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity 2500 psf
Pile size, type, and capacity _____



5 S7 TYPICAL WALL SECTION
3/4" = 1'-0"



6 S7 FRAMING SECTION
3/4" = 1'-0"



7 S7 FRAMING SECTION
3/4" = 1'-0"

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

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NORTH CAROLINA PROFESSIONAL SEAL 25539 ENGINEER BRIAN M. ROSS
12-18-2020
SEAL NOT VALID UNLESS SIGNED AND DATED

NO.	REVISION	DATE

SHEET DISCRIPTION
STRUCTURAL NOTES AND DETAILS

PROJECT #:	C200803
DATE ISSUED:	2/17/2020
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SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

S7

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.

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 NOTES AND SCHEDULES | 1

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	MANUFACTURER	FITTING	HW	CW	WASTE
P1	TWO PIECE TANK TYPE WATER CLOSET	KOHLER K-4421 OR EQUAL BY AMERICAN STANDARD OR TOTO	TWO-PIECE VITREOUS CHINA TOILET WITH HIGH-PROFILE TANK, KOHLER K-4309 ELONGATED FRONT BOWL AND CHROME TRIP LEVER. 1.28 GPF. PROVIDE KOHLER K-4731-C OPEN FRONT SEAT LESS COVER. ASME 112.19.2 COMPLIANCE.	-	1/2"	3"
P1H	TWO PIECE TANK TYPE ADA WATER CLOSET	KOHLER K-4421 OR EQUAL BY AMERICAN STANDARD OR TOTO	TWO-PIECE VITREOUS CHINA TOILET WITH HIGH-PROFILE TANK, KOHLER K-4309 ELONGATED FRONT BOWL AND CHROME TRIP LEVER. 1.28 GPF. PROVIDE KOHLER K-4731-C 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	TOTO LT307.4 OR EQUAL BY AMERICAN STANDARD OR KOHLER	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 DELTA 87T105 METERED FAUCET.	1/2"	1/2"	2"
P3	UNDER MOUNT LAVATORY	KOHLER K-2225 OR EQUAL BY AMERICAN STANDARD OR TOTO	VITREOUS CHINA SELF-RIMMING LAVATORY COMPLYING WITH ASME 112.19.2. MOUNT SO RIM IS 34 INCHES AFF AND 2 INCHES FROM FRONT EDGE FOR ADA. PROVIDE WITH LAV-GUARD PROTECTORS SUPPLY AND DRAIN LINES. USE DELTA 87T105 METERED FAUCET.	1/2"	1/2"	2"
P4	HI-EFFICIENCY URINAL	KOHLER K-4991-ET OR APPROVED EQUAL BY TOTO OR AMERICAN STANDARD	VITREOUS CHINA, WALL-MOUNTED, ADA COMPLIANT, ULTRA LOW CONSUMPTION WASHOUT URINAL COMPLYING WITH ASME 112.19.2. 0.125 GPF. USE KOHLER K-76319 FLUSHOMETER OR EQUAL BY TOTO, ZURN, OR SLOAN. TOP OF RIM SHALL BE 15-1/4 INCHES AFF FOR ADA.	-	3/4"	2"
P5	SHOWER	BARRIER FREE LSS4038A5TD	ADA COMPLAINT TRANSFER SHOWER, LEFT SEAT, LEFT REVEAL, RIGHT PLUMBING, PROVIDE WITH GRAB BAR, FOLDING SEAT, MIXING VALVE, PRESSURE BALANCED, KOHLER K-T97831-4 LEVER HANDLE, PREPLUMBED TREE TO SUPPLY ELBOW, SOAP DISH, PROVIDE KOHLER K-98362 SHOWER HEAD WITH FLOW SHUTOFF, SHOWER SPRAY HOSE, AND ALL OTHER ACCESSORIES FOR ADA COMPLIANCE. PROVIDE WITH SYMMONS 4-420 SHOWER VALVE AND ZURN Z87300-CWO METERING VALVE BODY. REFER TO OTHERS FOR EXACT ACCESSORY SPECS.	1/2"	1/2"	2"
P6	DRINKING FOUNTAIN	ELKAY VRCTL8SC OR APPROVED EQUAL	ADA COMPLIANT FOR ADULT AND CHILD, 8.0 GPH OF 50°F WATER @ 90°F AMBIENT, PROVIDE ACCESSORY APRON FOR ADA COMPLIANCE AS NECESSARY - WITH BOTTLE REFILLING STATION.	-	3/8"	2"
P7	FLOOR DRAIN	WATTS FD-200-A OR EQUAL BY ZURN, JR SMITH OR OWNER APPROVAL	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"
P8	FREEZEPROOF HOSE BIBB	WOODFORD MODEL 68 OR EQUAL BY ZURN, MIFAB, OR OWNER APPROVAL	THE MODEL 68 IS A ASSE 1053 LISTED HYDRANT, WITH A ASSE 1052 DOUBLE CHECK BACKFLOW PREVENTER, COMES WITH A CHROME PLATED BRASS HEAD WITH STAINLESS STEEL COVER, IT DRAINS AUTOMATICALLY EVEN WITH A ATTACHED HOSE, HAS A ONE PIECE PLUNGER WHICH CONTROLS DRAIN AND FLOW FUNCTION, WORKS WITH PRESSURES UP TO 125 PSI, AND A MAX TEMPERATURE OF 120 DEGREES, TEE KEY FOR HYDRANT DOOR AND LOCK, EASIER TO INSTALL THAN STANDARD RECESSED BOX HYDRANT, WALL CLAMP IS INCLUDED, HEAD COVER FLIPS DOWN AND OUT OF THE WAY FOR UNOBSTRUCTED HYDRANT USE	-	3/4"	-
P9	INTERIOR HOSE BIBB	WOODFORD MODEL 26 OR EQUAL BY ZURN OR MIFAB	PROVIDE CHECK VALVE AND ANTI-SIPHON PROTECTION IF NOT INTEGRAL TO UNIT		1/2"	
P10	1 1/2" RPZ BACKFLOW PREVENTER	WATTS LF909M1 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 1/2"	-
P11	EXPANSION TANK	AMTROL ST-5 OR EQUAL BY WATTS OR BELL & GOSSETT	INSTALL ON COLD WATER LINE BETWEEN WATER HEATER AND RPZ	-	3/4"	-
P12	SINK DOUBLE BOWL	ELKAY LRADQ3319 OR EQUAL BY FRANKE OR MOEN	TOP MOUNTED 18 GA STAINLESS STEEL. MAX BOWL DEPTH 6 INCHES FOR WHEEL CHAIR ACCESSIBLITY-USE DELTA FAUCET SET 140-DST (PC TO VERIFY WITH OWNER IF SPRAYER OPTION IS NEEDED) OR EQUAL BY MOEN OR KOHLER.	1/2"	1/2"	2"
P13	REFRIGERATOR VALVE BOX	OATEY OR APPROVED EQUAL	HIGH IMPACT POLYSTYRENE BOX WITH 1/4 TURN BRASS BALL VALVE. COMPLIANT WITH NSF 61, SECTION 9.	-	1/2"	-
P14	THERMOSTATIC MIXING VALVE	ZURN ZW3870XLT OR EQUAL BY LAWLER, LEONARD VALVE, OR WATTS	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"	-
P15	FLOOR DRAIN	ZURN FD1 OR EQUAL BY WATTS 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.	-	-	SEE PLAN
P16	3/4" 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	-	3/4"	-
YHD	YARD HYDRANT	WOODFORD MODEL S4H-LL OR APPROVED EQUAL	AUTO DRAIN W. BACKFLOW PREVENTION. BURY DEPTH TO BE BELOW FROST LINE. COORDINATE WITH SITE CONDITIONS.	-	1"	-
FCO	FLOOR CLEANOUT	ZURN, WATTS, JR SMITH	EPOXY COATED CAST IRON FLOOR CLEANOUT WITH ROUND ADJUSTABLE GASKETED NICKEL BRONZE TOP, REMOVABLE GAS TIGHT GASKETED BRASS CLEANOUT PLUG, AND NO HUB INLET.	-	-	4"
WCO	WALL CLEANOUT	ZURN, WATTS, OR JR SMITH	CAST IRON CLEANOUT FERRULE WITH THREADED BRASS COUNTERSUNK CLEANOUT PLUG, STAINLESS STEEL ACCESS COVER, AND VANDAL PROOF STAINLESS STEEL SCREW	-	-	4"

PLUMBING LINES SIZING TABLE

FIXTURE TYPE	OCCUPANCY	QTY	DRAINAGE FIXTURE UNITS		WATER SUPPLY FIXTURE UNITS				
			EACH	TOTAL	CW	HW	CW & HW	HW TOTAL	TOTAL
WATER CLOSET (FLUSH TANK)	PUBLIC	9	4.00	36.00	5.00	0.00	5.00	0.00	45.00
SHOWER	PUBLIC	3	2.00	6.00	3.00	3.00	4.00	9.00	12.00
LAVATORY	PUBLIC	8	1.00	8.00	1.50	1.50	2.00	12.00	16.00
URINAL (¾" FLUSH VALVE)	PUBLIC	2	2.00	4.00	5.00	0.00	5.00	0.00	10.00
DRINKING FOUNTAIN	PUBLIC	3	0.50	1.50	0.25	0.00	0.25	0.00	0.75

DEMAND FIXTURE	GPM	QTY	TOTAL GPM			
HOSE BIBBS	5	6	30.00	TOTAL DFU	55.5	
YARD HYDRANT	1	1	1	TOTAL WFSUs	21.0	83.8
				GPM	19.98	39.14
				OTHER FIXTURES' GPM	0.00	31.00
				TOTAL GPM	19.98	70.14

MINIMUM BUILDING DRAIN SIZE	4"
MINIMUM WATER LINE SIZE	1-1/2"

DO NOT TAP WATER LINE AHEAD OF RPZ.

ELECTRIC WATER HEATER SCHEDULE

MARK	MFG	MODEL	TANK VOL	INPUT	RECOVERY	SET POINT	POWER		CONNECTIONS		OPTIONS
			GALS	kW	GPH @ 60° ΔT	°F	VOLTAGE	PHASE	HOT	COLD	
WH-1	STATE	PCE3020LSA	30	4.5	30	110	208	1	3/4	3/4	1-5
WH-2	STATE	PCE2010MSA	20	4.5	30	110	208	1	3/4	3/4	1-5

1. PROVIDE GALVANIZED STEEL SAFETY PAN
2. UL 174 LISTED
3. PROVIDE ASME LISTED TEMPERATURE AND PRESSURE RELIEF VALVE
4. MEET OR EXCEED ENERGY FACTOR REQUIREMENTS OF ASHRAE 90.1-2007
5. OR EQUAL BY A.O. SMITH, BRADFORD WHITE, OR STATE

LINETYPE LEGEND

COLD WATER SUPPLY	— - —— - —— - —— - —
HOT WATER SUPPLY	—— · · —— · · ——
SANITARY SEWER LINE	—— – – —— – – ——
VENT LINE	– – – – – – – – – – – –

PLUMBING FIXTURE SCHEDULE | 2

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2-7-22

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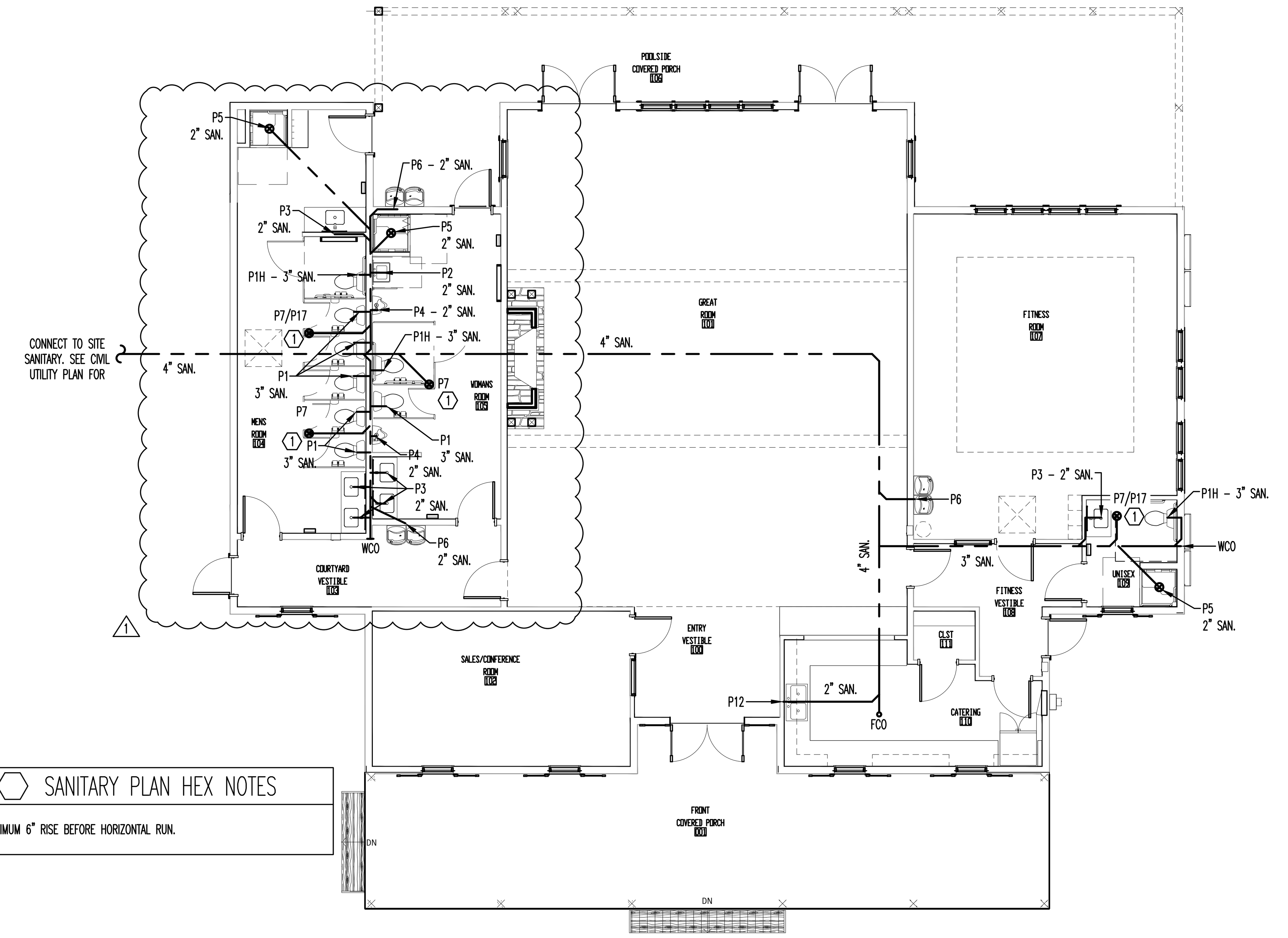
NO.	REVISION	DATE
1	CODE COMENTS	2-7-2022

SHEET DESCRIPTION
PLUMBING NOTES AND SCHEDULES

PROJECT #: 20442
DATE ISSUED: 10-23-2020
DRAWING BY: DBAS
CHECKED BY: MWK/JLH

SERENITY AMENITIES
GREENFIELD COMMUNITIES
CLUBHOUSE
FUQUAY-VARINA, NC

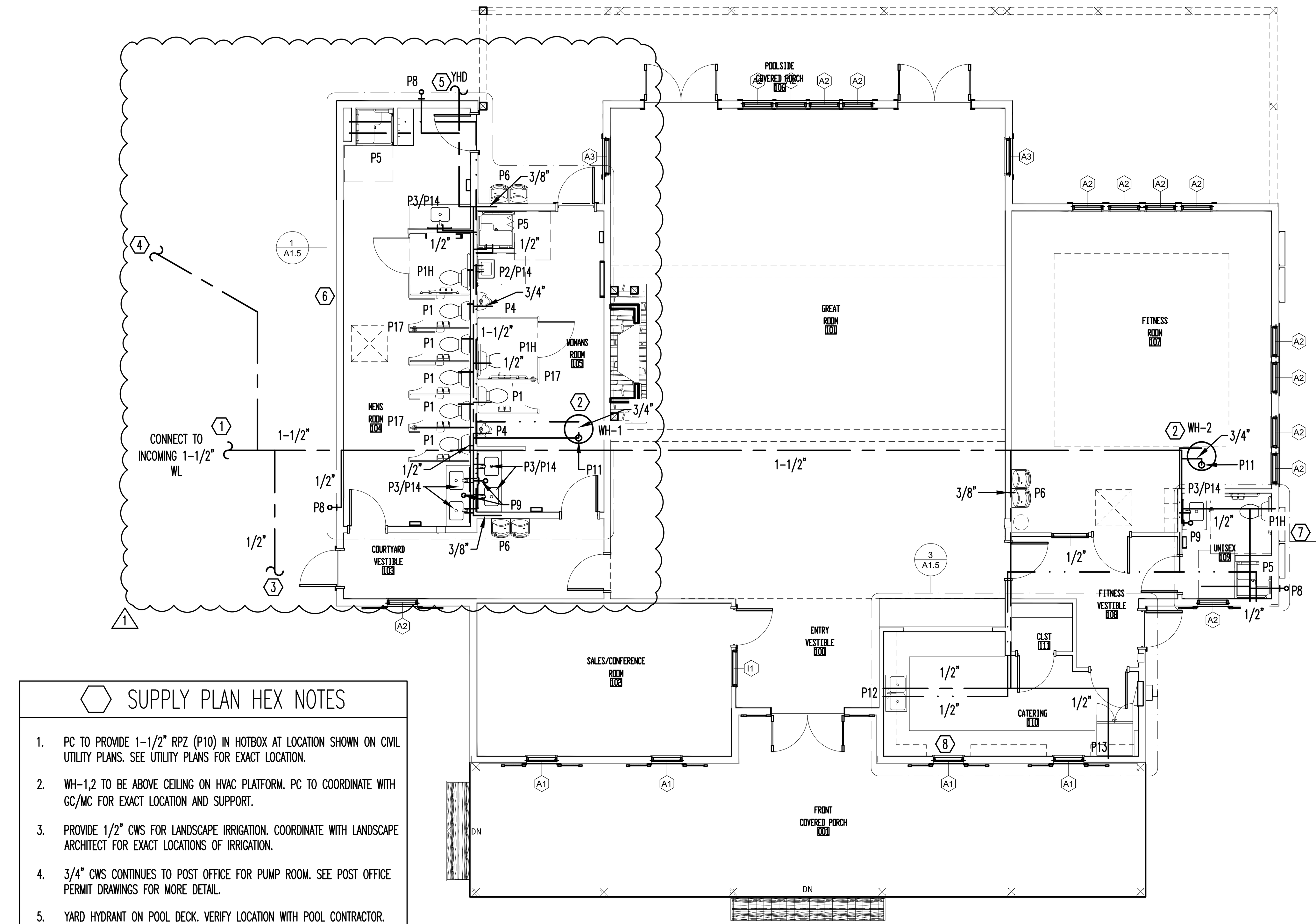
P1



SANITARY PLAN HEX NOTES

1. MINIMUM 6" RISE BEFORE HORIZONTAL RUN.

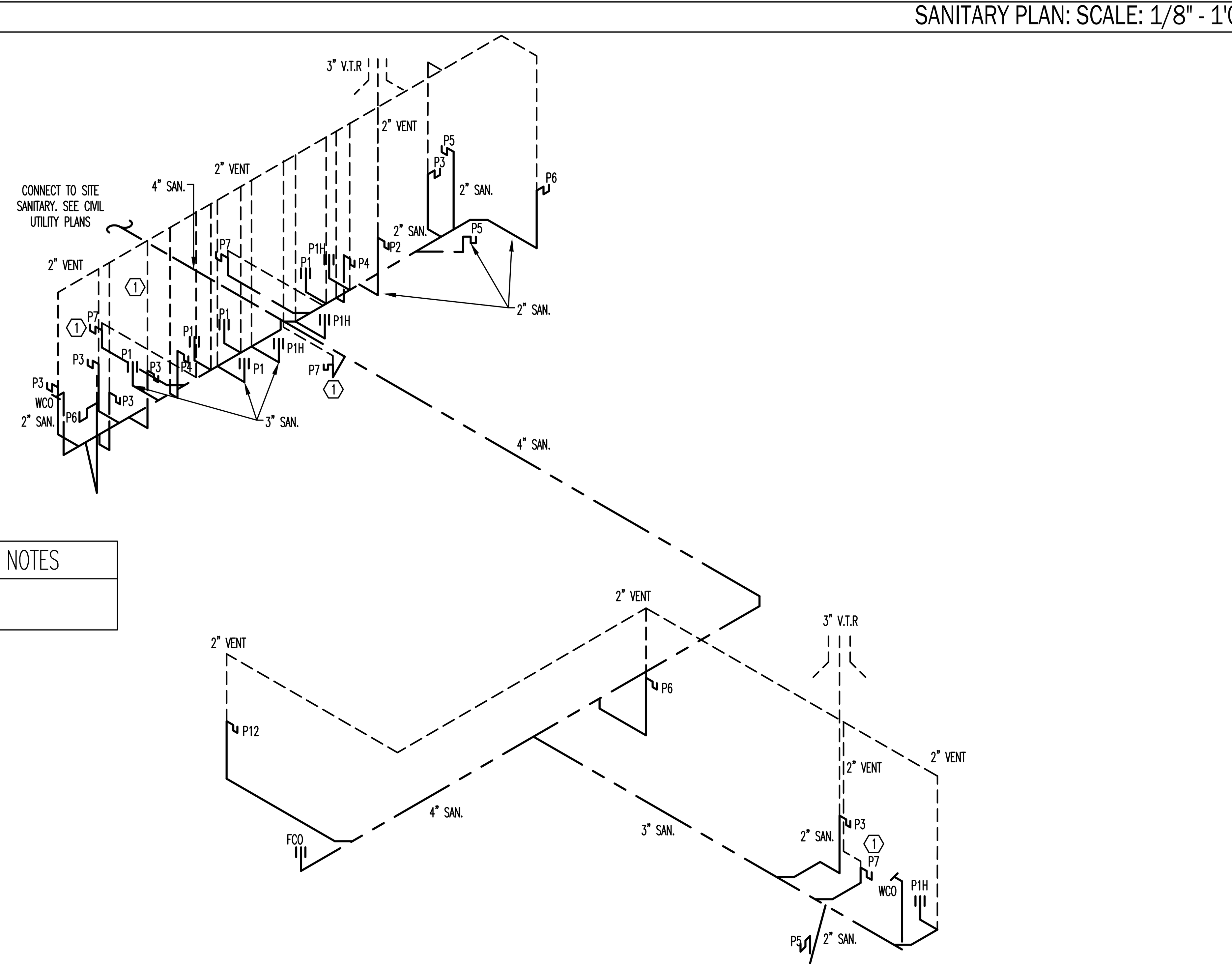
SANITARY PLAN: SCALE: 1/8" - 1'0" | 1



SUPPLY PLAN HEX NOTES

1. PC TO PROVIDE 1-1/2" RPZ (P10) IN HOTBOX AT LOCATION SHOWN ON CIVIL UTILITY PLANS. SEE UTILITY PLANS FOR EXACT LOCATION.
2. WH-1,2 TO BE ABOVE CEILING ON HVAC PLATFORM. PC TO COORDINATE WITH GC/MC FOR EXACT LOCATION AND SUPPORT.
3. PROVIDE 1/2" CWS FOR LANDSCAPE IRRIGATION. COORDINATE WITH LANDSCAPE ARCHITECT FOR EXACT LOCATIONS OF IRRIGATION.
4. 3/4" CWS CONTINUES TO POST OFFICE FOR PUMP ROOM. SEE POST OFFICE PERMIT DRAWINGS FOR MORE DETAIL.
5. YARD HYDRANT ON POOL DECK. VERIFY LOCATION WITH POOL CONTRACTOR.
6. LOCATE CONDENSATE LINES AT PLANT BED.
7. LOCATE CONDENSATE LINES 12" A.F.F BEHIND WALL SCREENS.
8. PROVIDE DISHWASHER HOOKUPS. VERIFY EXACT LOCATION WITH OWNER.

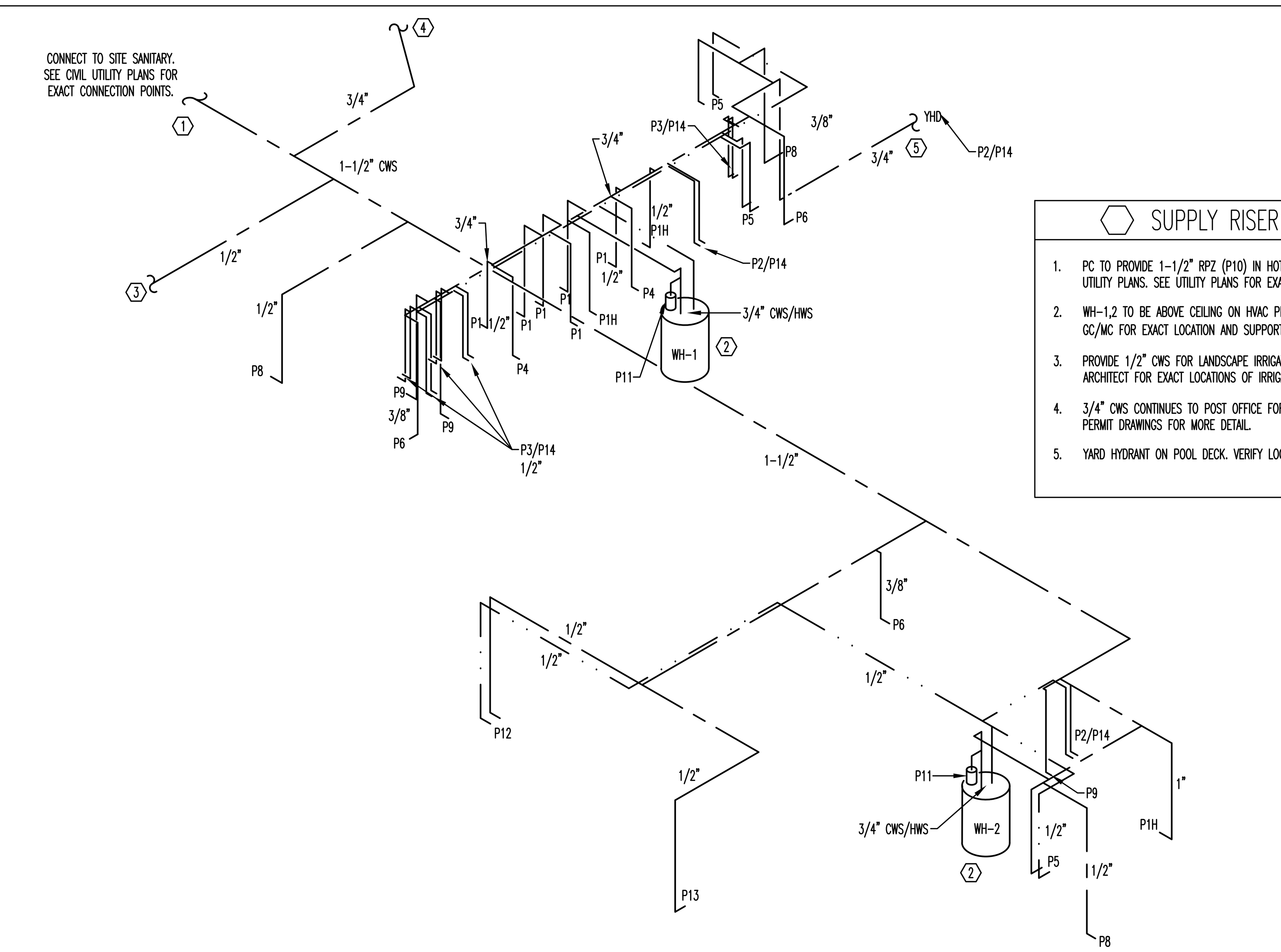
SUPPLY PLAN: SCALE - 1/8" = 1'0" | 2



SANITARY PLAN HEX NOTES

1. MINIMUM 6" RISE BEFORE HORIZONTAL RUN.

DWV RISER: NO SCALE | 3



SUPPLY RISER HEX NOTES

1. PC TO PROVIDE 1-1/2" RPZ (P10) IN HOTBOX AT LOCATION SHOWN ON CIVIL UTILITY PLANS. SEE UTILITY PLANS FOR EXACT LOCATION.
2. WH-1,2 TO BE ABOVE CEILING ON HVAC PLATFORM. PC TO COORDINATE WITH GC/MC FOR EXACT LOCATION AND SUPPORT.
3. PROVIDE 1/2" CWS FOR LANDSCAPE IRRIGATION. COORDINATE WITH LANDSCAPE ARCHITECT FOR EXACT LOCATIONS OF IRRIGATION.
4. 3/4" CWS CONTINUES TO POST OFFICE FOR PUMP ROOM. SEE POST OFFICE PERMIT DRAWINGS FOR MORE DETAIL.
5. YARD HYDRANT ON POOL DECK. VERIFY LOCATION WITH POOL CONTRACTOR.

WATER SUPPLY RISER: NO SCALE | 4

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NO.	REVISION	DATE
1	CODE COMENTS	2-7-2022

SHEET DESCRIPTION
SANITARY /SUPPLY PLAN AND RISERS

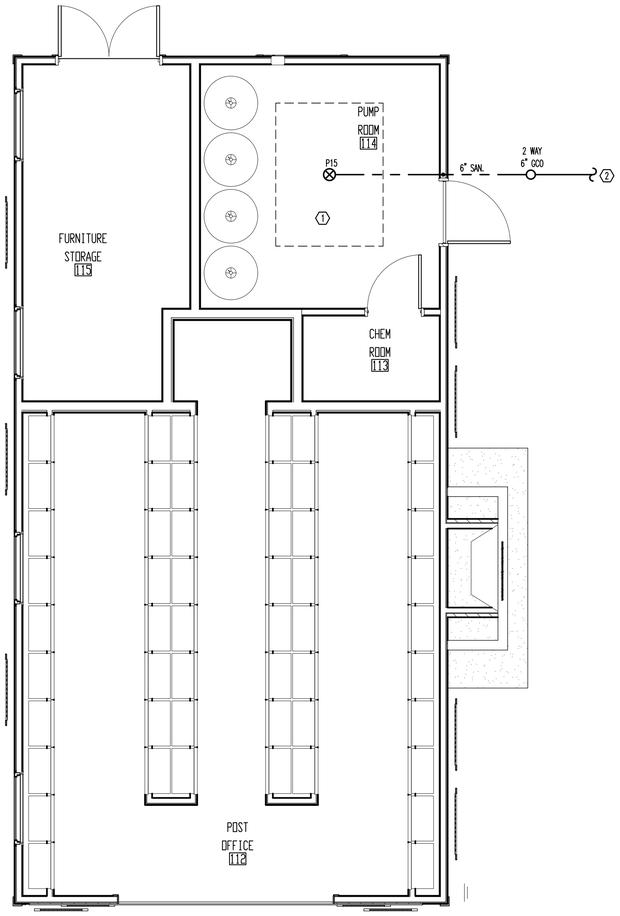
PROJECT #:	20442
DATE ISSUED:	10-23-2020
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE
FUQUAY-VARINA, NC

P2

SANITARY PLAN HEX NOTES

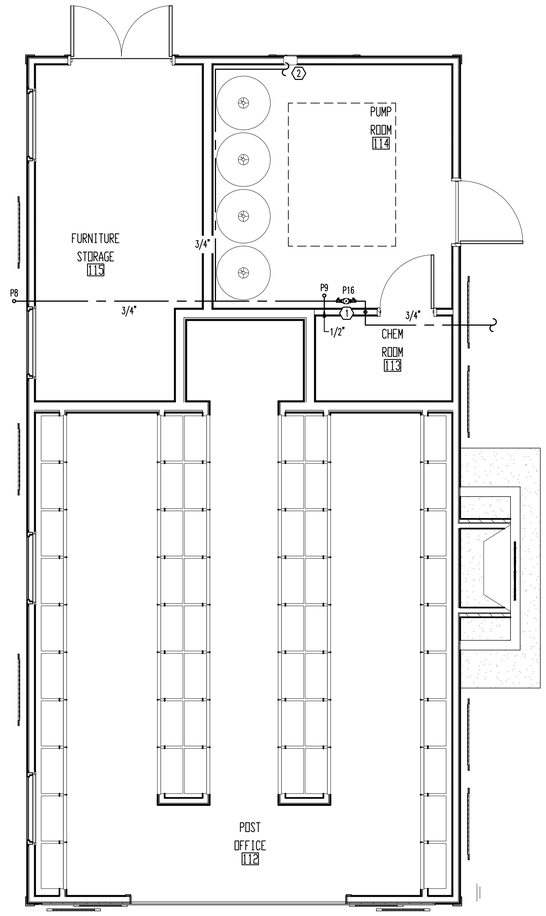
1. SUMP PIT. COORDINATE EXACT LOCATION WITH POOL EQUIPMENT AND POOL CONTRACTOR.
2. SANITARY CONTINUES TO MAIN SANITARY SEWER TO CLUBHOUSE. SEE SITE UTILITY PLANS BY OTHERS.



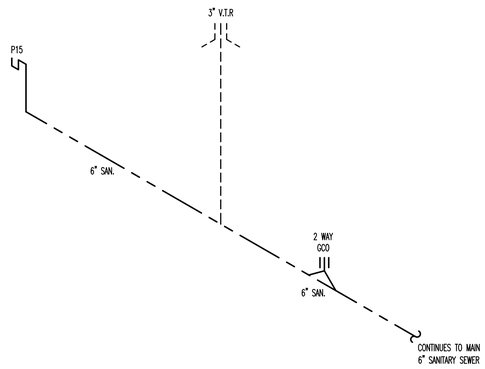
SANITARY PLAN: SCALE - 1/4" = 1'0" | 1

SUPPLY PLAN HEX NOTES

1. BACKFLOW PREVENTER, (P4), LOCATED ALONG WALL FOR POOL EQUIPMENT. DRAIN TO FLOOR DRAIN IN AREA. ENSURE REQUIRED CLEARANCES CAN BE MAINTAINED.
2. 3/4" CWS TO POOL EQUIPMENT. COORDINATE WITH POOL CONTRACTOR.
3. 3/4" CWS FROM MAIN 1-1/2" CWS TO CLUBHOUSE. REFER TO CLUBHOUSE SUPPLY PLAN FOR MORE DETAIL.



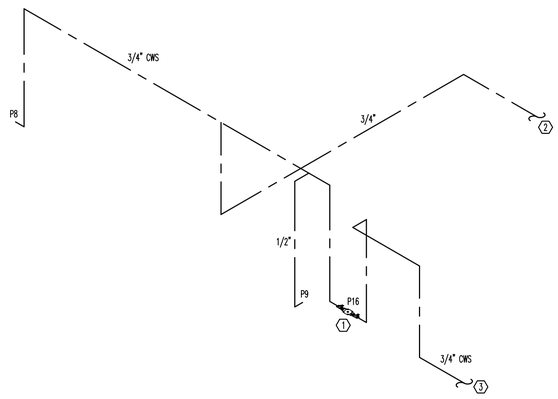
WATER SUPPLY PLAN: SCALE - 1/4" = 1'0" | 2



DWV RISER: NO SCALE | 3

RISER PLAN HEX NOTES

1. BACKFLOW PREVENTER, (P4), LOCATED ALONG WALL FOR POOL EQUIPMENT. DRAIN TO FLOOR DRAIN IN AREA. ENSURE REQUIRED CLEARANCES CAN BE MAINTAINED.
2. 3/4" CWS TO POOL EQUIPMENT. COORDINATE WITH POOL CONTRACTOR.
3. 3/4" CWS FROM MAIN 1-1/2" CWS TO CLUBHOUSE. REFER TO CLUBHOUSE SUPPLY PLAN FOR MORE DETAIL.



