

8'-0" x 20'-0" (ACTUAL SIZE) 820 GUARD BOOTH WITH HALF BATH

Twin Modular Services Inc.

1001 Lower Landing Road Suit 607, Blackwood , NJ

Site Location:
CHS Laurel Refinery
802 HWY 212 E
Laurel, MT 59044

DESIGN BASIS	
State/Jurisdiction	Montana
Building Code	International Building Code, 2012 Edition
Plumbing Code	Uniform Plumbing Code, 2012 Edition
Electrical Code	National Electrical Code, 2014 Edition
Mechanical Code	International Mechanical Code, 2012 Edition
Accessibility Code	ICC A117.1 - Accessibility, 2009 Edition

LIFE SAFETY SUMMARY			
Construction type	VB		
Sprinkler Increase, I_s	1.00		
Frontage Increase, I_f	1.00		
Allowable Area Per Story, A_A	900 ft ²		
Allowable Height Above Grade	2 stories		
	40 ft		
LEVEL	OCCUPANCY	AREA	OCCUPANT LOAD
1	B	160 ft ²	1

STRUCTURAL DESIGN CRITERIA			
GRAVITY LOADS		SEISMIC (IBC)	
	Floor Live	50 psf	Seismic Design Category
	Floor Dead	10 psf	Site Class
	Roof Live	20 psf	Importance Category
	Roof Dead	10 psf	Risk Category
	Exterior Wall Dead	5 psf	Mapped Accelerations
SNOW	Ground Snow Load	40 psf	S_s
			S_1
			Spectral Response
			S_{ps}
			S_{D1}
WIND	Wind Speed (Vult)	115 mph	Seismic Force Resisting System
	Wind Speed (Vasd)	90 mph	Design Base Shear
	Exposure Category	C	Response Modification Factor
	Internal Pressure, G_C	+/- 0.18	
	Base Wind Pressure, P_f	15 psf	
	Mean Roof Height	15 ft	
SETBACKS	Setback	Greater than 10 feet to a common or assumed property line.	Allowable bearing Pressure
			2000 psf
APPROXIMATE WEIGHT OF BUILDING		8,000 lbs	FLOOD
			Building shall not be located, in whole or in part, in a flood hazard area as established by the authority having jurisdiction unless set on a foundation designed in accordance with ASCE/SEI 25. The flood resistant foundation shall be designed by a registered design professional and constructed to resist all flood loads without transferring loads to the modular structure.
			Building shall not be placed on the upper half of a hill or escarpment exceeding 15 feet in height.

DRAWING INDEX	
1.	Cover Sheet
1.1	General Notes
1.2	Specifications
2.	Elevations
3.	Floor Plan
3.1	Framing Details
3.2	Framing Details
4.	Electrical Plan
5.	Plumbing Schematic
6.	Cross Section
7.	Foundation Design

THIS PLAN MAY BE REVERSED OR MIRRORED.

ACCESSIBILITY EXCEPTIONS

1103.2.6 Raised areas. Raised areas used primarily for purposes of security, life safety, or fire safety including but not limited to, observation galleries, prison guard towers, fire towers or life guard stands are not required to comply with this chapter (Accessibility)

Note: Single occupant guard structures will be placed on and elevated entrance island to the park that does not have an accessible rout.

SPECIAL LIMITATIONS

Adequate handicapped restroom facilities to handle this additional occupant load created by the addition of this building to a site shall be provided in an adjacent building on the same property. The local official having jurisdiction shall verify the existing facilities.

THERMAL ZONE

This buildings design complies with or exceeds the minimum requirements for Climate Zone 6B.

ATTENTION LOCAL BUILDING OFFICIAL

All work to be completed on-site is to be in compliance with all state and local codes and is subject to review, approval, and inspection by the local authority having jurisdiction. This building is designed for installation on a permanent foundation and is not intended to be moved once installed. All on-site work shall be performed by a licensed contractor with experience in the setup of modular buildings. The following list is not all inclusive, nor does it limit the items of work or materials that may be required for complete installation.