DOMESTIC WATER SUPPLY RISER: NO SCALE | 4

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NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JACOB L. HAMILTON 2-7-21

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NO.	REVISION	DATE

SHEET DESCRIPTION
POST OFFICE
PLUMBING PLAN

PROJECT #:	20442
DATE ISSUED:	10-23-2020
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
POST OFFICE
FUQUAY-VARINA, NC

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. THE MC SHALL VERIFY THE FUNCTIONALITY AND OPERATION OF ALL EXISTING MECHANICAL EQUIPMENT IN THE AREA OF WORK. REPLACE FILTERS, LEAK TEST AND RECHARGE REFRIGERANT LINES, REPLACE OR LUBRICATE BEARINGS, CHECK LINKAGES AND ACTUATORS, AND PERFORM OTHER MAINTENANCE SERVICE AS NECESSARY TO GET THE EQUIPMENT IN PROPER ORDER.
12. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER CONNECTIONS TO THE MECHANICAL EQUIPMENT. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONTROL WIRING.
13. IT IS THE MC'S RESPONSIBILITY TO VERIFY THAT ITEMS FURNISHED FOR THIS CONTRACT WILL FIT IN THE SPACE AVAILABLE. THE MC SHALL MAKE FIELD MEASUREMENTS AS NECESSARY TO DETERMINE SPACE REQUIREMENTS. IF THE MC MUST ALTER EQUIPMENT DUE TO SPACE CONSIDERATIONS, THE MC SHALL PROVIDE SIZES AND SHAPES THAT FIT THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS.
14. MC SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR REGARDING THE ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT BEING PROVIDED.
15. MAINTAIN CLEARANCES FOR ALL EQUIPMENT ACCORDING TO MANUFACTURER'S RECOMMENDATIONS FOR SERVICEABILITY. ALL ROOFTOP EQUIPMENT MUST BE A MINIMUM OF 10 FEET FROM ROOF EDGE.
16. MC SHALL FURNISH A BOUND SET OF OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT TO THE OWNER UPON COMPLETION OF THE PROJECT. MC SHALL PROVIDE ALL DOCUMENTATION TO THE OWNER AS NECESSARY TO SUBMIT FOR FACTORY WARRANTIES.
17. CONTRACTOR SHALL PROTECT ALL HVAC EQUIPMENT FROM CONSTRUCTION AND SHEET ROCK DUST DURING CONSTRUCTION. ALL FILTERS SHALL BE REPLACED WITH NEW AT THE COMPLETION OF THE PROJECT.
18. ALL EQUIPMENT INSTALLED ON ROOF MUST BE WITHIN THE ROOF SCREEN.
19. IF A ROOF PENETRATION IS REQUIRED AND THE ROOF IS UNDER WARRANTY, USE THE AUTHORIZED ROOFER. PROVIDE DOCUMENTATION.
20. ALL PIPING, WIRING, CONDUIT, INSULATION, EQUIPMENT, SUPPORTS, ETC. SHALL BE SUITABLE FOR INSTALLATION IN A RETURN PLENUM AS NECESSARY. COORDINATE WITH OTHER TRADES ON LOCATIONS OF ALL PLENUMS.
21. MC SHALL COORDINATE WITH THE GENERAL CONTRACTOR TO ENSURE ALL APPLICABLE CONSTRUCTION WASTE IS RECYCLED DURING THE CONSTRUCTION PHASE OF THE PROJECT.

MATERIALS:

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

METHODS:

1. INSULATE DUCTWORK WITH FIBERGLASS DUCT WRAP; INSTALLED R-VALUE SHALL BE A MINIMUM R-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. DUCTS CONNECTING TO A FURNACE SHALL HAVE A CLEARANCE TO COMBUSTIBLES IN ACCORDANCE WITH THE FURNACE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. FOR STRUCTURES IN FLOOD HAZARD AREAS, DUCTS SHALL BE LOCATED ABOVE THE DESIGN FLOOD ELEVATION. DUCT SHALL NOT BE INSTALLED IN OR WITHIN 4 INCHES OF THE EARTH.
6. PROVIDE DUCT ACCESS DOORS FOR INSPECTION AND CLEANING BEFORE AND AFTER FILTERS, COILS, FANS, AUTOMATIC DAMPERS, AT FIRE DAMPERS, COMBINATION FIRE AND SMOKE DAMPERS.
7. 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.
8. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE; MAXIMUM OF 30 DEGREES DIVERGENCE UPSTREAM OF EQUIPMENT AND 45 DEGREES CONVERGENCE DOWNSTREAM.
9. IT SHALL BE THE RESPONSIBILITY OF THE MC TO SUSPEND AND SUPPORT ALL EQUIPMENT, DUCTWORK, DIFFUSERS, AND OTHER MATERIALS FOLLOWING RECOGNIZED ENGINEERING PRACTICES AND 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.
10. DUCTS SHALL BE SUPPORTED IN ACCORDANCE WITH SMACNA AT INTERVALS NOT EXCEEDING 10 FEET. DUCTS 36 INCHES OR LARGER SHALL HAVE TRAPEZE TYPE HANGERS SUSPENDED WITH THREADED ROD. SUPPORT DUCTS FROM BAR JOISTS, GIRDERS, OR BEAMS.
11. CHECK LOCATIONS OF AIR OUTLETS AND INLETS AND MAKE NECESSARY ADJUSTMENTS IN POSITION TO CONFORM WITH ARCHITECTURAL FEATURES, SYMMETRY, AND LIGHTING ARRANGEMENT. COORDINATE WITH SPRINKLER CONTRACTOR IF APPLICABLE.
12. PROVIDE BALANCING DAMPERS AT POINTS ON SUPPLY WHERE BRANCHES ARE TAKEN FROM LARGER DUCTS AS REQUIRED FOR AIR BALANCING. INSTALL MINIMUM 2 DUCT WIDTHS FROM DUCT TAKE-OFF. PROVIDE BALANCING DAMPERS ON DUCT TAKE-OFFS TO DIFFUSERS, AND REGISTERS, REGARDLESS OF WHETHER DAMPERS ARE SPECIFIED AS PART OF THE DIFFUSER OR REGISTER ASSEMBLY. ADJUST AIR HANDLING AND DISTRIBUTION SYSTEMS TO PROVIDE DESIGN SUPPLY, RETURN, AND EXHAUST AIR QUANTITIES AT SITE ALTITUDE.
13. MC SHALL INSTALL FIRE DAMPERS AT EACH PENETRATION OF A RATED WALL AS INDICATED ON THE DRAWINGS OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. FIRE DAMPERS SHALL BE UL LABELED (UL 555), CURTAIN TYPE, WITH INTEGRAL FACTORY SLEEVE AND BLADES LOCATED OUTSIDE THE AIR STREAM. INSTALLATION OF ALL FIRE DAMPERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND SECTION 607 OF THE 2018 NC MECHANICAL CODE. PROVIDE ACCESS PANELS FOR TESTING AND SERVICE AS NECESSARY. MC SHALL PROVIDE RADIATION DAMPERS AND THERMAL BLANKETS FOR ALL PENETRATIONS OF RATED CEILING ASSEMBLIES. RADIATION DAMPERS SHALL BE UL LABELED (UL 555C) AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFIC INSTALLATION INSTRUCTIONS. FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS, AND CEILING RADIATION DAMPERS SHALL BE BY RUSKIN, NAILOR, OR LLOYD INDUSTRIES.
14. MC SHALL INSTALL A SMOKE DETECTOR-UL LISTED FOR DUCT INSTALLATION (UL 268A) IN EACH UNIT'S RETURN UPSTREAM OF ANY FILTERS, OUTSIDE AIR CONNECTIONS, OR DECONTAMINATION EQUIPMENT. DUCT SMOKE DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 72. DUCT SMOKE DETECTOR SUPERVISION SHALL COMPLY WITH 606.4.1 OF THE 2018 NC MECHANICAL CODE. IF THE BUILDING IS (TO BE) EQUIPPED WITH A FIRE ALARM SYSTEM, THE FIRE ALARM SYSTEM CONTRACTOR SHALL FURNISH AND WIRE ALL DUCT SMOKE DETECTORS. IF THE BUILDING IS NOT PROVIDED WITH A FIRE ALARM SYSTEM, THE MC SHALL FURNISH AND WIRE THE DUCT SMOKE DETECTORS AND A/V DEVICE. IT SHALL BE THE RESPONSIBILITY OF THE MC TO INSTALL ALL SMOKE DUCT DETECTORS PER NFPA AND MFG'S INSTALLATION INSTRUCTIONS REGARDLESS OF WHO FURNISHES THE DEVICES.
15. MC SHALL INSTALL PROGRAMMABLE THERMOSTATS AS SHOWN ON THE PLANS. THERMOSTAT SHALL BE MOUNTED AT 48 INCHES AFF. THERMOSTATS SHALL MEET THE REQUIREMENTS OF SECTION C403.2.4 OF THE 2018 NORTH CAROLINA ENERGY CONSERVATION CODE.
16. FRESH AIR INTAKES SHALL BE INSTALLED ON ALL UNITS AS SHOWN ON DRAWINGS. MAINTAIN 10 FEET OF DISTANCE BETWEEN FRESH AIR INTAKES AND ALL EXHAUST TERMINATIONS AND PLUMBING VENT THRU ROOFS.
17. UNITS PROVIDED WITH ECONOMIZERS SHALL ALSO BE PROVIDED WITH POWERED EXHAUST AND COMPARATIVE ENTHALPY CONTROLS.
18. MC SHALL INSTALL ALL EXHAUST FANS AND VENT TO THE BUILDING'S EXTERIOR. EC SHALL SWITCH FANS WITH LIGHTS OR ON SEPARATE SWITCH AS SHOWN.
19. P-TRAPS MUST BE INSTALLED ON ALL UNITS. MC SHALL INSTALL AUXILIARY DRAIN PANS UNDER OVERHEAD AIR HANDLERS AND AN AUTOMATIC CUT-OFF FLOAT SWITCH FOR EACH. P-TRAPS AND CONDENSATE LINES SHALL BE 1 INCH. P-TRAPS AND CONDENSATE LINES MAY BE PVC WHERE NOT LOCATED IN PLENUMS; OTHERWISE, THEY SHALL BE TYPE M COPPER.
20. INSTALL BACKDRAFT DAMPERS ON FRESH AIR AND EXHAUST DUCTS WHERE THEY PENETRATE THE THERMAL ENVELOPE PER NORTH CAROLINA ENERGY CONSERVATION CODE C402.5.5

MECHANICAL NOTES AND SCHEDULES | 1

SPLIT SYSTEM HEAT PUMP SCHEDULE

MARK	MFG / MODEL #	NOMINAL CAPACITY	REF LINES		MOTORS		EFFICIENCIES	ELECTRICAL			WEIGHT	REMARKS
			GAS	LIQ	COMPRESSOR	COND. FAN	SEER	V/PH	MCA	MOCP		
		TONS			NO.	NO.					LBS	
HP-1,2	GUARDIAN / RHP14L60B23S	5	1-1/8	3/8	1	1	14	230/1	31.7	50	261	1,3-5,10-15

GAS FURNACE AND COOLING COIL SCHEDULE

MARK	MFG / MODEL #	COIL MODEL #	NOMINAL CAPACITY	AIR FLOW		FAN MOTORS	HEATING CAPACITY				COOLING CAPACITY			ELECTRICAL			WEIGHT	REMARKS
				NOMINAL SUPPLY	MIN. OA	ESP	INPUT	OUTPUT	STAGES	AFUE	EAT WB/DB	TOTAL	SENSIBLE	V/PH	MCA	MOCP		
			TONS	CFM	CFM	in wg	MBH	MBH	NO.	%	°F	MBH	MBH				LBS	
GF-1,2	GUARDIAN / RGF1L130DE20MP12	CF64DXA1	5	2000	SEE TABLE	.6	130	104	1	80	67/80	54.9	42.0	120/1	13.7	20	136	2,6-10,13-15

1. PROVIDE CONCRETE PAD FOR UNIT TO SIT ON
2. PROVIDE DUCT DETECTOR IN RETURN DUCT. PROVIDE RELAY FOR KILLING POWER TO UNIT'S FAN.
3. PROVIDE HEAT STRIP OUTDOOR TEMPERATURE LOCKOUT TO PREVENT SUPPLEMENTAL HEAT OPERATION IN RESPONSE TO THE THERMOSTAT BEING CHANGED TO A WARMER SETTING. SET NO LOWER THAN 35°F AND NO HIGHER THAN 40°F
4. PROVIDE HINGED ACCESS DOORS
5. PROVIDE HAIL GUARDS FOR COIL
6. REPLACE ALL FILTERS AT PROJECT'S COMPLETION
7. PROVIDE CO2 SENSOR FOR MODULATING OUTSIDE AIR
8. PROVIDE MOTORIZED OUTSIDE AIR DAMPER. CONNECT TO FAN RELAY AT AIR HANDLER
9. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH NIGHT-TIME SET BACK
10. CONSULT MANUFACTURER ON LINE SET LENGTHS EXCEEDING 60FT
11. PROVIDE HARD START KIT
12. HEATER RATED AT 240V
13. OR EQUAL BY CARRIER, LENNOX, OR TRANE
14. ANY EQUIPMENT SUBSTITUTIONS MUST EQUAL OR EXCEED EFFICIENCIES LISTED (RATINGS PER ARI)
15. MAINTAIN MANUFACTURER'S RECOMMENDED CLEARANCES

REGISTER & GRILLE SCHEDULE

MARK	MFG	MODEL #	SIZE	MOUNTING	DESCRIPTION	NOTES
A	HART & COOLEY	S SERIES	4'	SURFACE	STEEL SUPPLY DIFFUSER, 3 SLOTS	1
B	HART & COOLEY	HV	8X4	SURFACE	ALUMINUM, DOUBLE DEFLECTION C, WHITE	1,2
C	HART & COOLEY	HV	10X6	SURFACE	ALUMINUM, DOUBLE DEFLECTION C, WHITE	1,2
D	HART & COOLEY	HV	14X6	SURFACE	ALUMINUM, DOUBLE DEFLECTION C, WHITE	1,2
E	HART & COOLEY	TG/TGF	8X8	WALL	ALUMINUM TRANSFER GRILLE	1,2
R	HART & COOLEY	RE5	10X10	SURFACE	RETURN GRILLE	1,2
R2	HART & COOLEY	RE5	12X12	SURFACE	RETURN GRILLE	1,2
R3	HART & COOLEY	RE5	14X14	SURFACE	RETURN GRILLE	1,2

1. OR EQUAL BY PRICE, METAL-AIRE, CARNES, TITUS OR NAILOR.
2. VERIFY WITH OWNER/ARCHITECT FOR DIFFUSER COLOR

EXHAUST FAN SCHEDULE

MARK	MFG / MODEL #	TYPE	ESP (in WG)	CFM	VOLT/PH	FLA	SONES	NOTES
EF-1	GREENHECK CSPA700	INLINE	0.40	684	120/1	1.19	2.7	1-4
EF-2	GREENHECK SP-B110	CEILING	0.40	96	120/1	1.14	2.0	1-3

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 OR GREENHECK
4. EXHAUST FAN IS TO BE WIRED TO RUN CONTINUOUSLY DURING OCCUPIED HOURS.

1

RECTANGULAR/SQUARE TO ROUND DUCT EQUIVALENT

RECTANGULAR DUCT	ROUND DUCT
30"X26"	30"ø
20"X26"	24"ø
18"X18"	20"ø
18"X20"	20"ø
20"X16"	18"ø
16"X16"	16"ø
10"X16"	14"ø
10"X20"	16"ø
16"X14"	16"ø
16"X12"	14"ø

Ventilation Calculation (For Clubhouse)

Room Name(s)	Zone Type	Area (sq.ft.)	Rp	Ra	Default Occupancy	Pz	Ez	Airflow to Zone (cfm)
All Other Rooms	Office Space	2085	5	0.06	5	10.43	0.8	2800
Fitness Room	Health/Weight Rooms	540	20	0.06	10	5.40	0.8	600
Bathroom/Shower Rooms	N/A	540	0	0	0	0.00	0.8	400
Corridors	Corridors	235	0	0.06	0	0.00	0.8	200
	N/A	0	0	0	0	0.00	0.8	0

			Maximum Zp:	0.2925
K-12 School?	No		Ev:	0.8
			Actual System Population:	25
Uncorrected Intake	425	cfm		
Outdoor Air Intake	*531*	*cfm*		
Percent of Unit Air	13%			

MECHANICAL SYSTEM, SERVICE SYSTEMS, AND EQUIPMENT

METHOD OF COMPLIANCE	PRESCRIPTIVE
THERMAL ZONE	ZONE 3A

EXTERIOR DESIGN CONDITIONS

HEATING DESIGN DRY BULB	23.1°F
COOLING DESIGN DRY BULB	91.7°F
COOLING DESIGN WET BULB	75.6°F

INTERIOR DESIGN CONDITIONS

HEATING DESIGN DRY BULB	70°F
COOLING DESIGN DRY BULB	75°F
COOLING RELATIVE HUMIDITY	50%

HEATING LOAD:	72,089 BTU/H
SENSIBLE COOLING LOAD:	78,344 BTU/H
LATENT COOLING LOAD:	25,794 BTU/H

MECHANICAL SPACING CONDITIONING SYSTEM:

UNITARY	AIR COOLED DX
DESCRIPTION OF UNIT(S)	(2) 5 TON SPLIT SYSTEMS
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.

MECHANICAL DESIGNER'S STATEMENT | 2

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

JACOB L HAMILTON

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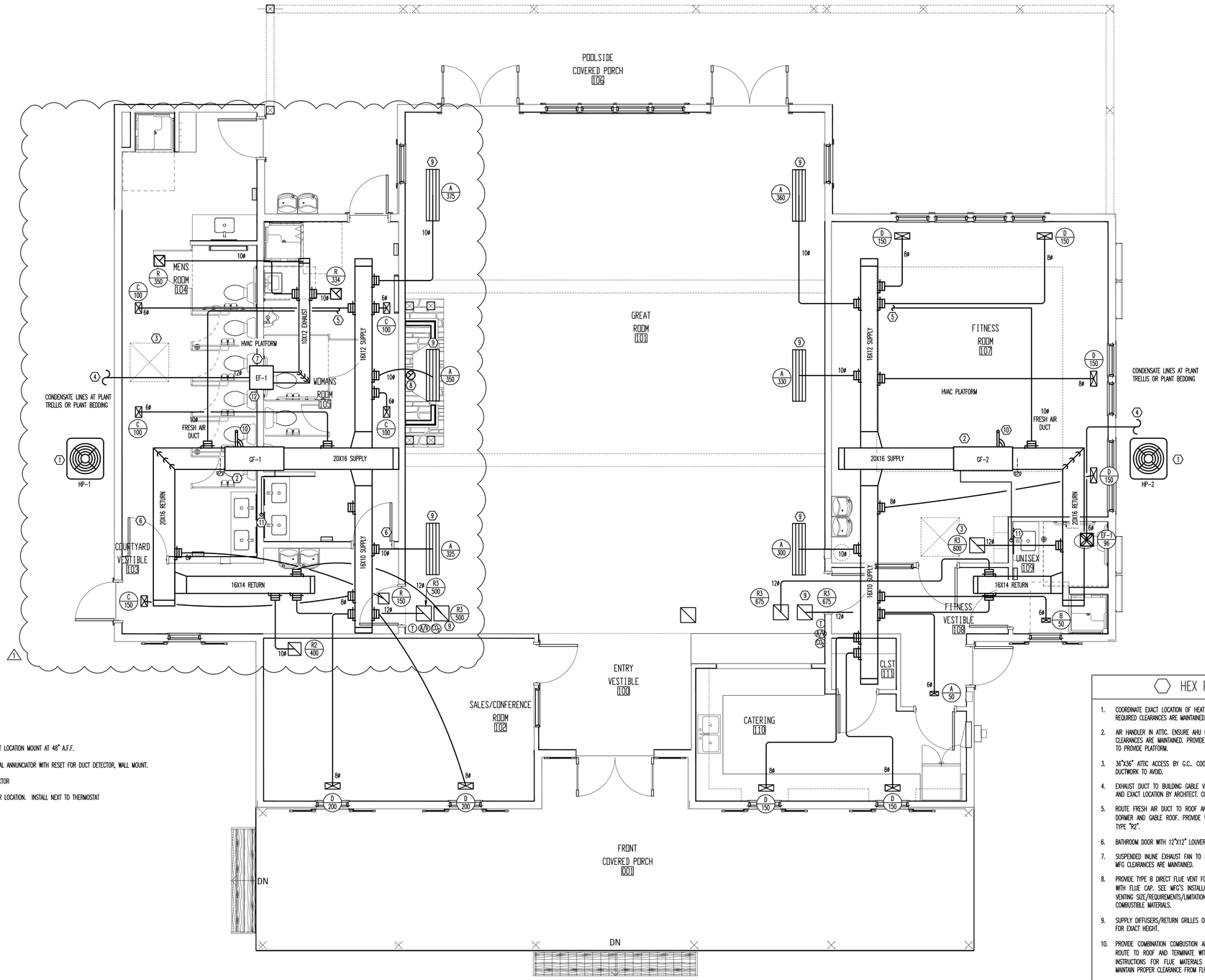
NO.	REVISION	DATE
1	CODE COMENTS	2-7-2022

SHEET DESCRIPTION
MECHANICAL NOTES AND SCHEDULES

PROJECT #: 20442
DATE ISSUED: 10-23-2020
DRAWING BY: DBAS
CHECKED BY: MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE
FUQUAY-VARINA, NC

M1



T THERMOSTAT LOCATION MOUNT AT 48" A.F.F.

A/V AUDIO VISUAL ANNUNCIATOR WITH RESET FOR DUCT DETECTOR, WALL MOUNT.

S--- DUCT DETECTOR

CO_2 CO_2 SENSOR LOCATION. INSTALL NEXT TO THERMOSTAT

HEX PLAN NOTES

1. COORDINATE EXACT LOCATION OF HEAT PUMP W/ ARCHITECT AND G.C. ENSURE MFG'S REQUIRED CLEARANCES ARE MAINTAINED. PROVIDE EQUIPMENT MOUNTING PAD.
2. AIR HANDLER IN ATTIC. ENSURE AHU IS POSITIONED SO THAT REQUIRED MAINTENANCE CLEARANCES ARE MAINTAINED. PROVIDE UNIT WITH CONDENSATE NEUTRALIZER KIT. G.C. TO PROVIDE PLATFORM.
3. 36"X36" ATTIC ACCESS BY G.C.. COORDINATE W/ BUILDING STRUCTURE. ROUTE ALL DUCTWORK TO AVOID.
4. EXHAUST DUCT TO BUILDING GABLE VENT. PROVIDE WITH INSECT SCREEN. SELECTION AND EXACT LOCATION BY ARCHITECT. COORDINATE WITH G.C..
5. ROUTE FRESH AIR DUCT TO ROOF AND PROVIDE WITH TURTLE BACK VENT BETWEEN DORMER AND GABLE ROOF. PROVIDE W/ INSECT SCREEN. 265 CFM USING DIFFUSER TYPE "R2".
6. BATHROOM DOOR WITH 12"X12" LOUVER BY G.C..
7. SUSPENDED INLINE EXHAUST FAN TO BE INSTALLED IN HVAC PLATFORM. ENSURE ALL MFG CLEARANCES ARE MAINTAINED.
8. PROVIDE TYPE B DIRECT FLUE VENT FOR FIRE PLACE. ROUTE TO ROOF AND TERMINATE WITH FLUE CAP. SEE MFG'S INSTALLATION INSTRUCTIONS FOR FLUE MATERIALS AND VENTING SIZE/REQUIREMENTS/LIMITATIONS. MAINTAIN PROPER CLEARANCE FROM FLUE TO COMBUSTIBLE MATERIALS.
9. SUPPLY DIFFUSERS/RETURN GRILLES ON SLOPED CEILING. COORDINATE WITH ARCHITECT FOR EXACT HEIGHT.
10. PROVIDE COMBINATION COMBUSTION AIR INTAKE/EXHAUST FLUE VENT FOR FURNACE. ROUTE TO ROOF AND TERMINATE WITH MFG'S FLUE CAP. SEE MFG'S INSTALLATION INSTRUCTIONS FOR FLUE MATERIALS AND VENTING SIZE/REQUIREMENTS/LIMITATIONS. MAINTAIN PROPER CLEARANCE FROM FLUE TO COMBUSTIBLE MATERIALS.
11. CONDENSATE DOWN WITHIN WALL TO TAILPIECE OF BATHROOM LAVATORY.
12. EXHAUST FAN TO RUN CONTINUOUSLY DURING OCCUPIED HOURS. FAN TO BE CONTROLLED VIA TIME CLOCK. VERIFY SETTINGS FOR TIME CLOCK WITH OWNER.

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

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

NORTH CAROLINA PROFESSIONAL SEAL ENGINEER JACOB L HAMILTON 2-7-22

KILIAN ENGINEERING CORPORATE INC. SEAL NORTH CAROLINA

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FUQUAY-VARINA, NC

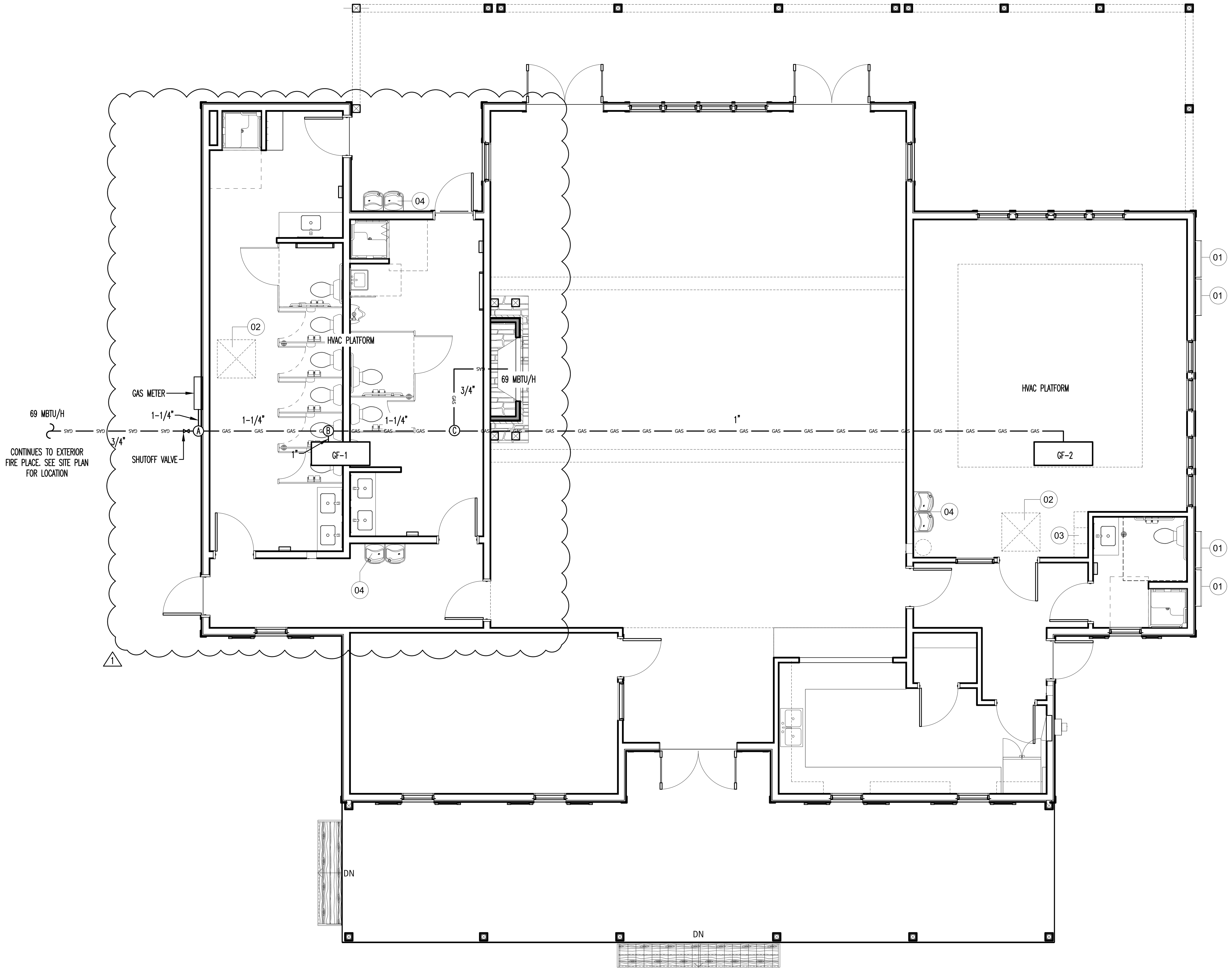
M2

GAS LINE SIZING VERIFICATION TABLE				
PER 2018 NC FUEL GAS CODE TABLE 402.4(2)				
SECTION	GAS LOAD	LINE SIZE	CAPACITY	PRESSURE
	MBTU/H	INCHES	CFH	IN WC
METER-A	398.0	1-1-4	400.0	7"
A-B	329.0	1-1-4	400.0	7"
A-FIRE(EXTERIOR)	69.0	3/4	104.0	7"
B-GF-1	130	1	195.0	7"
B-C	199.0	1-1-4	400.0	7"
C-FIRE(INTERIOR)	69.0	3/4	104.0	7"
C-GF-2	130.0	1	195.0	7"

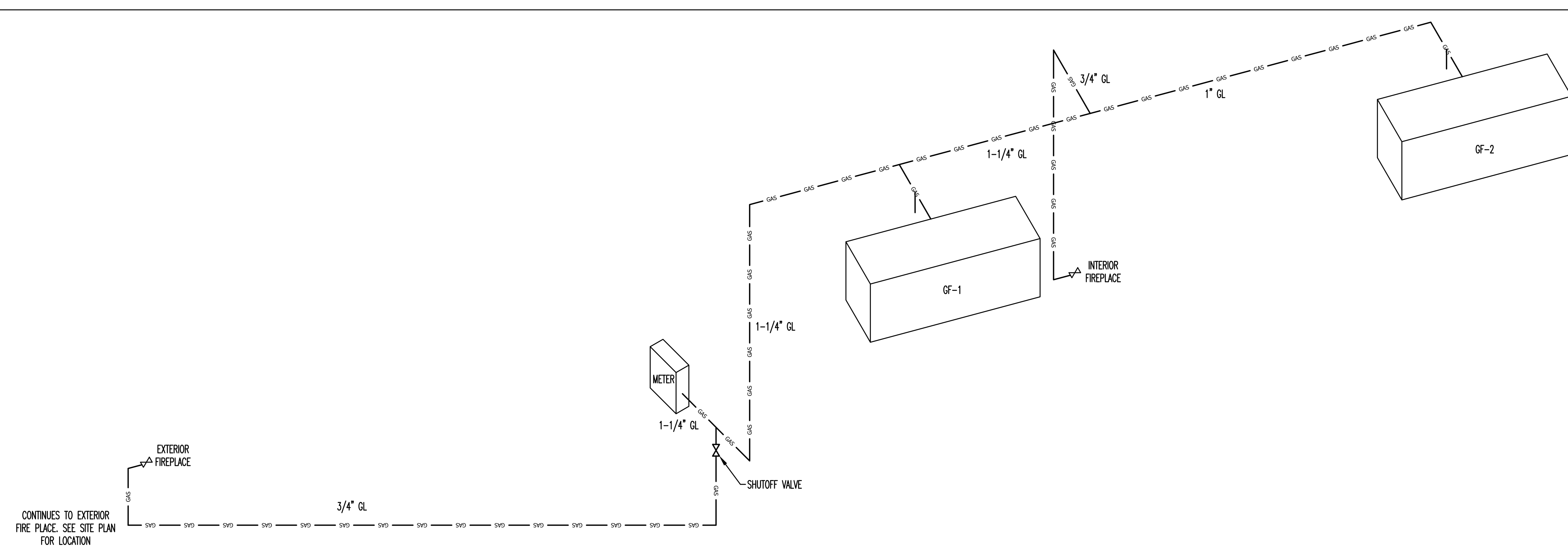
BASED ON 100' OF DEVELOPED LENGTH

PLAN NOTES

1. VERIFY EXACT BTU/H AND GAS LINE SIZE REQUIREMENTS OF FIRE PLACES PRIOR TO BEGINNING WORK. CONTACT ENGINEER IF DISCREPANCIES ARISE.



GAS PLAN: SCALE - 1/8" = 1'0" 1



GAS RISER: NO SCALE 2

GENERAL GAS LINE PIPING NOTES

1. THE GAS PIPING CONTRACTOR (GPC) SHALL PROVIDE ALL MATERIALS AND LABOR AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM AS DESCRIBED BY THESE PLANS AND SPECIFICATIONS.
2. THE GPC SHALL INSTALL ALL MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE 2018 NORTH CAROLINA FUEL GAS CODE AND ANY APPLICABLE LOCAL CODES. WHERE A CONFLICT EXISTS BETWEEN THE ABOVE REQUIREMENTS, THE MORE STRINGENT SHALL BE USED. THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER IN THE EVENT ANY PART OF THESE PLANS CONFLICTS WITH THE ABOVE REQUIREMENTS.
3. THE GPC SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, AND INSPECTIONS NECESSARY FOR THE COMPLETION OF THE WORK UNDER THIS CONTRACT.
4. DO NOT SCALE THESE DRAWINGS-REFER TO ARCHITECTURAL SHEETS FOR DIMENSIONS.
5. THE CONTRACTOR 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.
6. THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
7. INSTALL A DRIP LEG IN GAS LINE AT EACH POINT WHERE CONDENSATE COULD COLLECT. ALL DRIP LEGS SHALL BE READILY ACCESSIBLE FOR CLEANING OR EMPTYING.
8. PIPING SHALL BE SCHEDULE 40 STEEL OR WROUGHT IRON AND COMPLY WITH ANSI/ASME B36.10, ASTM A 53, OR ASTM A 106.
9. ALL PIPES AND FITTINGS SHALL BE NEW, FREE OF DEFECTS, AND RATED FOR THE APPLICATION.
10. ALL PIPING SHALL BE INSTALLED SO AS NOT TO BE SUBJECT TO PHYSICAL DAMAGE.
11. PVC VENT PIPING SHALL NOT BE INSTALLED INDOORS.
12. THE TYPE OF PIPING JOINT USED SHALL BE SUITABLE FOR THE PRESSURE-TEMPERATURE CONDITIONS AND SHALL BE SELECTED CONSIDERING JOINT TIGHTNESS AND MECHANICAL STRENGTH UNDER THE SERVICE CONDITIONS.
13. PIPE JOINTS SHALL BE THREADED, FLANGED, BRAZED, OR WELDED.
14. FLEXIBILITY SHALL BE PROVIDED BY THE USE OF BENDS, LOOPS, OFFSETS, OR COUPLINGS OF THE SLIP TYPE. PROVISIONS SHALL BE MADE TO ABSORB THERMAL CHANGES BY THE USE OF EXPANSION JOINTS OF THE BELLOWS TYPE OR BY THE USE OF 'BALL' OR 'SWIVEL' JOINTS. DO NOT USE EXPANSION JOINTS OF THE SLIP TYPE INSIDE THE BUILDING. PIPE ALIGNMENT GUIDES SHALL BE USED WITH EXPANSION JOINTS PER THE MFG.
15. ALL GAS PIPING SHALL BE LABELED TO INDICATE THE PRESSURE.
16. PIPE HANGERS AND SUPPORTS SHALL CONFORM TO ANSI/MSS SP-58.
17. BENDS SHALL BE MADE ONLY WITH BENDING TOOLS AND PROCEDURES INTENDED FOR THAT PURPOSE. DO NOT BEND PIPE THROUGH AN ARC OF MORE THAN 90°. ALL BENDS SHALL BE SMOOTH AND FREE OF CRACKS, BUCKLING, OR OTHER EVIDENCE OF DAMAGE.
18. INSTALL GAS SHUTOFF VALVES UPSTREAM OF EACH GAS REGULATOR. VALVES SHALL BE READILY ACCESSIBLE AND NOT SUBJECT TO PHYSICAL DAMAGE.
19. WHERE A SEDIMENT TRAP IS NOT INCORPORATED AS PART OF THE APPLIANCE, A SEDIMENT TRAP SHALL BE INSTALLED DOWNSTREAM OF THE APPLIANCE SHUTOFF VALVE AS CLOSE TO THE INLET OF THE APPLIANCE AS PRACTICAL.
20. PRIOR TO ACCEPTANCE BY THE OWNER, ALL GAS PIPING INSTALLATIONS SHALL BE INSPECTED AND PRESSURE TESTED IN ACCORDANCE WITH SECTION 406 OF THE NC FUEL GAS CODE.

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL JACOB L. HAMILTON

KILIAN ENGINEERING, INC. CORPORATE SEAL NORTH CAROLINA

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NO.	REVISION	DATE
1	CODE COMENTS	2-7-2022

SHEET DESCRIPTION
GAS PLAN AND RISER

PROJECT #:	20442
DATE ISSUED:	10-23-2020
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE
FUQUAY-VARINA, NC

M3

ELECTRIC UNIT HEATER SCHEDULE							
MARK	MFG / MODEL #	AIR FLOW	HEATER	VOLT/PH	FLA	MOCP	NOTES
		CFM	KW		AMPS	AMPS	
UH-1,2	MARKEL / H3425T	245	5	240/1	20.8	25.0	1-6

1. BUILT-IN THERMOSTAT SET TO 40°.
2. BUILT-IN DISCONNECT SWITCH.
3. PROVIDE WITH SURFACE MOUNTING SLEEVE KIT.
4. U.L. LISTED
5. MOUNT HEATER AT 12' A.F.F.
6. CORROSION RESISTANT.

EXHAUST FAN SCHEDULE									
MARK	MFG / MODEL #	TYPE	ESP (in WG)	CFM	VOLT/PH	FLA	SONES	NOTES
EF-3	GREENHECK BSQ-70-5	INLINE	0.35	405	120/1	9.8	23	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. INTEGRAL DISCONNECT SWITCH
5. CORROSION RESISTANT
6. CONTINUOUS OPERATION

REGISTER & GRILLE SCHEDULE						
MARK	MFG	MODEL #	SIZE	MOUNTING	DESCRIPTION	NOTES
A	NAILOR	5145H	12X12	CEILING	ALUMINUM LOUVERED RETURN GRILLE	1

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

VENTILATION CALCS

CHEMICAL STORAGE:

37 SQFT X 10' HIGH CEILING = 370 CU. FT @ 10 ACH = 62 CFM

*75 CFM PROVIDED

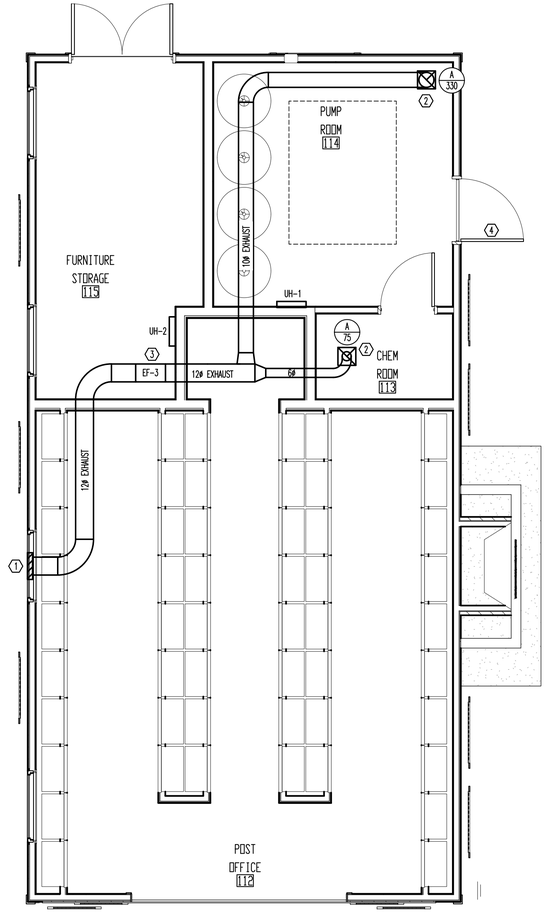
PUMP ROOM:

184 SQFT X 10' HIGH CEILING = 1840 CU. FT @ 10 ACH = 307 CFM

*330 CFM PROVIDED

HEX PLAN NOTES

1. EXHAUST DUCT TO BUILDING GABLE VENT. PROVIDE WITH INSECT SCREEN. SELECTION AND EXACT LOCATION BY ARCHITECT. COORDINATE 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.
4. PUMP EQUIPMENT DOOR WITH WEATHER PROOF LOUVER AND INSECT SCREEN BY G.C. LOUVER TO HAVE MINIMUM FREE AREA OF 240 SQIN.



POST OFFICE MECHANICAL SCHEDULE | 1

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

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SEAL

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POST OFFICE
MECHANICAL PLAN

PROJECT #:	20442
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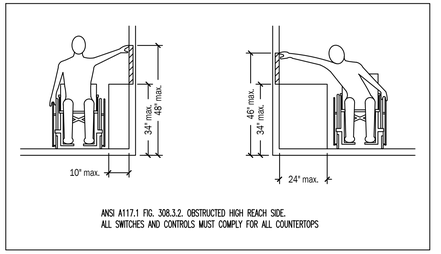
CHECKED BY:	MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
POST OFFICE
FUQUAY-VARINA, NC

M4



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 T&B "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. ABANDONED CONDUIT AND BOXES SHALL HAVE ALL ELECTRICAL WIRING REMOVED COMPLETELY AND NOT JUST "MADE SAFE." CONDUIT AND BOXES SHALL BE REMOVED WHERE PRACTICAL WITHOUT CREATING ADDITIONAL DEMOLITION/RESTITUTION WORK FOR OTHER TRADES.
14. WHERE CONDUCTORS ARE RUN IN PARALLEL, THE EC SHALL COMPLY WITH NEC 310.4.
15. ISOLATED–GROUND TYPE RECEPTACLES SHALL BE INSTALLED IN ACCORDANCE WITH 250.146(D). ISOLATED GROUND RECEPTACLES SHALL BE ORANGE IN COLOR.
16. ALL RECEPTACLES LOCATED WITHIN DWELLING UNITS SHALL HAVE AFCI PROTECTION IN ACCORDANCE WITH SECTION 210.12 OF THE NEC. RECEPTACLES IN DWELLING UNITS SHALL BE LISTED TAMPER–RESISTANT PER NEC 406.12.
17. IN ASSEMBLY AREAS EXCEEDING 100 PERSONS OCCUPANCY, WIRING METHODS SHALL COMPLY WITH NEC 518.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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.
23. 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.

ELECTRICAL NOTES AND SCHEDULES | 1

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

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.
$M	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.
(DT)	CEILING OCCUPANCY SENSOR	WATTSTOPPER, DT-300 LOW VOLTAGE OCCUPANCY SENSOR. 360° ULTRA SONIC AND INFRARED.
Ⓟ	POWER PACK	WATTSTOPPER, BZ-150 LOW VOLTAGE POWER PACK FOR CEILING PACK SENSORS.
Ⓙ	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.

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
	4159.0	6032.00

OCCUPANCY	AREA (sf)	ALLOWANCE (W/sf)	WATTAGE ALLOWED
LEISURE	4900	1.01	4949.00
POST OFFICE	1083	1.00	1083.00
TOTAL	4900		6032.00

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.

4159 W SPECIFIED <= 5429 W (6032 W ALLOWED X 90%)

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 COUNTER HEIGHT. LISTED TAMPERPROOF IF NOTED. MEET FEDERAL SPECIFICATION W-C-596. MAY BE EITHER SIMPLEX, DUPLEX, OR QUAD.
⦶	DUPLEX FLOOR RECEPTACLE	DUPLEX RECEPTACLE OF SAME CHARACTERISTICS AS ABOVE WITH BRASS COVER. MOUNT IN FLOOR. ALL FLOOR BOXES MUST BE LISTED FOR FLOOR APPLICATION.
(TV)	TELEVISION JACK	TELEVISION 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.
⧄	FUSIBLE DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS, FUSE ACCORDING TO NAMEPLATE DATA.
▭	DISCONNECT SWITCH	HEAVY DUTY TYPE. TYPE 1 ENCLOSURE IN INTERIOR APPLICATIONS, TYPE 3R ENCLOSURE IN EXTERIOR APPLICATIONS.
Ⓙ	JUNCTION BOX	GALVANIZED METAL BOX CONSTRUCTED IN ACCORDANCE WITH 314.40 OF THE NEC.

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	LOUVER/LENS	LAMPS			VOLTAGE	INPUT WATTAGE	MOUNTING	REMARKS	MFG	MODEL
			TYPE	QTY.	CCT						
A	6" CAN LIGHT	-	LED	1	-	120	12	RECESSED	2,3	JUNO	IC22LED-G4-09LM-35K-90CRI-MVOLT
B	WALL SCONCE 17.25"	-	LED	1	-	120	20	RECESSED	2,4	KICHLER	PAI COLLECTION 49876BK
C	WALL SCONCE 21.5"	-	LED	1	-	120	20	RECESSED	2,4	KICHLER	PAI COLLECTION 49876BK
D	PENDANT LIGHT	-	LED	1	-	120	30	RECESSED	2,4	KICHLER	PAI COLLECTION 49879BK
E	3 LIGHT VANITY	-	LED	3	-	120	11	WALL	2	KICHLER	45945BK
F	DECORATIVE PENDANT	-	LED	9	-	120	100	PENDANT	2,4	KICHLER	43639OZL18
G	INTERIOR FAN	-	-	-	-	120	91	SUSPENDED	2	KICHLER	330025SBK
H	EXTERIOR FAN	-	LED	1	-	120	32	SUSPENDED	2	KICHLER	300300SBK
I	FLOOD LIGHT	-	LED	2	-	120	25	WALL	2	LITHONIA	OLF-2RH-40K-120-MO
J	GREAT ROOM PENDANT	-	LED	5	-	120	100	PENDANT	2,4	KICHLER	42196BK
K	GOOSENECK WALL SCONCE	-	LED	1	-	120	30	WALL	2,4	KICHLER	49775BK
L	CUSTOM EXTERIOR FIXTURE	-	LED	1	-	120	30	WALL	2,4	PROVIDED BY OTHERS	PROVIDED BY OTHERS
M	1X4 STRIP LIGHT	-	LED	1	3500K	120	35	SURFACE	2	EPCO	G4LED-FX-S3534
N	FLUSH MOUNT LIGHT	-	LED	1	-	120	11	SURFACE	2	KICHLER	43878WHLED
O	LED STRIP	-	LED	-	-	LOW	2	SURFACE	2	COMMERCIAL ELECTRIC	17067
P	UNDERCOUNTER LIGHTING	-	LED	1	-	120	7	SURFACE	2	LITHONIA	UCES-36IN-SWW4-90CRI-WH-M6
EXH	LED EXIT/COMBO W/ BATTERY BACKUP	ACRYLIC	LED	MULT.	N/A	120	4	VARIES	1,2	EMERGI-LITE	LSNX42NGC
EM	DUAL HEAD EMERGENCY FIXTURE	ACRYLIC	LED	MULT.	N/A	120	2	VARIES	1,2	EMERGI-LITE	W-EL-2LED
OE	EXTERIOR LED EMERGENCY LIGHT	POLYCARBONATE	LED	2	-	120	2	SURFACE	1,2	EMERGI-LITE	OW-LUXSB

1. FIXTURE SHALL HAVE BATTERY BACKUP FOR 90 MINUTE ILLUMINATION.
2. OR EQUAL BY COOPER, PHILIPS, DAY-BRITE LIGHTING, OR OWNER APPROVED EQUAL
3. TRIM APPROVED AS WET/DAMP LOCATION LISTED
4. LAMP WITH LED EQUIVALENT
5. PROVIDE TXS-300-SS-120 OR EQUIVALENT LOW VOLTAGE TRANSFORMER FOR FIXTURE

LIGHTING FIXTURE SCHEDULE | 2

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2-7-22

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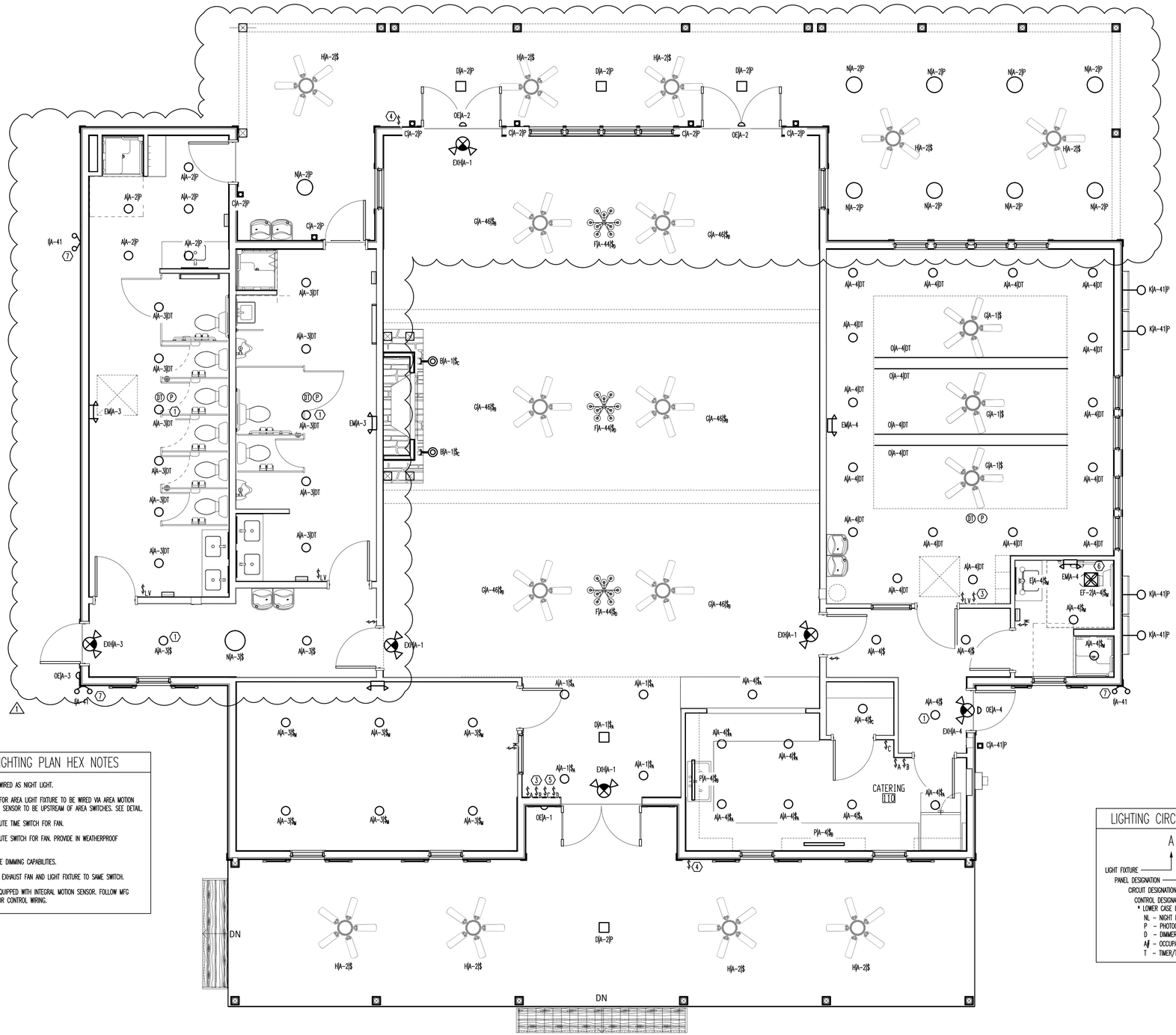
NO.	REVISION	DATE
1	CODE COMENTS	2-7-2022

SHEET DESCRIPTION
ELECTRICAL NOTES AND SCHEDULES

PROJECT #: 20442
DATE ISSUED: 10-23-2020
DRAWING BY: DBAS
CHECKED BY: MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE
FUQUAY-VARINA, NC

E1



LIGHTING PLAN HEX NOTES

1. FIXTURE TO BE WIRED AS NIGHT LIGHT.
2. POWER CIRCUIT FOR AREA LIGHT FIXTURE TO BE WIRED VIA AREA MOTION SENSOR. MOTION SENSOR TO BE UPSTREAM OF AREA SWITCHES. SEE DETAIL.
3. PROVIDE 60 MINUTE TIME SWITCH FOR FAN.
4. PROVIDE 60 MINUTE SWITCH FOR FAN. PROVIDE IN WEATHERPROOF ENCLOSURE.
5. SWITCHS TO HAVE DIMMING CAPABILITIES.
6. EC TO CONNECT EXHAUST FAN AND LIGHT FIXTURE TO SAME SWITCH.
7. FLOOD LIGHTS EQUIPPED WITH INTEGRAL MOTION SENSOR. FOLLOW MFG INSTRUCTIONS FOR CONTROL WIRING.

LIGHTING CIRCUIT DESIGNATIONS

A | A#-# | C

- LIGHT FIXTURE
- PANEL DESIGNATION
- CIRCUIT DESIGNATION
- CONTROL DESIGNATION
  - * LOWER CASE LETTER INDICATES SWITCH ID
  - NL - NIGHT LIGHT - 24/7 OPERATION
  - P - PHOTOCELL
  - D - DIMMER
  - Af - OCCUPANCY SENSOR CIRCUIT (E.G. RMJ-B1)
  - T - TIMER/TIME CLOCK

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

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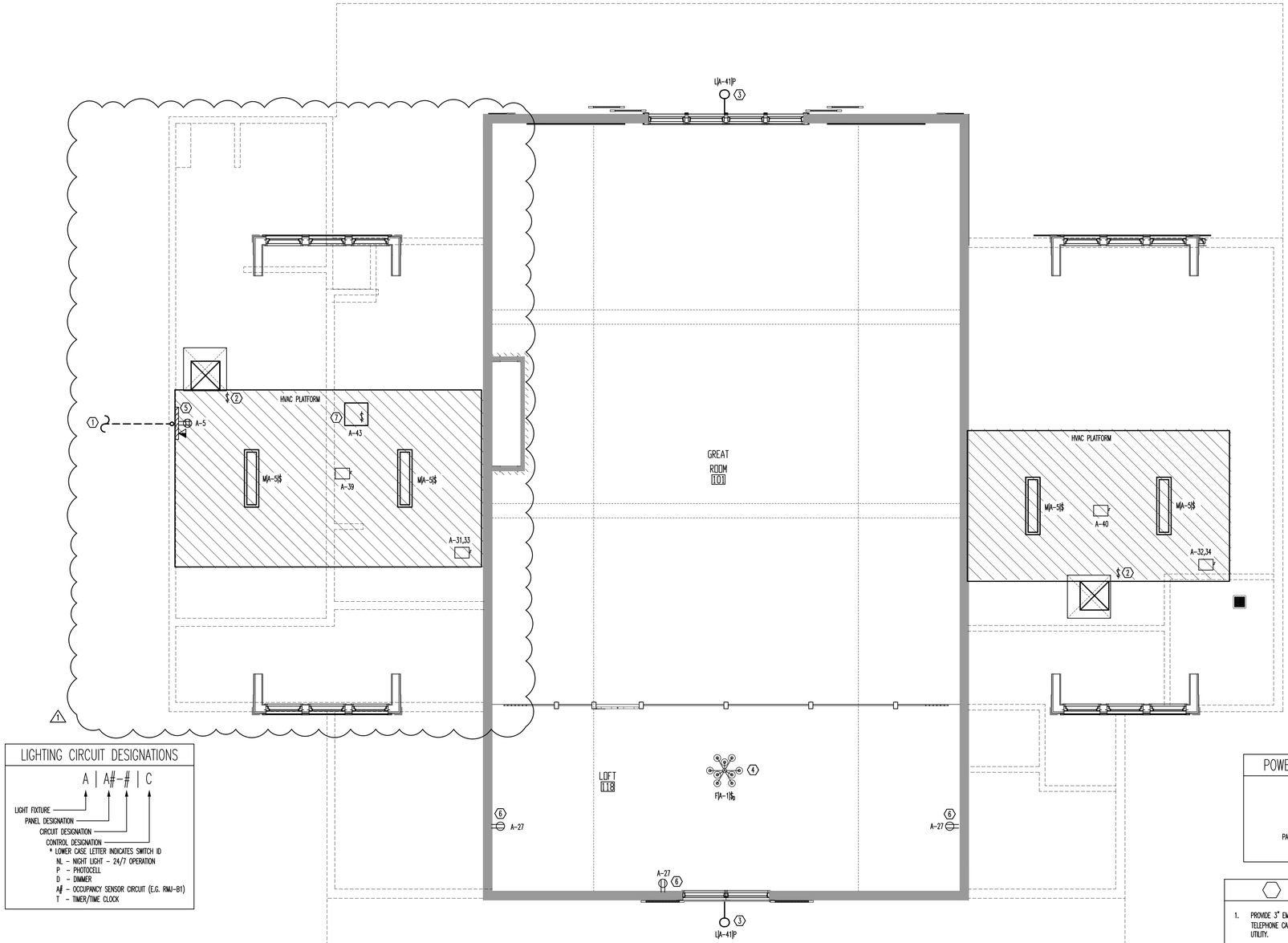

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POWER CIRCUIT DESIGNATIONS

A – #

- PANEL DESIGNATION
- CIRCUIT DESIGNATION

LOFT PLAN HEX NOTES

1. PROVIDE 3" EMPTY CONDUIT W/ PULL STRING TO PROPERTY LINE FOR TELEPHONE CABLE. COORDINATEEXACT LOCATIONS W/ G.C. AND TELEPHONE UTILITY.
2. PROVIDE SWITCH AT HVAC PLATFORM ENTRANCE FOR PLATFORM EQUIPMENT LIGHTING. COORDINATE LOCATION OF LIGHT WITH M.C AND G.C.
3. CUSTOM FIXTURE "L" BY OTHERS. CONFIRM EXACT LOCATION WITH OWNER.
4. CONFIRM HANGING HEIGHT OF FIXTURE WITH ARCHITECT PRIOR TO BEGINNING WORK.
5. PROVIDE FIRE RATED PLYWOOD FOR TELEPHONE/DATA BOARD. PROVIDE #6 CU BONDING WIRE TO BUILDING GROUNDING SYSTEM.
6. PROVIDE SWITCH ON FIRST FLOOR FOR OUTLETS IN LOFT. COORDINATE WITH ARCHITECT AND G.C. FOR EXACT LOCATION OF OUTLETS AND SWITCHES.
7. EXHAUST FAN TO RUN CONTINUOUSLY. FAN TO BE CONTROLLED VIA TIMECLOCK. VERIFY WITH OWNER FOR TIMECLOCK SETTINGS.

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

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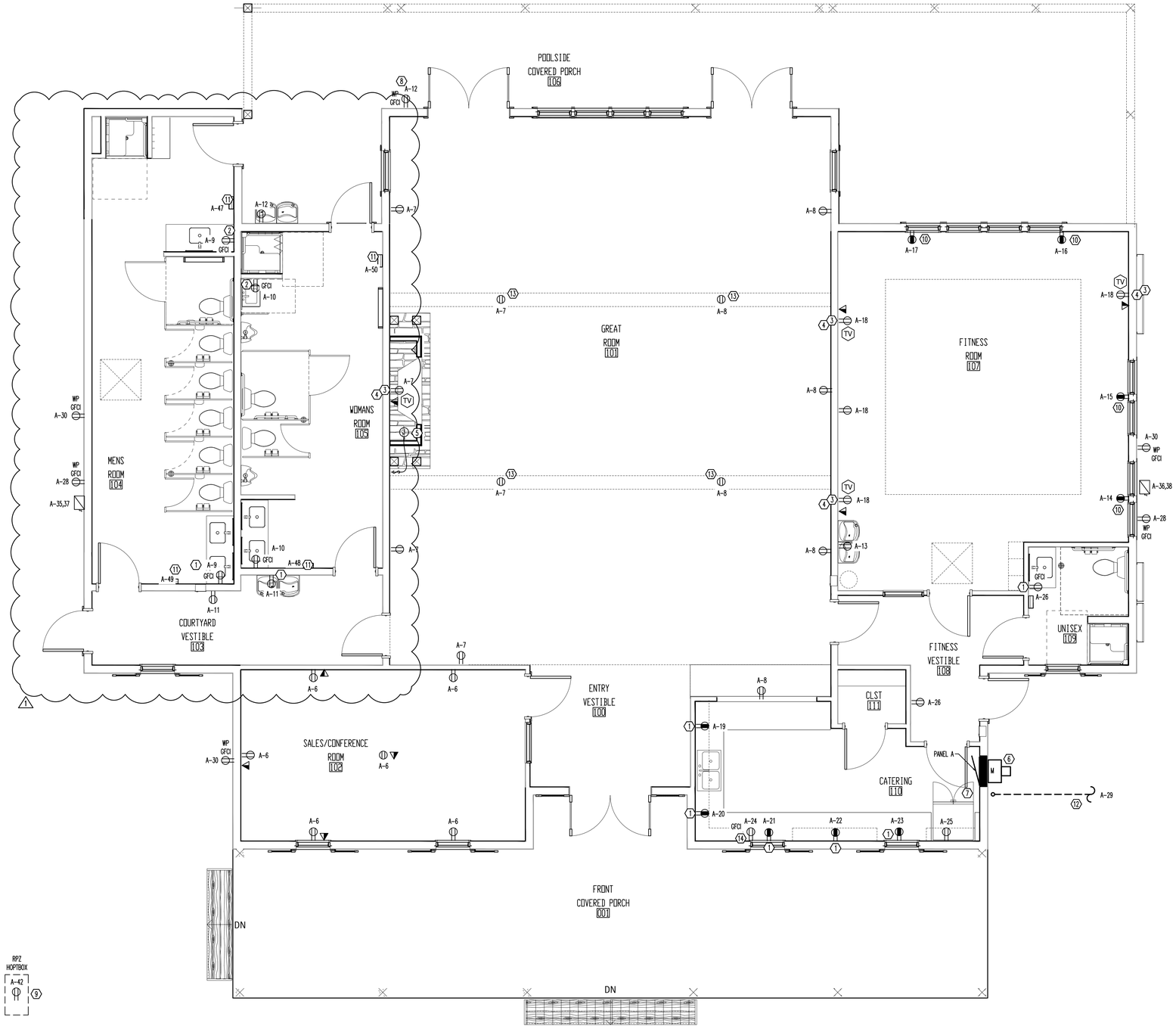

POWER CIRCUIT DESIGNATIONS

A – #

PANEL DESIGNATION

CIRCUIT DESIGNATION

POWER PLAN HEX NOTES

1. RECEPTACLE TO BE MOUNTED AT COUNTER HEIGHT.
2. RECEPTACLE TO BE MOUNT 48" A.F.F.
3. RECEPTACLE AND DATA BOX TO BE MOUNTED 96" A.F.F.
4. EC TO CONFIRM EXACT LOCATION OF TV OUTLET WITH OWNER PRIOR TO BEGINNING WORK.
5. PROVIDE POWER FOR GAS FIREPLACE. COORDINATE REQUIREMENTS AND LOCATION WITH M.C.
6. NEW METER BY UTILITY.
7. NEW PANEL. SEE RISER FOR MORE DETAIL.
8. E.C TO COORDINATE WITH POOL CONTRACTOR TO ENSURE A GFCI/WEATHER PROOF RECEPTACLE IS WITHIN 20' OF EDGE OF POOL (BUT NO CLOSER THAN 6') AS REQUIRE BY NEC 680.22(A)(1).
9. PROVIDE RECEPTACLE AT BUILDING RPZ FOR HOT BOX HEAT TAPE. COORDINATE EXACT LOCATION WITH SITE PLANS AND P.C.
10. PROVIDE POWER FOR FITNESS EQUIPMENT. COORDINATE EXACT REQUIREMENTS WITH MANUFACTURERS INSTRUCTIONS.
11. PROVIDE JUNCTION BOX ABOVE CEILING FOR BATHROOM HAND DRYER. VERIFY EQUIPMENT REQUIREMENTS WITH PRODUCT MANUFACTURER.
12. VERIFY WITH LANDSCAPE ARCHITECT AND G.C. WHICH SIDE OF BUILDING FOR IRRIGATION CIRCUIT TO COME FROM PRIOR TO BEGINNING WORK.
13. VERIFY WITH G.C. FOR FINAL LOCATION OF FLOOR RECEPTACLES BASED ON INTERIOR DESIGN DRAWINGS.
14. VERIFY EXACT LOCATION OF DISHWASHER WITH OWNER.

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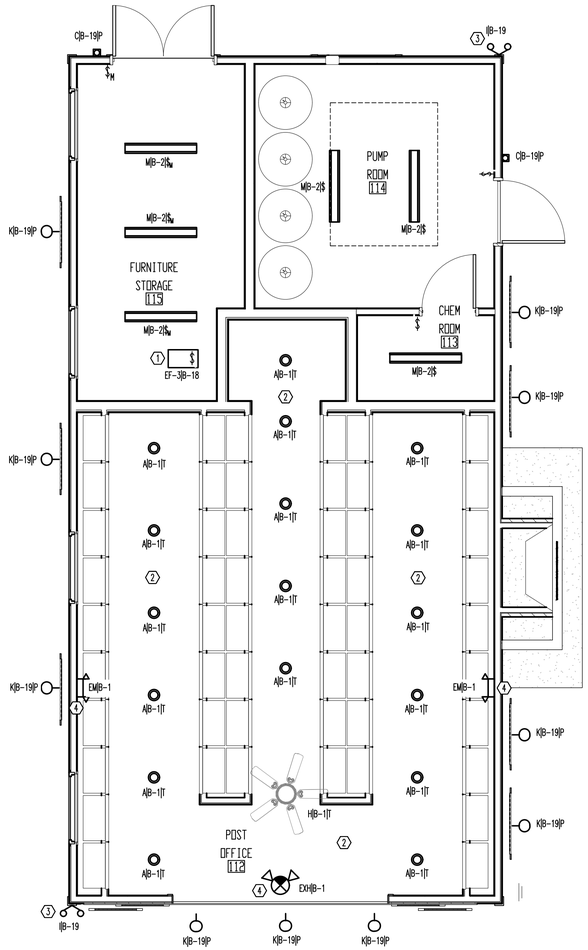
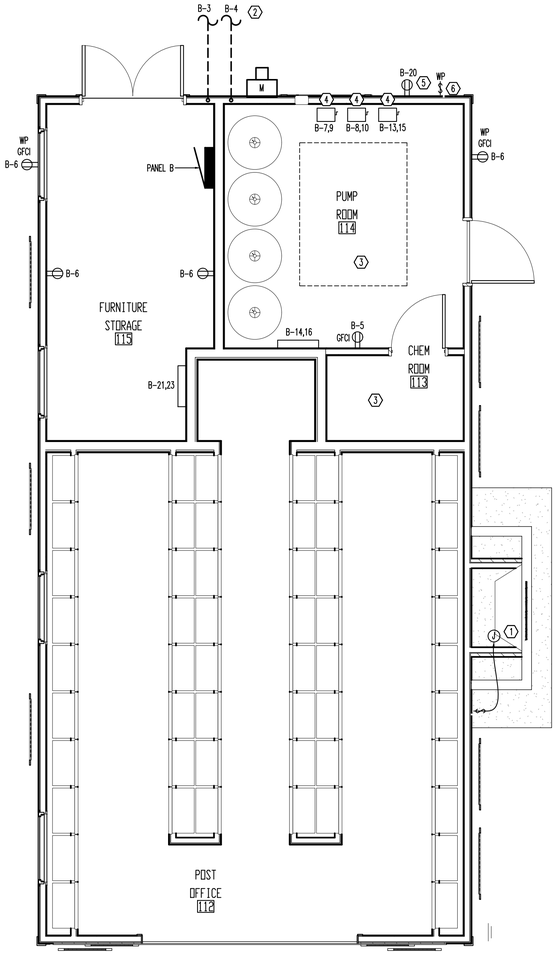
E4





LIGHTING CIRCUIT DESIGNATIONS

A | A#-# | C

- LIGHT FIXTURE
- PANEL DESIGNATION
- CIRCUIT DESIGNATION
- CONTROL DESIGNATION
  - * LOWER CASE LETTER INDICATES SWITCH ID
  - NL – NIGHT LIGHT – 24/7 OPERATION
  - P – PHOTOCELL
  - D – DIMMER
  - A# – OCCUPANCY SENSOR CIRCUIT (E.G. RMJ-B1)
  - T – TIMER/TIME CLOCK

LIGHTING PLAN HEX NOTES

1. EXHAUST FAN SUSPENDED IN ATTIC TO BE WIRE FOR CONTINUOUS OPERATION. COORDINATE WITH M.C.
2. LIGHTING CIRCUIT FOR POST OFFICE LIGHTS TO BE CONTROLLED VIA TIME CLOCK AT PANEL.
3. FLOOD LIGHTS EQUIPPED WITH INTEGRAL MOTION SENSOR. FOLLOW MFG INSTRUCTIONS FOR CONTROL WIRING.
4. VERIFY HEIGHT OF EGRESS LIGHTING WITH ARCHITECT DUE TO MAIL BOXES AND ENTRY HEIGHT.

POWER CIRCUIT DESIGNATIONS

A – #

- PANEL DESIGNATION
- CIRCUIT DESIGNATION

POWER PLAN HEX NOTES

1. PROVIDE POWER FOR GAS FIREPLACE. COORDINATE REQUIREMENTS AND LOCATION WITH M.C.
2. PROVIDE (2) 1" CONDUITS WITH CIRCUITS AS SHOWN TO POOL FOR POOL LIGHTS AND OTHER POOLSIDE EQUIPMENT. COORDINATE EXACT LOCATIONS WITH G.C. AND POOL CONTRACTOR. CIRCUIT TO CONTROLLED VIA TIME CLOCK AT PANEL.
3. AREA IS CORROSIVE ENVIRONMENT PER NEC 680.14.
4. PROVIDE POWER TO 60A NON-FUSED DISCONNECT FOR POOL PUMP. PUMP MUST HAVE GFCI PROTECTION. PROVIDE GFCI BREAKER IN NON-FUSED DISCONNECT. DISCONNECT MUST HAVE NEMA 4X RATED ENCLOSURE. COORDINATE EXACT LOCATION AND SPEC WITH G.C. AND POOL CONTRACTO BEFORE BEGINNING WORK. FINAL CONNECTIONS BY E.C.
5. PROVIDE POWER TO EMERGENCY PHONE RECEPTACLE. FIELD VERIFY LOCATION WITH LOCAL AHJ.
6. 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.

POST OFFICE LIGHTING PLAN: SCALE - 1/4" = 1

POST OFFICE POWER PLAN: SCALE - 1/4" = 2

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BUILDING & DEVELOPMENT CO.

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NO.	REVISION	DATE

SHEET DESCRIPTION
POST OFFICE POWER AND LIGHTING PLANS

PROJECT #:	20442
DATE ISSUED:	2-7-22
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
POST OFFICE
FUQUAY-VARINA, NC

E5

PANEL A								
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	GREAT ROOM ENTRY LIGHTING	20/1	0.28	A	0.82	20/1	COVERED PORCH LIGHTING	2
3	BATHROOM/SALES LIGHTING	20/1	0.36	B	0.93	20/1	FITNESS/CATERING LIGHTING	4
5	HVAC PLATFORM LIGHTING/RECEPT.	20/1	0.54	A	1.08	20/1	SALES RECEPTACLES	6
7	GREAT ROOM RECEPTACLES	20/1	1.08	B	1.08	20/1	GREAT ROOM FLOOR RECEPTACLES	8
9	MEN BATHROOM RECEPTACLES	20/1	0.36	A	0.36	20/1	WOMEN BATHROOM RECEPTACLES	10
(11)	VESTIBLE EWC/RECEPTACLE	20/1	0.64	B	0.64	20/1	COVERED PORCH EWC/RECEPTACLE	(12)
(13)	FITNESS EWC	20/1	0.48	A	0.18	20/1	CARDIO EQUIPMENT	14
15	CARDIO EQUIPMENT	20/1	0.18	B	0.18	20/1	CARDIO EQUIPMENT	16
17	CARDIO EQUIPMENT	20/1	0.18	A	0.54	20/1	FITNESS RECEPTACLES	18
19	CATERING RECEPTACLE	20/1	0.18	B	0.18	20/1	CATERING RECEPTACLE	20
21	CATERING RECEPTACLE	20/1	0.18	A	0.18	20/1	CATERING RECEPTACLE	22
23	CATERING RECEPTACLE	20/1	0.18	B	0.60	20/1	DISHWASHER RECEPTACLE	24
(25)	REFRIGERATOR RECEPTACLE	20/1	0.60	A	0.36	20/1	UNISEX/VESTIBLE RECEPTACLE	26
27	SWITCHED LOFT OUTLETS	20/1	0.54	B	0.36	20/1	EXTERIOR RECEPTACLES	28
29	IRRIGATION	20/1	0.30	A	0.54	20/1	EXTERIOR RECEPTACLES	30
31	WATER HEATER - 1	25/2	2.25	B	2.25	25/2	WATER HEATER - 2	32
33			2.25	A	2.25			34
35	HP-1	50/2	3.65	B	3.65	50/2	HP-2	36
37			3.65	A	3.65			38
39	GF-1	20/1	1.64	B	1.64	20/1	GF-2	40
41	EXTERIOR LIGHTING	20/1	0.32	A	0.20	20/1	RPZ HEAT TRACE	42
43	EXHAUST FAN 1	20/1	0.40	B	0.38	20/1	GREAT ROOM DECORATIVE PENDANTS	44
45	GREAT ROOM PENDANTS	20/1	0.75	A	0.68	20/1	GREAT ROOM FANS	46
(47)	HAND DRYER MEN	20/1	1.00	B	1.00	20/1	HAND DRYER WOMEN	(48)
(49)	HAND DRYER MEN	20/1	1.00	A	1.00	20/1	HAND DRYER WOMEN	(50)
51	SPACE		0.00	B	0.00		SPACE	52
53	SPACE		0.00	A	0.00		SPACE	54
			kVA	PH	AMPS			
			22.7	A	189			
			25.0	B	208			

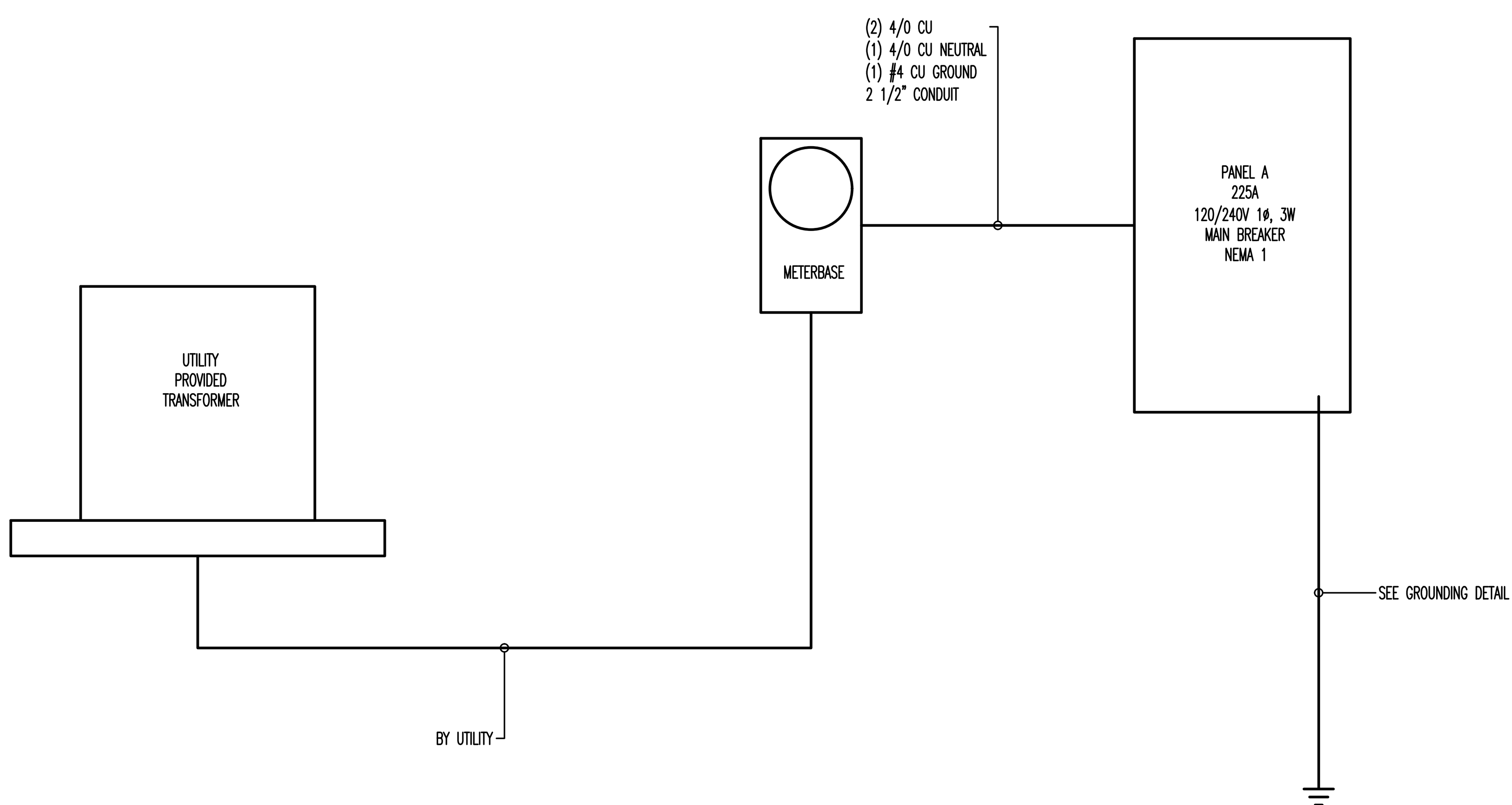
VOLTAGE/PHASE	120/240, 1P, 3W
BUS RATING	225A
MAIN CIRCUIT BREAKER RATING	MAIN BREAKER
AIC RATING	22K - EC TO VERIFY
SERVICE ENTRANCE RATED	YES
ENCLOSURE	NEMA 1
MOUNTING	RECESSED

○ - INDICATES GFCI BREAKER

NEC ELECTRIC DEMAND SUMMARY 120/240V, 1P, 3W						
EQUIPMENT	DEMAND FACTOR	kVA A	kVA B	LOAD kVA	NEC REFERENCE	NOTES/CALCULATIONS
LIGHTING	125%	4.29	4.29	8.58	220.12	4900 SF X 1.4 VA/SF X 1.25
RECEPTACLES < 10 kVA	100%	4.41	4.41	8.82	220.44	
RECEPTACLES > 10 kVA	50%	0.00	0.00	0.00	220.44	
HVAC	100%	8.94	8.94	17.87	--	BASED ON MCA
WATER HEATER	125%	5.63	5.63	11.25	422.13	STORAGE TANK <120 GAL @ 125%
DEMAND kVA PER PHASE		23.26	23.26			
DEMAND AMPS PER PHASE		194	194			

THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.

1



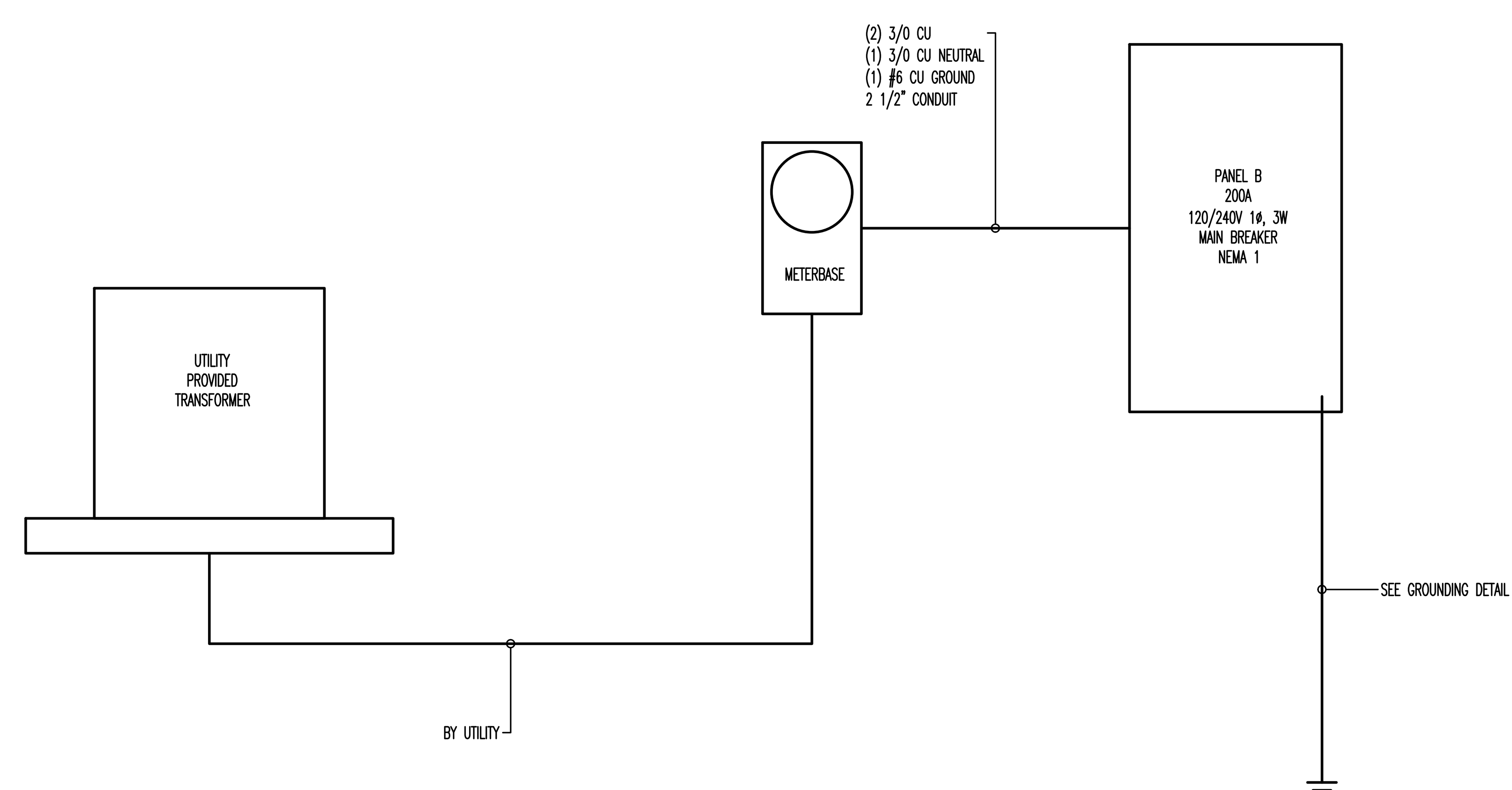
CLUBHOUSE PANEL SCHEDULE AND POWER RISER: NO SCALE 1

PANEL B								
CKT	LOAD	BKR	LOAD kVA	PH	LOAD kVA	BKR	LOAD	CKT
1	POST OFFICE LIGHTS/FAN	20/1	0.30	A	0.26	20/1	STORAGE/CHEM/PUMP ROOM LIGHTS	2
3	POOL LIGHTS/ACCESSORIES	20/1	0.48	B	0.48	20/1	POOL LIGHTS/ACCESSORIES	4
5	PUMP ROOM RECEPTACLE	20/1	0.18	A	0.72	20/1	RECEPTACLES	6
7	5 HP POOL PUMP 1	60/2	3.36	B	3.36	60/2	5 HP POOL PUMP 2	8
9			3.36	A	3.36			10
11	SHUNT TRIP		0.00	B	0.00		SHUNT TRIP	12
13	5 HP POOL PUMP 3	60/2	3.36	A	2.50	25/2	UNIT HEATER 1	14
15			3.36	B	2.50			16
17	SHUNT TRIP		0.00	A	1.18	20/1	EXHAUST FAN 1	18
19	EXTERIOR LIGHTING	20/1	0.49	B	0.18	20/1	EMERGENCY TELEPHONE RECEPTACLE	20
21	UNIT HEATER 2	25/2	2.50	A	0.00		SPACE	22
23			2.50	B	0.00		SPACE	24
25	SPACE		0.00	A	0.00		SPACE	26
27	SPACE		0.00	B	0.00		SPACE	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			
			17.7	A	148			
			16.7	B	139			

VOLTAGE/PHASE	120/240, 1P, 3W
BUS RATING	200A
MAIN CIRCUIT BREAKER RATING	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%	1.08	1.08	2.17	220.12	1083 SF X 1.6 VA/SF X 1.25
RECEPTACLES < 10 kVA	100%	0.45	0.45	0.90	220.44	
HVAC	100%	5.00	5.18	10.18	--	BASED ON MCA
POOL EQUIPMENT	100%	10.08	10.08	20.16	--	BASED ON MOTOR SIZE
DEMAND kVA PER PHASE		16.61	16.79			
DEMAND AMPS PER PHASE		138	140			

THE CALCULATED LIGHTING LOAD EXCEEDS THE CONNECTED LIGHTING LOAD.



POST OFFICE PANEL SCHEDULE AND POWER RISER: NO SCALE 2

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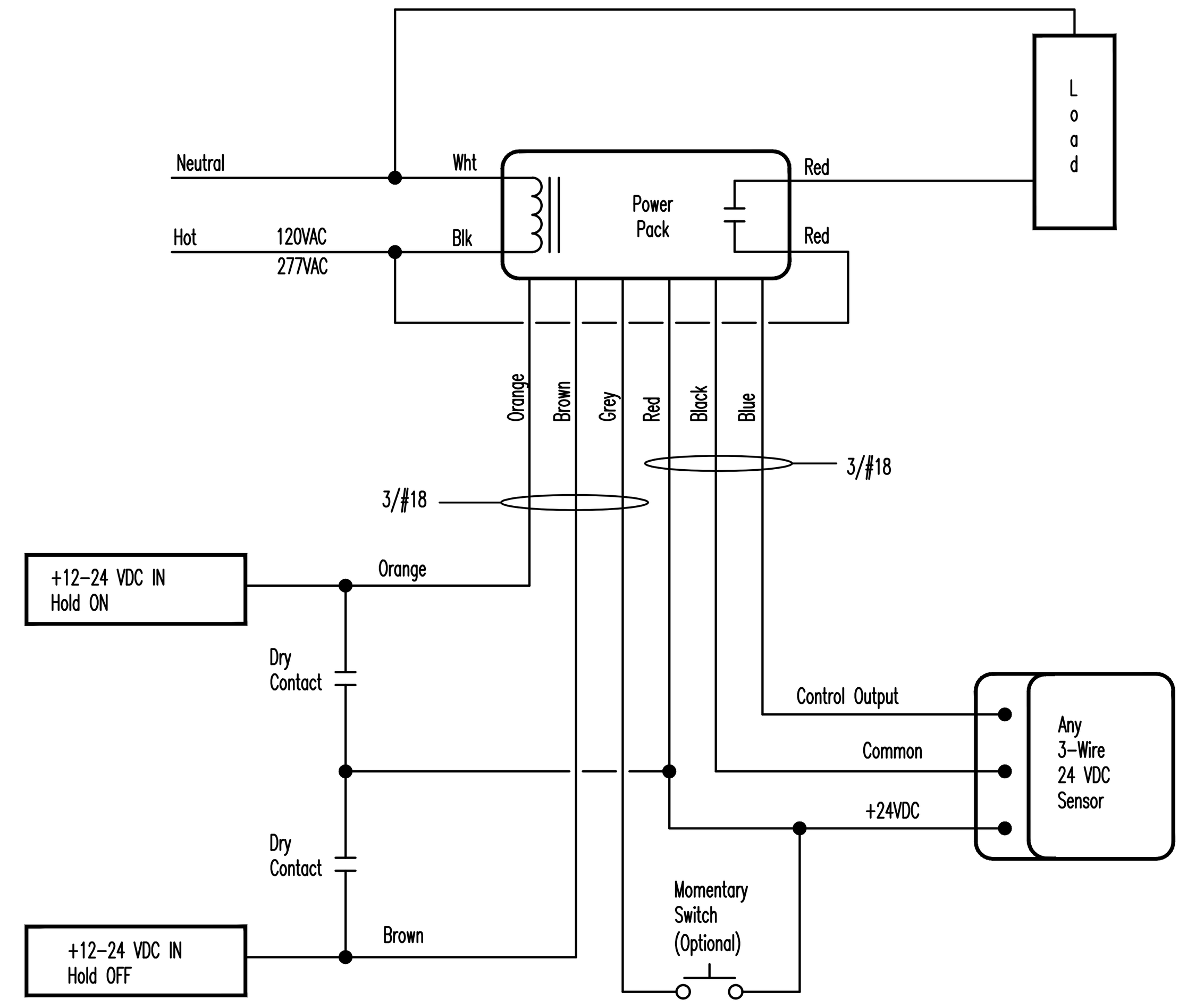
NO.	REVISION	DATE
1	CODE COMENTS	2-7-2022

SHEET DESCRIPTION
PANEL SCHEDULE AND POWER RISER

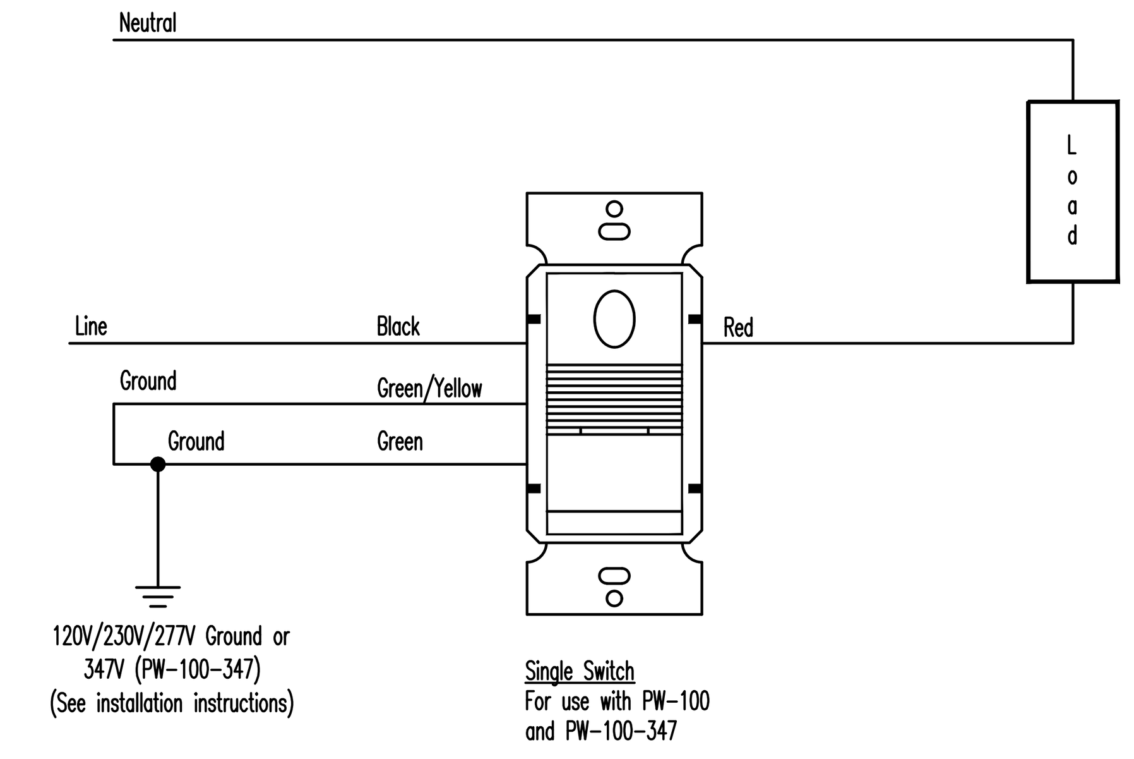
PROJECT #: 20442
DATE ISSUED: 10-23-2020
DRAWING BY: DBAS
CHECKED BY: MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POST OFFICE
FUQUAY-VARINA, NC

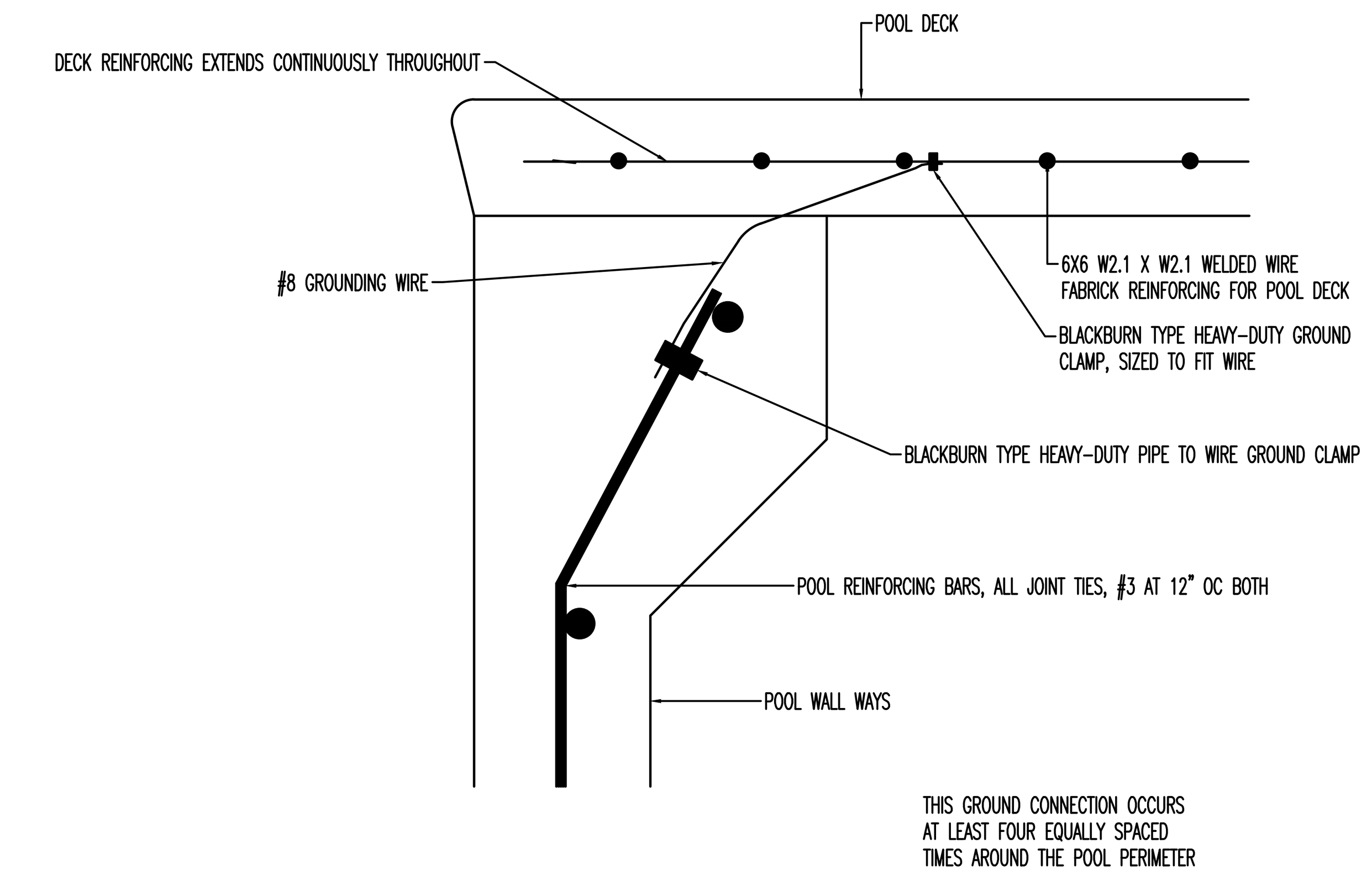
E6



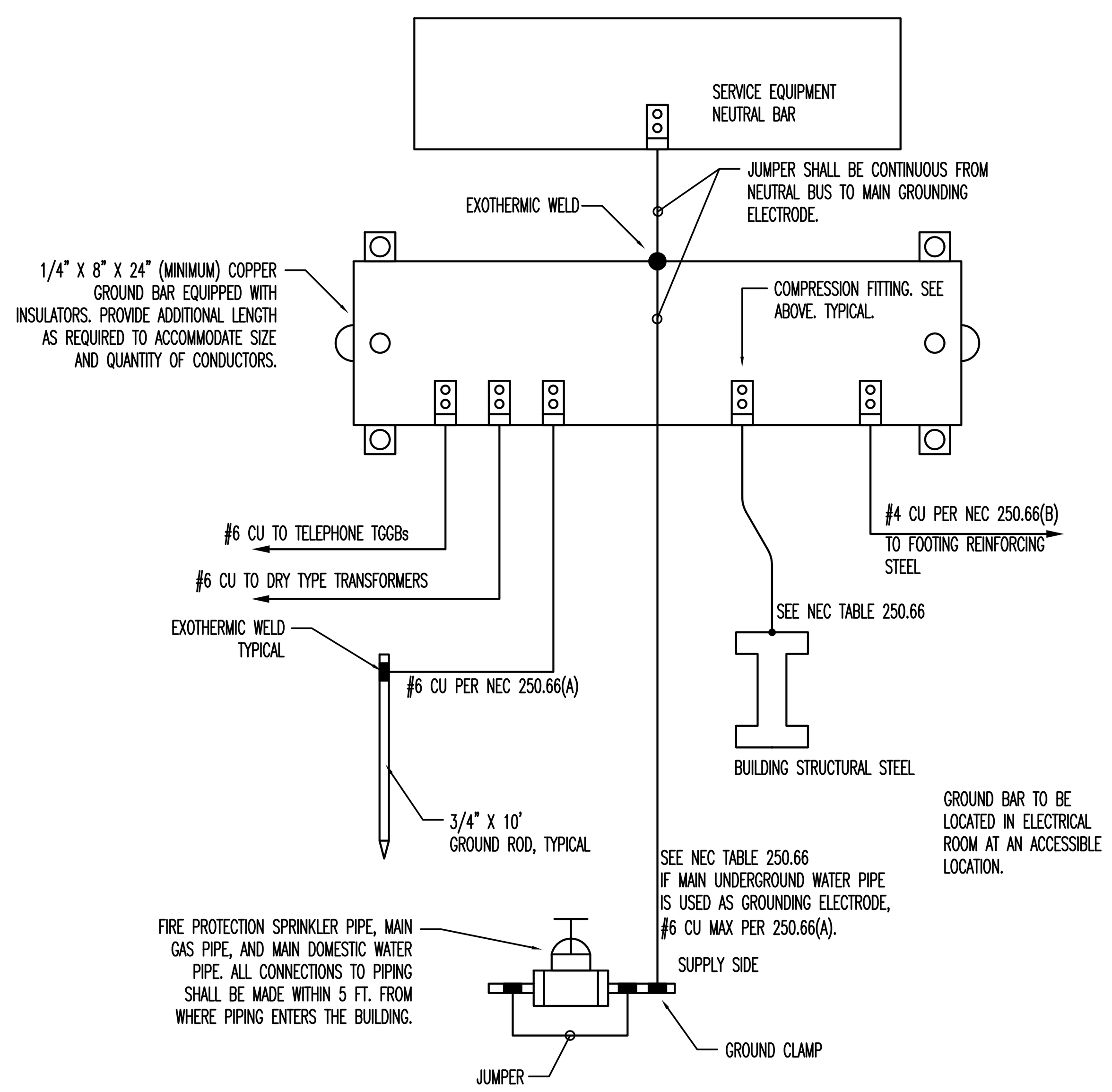
CEILING OCCUPANCY SENSOR WIRING - NO SCALE | 1



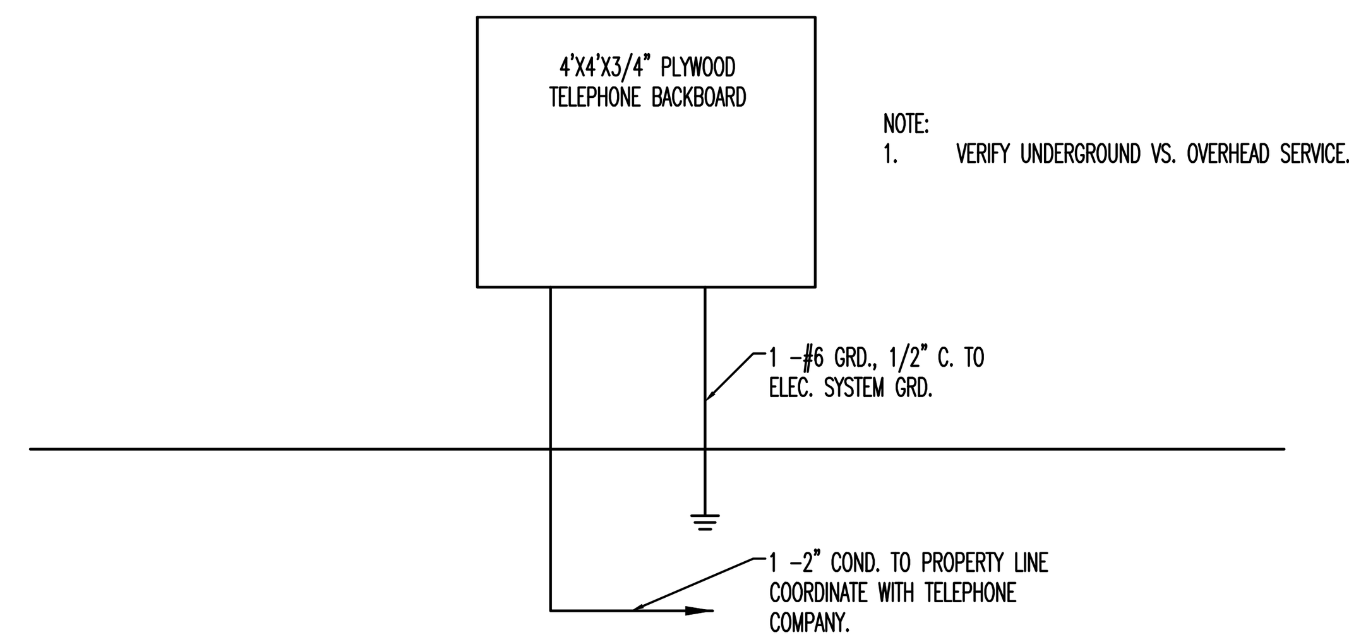
WALL OCCUPANCY SENSOR WIRING-NO SCALE | 2



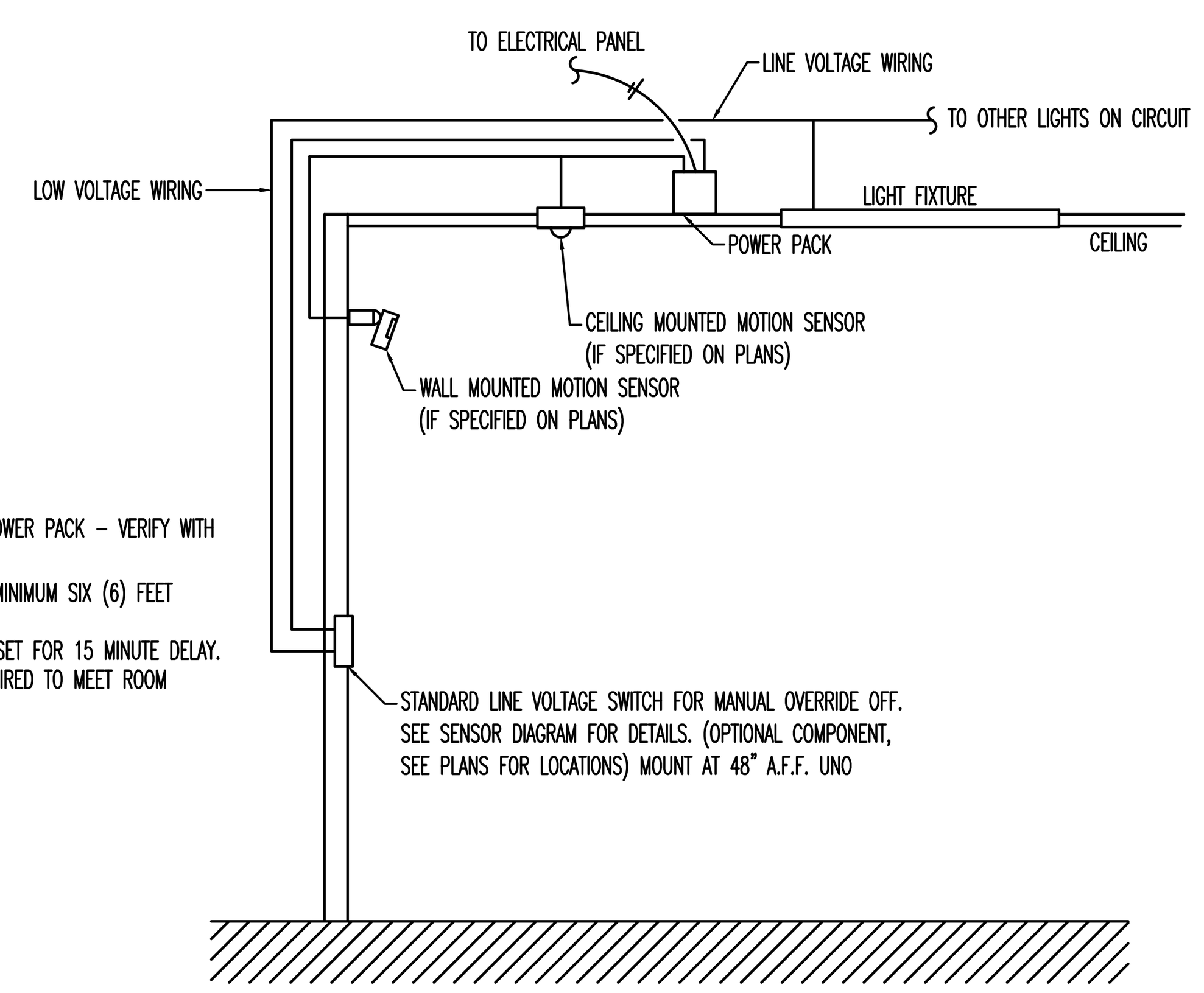
EQUIPOTENTIAL BONDING GRID DETAIL (BY OTHERS) - NO SCALE | 3



GROUNDING DETAIL-NO SCALE | 4

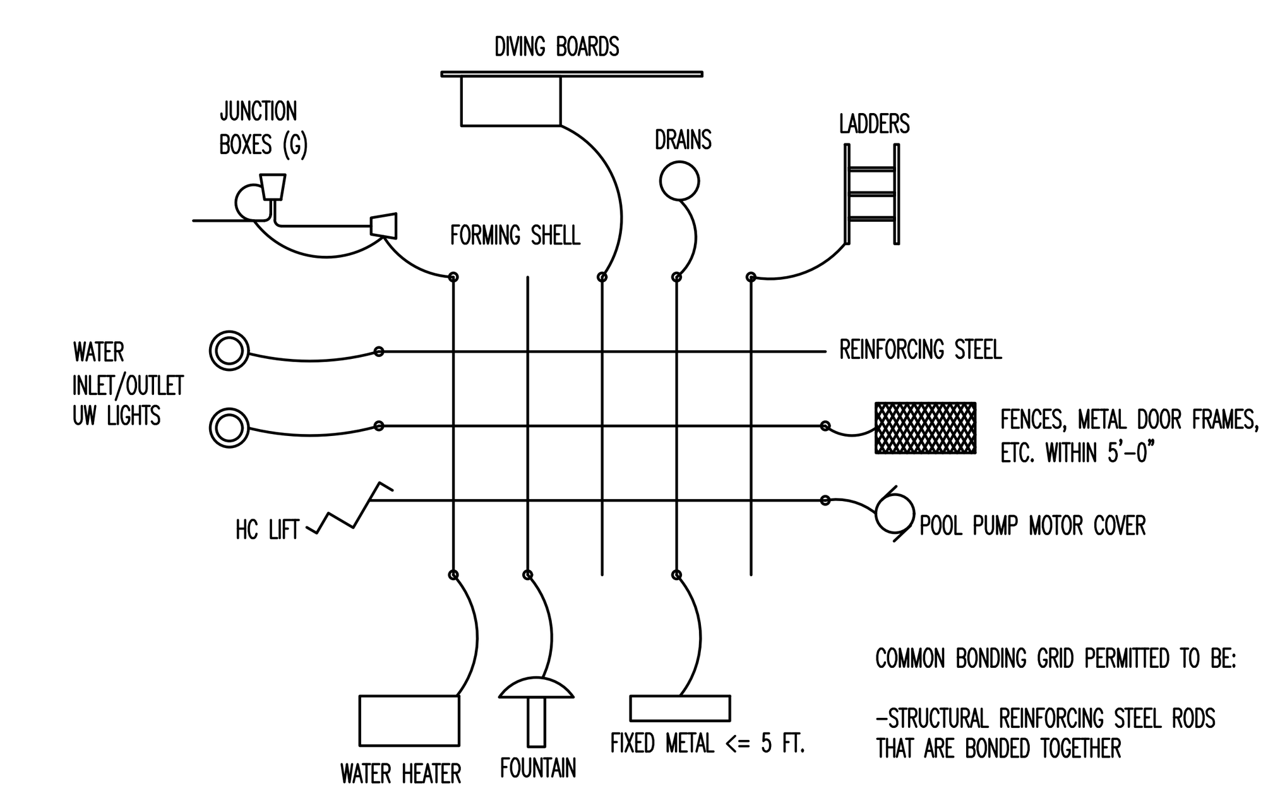


PHONE BOARD DETAIL-NO SCALE | 5



1. THERE SHALL BE A MAXIMUM OF 3 MOTION SENSORS PER POWER PACK - VERIFY WITH SPECIFIC BRAND/EQUIPMENT BEING INSTALLED.
2. CEILING MOUNTED MOTION SENSORS SHALL BE MOUNTED AT MINIMUM SIX (6) FEET FROM ANY HVAC DIFFUSER
3. MOTION SENSORS AND MOTION SENSOR SWITCHES SHALL BE SET FOR 15 MINUTE DELAY. CONTRACTOR SHALL ADJUST SENSITIVITY ON SENSOR AS REQUIRED TO MEET ROOM CONDITIONS AND SIZE.

TYPICAL MOTION SENSOR DIAGRAM WITH LINE VOLTAGE SWITCH-NO SCALE | 6



COMMON BONDING GRID PERMITTED TO BE:

-STRUCTURAL REINFORCING STEEL RODS THAT ARE BONDED TOGETHER

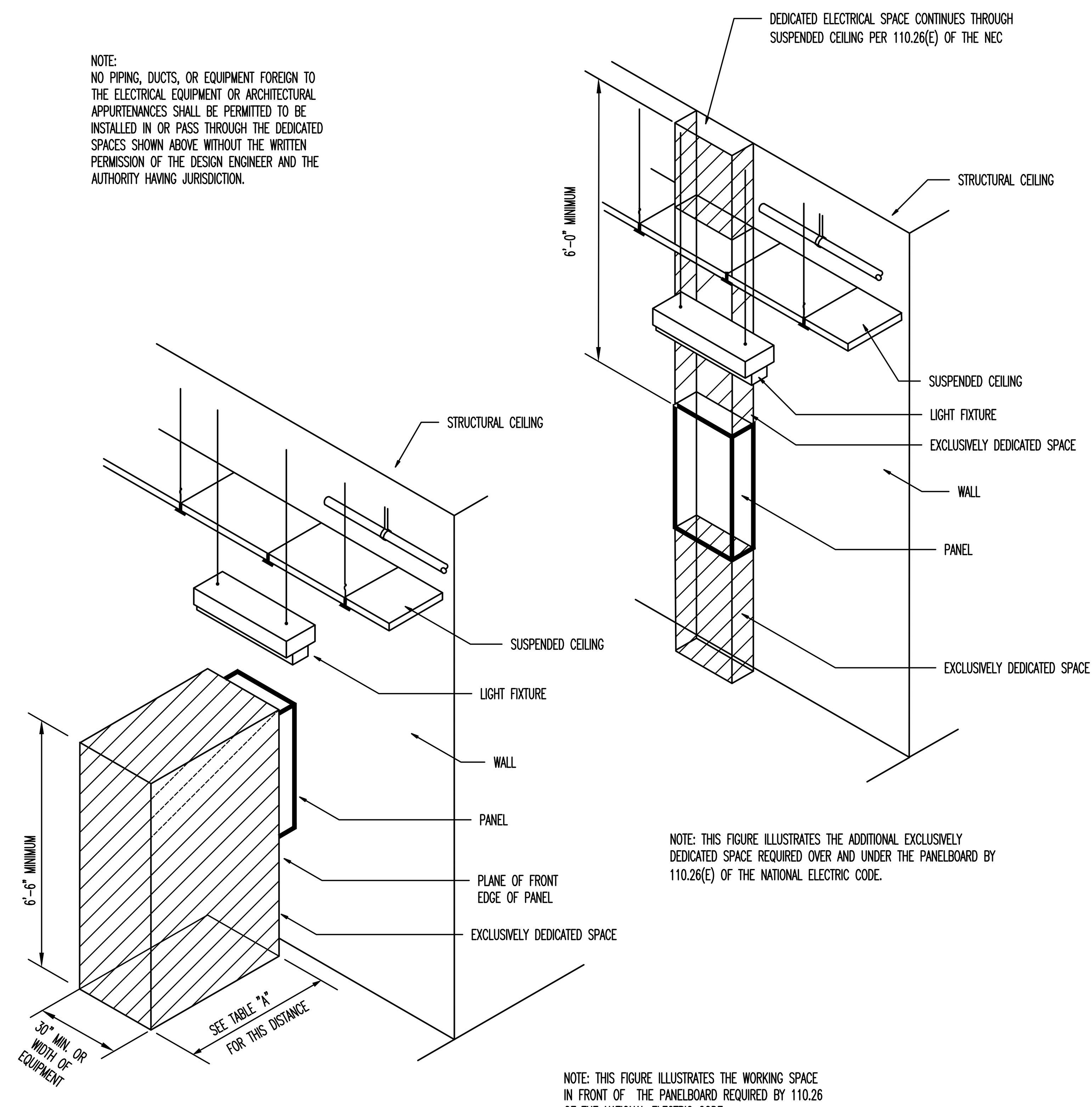
-WALL OF BOLTED OR WELDED METAL POOL

OR

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

SWIMMING POOL BONDING RISER (BY OTHERS) - NO SCALE | 7

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)		
	CONDITION 1	2	3
0-150	3	3	3
151-600	3	3-1/2	4

REQUIRED CLEARANCES-NO SCALE | 8

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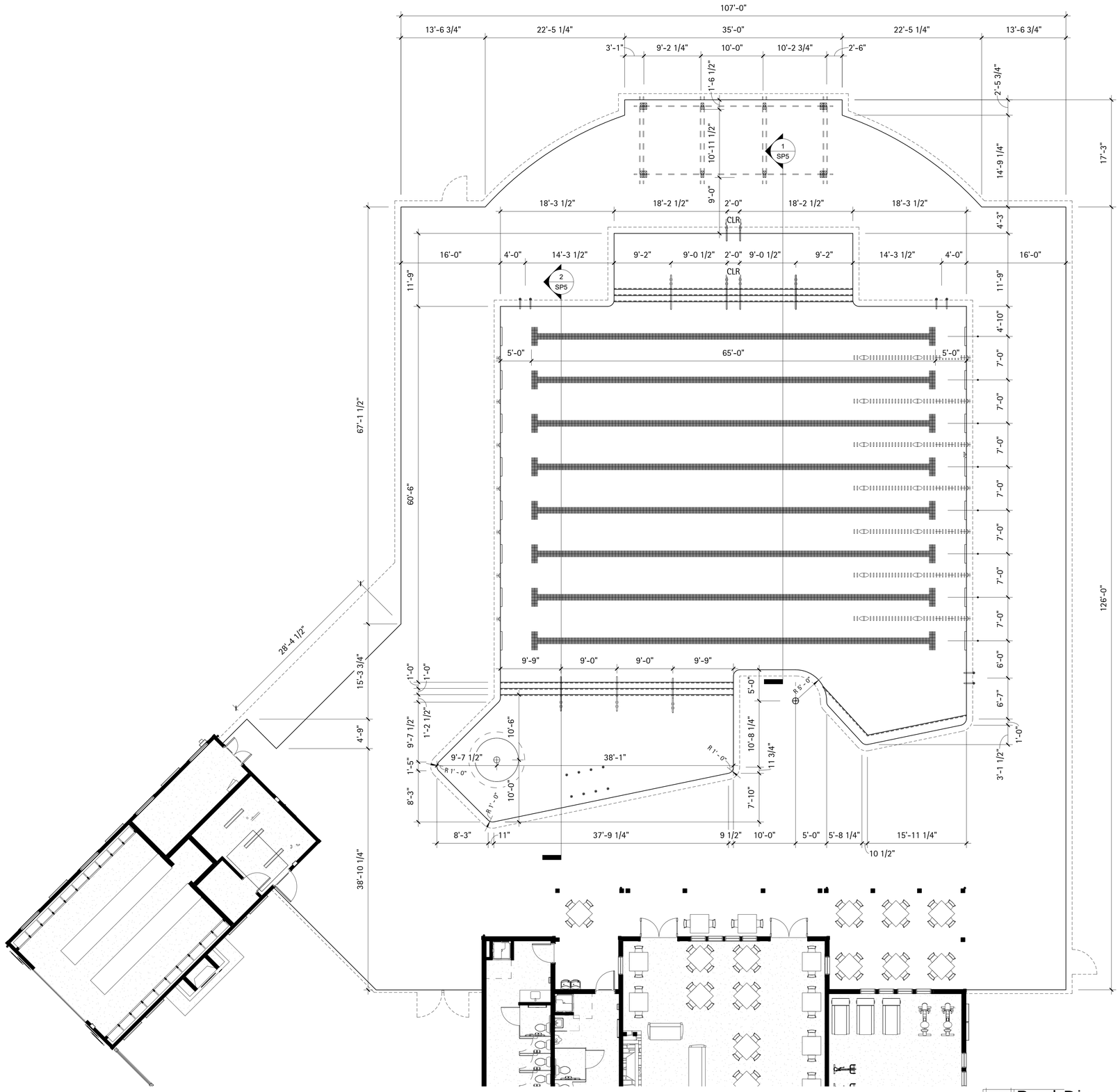
NO.	REVISION	DATE
1	CODE COMMENTS	2-7-2022

SHEET DESCRIPTION
ELECTRICAL DETAILS

PROJECT #:	20442
DATE ISSUED:	10-23-2020
DRAWING BY:	DBAS
CHECKED BY:	MWK/JLH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE & POST OFFICE
FUQUAY-VARINA, NC

E7



1 SP1 Pool Dimension Plan

1/8" = 1'-0"

MAIN POOL DATA	
POOL DIMENSIONS:	85'-3" X 94'-9" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	9" SHELF w/ 3'-5'
POOL VOLUME:	149,057 GALLONS
SURFACE AREA:	5,945 SQFT.
PERIMETER:	355 LF
COPING:	BULLNOSE INDEPENDENT
TOTAL FLOW:	414 GPM @ 65 TDH
SHELL MATERIAL:	4000 PSI SHOTCRETE
INTERIOR FINISH:	QUARTZ PLASTER
BATHER LOAD:	396 PERSONS
BACKWASH TO:	STORM SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
MAIN DRAINS:	(4) 6" SCH 40 PVC
SKIMMERS:	(16) 4" SCH 40 PVC
VACUUM LINE:	(2) 2" SCH 40 PVC
INLETS:	(23) 6" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	4 @ 7.06 SF (EA) = 28.24
SIZE REQUIRED:	27.82 SF TOTAL
MEDIA CIRC. RATE:	20 GPM/SF
BACKWASH RATE:	20 GPM/SF
TURNOVER RATE:	6 HOURS

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BUILDING & DEVELOPMENT CO.

NORTH CAROLINA PROFESSIONAL SEAL 7017 ENGINEER ALAN R. HINES
2/24/2021

Hine's Aquatic Engineering PLLC P-1455
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405 Willowcrest Dr.
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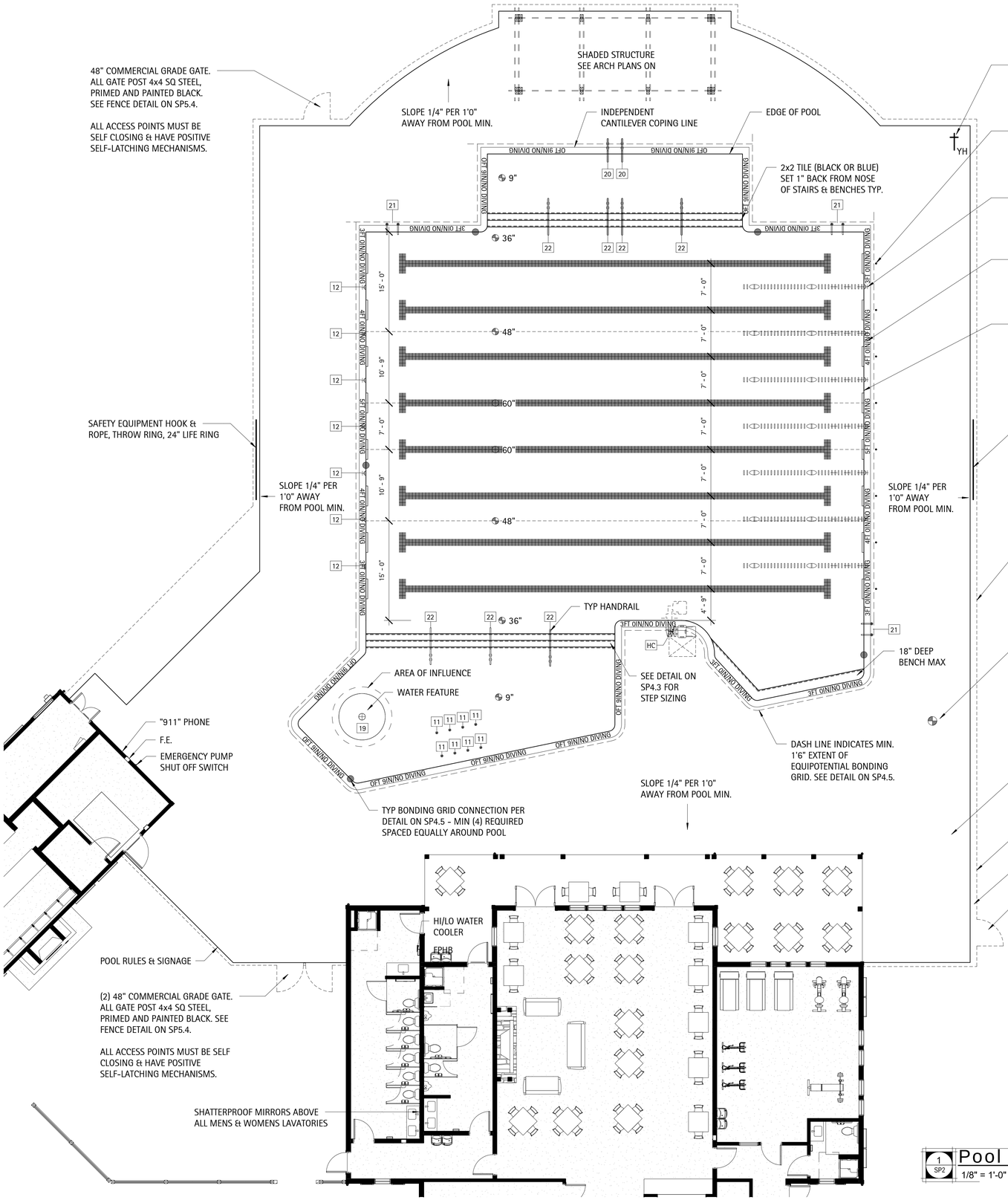
NO.	REVISION	DATE

SHEET DISCRIPTION
Pool Dimension Plan

PROJECT #:	2018.037
DATE ISSUED:	02/23/2021
DRAWING BY:	BSJ/JVD
CHECKED BY:	DSC/ARH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

SP1



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

POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	3	PENTAIR	XFE-20	5 HP SELF-PRIMING PUMPS W/ STRAINER BASKET + EXTRA BASKET
2	4	PENTAIR	TR-140C	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
3	4	PENTAIR	PAC-06-3080	3" PUSH PULL BACKWASH VALVE
4	1	VERSACHLOR	SYSTEM 3	CALCIUM HYPOCHLORITE TABLET CHLORINATION SYSTEM
5	1	BLUE-WHITE	F-30600P	6" COMMERCIAL FLOWMETER
6	2	AQUASTAR	1216101D	12" x 12" ANTI-ENTRAPMENT SUCTION OUTLET COVER W/ 4" SOCKET DEEP PVC SUMP
7	2	HAYWARD	WG1033BHF	18" x 18" ANTI-ENTRAPMENT SUCTION OUTLET COVER W/ DEEP PVC SUMP
8	2	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC VALVE ASSEMBLY
9	16	AQUASTAR	SKR101	COMMERCIAL SKIMMER - WHITE
10	2	AQUASTAR	ES1022S12001 W/ VLK15T01	VACUUM LINE FITTING W/ LOCK CAP
11	8	AQUASTAR	ES1022S12001 W/ BP101	RETURN FLOOR INLETS - DIRECTIONAL W/ BUBBLER PLATE (15 GPM DESIGN RATE)
12	7	PENTAIR	542044	ANTIWAVE CUP ROPE ANCHOR - ANTIWAVE BY HOA
13	2	AQUASTAR	4DIV101 / DIV0101	4" ADJUSTABLE FLOOR RETURN FITTING W/ WATER STOP
14	22	AQUASTAR	ES1022SI2001 W/ 4101	RETURN WALL FITTING W/ EYEBALL FITTING
15	1	AQUASTAR	GDD101	OVERFLOW DRAIN TO DAYLIGHT
16	8	PENTAIR	LIGHT - 601307	400 W EQUIVALANT INTELLIBRITE LED LOW VOLTAGE LIGHT
17	1	AQUASTAR	AFB101	AQUALEVEL - AUTOFILL LINE - WHITE
18	2	INTERMATIC	PJBX52100	COMBO CONNECT JUNCTION BOX W/ 100 W TRANSFORMER
19	1	NATURAL STRUCTURES	1800-17-96	7' - 6" DIA MUSHROOM FEATURE (200 GPM AT 3" DIA) - BLUE CAP
20	2	SR Smith	F4H - 100S - MG	MARINE GRADE DECK MOUNTED ADA HAND RAILS - 24" INSIDE CLEAR SPACE
21	3	SR SMITH	F4H-100- MG / 25578-000-000	MARINE GRADE HANDRAILS - W/ RECESSED STEPS
22	7	SR SMITH	DMS-101B - MG	MARINE GRADE DECK MOUNTED HANDRAILS
HC	1	SR SMITH	MULTI-LIFT	ADA COMPLIANT MULTILIFT WITH FOLDING SEAT

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 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 DECK MARKINGS

DEPTH MARKINGS: IN LOCATIONS AS SHOWN ON THE DRAWINGS AND ADHERING TO THE FOLLOWING:

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

"NO DIVING" MARKINGS: IN LOCATIONS AS SHOWN ON THE DRAWINGS AND ADHERING TO THE FOLLOWING:

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

POOL DECK EXIT REQUIREMENTS

POOL DECK AREA - 8,219 SF @ 15 SF PER PERSON
DECK OCCUPANT LOAD IS 548.

POOL AREA IS 5,945 SF @ 50 SF PER PERSON,
POOL OCCUPANT LOAD IS 119.

TOTAL OCCUPANT LOAD OF 667 * 0.2 EQUAL
133.4 INCHES REQUIRED. 144" SHOWN ON PLAN.

REQ'D EXIT SEPARATION - 168' 0" / 2 = 84' 0"
105' 8" SHOWN ON PLANS.

BUILDING FIXTURE DATA

TOTAL BATHER LOAD = 5945/15 = 396 PERSONS
(50% - 50% SPLIT) = 198 PERSONS
CLUBHOUSE & PUMP HOUSE REQUIREMENTS:
MINIMUM FIXTURE REQUIRMENTS ARE:
198 MEN
- 2 LAVATORIES
- 2 WATER CLOSET(S)
- 2 URINAL(S)
198 WOMEN
- 3 LAVATORIES
- 3 WATER CLOSET(S)
2 SHOWERS ARE REQUIRED

SEE ARCHITECTURAL PLANS BY OTHERS FOR RESTROOM LOCATION & LAYOUTS

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

MAIN POOL DATA

POOL DIMENSIONS:	85'-3" X 94'-9" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	9" SHELF w/ 3'-5'
POOL VOLUME:	149,057 GALLONS
SURFACE AREA:	5,945 SQFT.
PERIMETER:	355 LF
COPING:	BULLNOSE INDEPENDENT
TOTAL FLOW:	414 GPM @ 65 TDH
SHELL MATERIAL:	4000 PSI SHOTCRETE
INTERIOR FINISH:	QUARTZ PLASTER
BATHER LOAD:	396 PERSONS
BACKWASH TO:	STORM SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
MAIN DRAINS:	(4) 6" SCH 40 PVC
SKIMMERS:	(16) 4" SCH 40 PVC
VACUUM LINE:	(2) 2" SCH 40 PVC
INLETS:	(23) 6" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	4 @ 7.06 SF (EA) = 28.24
SIZE REQUIRED:	27.82 SF TOTAL
MEDIA CIRC. RATE:	20 GPM/SF
BACKWASH RATE:	20 GPM/SF
TURNOVER RATE:	6 HOURS

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

NORTH CAROLINA PROFESSIONAL SEAL 2011 ENGINEER ALAN R. HINE
2/24/2021

Hine's Aquatic Engineering PLLC P-1455
Alan Hine, P.E.
405 Willowcrest Dr.
Winston-Salem, NC 27107
Phone & Fax: (336)769-4900

NO. | REVISION | DATE

SHEET DISCRIPTION
Pool Layout Plan

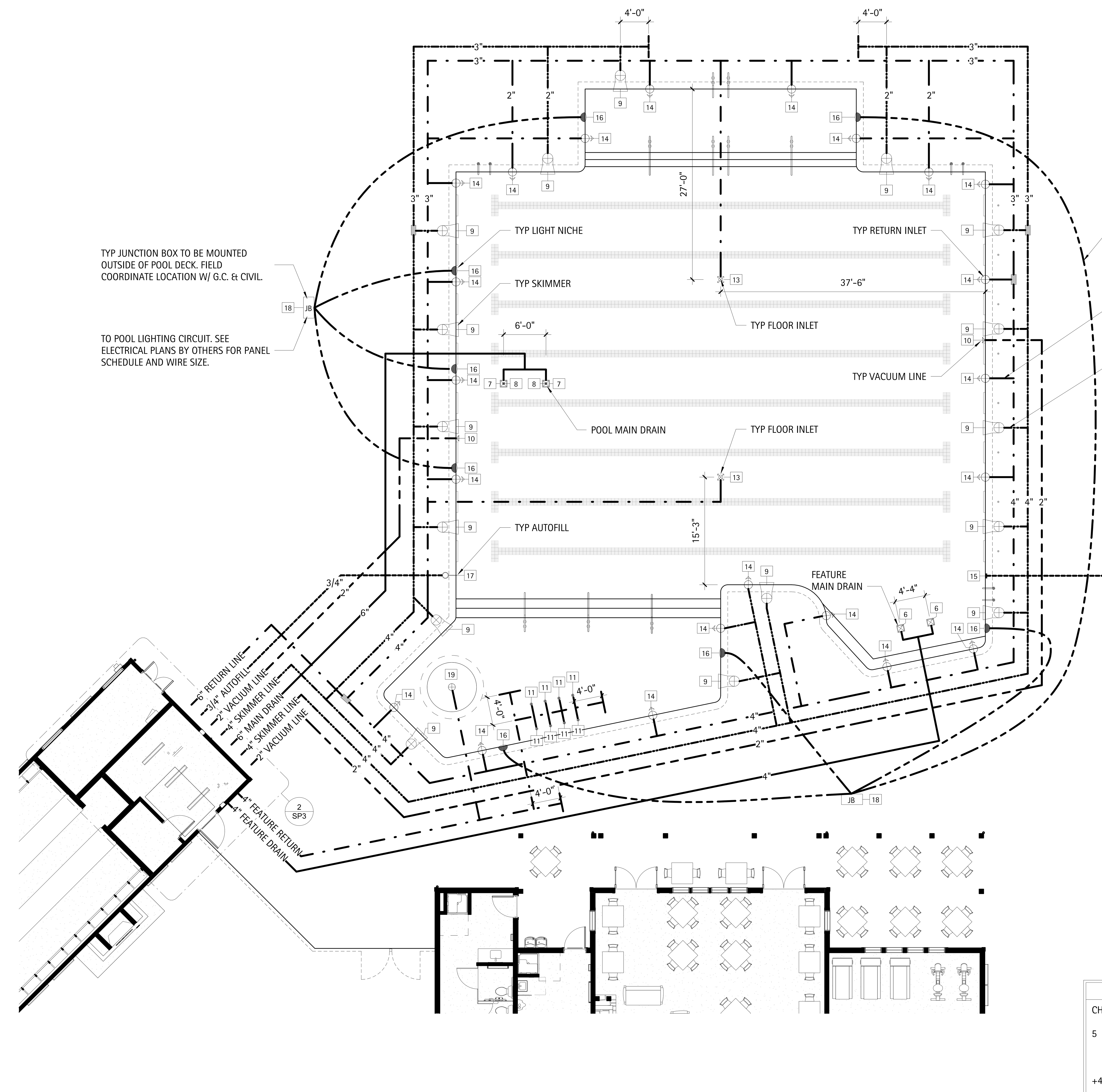
PROJECT #:	2018.037
DATE ISSUED:	02/23/2021
DRAWING BY:	BSJ/JVD
CHECKED BY:	DSC/ARH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

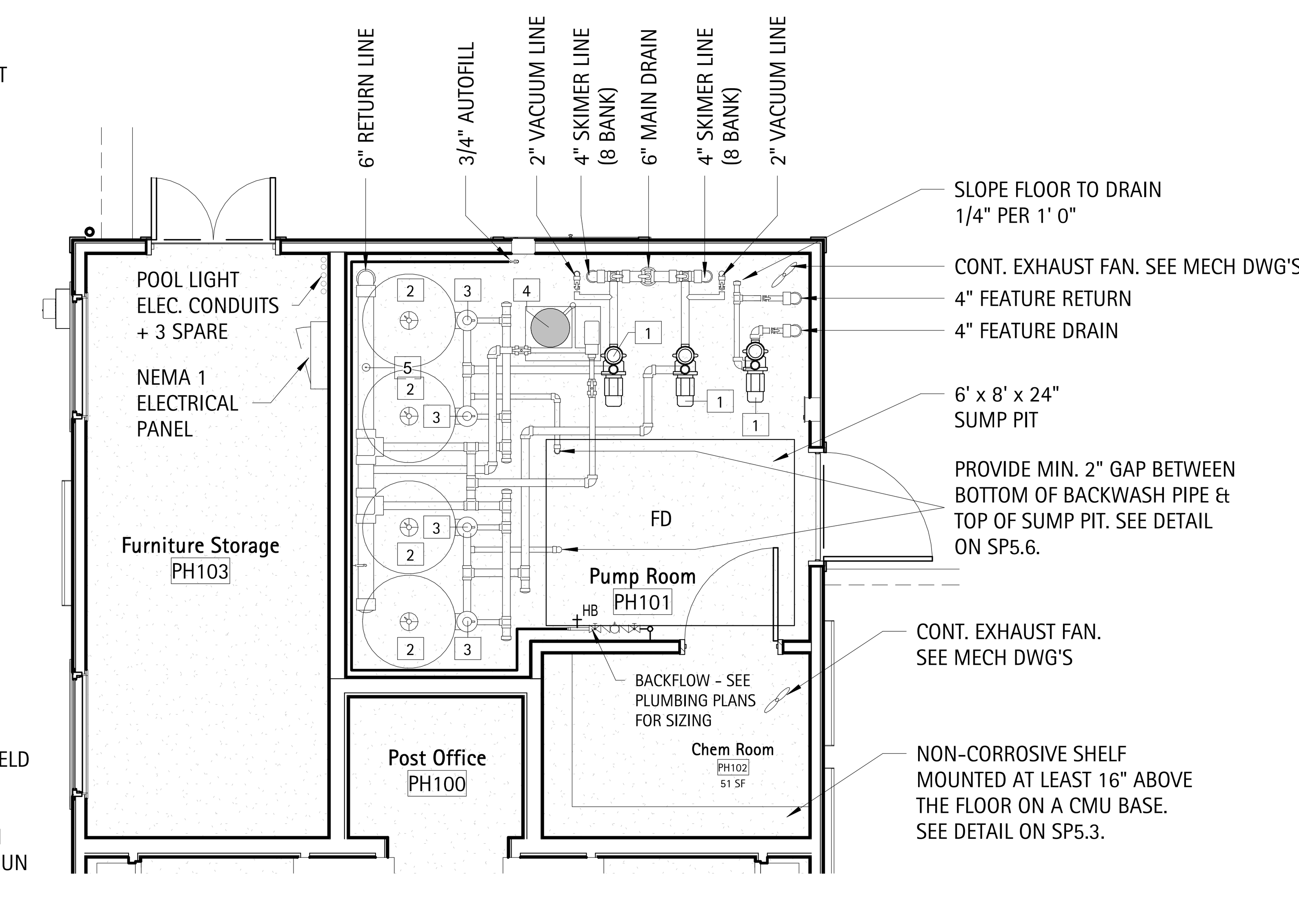
SP2

POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	3	PENTAIR	XFE-20	5 HP SELF-PRIMING PUMPS W/ STRAINER BASKET + EXTRA BASKET
2	4	PENTAIR	TR-140C	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
3	4	PENTAIR	PAC-06-3080	3" PUSH PULL BACKWASH VALVE
4	1	VERSACHLOR	SYSTEM 3	CALCIUM HYPOCHLORITE TABLET CHLORINATION SYSTEM
5	1	BLUE-WHITE	F-30600P	6" COMMERCIAL FLOWMETER
6	2	AQUASTAR	1216101D	12" x 12" ANTI-ENTRAPMENT SUCTION OUTLET COVER W/ 4" SOCKET DEEP PVC SUMP
7	2	HAYWARD	WG1033BHF	18" x 18" ANTI-ENTRAPMENT SUCTION OUTLET COVER W/ DEEP PVC SUMP
8	2	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC VALVE ASSEMBLY
9	16	AQUASTAR	SKR101	COMMERCIAL SKIMMER - WHITE
10	2	AQUASTAR	ES1022S12001 W/ VLK15T01	VACUUM LINE FITTING W/ LOCK CAP
11	8	AQUASTAR	ES1022S12001 W/ BP101	RETURN FLOOR INLETS - DIRECTIONAL W/ BUBBLER PLATE (15 GPM DESIGN RATE)
12	7	PENTAIR	542044	ANTIWAVE CUP ROPE ANCHOR - ANTIWAVE BY HOA
13	2	AQUASTAR	4DIV101 / DIV0101	4" ADJUSTABLE FLOOR RETURN FITTING W/ WATER STOP
14	22	AQUASTAR	ES1022SI2001 W/ 4101	RETURN WALL FITTING W/ EYEBALL FITTING
15	1	AQUASTAR	GDD101	OVERFLOW DRAIN TO DAYLIGHT
16	8	PENTAIR	LIGHT - 601307	400 W EQUIVALANT INTELLIBRITE LED LOW VOLTAGE LIGHT
17	1	AQUASTAR	AFB101	AQUALEVEL - AUTOFILL LINE - WHITE
18	2	INTERMATIC	PJBX52100	COMBO CONNECT JUNCTION BOX W/ 100 W TRANSFORMER
19	1	NATURAL STRUCTURES	1800-17-96	7' - 6" DIA MUSHROOM FEATURE (200 GPM AT 3" DIA) - BLUE CAP
20	2	SR Smith	F4H - 100S - MG	MARINE GRADE DECK MOUNTED ADA HAND RAILS - 24" INSIDE CLEAR SPACE
21	3	SR SMITH	F4H-100- MG / 25578-000-000	MARINE GRADE HANDRAILS - W/ RECESSED STEPS
22	7	SR SMITH	DMS-101B - MG	MARINE GRADE DECK MOUNTED HANDRAILS
HC	1	SR SMITH	MULTI-LIFT	ADA COMPLIANT MULTILIFT WITH FOLDING SEAT



1 SP3 Pool Piping Plan
1/8" = 1'-0"



2 SP3 Enlarged Pump Room Plan
1/4" = 1'-0"

PUMP FLOW PIPE SIZING

(2) XFE-20 (MAIN) PUMP FLOW AT 65 FT OF WATER IS 210 GPM EACH (420 TOTAL), WITH SPECIFIED:
6" MAIN DRAIN PIPING VELOCITY IS 4.66 FPS.
4" SKIMMER PIPING VELOCITY IS 5.29 FPS.
6" RETURN PIPING VELOCITY IS 4.66 FPS.

(1) XFE-20 (FEATURE) PUMP FLOW AT 65 FT OF WATER IS 210 GPM , WITH SPECIFIED:
4" MAIN DRAIN PIPING VELOCITY IS 5.29 FPS.
4" RETURN PIPING VELOCITY IS 5.29

UNDERWATER LIGHTING DATA

MAIN POOL AREA: 5,945 SQFT.
5,945 SF x 0.5 WATTS = 2, 973 **WATTS**

LIGHTING PROVIDED (12V LED EQ.)
8 INTELLIBRITE @ 400 WATTS
TOTAL PROVIDED = 3,200 WATTS

CHEMICAL STORAGE DATA

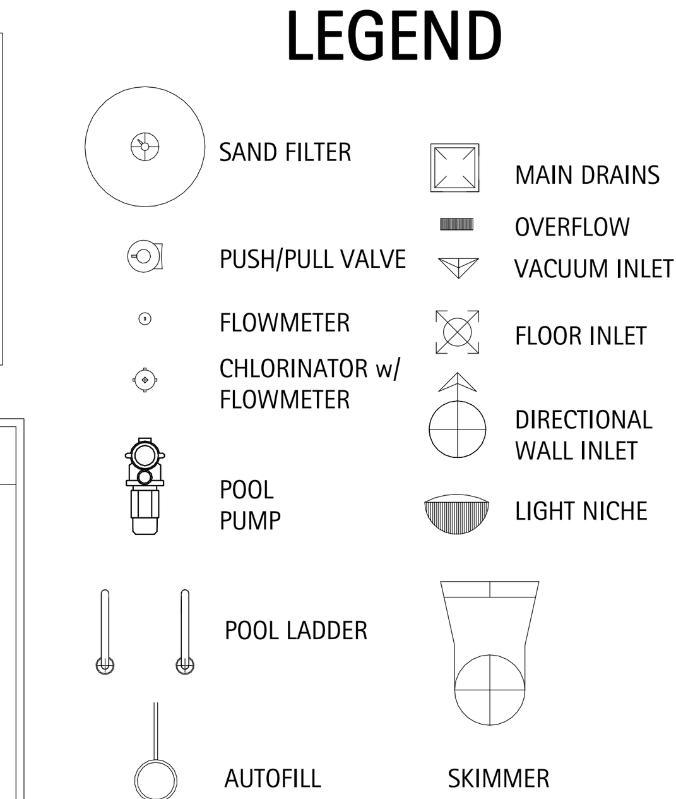
CHEMICAL STORAGE REQUIREMENTS FOR A **149,057** GALLON POOL ARE:

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

+46 SF (1 SF PER 3,000)(139,057/3,000 = 46)

BUILDING PROVIDES MIN OF 51 SF FOR CHEMICAL STORAGE.
-SEE BUILDING PLANS BY OTHERS FOR EXACT LAYOUT. 51 SF PROV.

POOL SYMBOLS LEGEND



REFER TO POOL PLUMBING SCHEDULE FOR SPECS.

MAIN POOL DATA

POOL DIMENSIONS:	85'-3" X 94'-9" OVERALL IRREGULAR SHAPE.
POOL DEPTHS:	9" SHELF w/ 3'-5'
POOL VOLUME:	149,057 GALLONS
SURFACE AREA:	5,945 SQFT.
PERIMETER:	355 LF
COPING:	BULLNOSE INDEPENDENT
TOTAL FLOW:	414 GPM @ 65 TDH
SHELL MATERIAL:	4000 PSI SHOTCRETE
INTERIOR FINISH:	QUARTZ PLASTER
BATHER LOAD:	396 PERSONS
BACKWASH TO:	STORM SEWER
WATER SOURCE:	IN-LINE AUTOFILL
PIPE SIZING:	
MAIN DRAINS:	(4) 6" SCH 40 PVC
SKIMMERS:	(16) 4" SCH 40 PVC
VACUUM LINE:	(2) 2" SCH 40 PVC
INLETS:	(23) 6" SCH 40 PVC
FILTER TYPE:	HIGH RATE SAND
SIZE PROVIDED:	4 @ 7.06 SF (EA) = 28.24
SIZE REQUIRED:	27.82 SF TOTAL
MEDIA CIRC. RATE:	20 GPM/SF
BACKWASH RATE:	20 GPM/SF
TURNOVER RATE:	6 HOURS

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

NORTH CAROLINA PROFESSIONAL SEAL 021 ALAN R. HINES 2-24-2021

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Phone & Fax: (336)769-4900

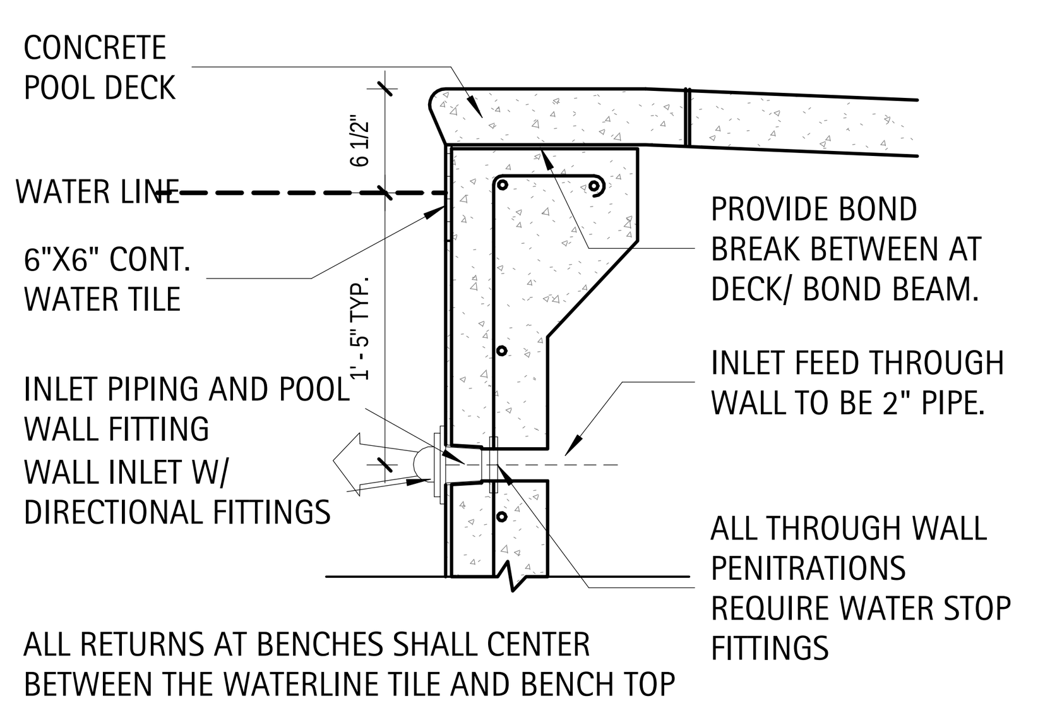
NO.	REVISION	DATE

SHEET DISCRIPTION
Pool Piping & Electrical Plan

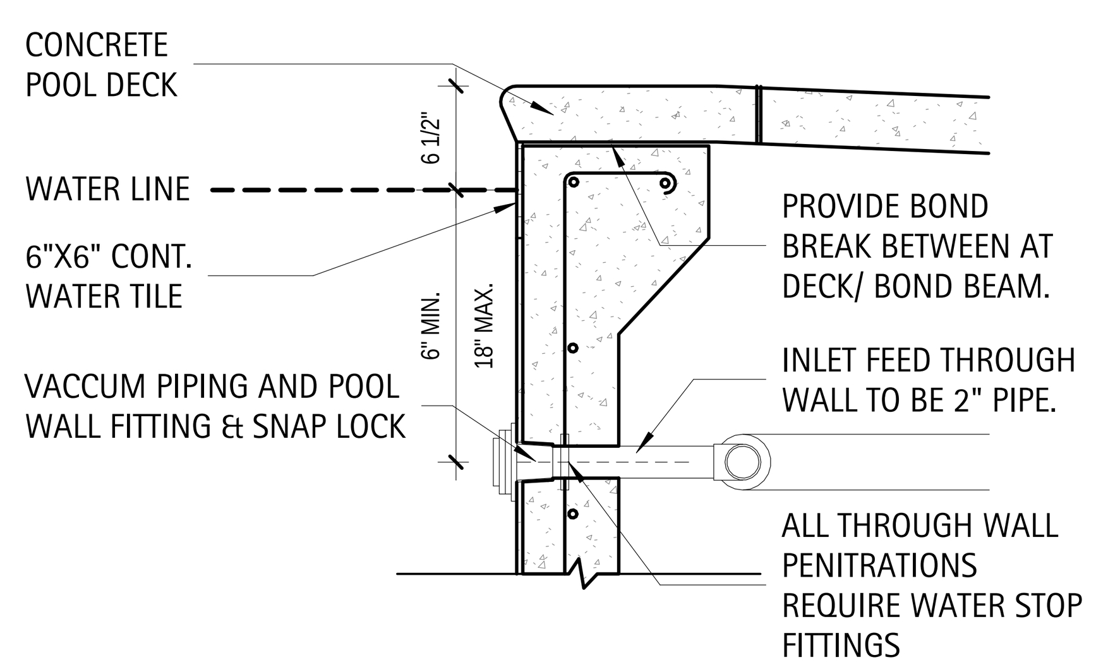
PROJECT #:	2018.037
DATE ISSUED:	02/23/2021
DRAWING BY:	BSJ/JVD
CHECKED BY:	DSC/ARH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

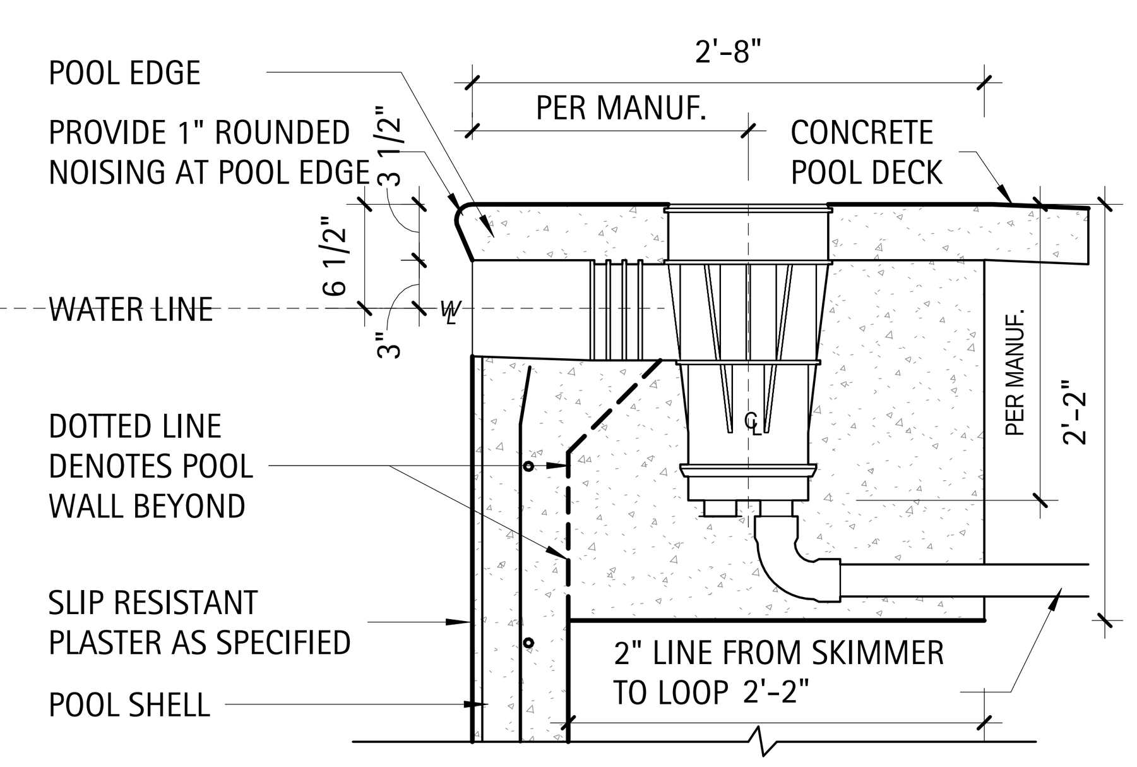
SP3



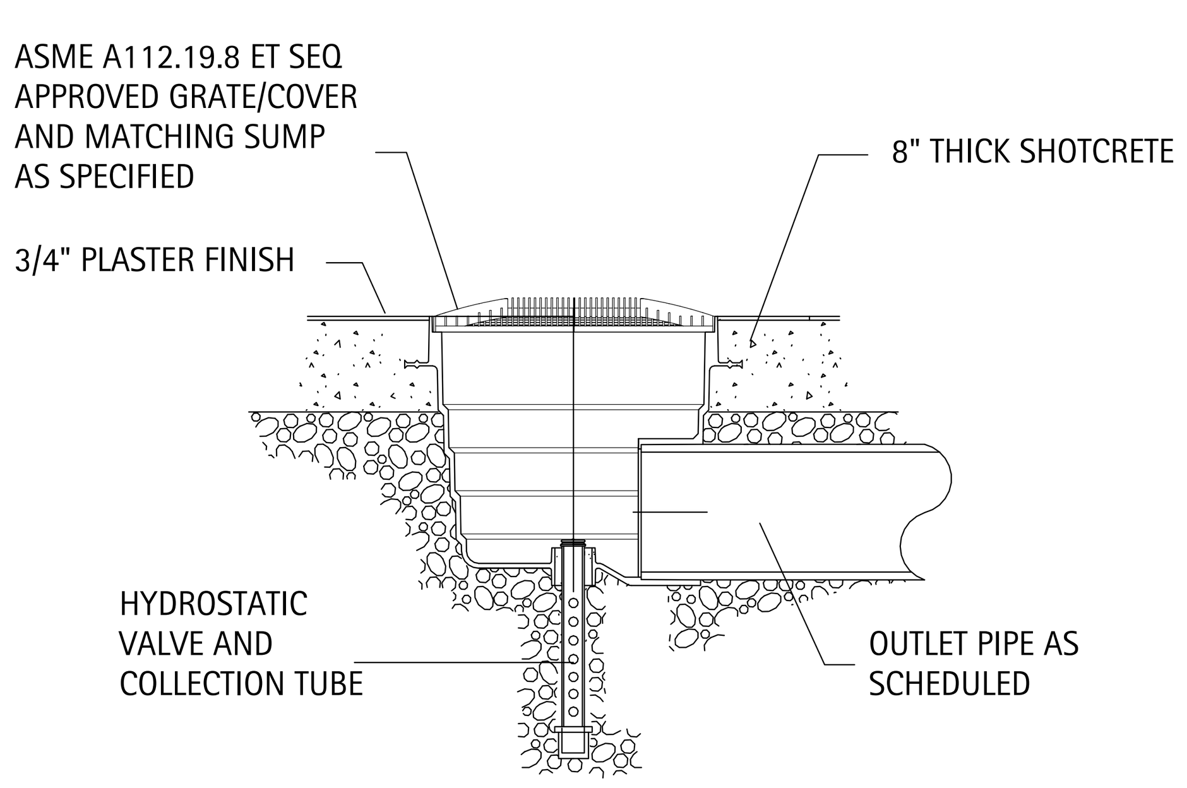
7 SP4 **Detail -Inlet Pipe Detail**
1" = 1'-0"



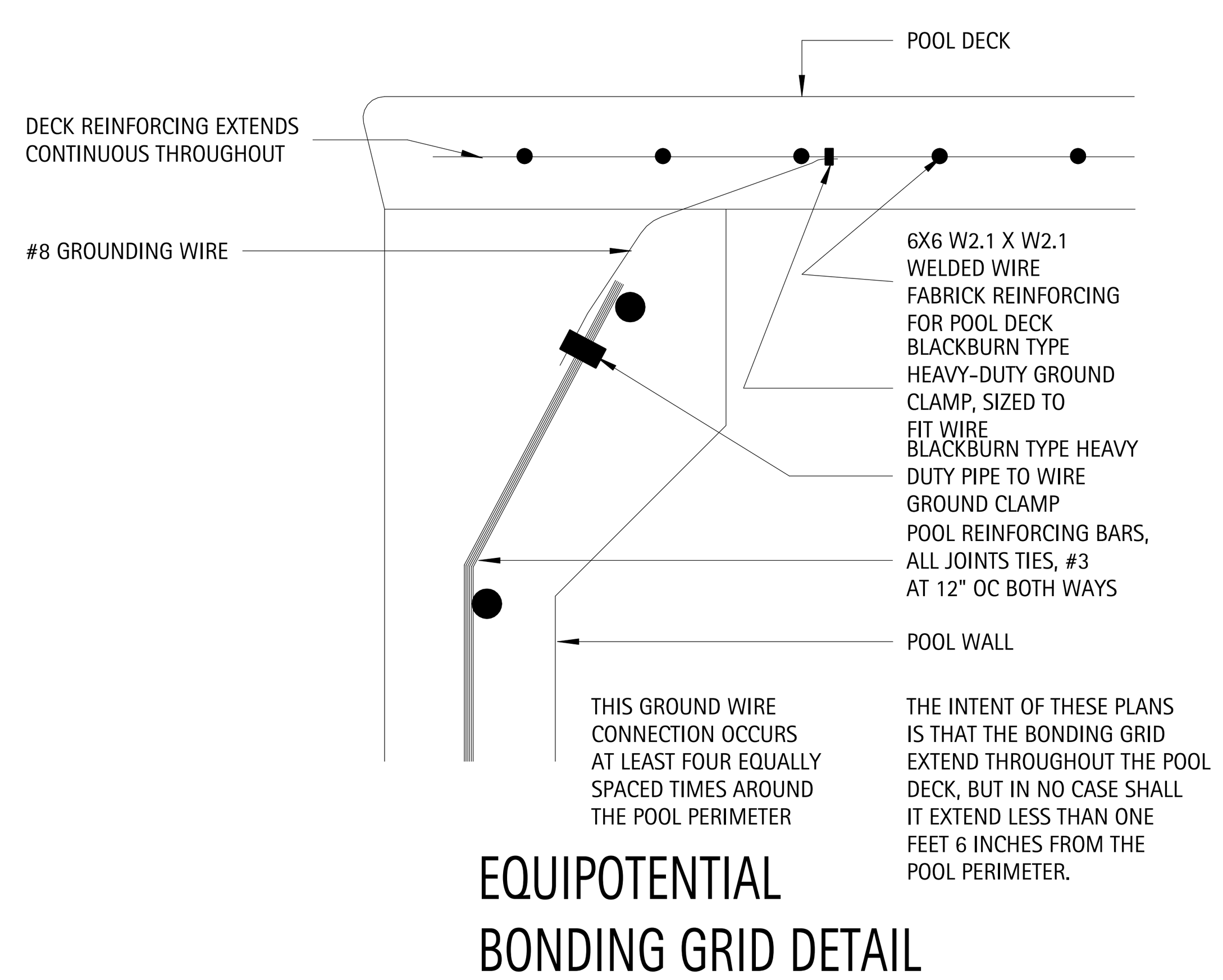
8 SP4 **Detail - Vacuum Inlet Detail**
1" = 1'-0"



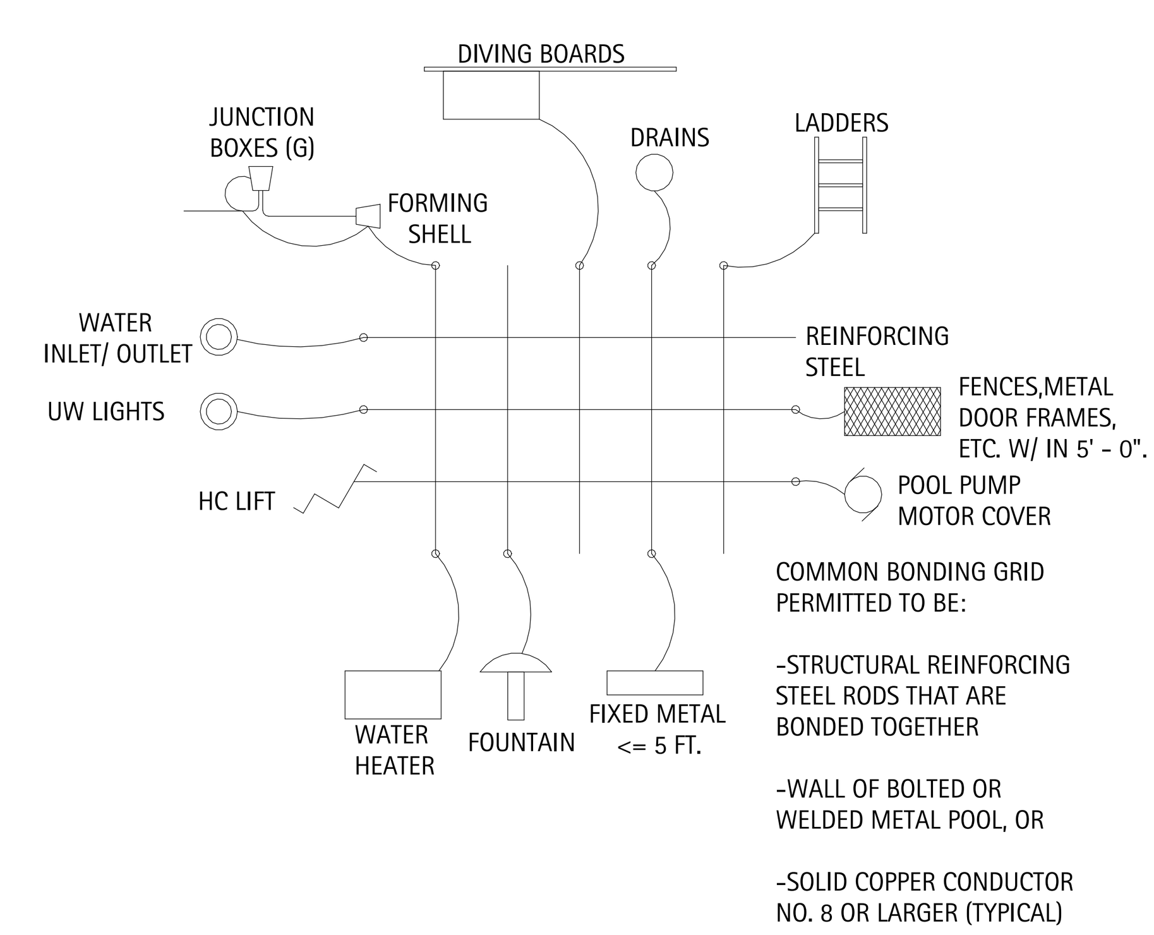
9 SP4 **Detail - Pool Skimmer**
1" = 1'-0"



10 SP4 **Detail - Main Drain**
1" = 1'-0"

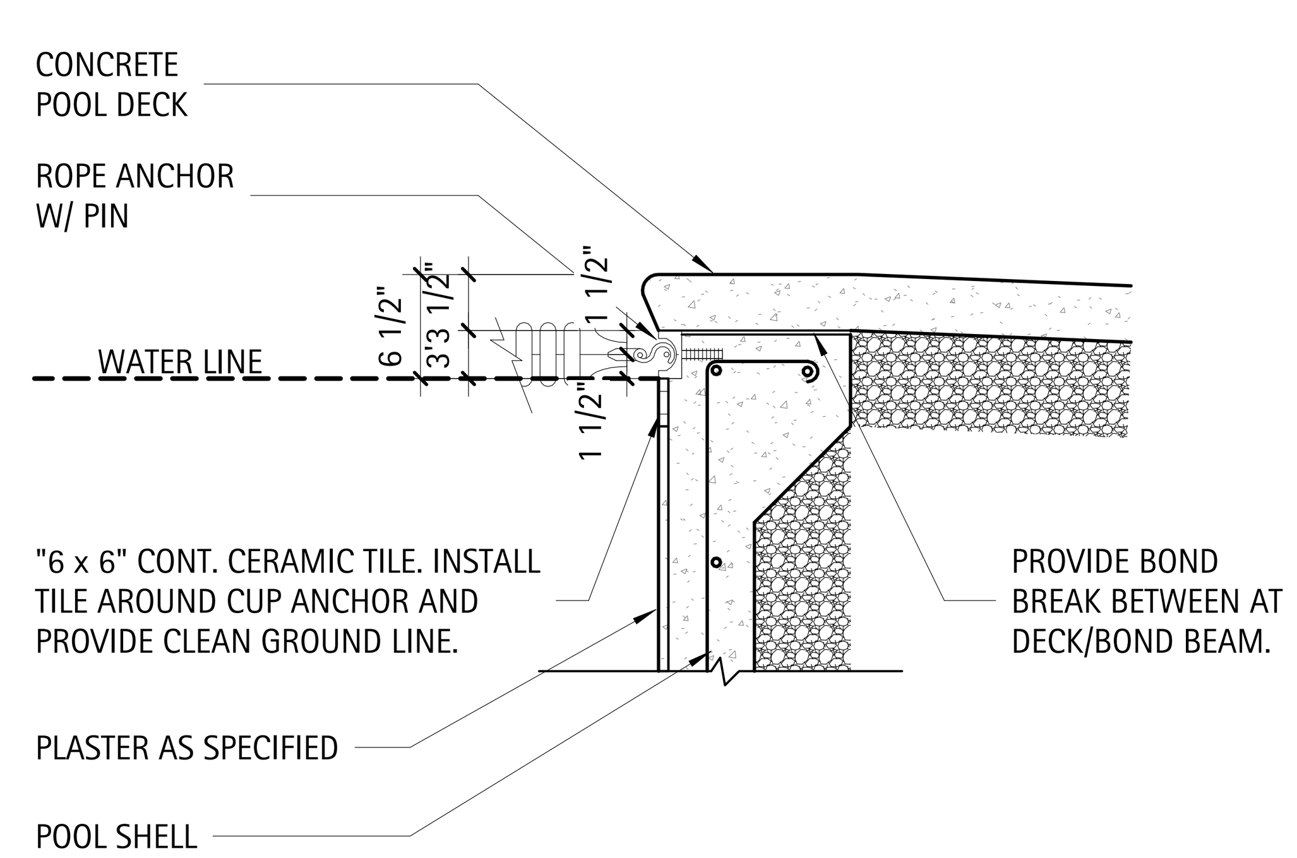


EQUIPOTENTIAL BONDING GRID DETAIL

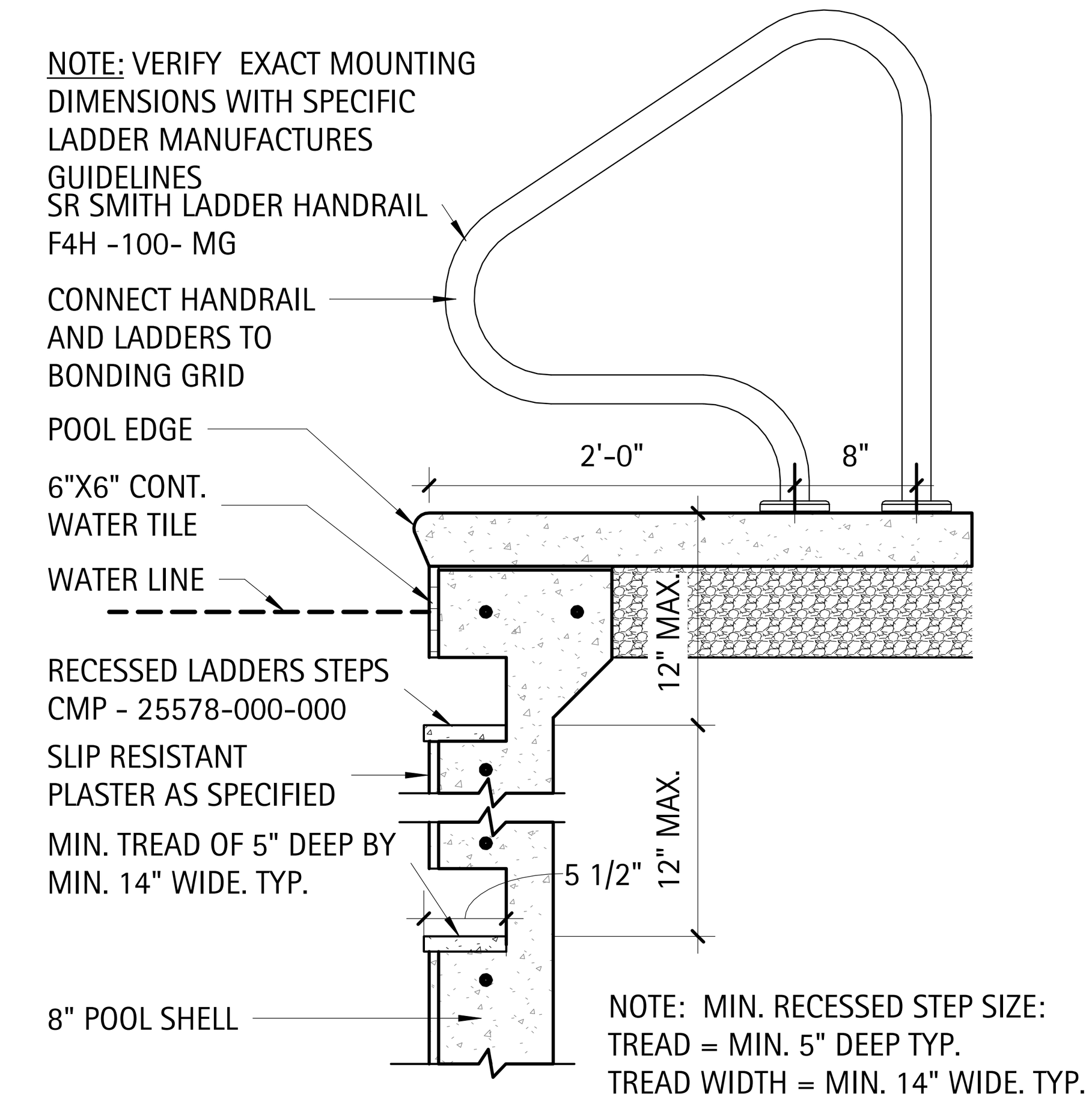


SWIMMING POOL BONDING RISER

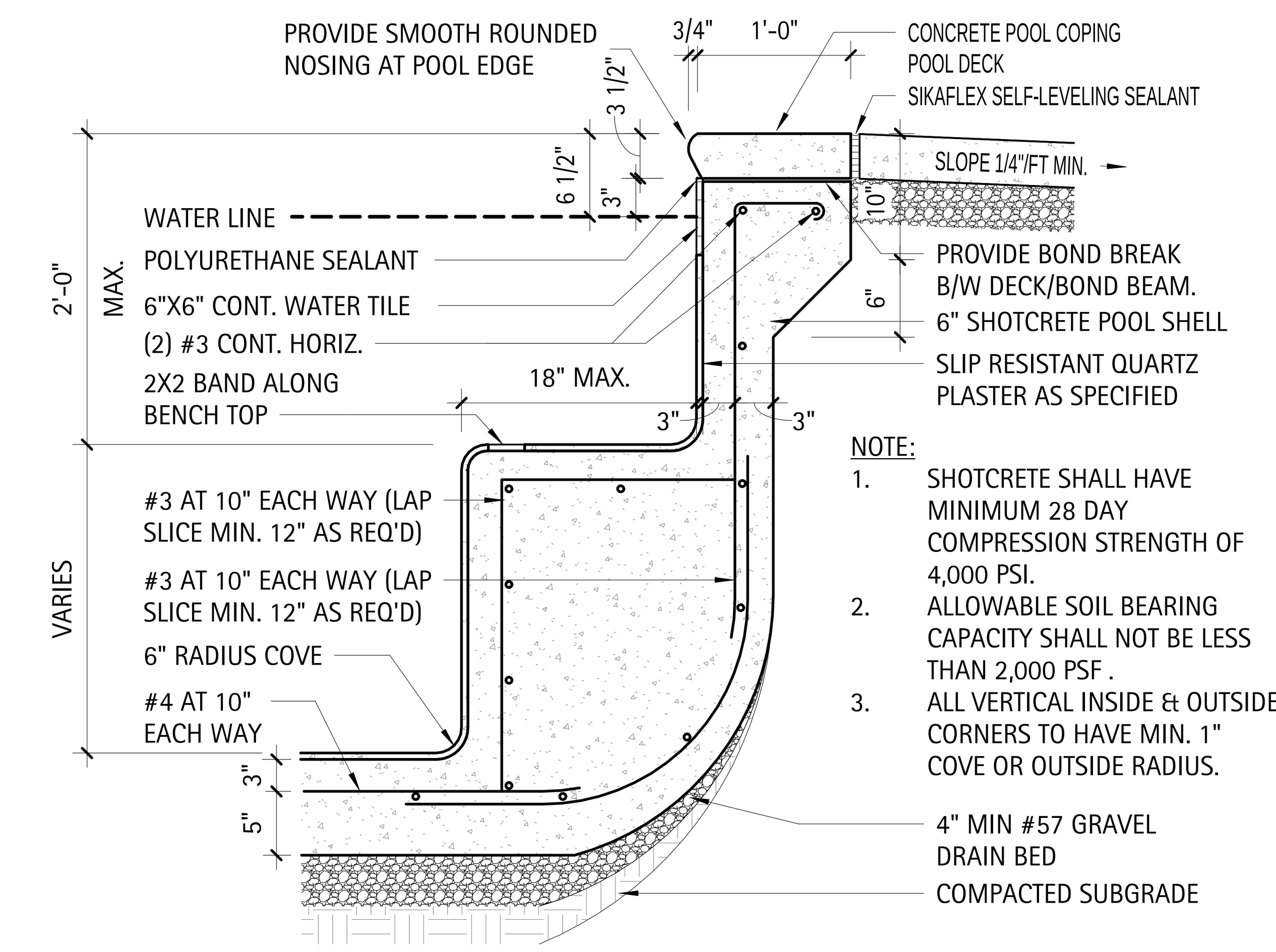
5 SP4 **Detail - Pool Bonding**
1" = 1'-0"



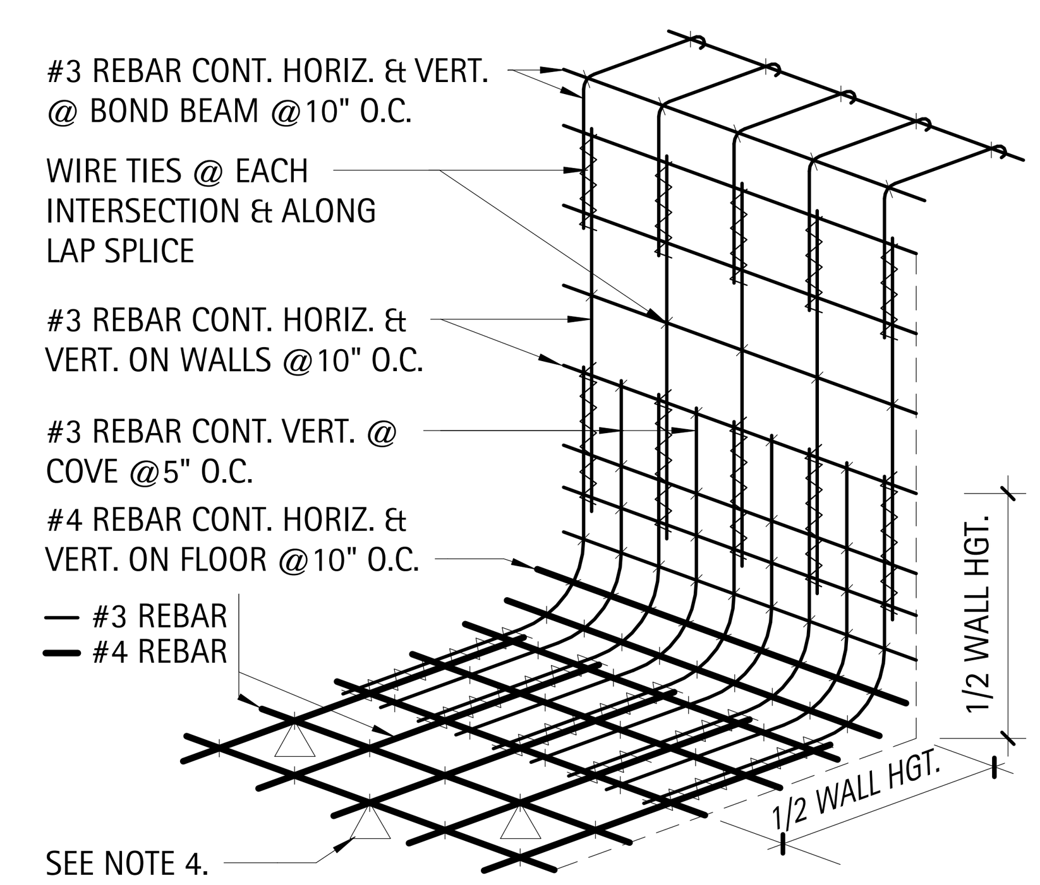
6 SP4 **Detail - Rope Anchor**
1" = 1'-0"



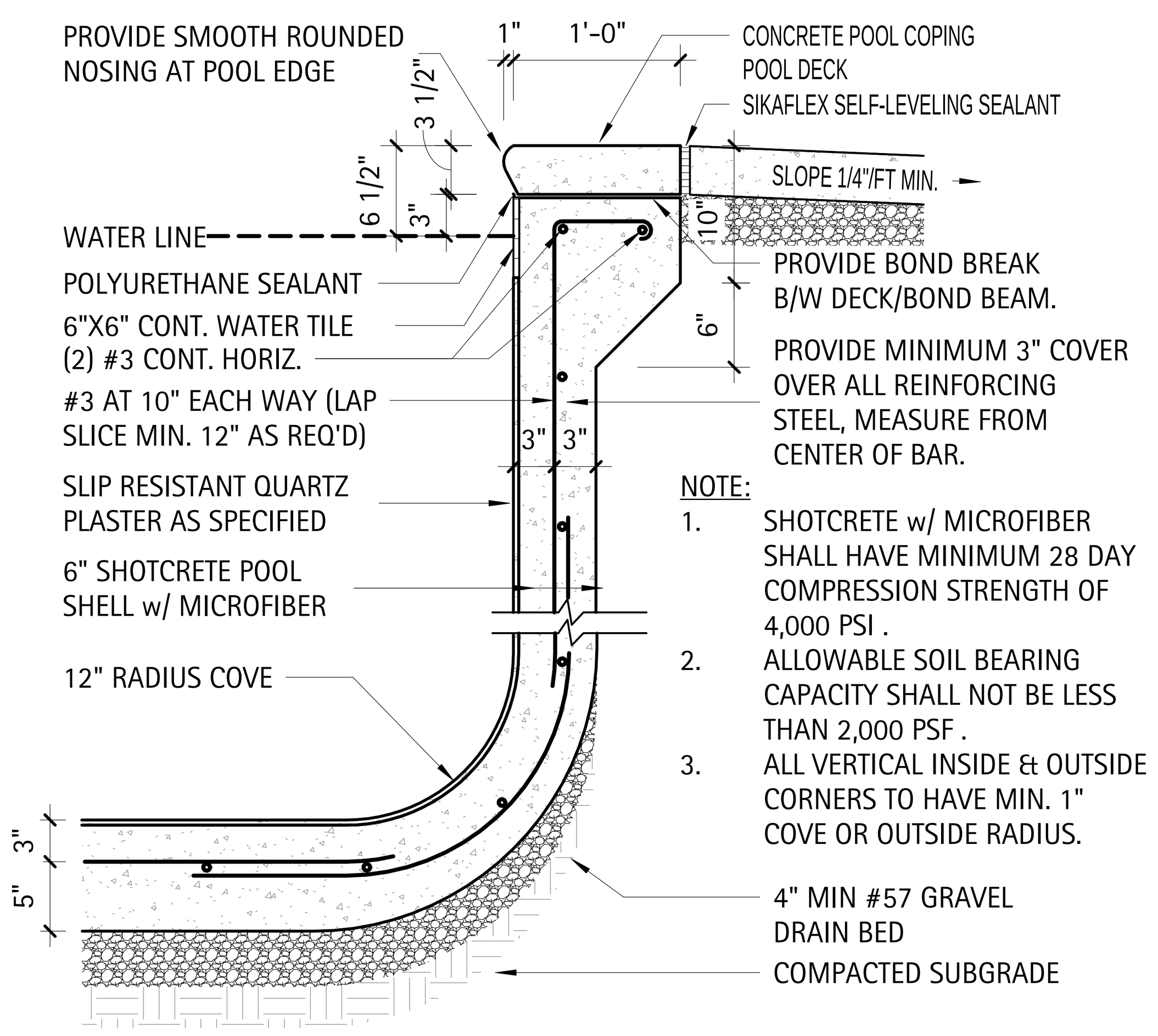
4 SP4 **Detail - Ladder Steps**
1" = 1'-0"



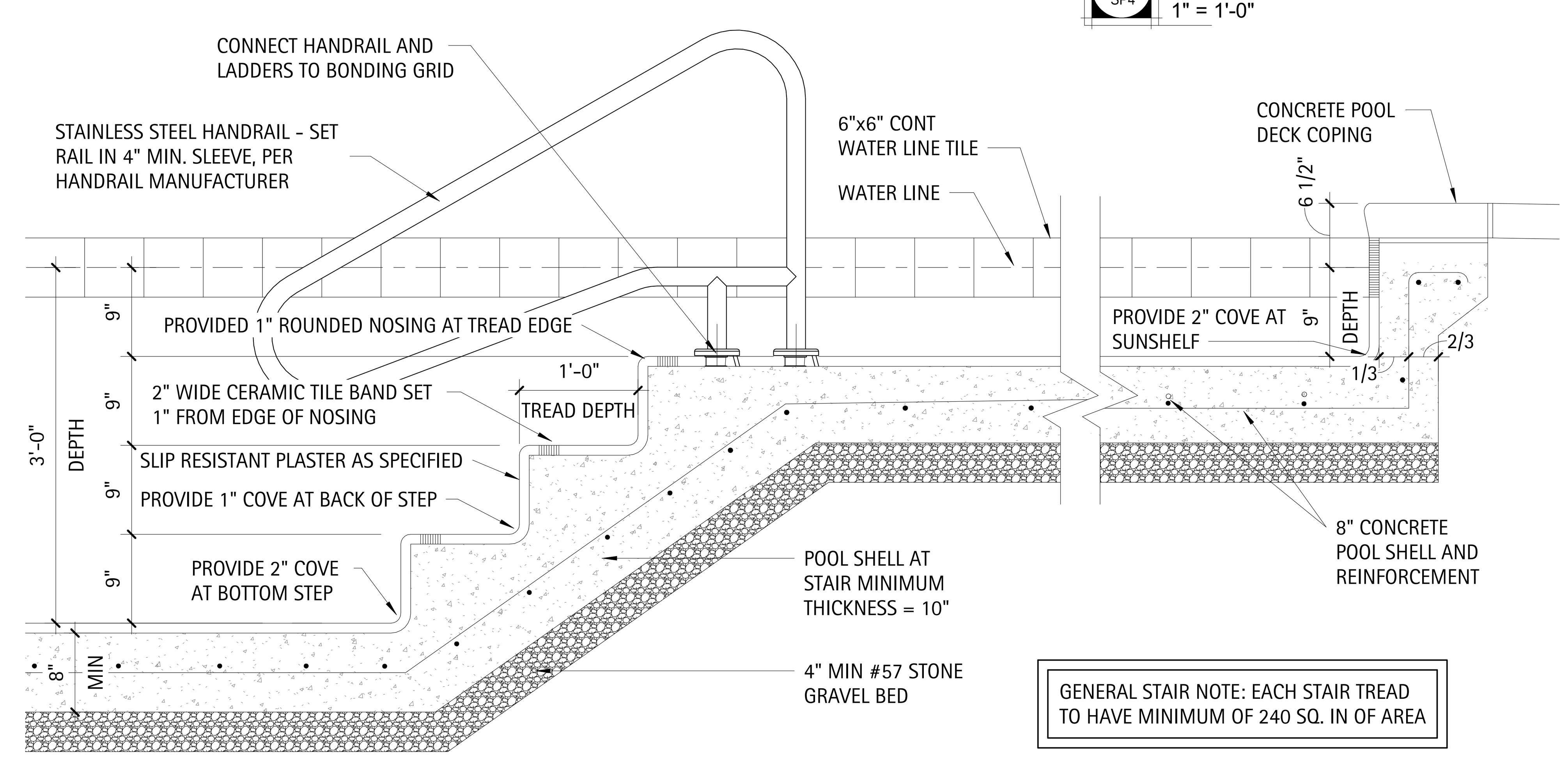
1 SP4 **Detail - Pool Bench**
1" = 1'-0"



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



2 SP4 **Detail - Pool Wall**
1" = 1'-0"



3 SP4 **Detail - Pool Shelf w/ Step**
1" = 1'-0"

D. CLUGSTON
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Hine's Aquatic Engineering
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Winston-Salem, NC 27107
Phone & Fax: (336)769-4900

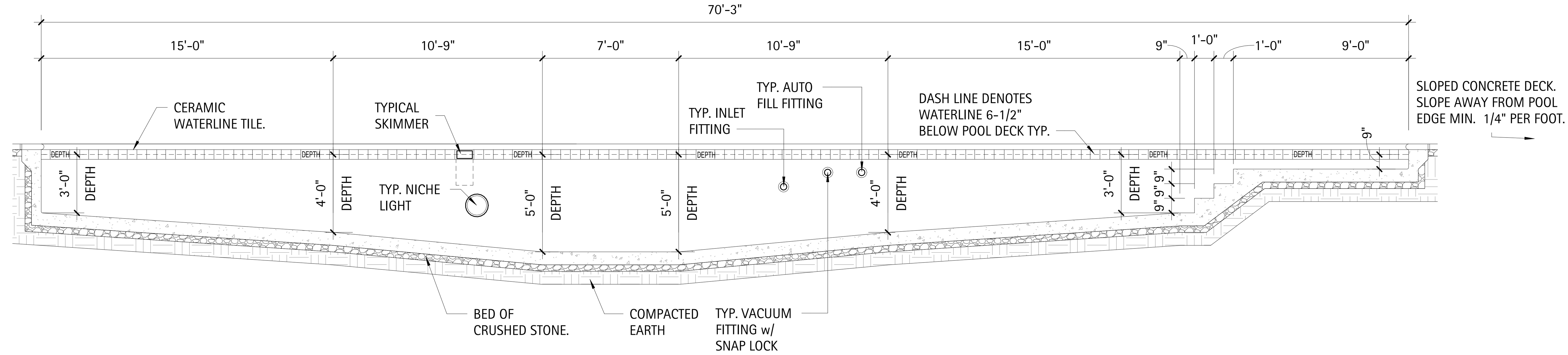
DATE	REVISION	NO.

SHEET DISCRIPTION
Sections & Details

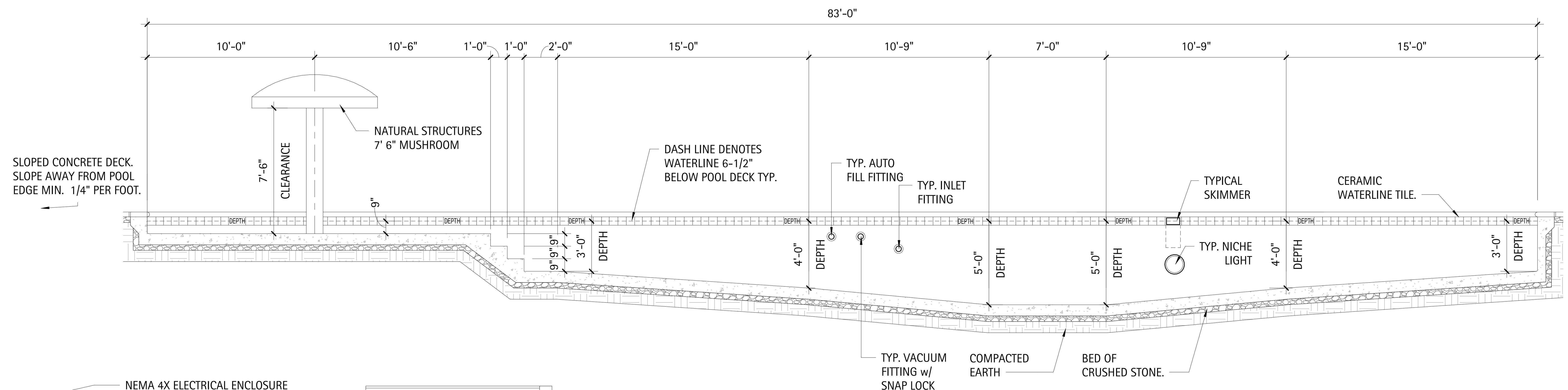
PROJECT #:	2018.037
DATE ISSUED:	02/23/2021
DRAWING BY:	BSJ/JVD
CHECKED BY:	DSC/ARH

SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

SP4

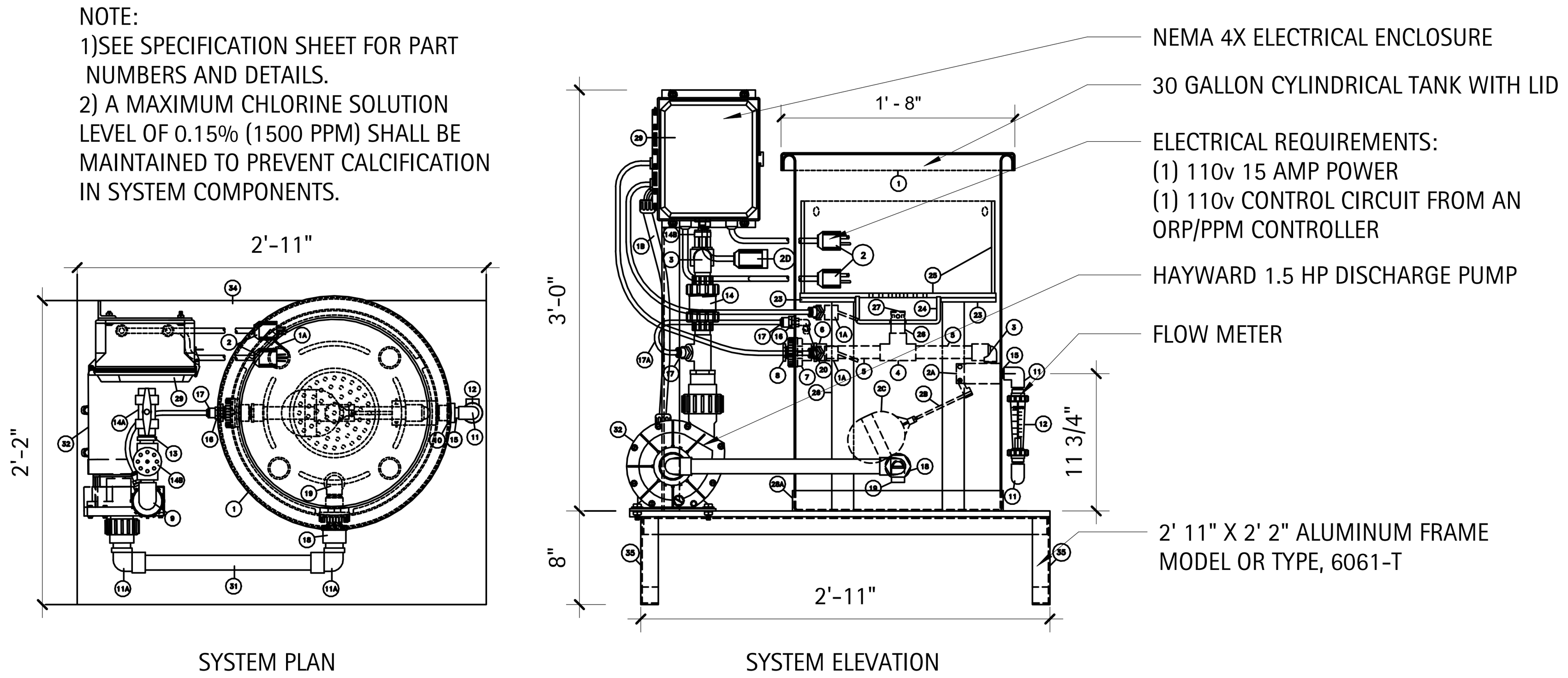


1 SP5 **Section - Pool w/ Lounge Shelf**
1/4" = 1'-0"

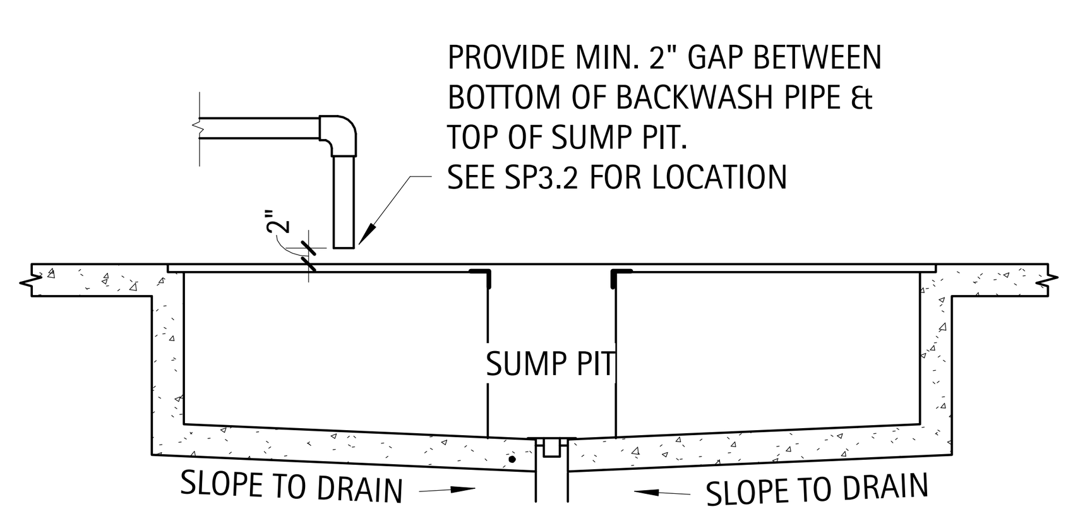


2 SP5 **Section - Pool w/ Kids Shelf**
1/4" = 1'-0"

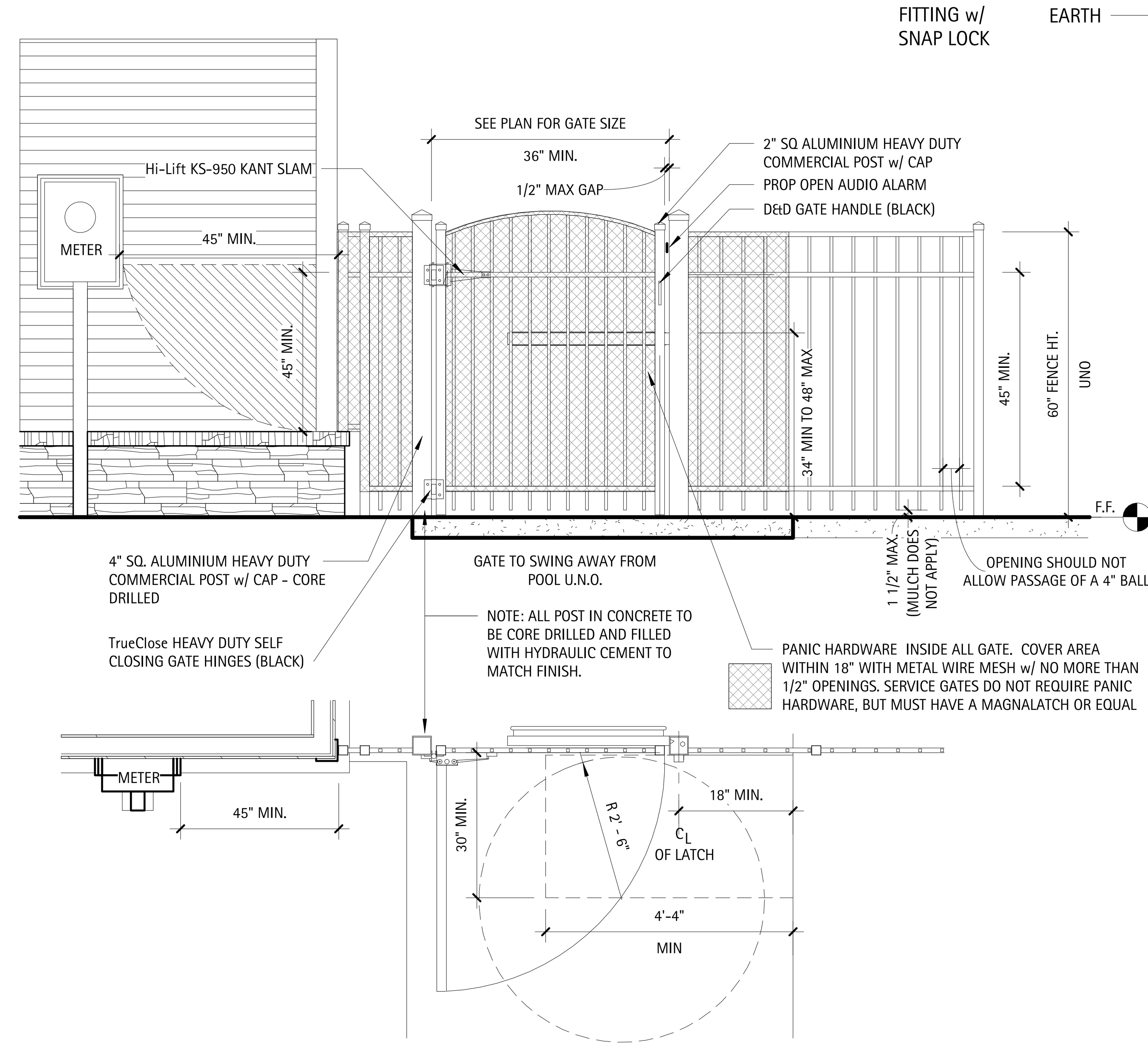
NOTE:
1)SEE SPECIFICATION SHEET FOR PART NUMBERS AND DETAILS.
2) A MAXIMUM CHLORINE SOLUTION LEVEL OF 0.15% (1500 PPM) SHALL BE MAINTAINED TO PREVENT CALCIFICATION IN SYSTEM COMPONENTS.



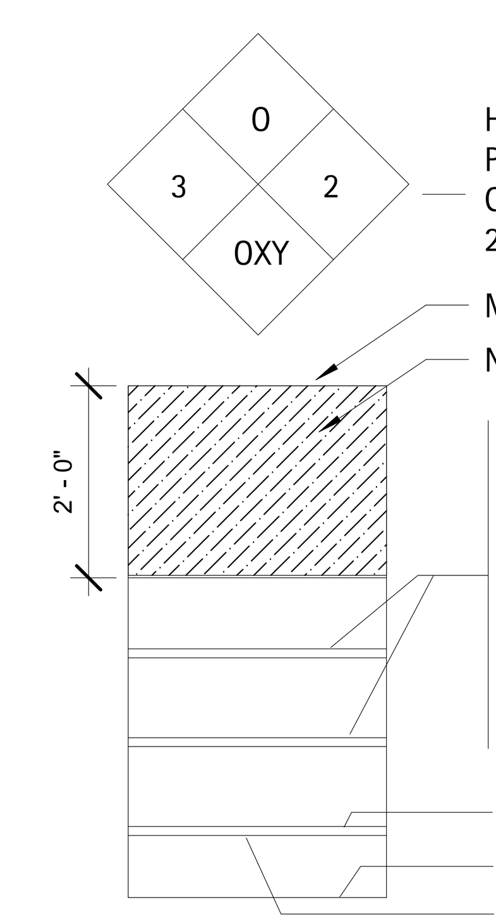
5 SP5 **Detail - VersaChlor System 3**
1" = 1'-0"



6 SP5 **Detail - 2" Air Gap**
1/2" = 1'-0"



4 SP5 **Detail - Fence**
1/2" = 1'-0"



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

MECH. VENITILATION IN CEILING (CONTINOUS)

NO CHEMICALS

100 LBS CALCIUM CHLORIDE ON ON SECOND OR THIRD SHELF ONLY
100 LBS CYANURIC ACID ON SECOND OR THIRD SHELF ONLY
100 LBS SODIUM CARBONATE ON SECOND OR THIRD SHELF ONLY
50 LBS CALCIUM HYPOCHLORITE ON SECOND OR THIRD SHELF ONLY
100 LBS SODIUM THIOSULFATE ON SECOND OR THIRD SHELF ONLY
100 LBS SODIUM BICARBONATE ON SECOND OR THIRD SHELF ONLY

30 GALS HYDROCHLORIC ACID ON LOWEST SHELF ONLY

SHELF FLOOR ONLY

TYPICAL NON-CORROSIVE SHELF TO START 1'-4" AFF

TYPICAL CHEMICAL ROOM SHELVING w/ QUANITIES

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

3 SP5 **Detail - Chemical Storage**
1/2" = 1'-0"

D. CLUGSTON
BUILDING & DEVELOPMENT CO.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 01[illegible] ALAN R. HINE 2-24-2021

Hine's Aquatic Engineering
PLLC P-1455
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DATE	REVISION	NO.

SHEET DISCRIPTION
Sections & Details

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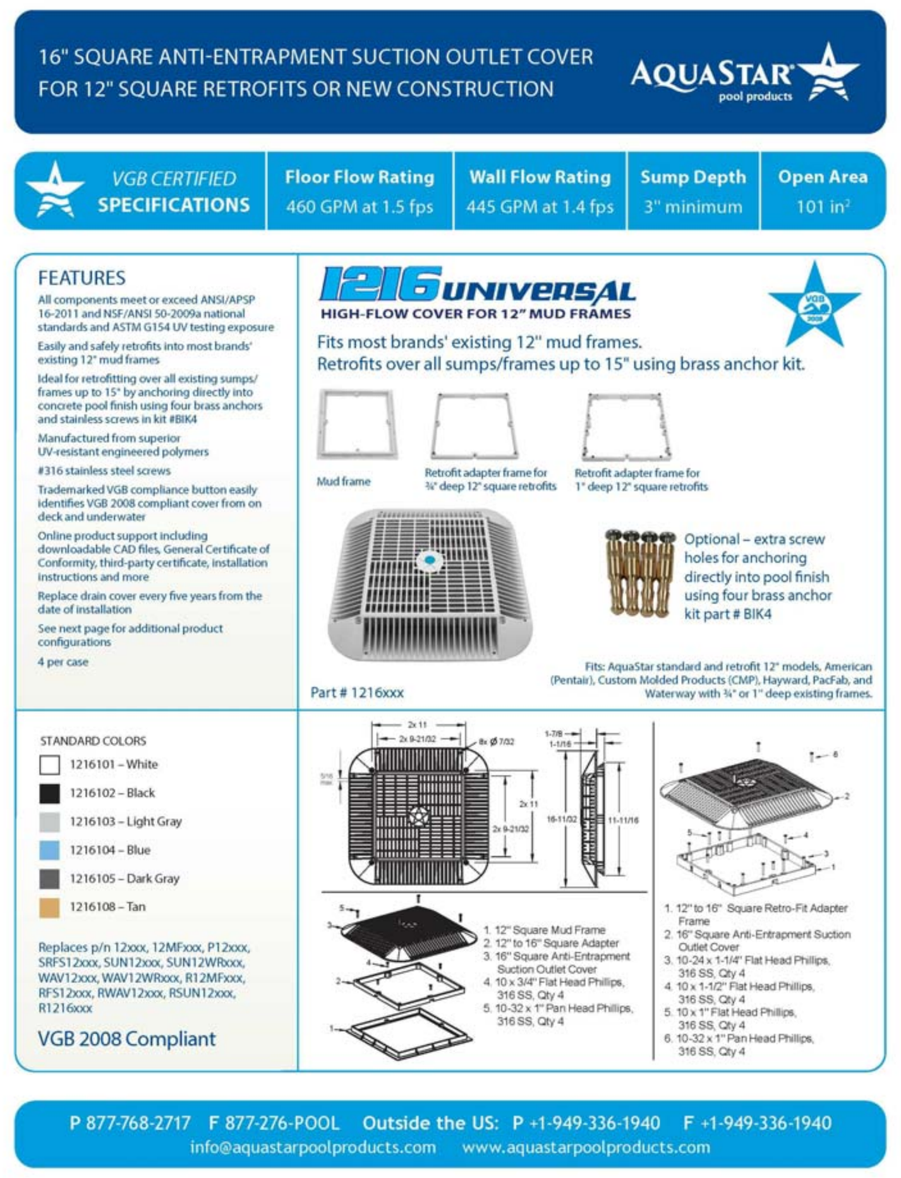
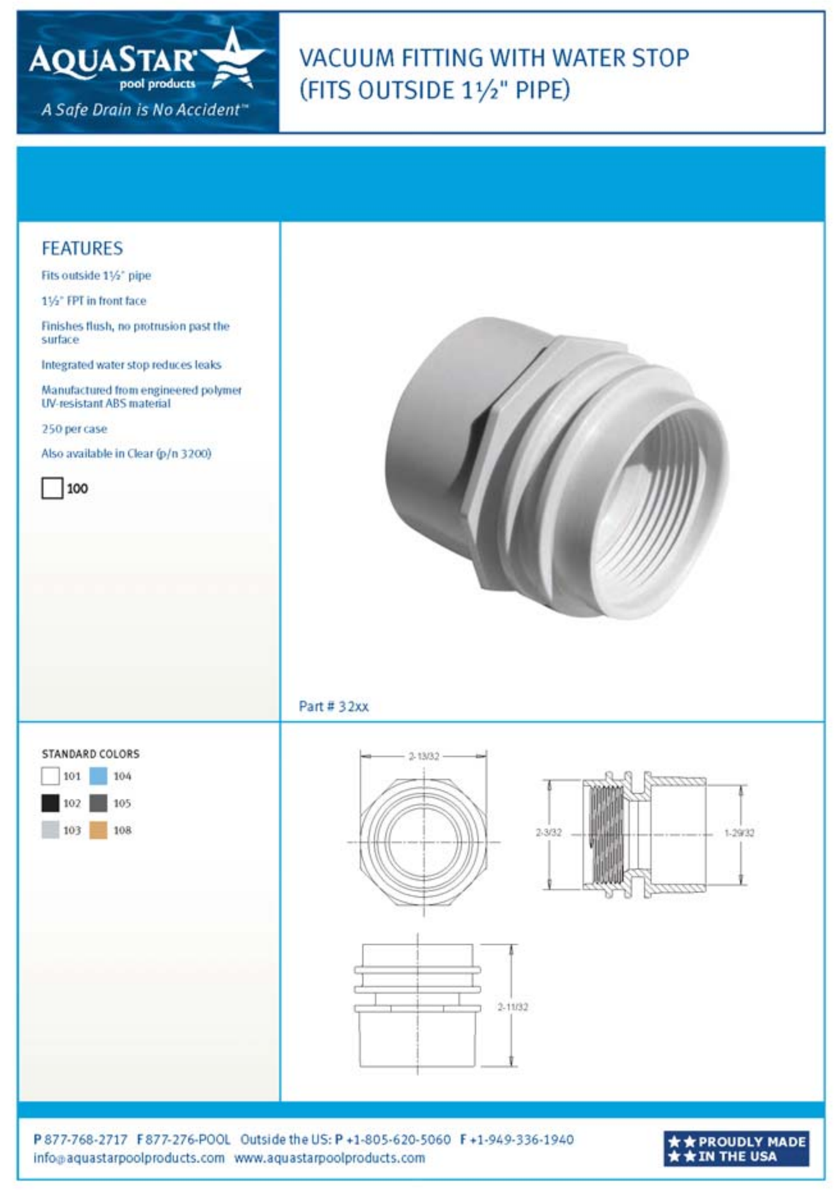
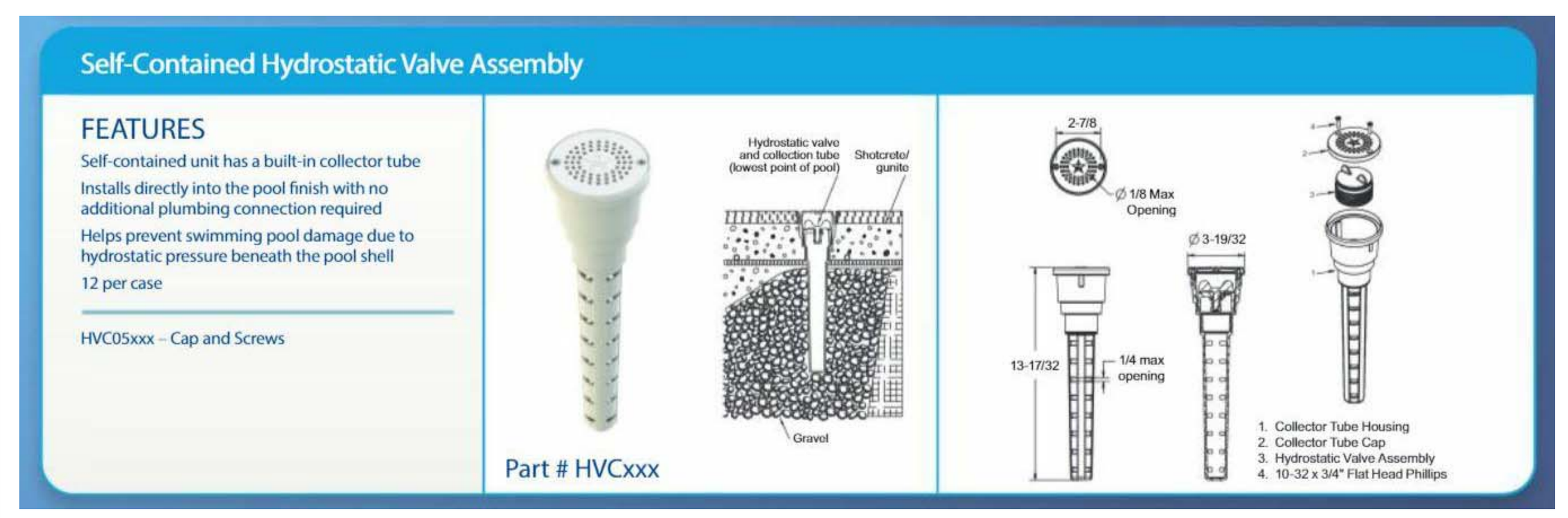
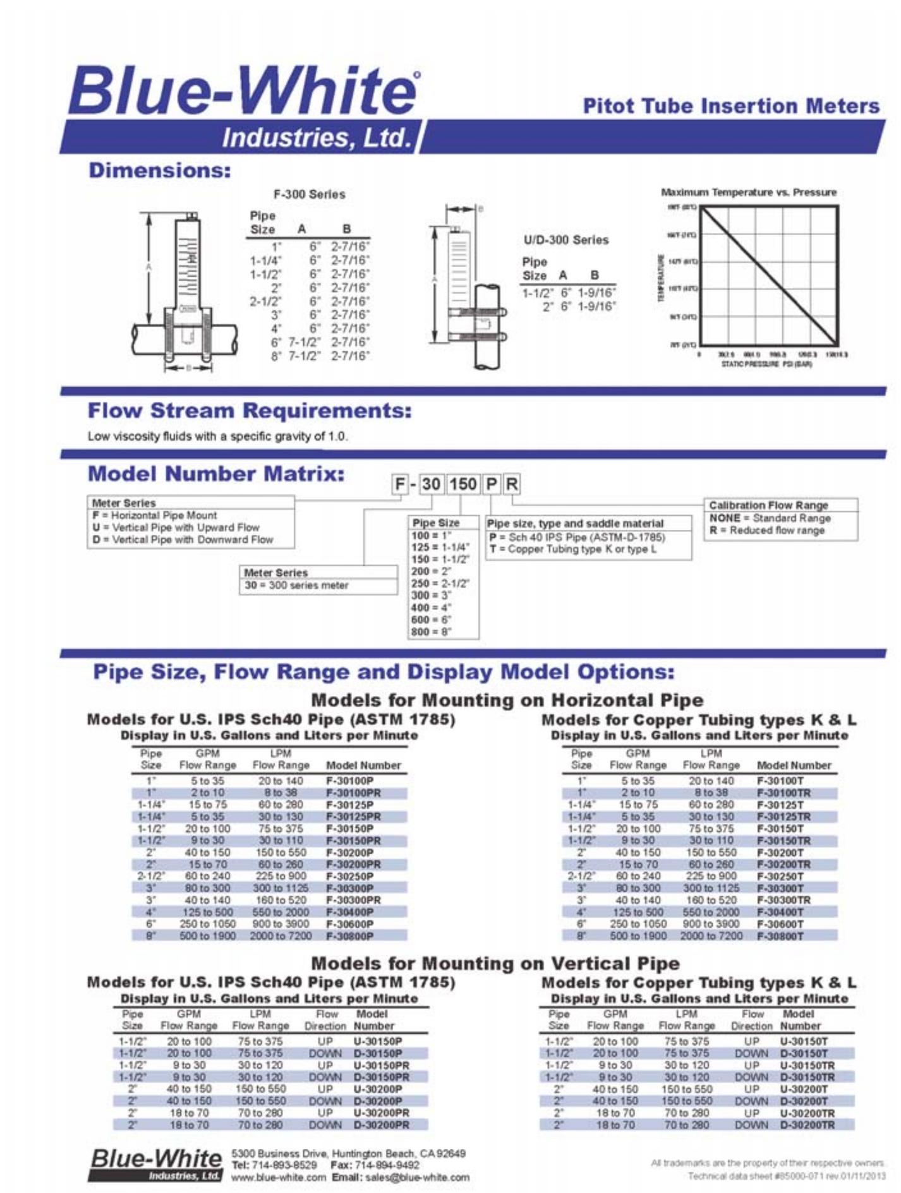
SERENITY AMENITY
GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

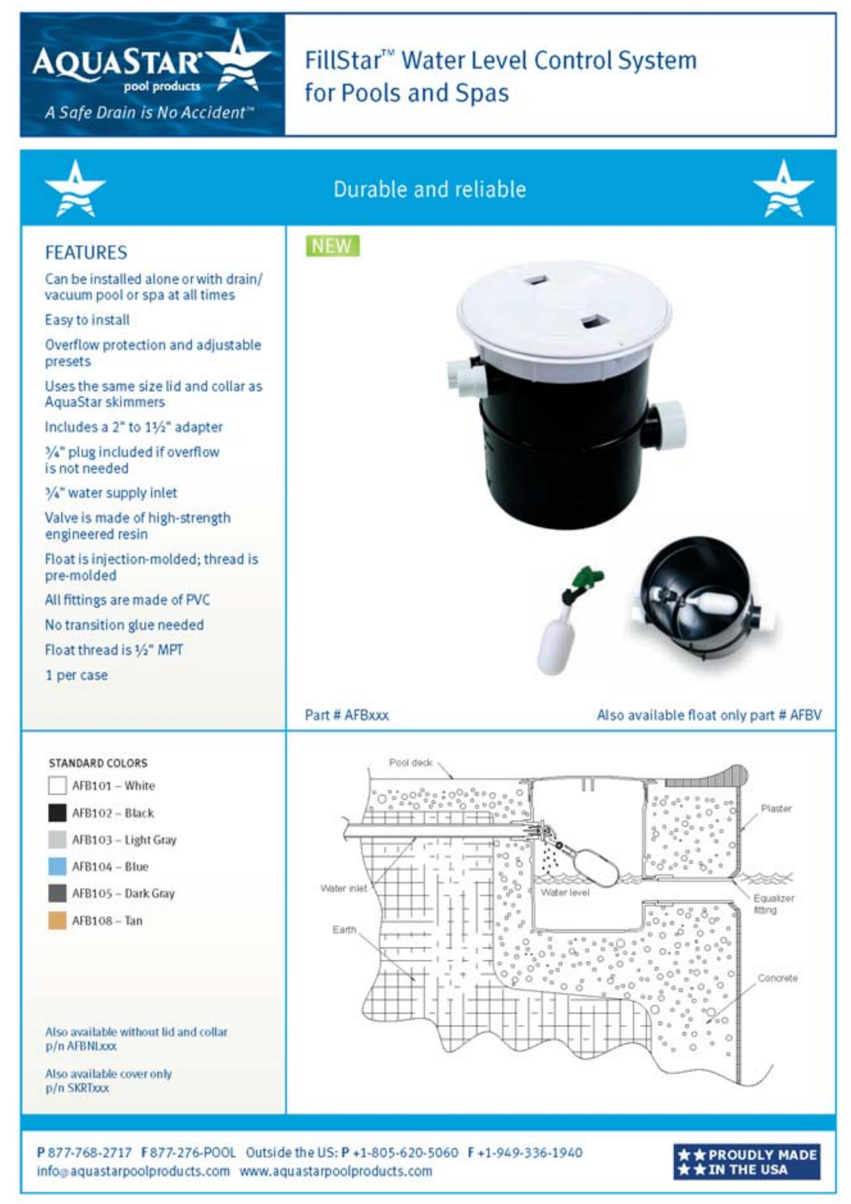
SP5

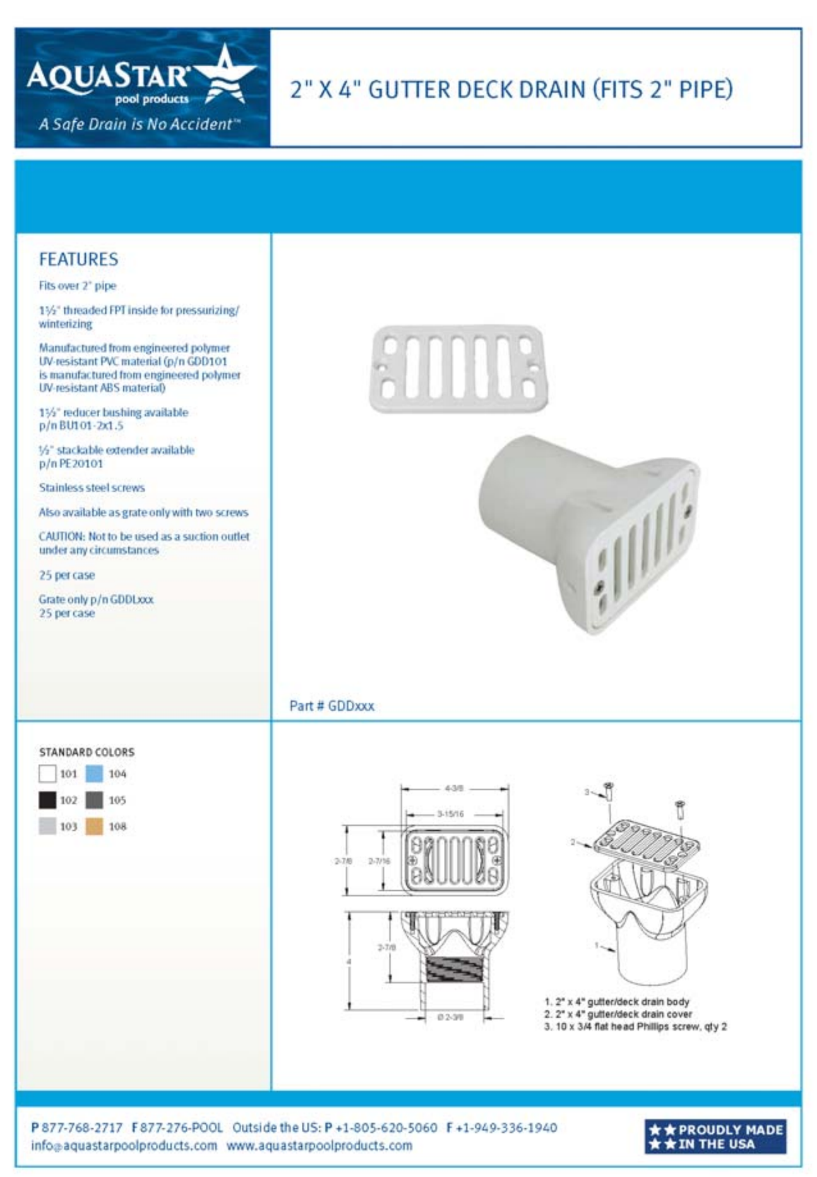


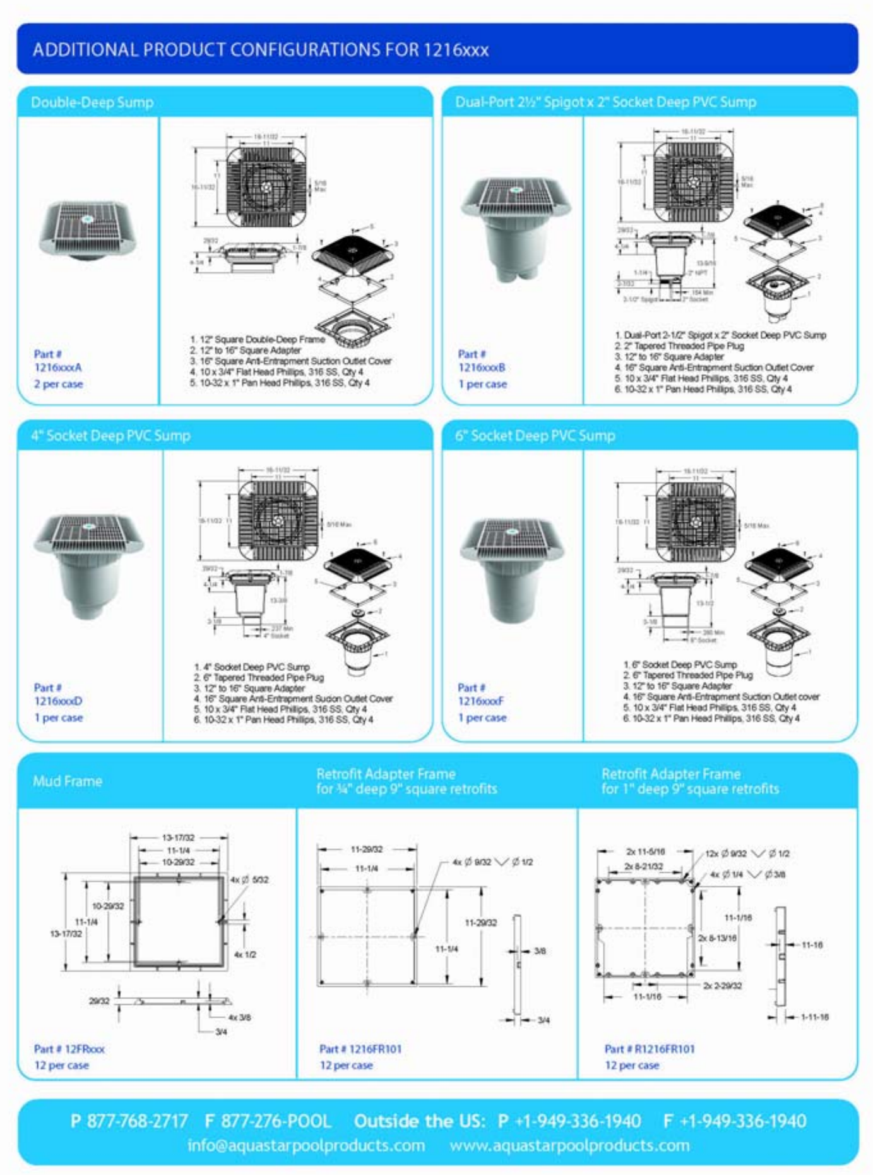






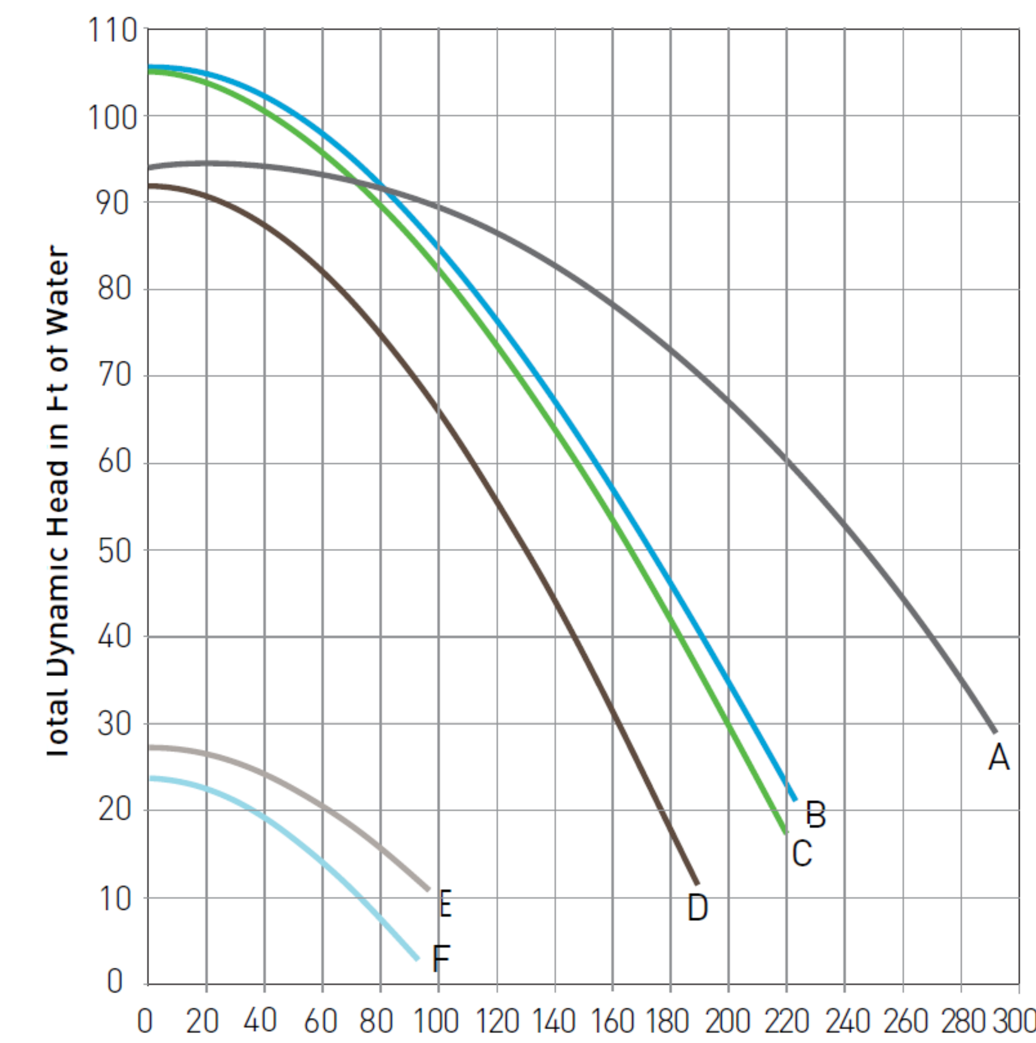






POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	3	PENTAIR	XFE-20	5 HP SELF-PRIMING PUMPS W/ STRAINER BASKET + EXTRA BASKET
2	4	PENTAIR	TR-140C	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
3	4	PENTAIR	PAC-06-3080	3" PUSH PULL BACKWASH VALVE
4	1	VERSACHLOR	SYSTEM 3	CALCIUM HYPOCHLORITE TABLET CHLORINATION SYSTEM
5	1	BLUE-WHITE	F-30600P	6" COMMERCIAL FLOWMETER
6	2	AQUASTAR	1216101D	12" x 12" ANTI-ENTRAPMENT SUCTION OUTLET COVER W/ 4" SOCKET DEEP PVC SUMP
7	2	HAYWARD	WG1033BHF	18" x 18" ANTI-ENTRAPMENT SUCTION OUTLET COVER W/ DEEP PVC SUMP
8	2	AQUASTAR	HVC101	SELF-CONTAINED HYDROSTATIC VALVE ASSEMBLY
9	16	AQUASTAR	SKR101	COMMERCIAL SKIMMER - WHITE
10	2	AQUASTAR	ES1022S12001 W/ VLK15T01	VACUUM LINE FITTING W/ LOCK CAP
11	8	AQUASTAR	ES1022S12001 W/ BP101	RETURN FLOOR INLETS - DIRECTIONAL W/ BUBBLER PLATE (15 GPM DESIGN RATE)
12	7	PENTAIR	542044	ANTIWAVE CUP ROPE ANCHOR - ANTIWAVE BY HOA
13	2	AQUASTAR	4DIV101 / DIV0101	4" ADJUSTABLE FLOOR RETURN FITTING W/ WATER STOP
14	22	AQUASTAR	ES1022SI2001 W/ 4101	RETURN WALL FITTING W/ EYEBALL FITTING
15	1	AQUASTAR	GDD101	OVERFLOW DRAIN TO DAYLIGHT
16	8	PENTAIR	LIGHT - 601307	400 W EQUIVALANT INTELLIBRITE LED LOW VOLTAGE LIGHT
17	1	AQUASTAR	AFB101	AQUALEVEL - AUTOFILL LINE - WHITE
18	2	INTERMATIC	PJBX52100	COMBO CONNECT JUNCTION BOX W/ 100 W TRANSFORMER
19	1	NATURAL STRUCTURES	1800-17-96	7' - 6" DIA MUSHROOM FEATURE (200 GPM AT 3" DIA) - BLUE CAP
20	2	SR Smith	F4H - 100S - MG	MARINE GRADE DECK MOUNTED ADA HAND RAILS - 24" INSIDE CLEAR SPACE
21	3	SR SMITH	F4H-100- MG / 25578-000-000	MARINE GRADE HANDRAILS - W/ RECESSED STEPS
22	7	SR SMITH	DMS-101B - MG	MARINE GRADE DECK MOUNTED HANDRAILS
HC	1	SR SMITH	MULTI-LIFT	ADA COMPLIANT MULTILIFT WITH FOLDING SEAT

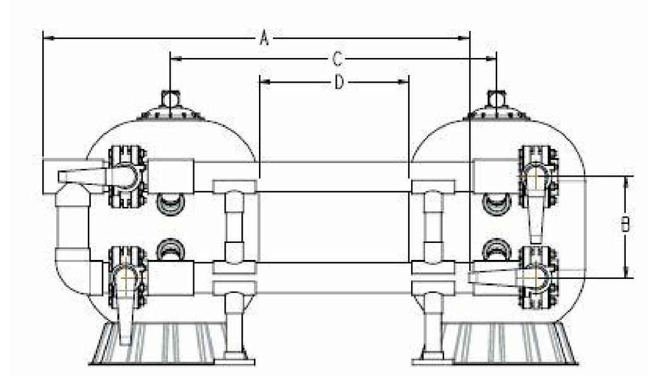


Performance Curve	Model	Description
A	XFE-20	5 HP, Single Speed Full Rated
A	XFET-20	5 HP, TEFC Super-Duty Single Speed
G	XFK-20	5 HP, 3-Phase, Super-Duty Motor
B	XFE-12	3 HP, Single Speed Full Rated
B, E	XFDS-12	3 HP, 2-Speed Full Rated
B	XFET-12	3 HP, TEFC Super-Duty Single Speed
H	XFK-12	3 HP, 3-Phase, Super-Duty Motor
C	XF-12	3 HP, Single Speed Full Rated
D	XFE-8	2 HP, Single Speed Full Rated
D	XFET-8	2 HP, TEFC Super-Duty Single Speed
D	XF-8	2 HP, Single Speed Full Rated
D, F	XFDS-8	2 HP, 2-Speed Full Rated
D	XFE-30	2.5 HP, Single Speed Up Rated
D	XF-30	2.5 HP, Single Speed Up Rated
D, F	XFDS-30	2.5 HP, 2-Speed, Up Rated
I	XFK-8	2 HP, 3-Phase, Super-Duty Motor

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 ¾"	30 ½"	600 lbs.	450 lbs./150 lbs.
TR140C	7.06	106	38,160	50,880	45 ¼"	36 ½"	925 lbs.	650 lbs./275 lbs.
TR100C-3	4.91	74	26,640	35,520	39 ¾"	30 ½"	600 lbs.	450 lbs./150 lbs.
TR140C-3	7.06	106	38,160	50,880	45 ¼"	36 ½"	925 lbs.	650 lbs./275 lbs.

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

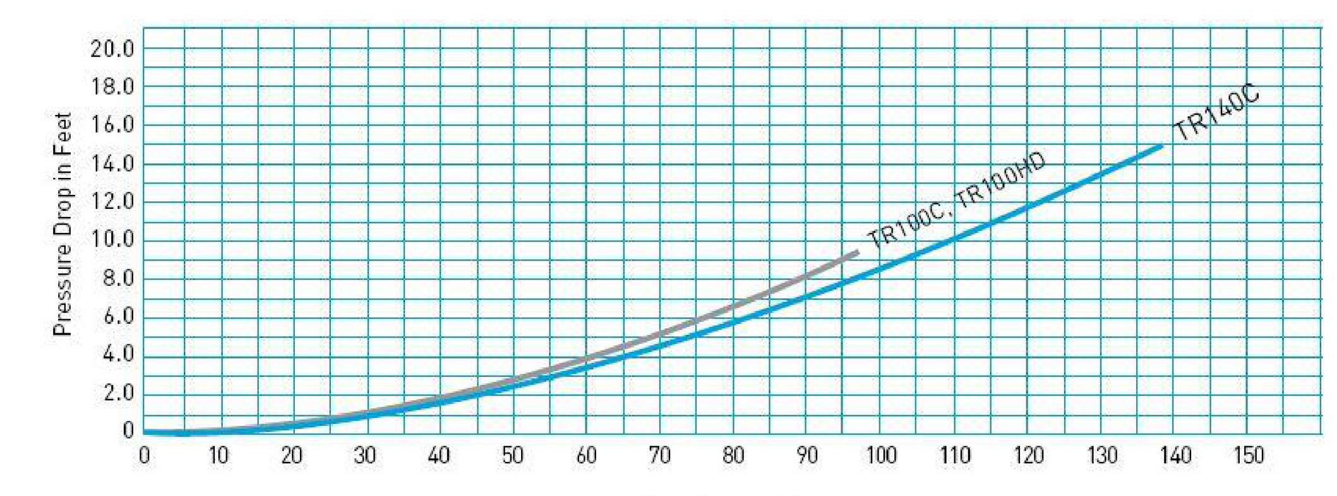


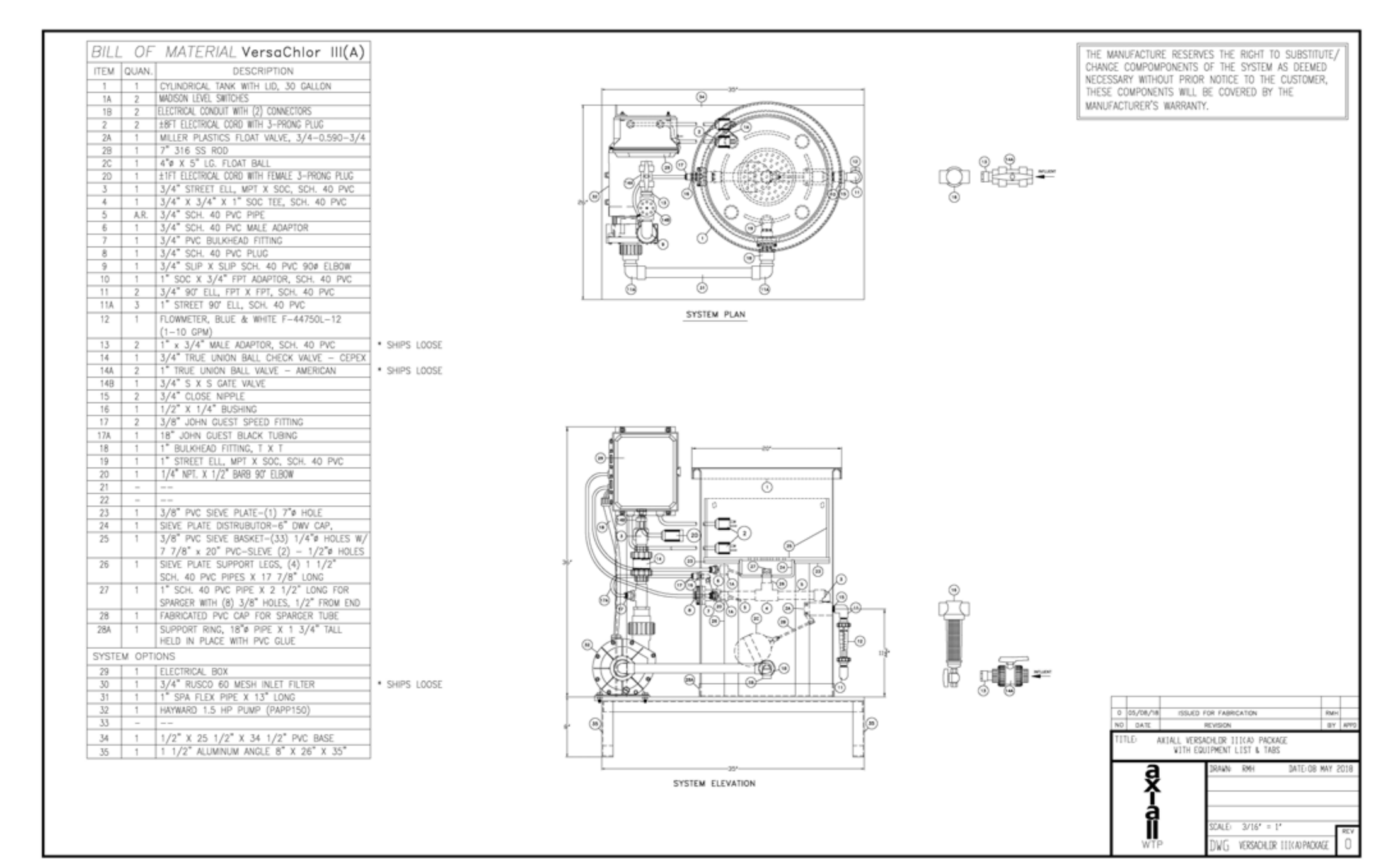
Two Filter System	A	B	C	D	Total Wt.
3" —TR100C	82 ¾"	17 15/16"	48" Min.	18" Min.	2,300 lbs.
3" —TR140C	88 3/8"	17 15/16"	54" Min.	18" Min.	3,200 lbs.
4" —TR140C	95 ¾"	19 35/64"	54" Min.	18" Min.	2,300 lbs.
6" —TR140C	111 ¾"	24 7/32"	54" Min.	18" Min.	3,550 lbs.

Note: 6" piping needs to be rotated upward as shown at 25° so handle will clear the floor.

2",2-1/2",3" VALVULA DE RETROLAVADO XF ENTRADA SUPR. (PAC-06-3080)

- Product # : PAC-06-3080
- Mfg : PENTAIR WATER POOL AND SPA INC
- Mfg # : 263080
- Department : FILTER ACCESSORIES
- Product Line : Filter Control Valves
- UOM (Default) : PZA
- Obsolete : This product is not obsolete.
- Ship Weight (lbs) : 8.50
- Shipping Dimensions : 17.40x12.20x8.10
- Product UPC : 788379852955





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405 Willowcrest Dr.
Winston-Salem, NC 27107
Phone & Fax: (336)769-4900

NORTH CAROLINA PROFESSIONAL SEAL ALAN R. HINE 2-24-2021

DATE | REVISION | NO.

SHEET DESCRIPTION
Specifications

PROJECT #:	2018.037
DATE ISSUED:	02/23/2021
DRAWING BY:	BSJ/JVD
CHECKED BY:	DSC/ARH

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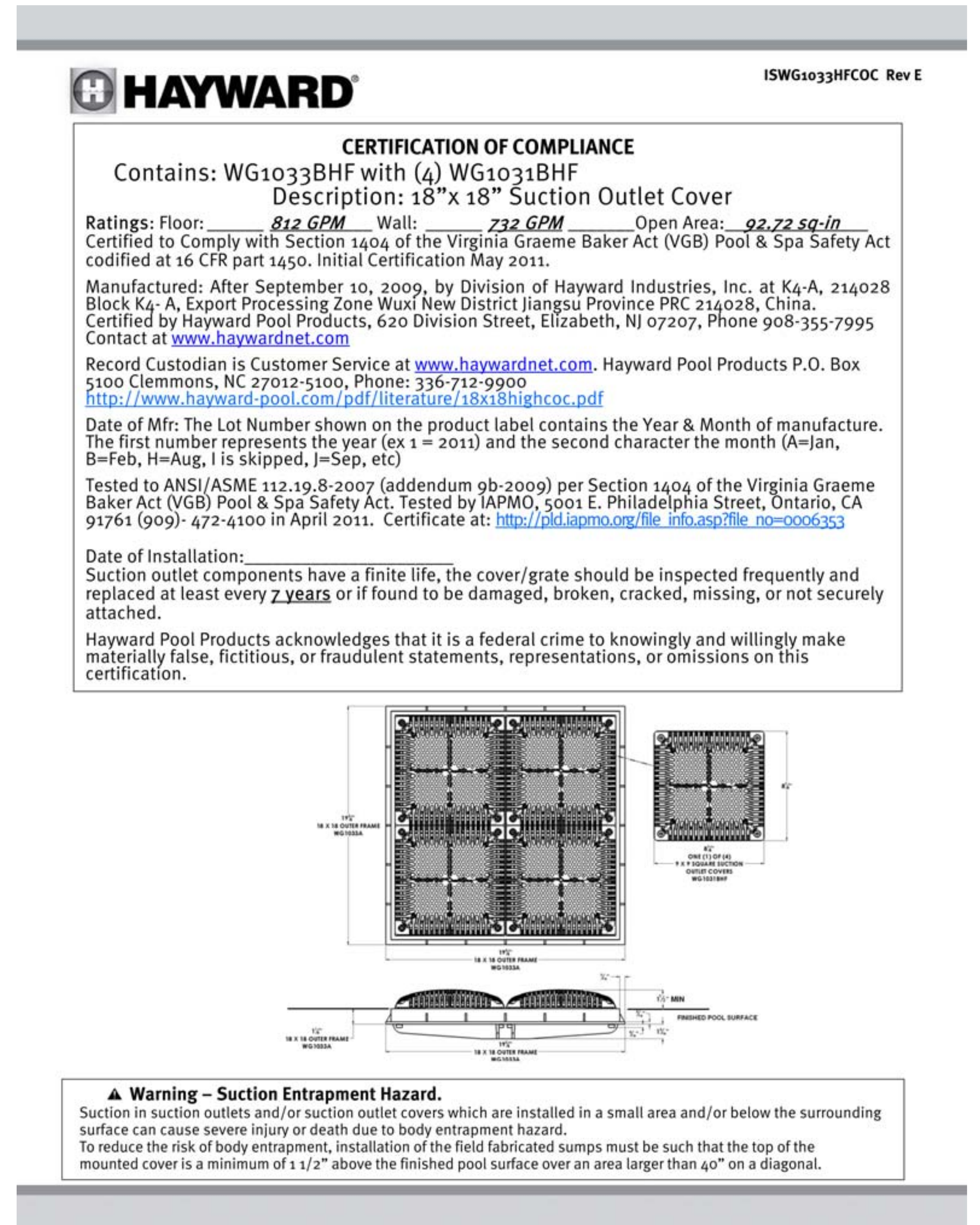
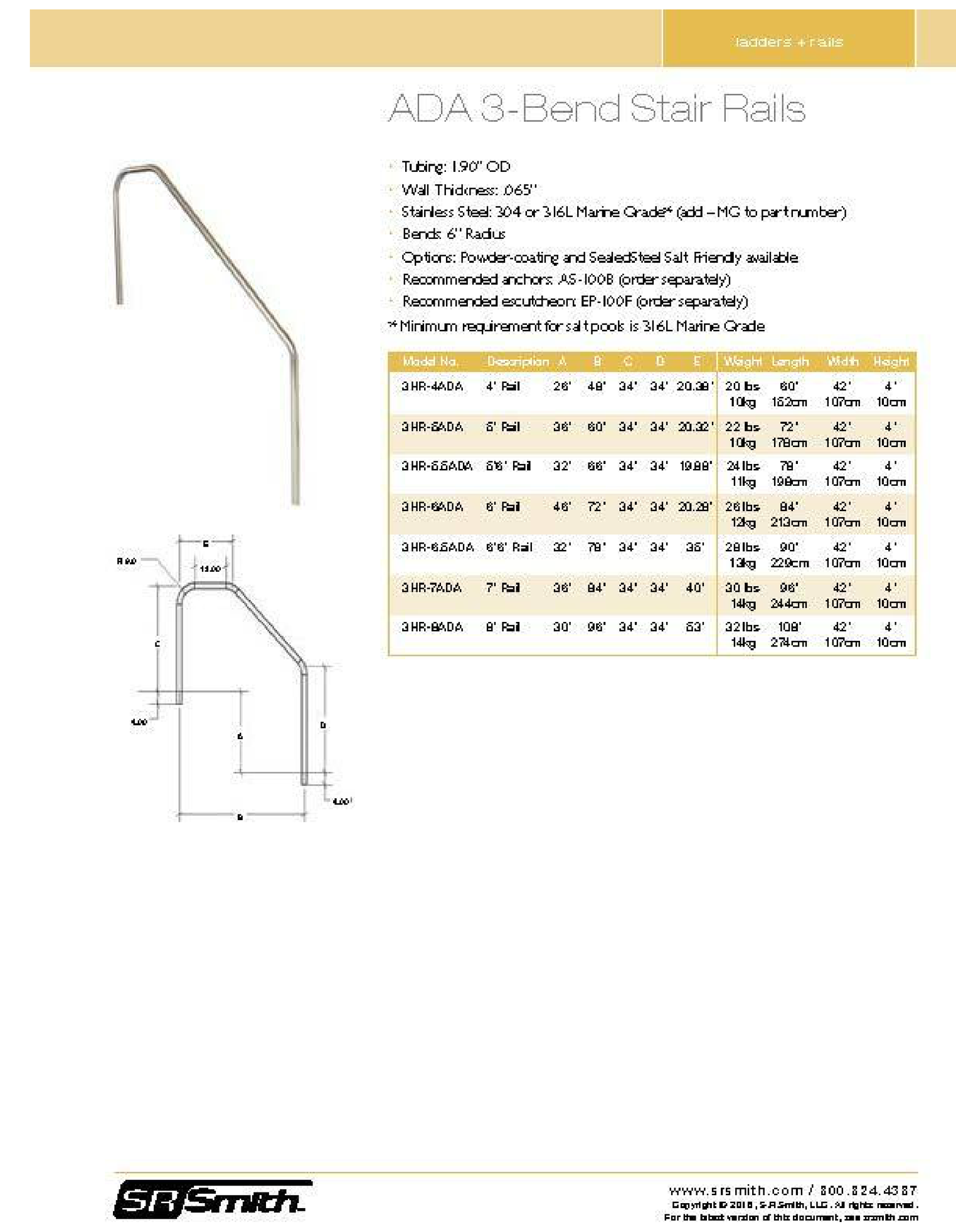
GREENFIELD COMMUNITIES
CLUBHOUSE PLANS
Fuquay-Varina, NC

SP6





POOL EQUIPMENT SCHEDULE

TAG	COUNT	MANUFACTURER	MODEL	COMMENTS
1	3	PENTAIR	XFE-20	5 HP SELF-PRIMING PUMPS W/ STRAINER BASKET + EXTRA BASKET
2	4	PENTAIR	TR-140C	36" DIA HIGH RATE SAND FILTER W/ 7.06 SF OF MEDIA
3	4	PENTAIR	PAC-06-3080	3" PUSH PULL BACKWASH VALVE
4	1	VERSACHLOR	SYSTEM 3	CALCIUM HYPOCHLORITE TABLET CHLORINATION SYSTEM
5	1	BLUE-WHITE	F-30600P	6" COMMERCIAL FLOWMETER
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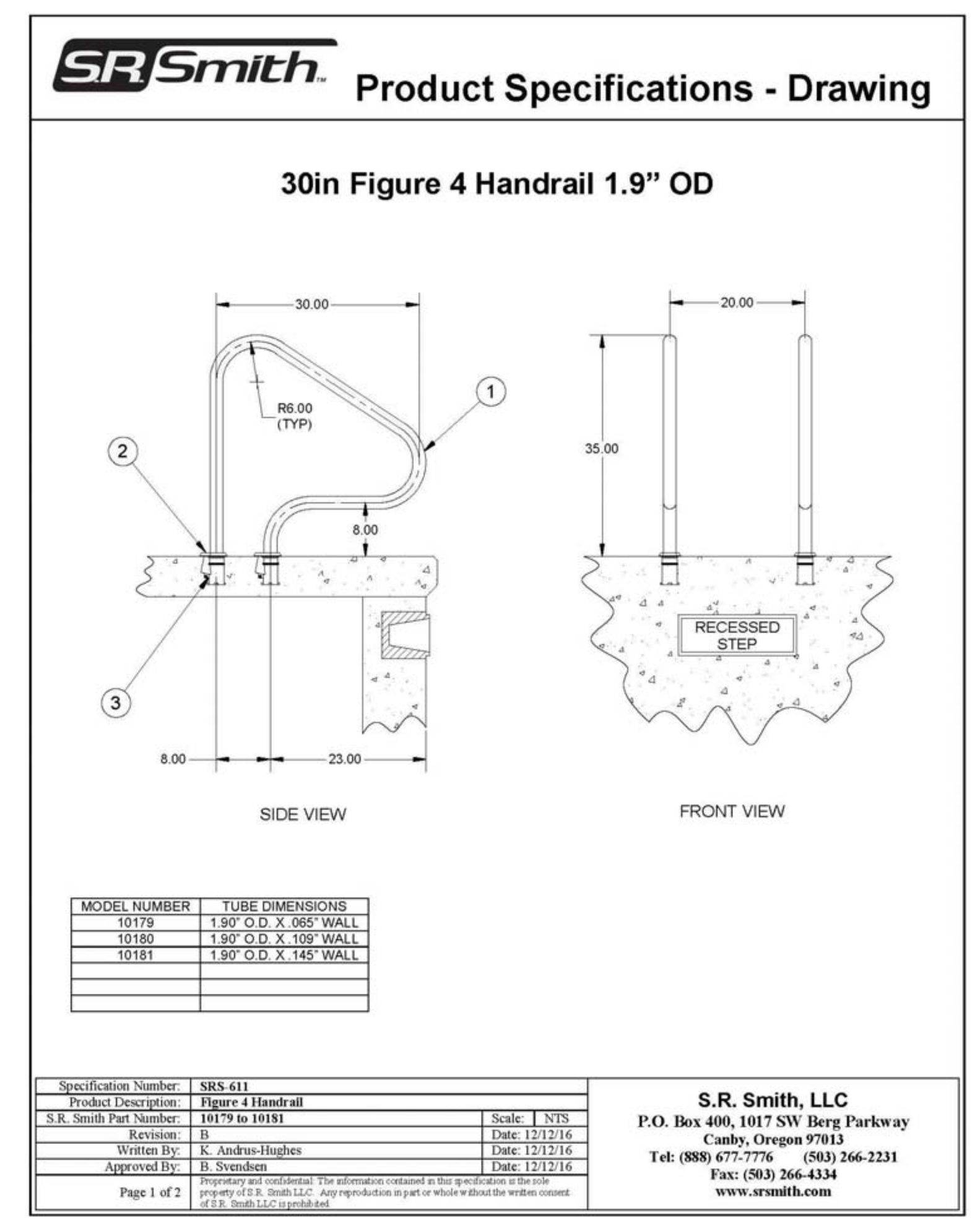

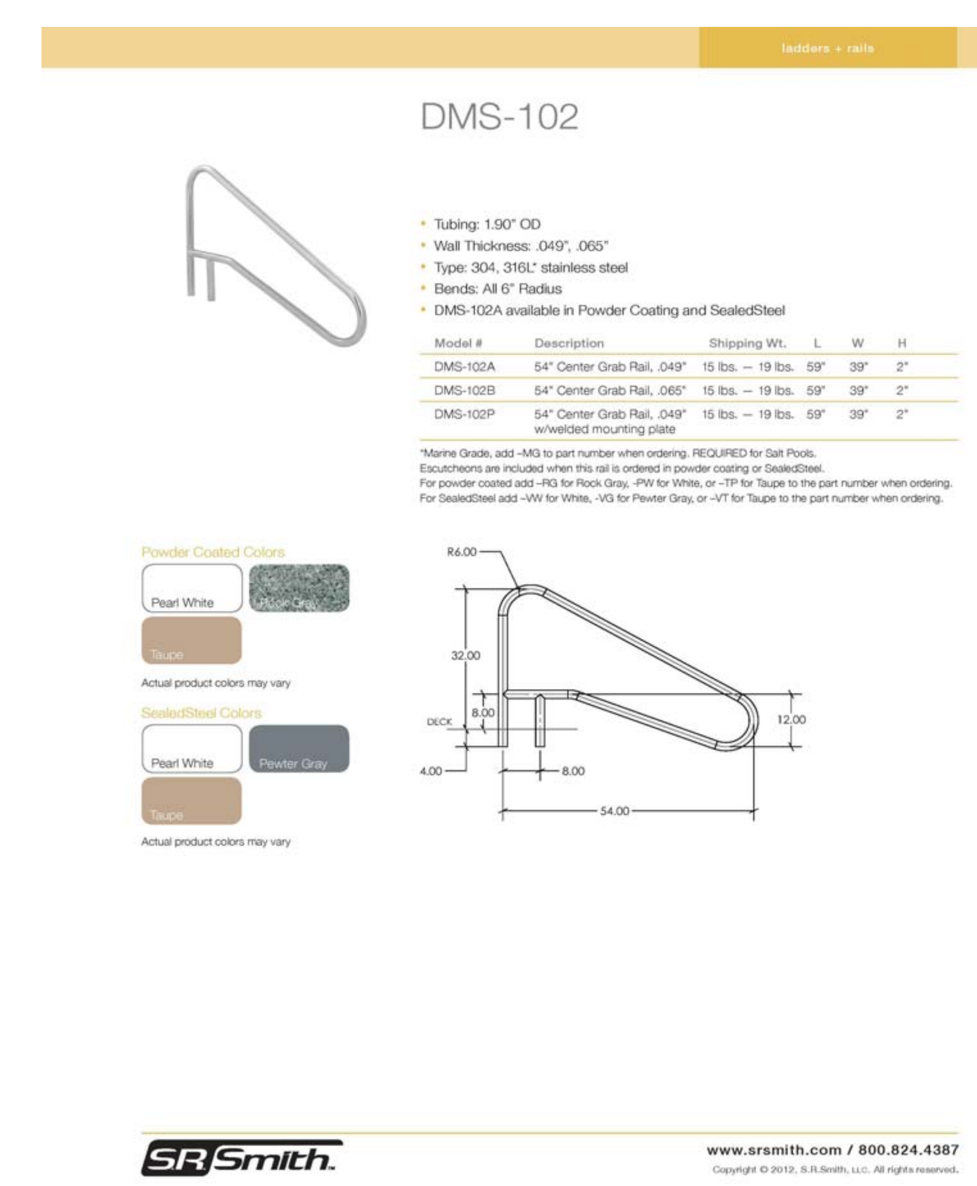

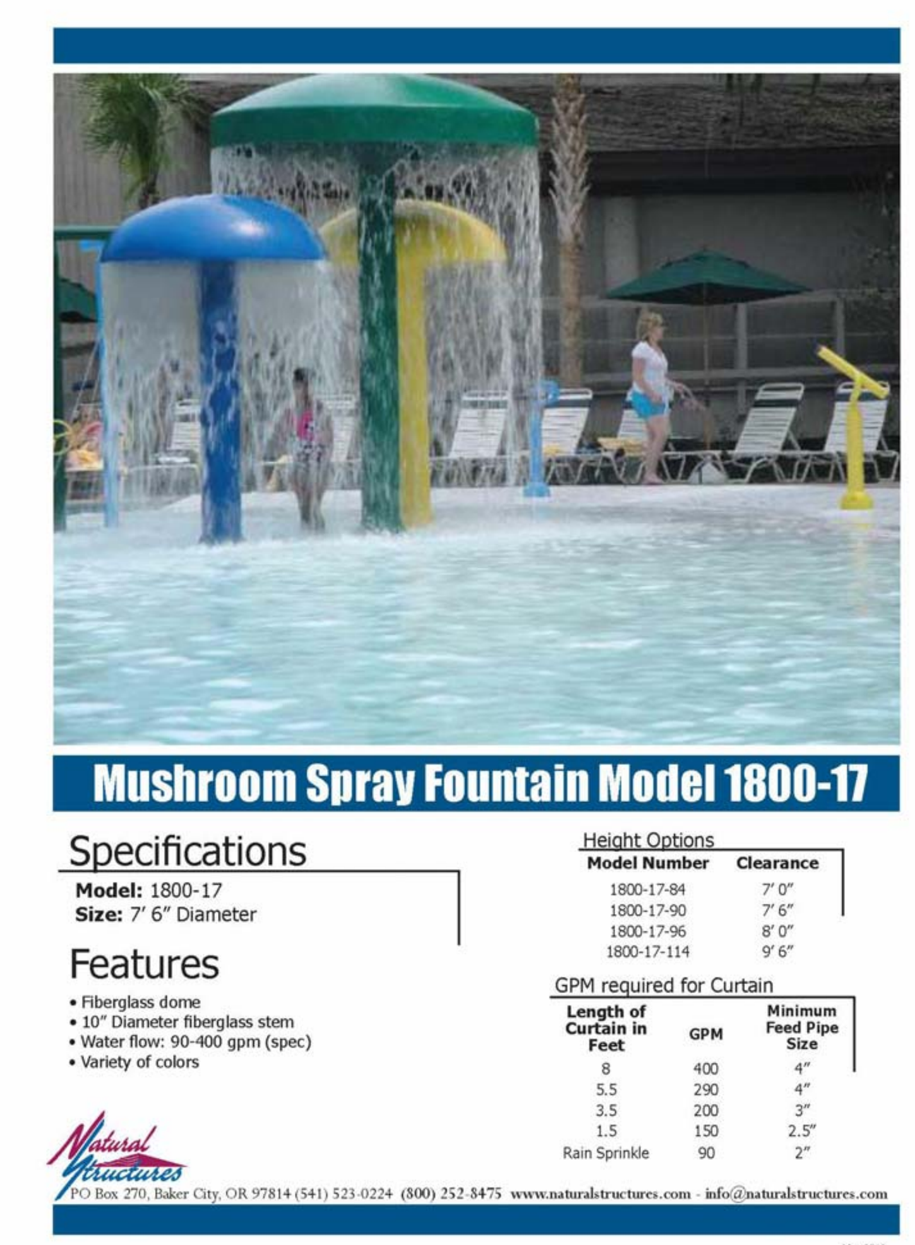

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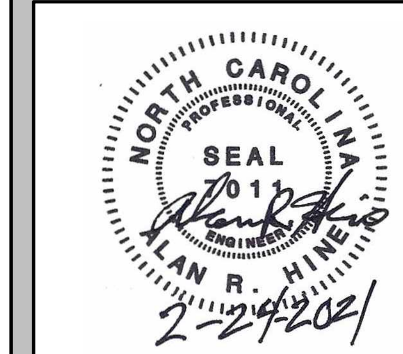

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