- Complete foundation support and anchorage system.
- Ramps, stairs and general access to building.
- Electrical service connection (including feeders) to the building.
- Sewer and water supply connections to the building per local authority having jurisdiction.
- A/C heat combo unit, installed on-site.
- Energy Compliance

COMPONENTS AND CLADDING WIND LOADS		
Component	End Zone (psf)	Interior Zone (psf)
Windows & Siding	+17.7/-23.7	+17.7/-19.2
Doors	+15/-18.4	+15/-16.5
Roof Cladding	+10/-44.6	+10/-17.7
Roof Overhangs	-41.9	-25.5

NOTICE

These drawings are applicable only to the elements and loading criteria specifically provided herein. These drawings shall not be construed in any way to specify, certify or design any aspects of the building not contained herein. Elements not contained herein are to be constructed in accordance with the prescriptive requirements of the adopted building code or designed by other registered design professionals, as applicable. Specified design criteria are based solely on information provided by the client and must be verified and approved by the local authority having jurisdiction. NTA, Inc. is not responsible for fabrication or erection. If it is suspected that these drawings have been modified, substituted or altered in any way, contact NTA, Inc. directly to obtain a file copy.

**NTA, Inc., 305 N Oakland Ave
Nappanee, Indiana 46550
Engineering COA No. C-969**
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0104 2008-05-28

REVISIONS:	SCALE: NTS	APPROVED BY:	Twin Modular Services Inc. Blackwood , NJ	TITLE: COVER SHEET	JOB NO: TMS091619-19
	DATE: 10/08/2019	DRAWN BY: FR		MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 1

WOOD FRAMING

- Structural sawn lumber shall be identified by a grade mark in accordance with DOC PS 20.
- Approved end-jointed lumber may be use interchangeably with solid-sawn member of the same species and grade except in fire rated assemblies.
- Structural sheathing shall be rated and labeled for compliance with DOC PS 1 or DOC PS 2.
- LVL members shall have the following minimum properties, E=2.0, F_v=2800 psi, unless noted otherwise.
- All wood shall have a moisture content of 19% or less at the time of construction.
- Wood framing members, including wood sheathing, that rest on exterior foundation walls and are less than 8" from exposed earth each shall be naturally durable or preservative treated.
- Wood members shall be cut and joined so no gap larger than 1/8" exists between members.
- Wood in contact with concrete or masonry shall be naturally durable or preservative treated in accordance with AWPA use category UC4C and properly identified as preservative treated.
- Nails and staples shall conform to ASTM F1667. Nails with shank diameters of 0.099" but not larger than 0.142" shall have a minimum average bending yield strength, F_{by} = 100 ksi.
- Fasteners shall be installed to avoid splitting of the wood members. If splitting occurs, the connection shall be made by alternate means or otherwise reinforced under the direction of the design engineer.
- Fasteners shall be driven so their head or crown is flush with the surface of the wood member or sheathing. Overdriven fasteners shall be replaced.
- Bolts shall conform to ASTM A307 meeting the requirements of ANSI/ASME B18.2.1 for full-body diameter bolts. Screws and lag screws shall conform to ANSI B18.2.1 and ANSI B18.6.1, respectively.
- Bolt holes shall be at least a minimum of 1/32" and no more than a maximum of 1/16" larger than the bolt diameter.
- Bolt nuts shall be finger-tight plus 1/3 to 1/2 turn with a hand wrench.
- Connection hardware shall be the brand and model specified. Alternate connectors shall be submitted to the design engineer for approval.
- Unless otherwise noted, connectors shall be installed with the maximum number and size of fasteners as required in the manufacturer's installation instructions.
- Prefabricated wood I-joist and structural composite lumber shall not be notched or drilled except where permitted by the manufacturer's recommendations.
- Plywood beams shall be detailed and fabricated in accordance with the latest edition of APA Plywood Design Specification Supplement 5 - Design & Fabrication of All-Plywood Beams.
- Douglas Fir, Hem Fir, or Southern Yellow Pine may be substituted for Spruce-Pine-Fir using an equal size and grade.

CORROSION PROTECTION

- Metal framing, connectors, fasteners, and flashing in contact with preservative treated or fire retardant treated wood members shall be hot-dipped zinc coated galvanized steel, stainless steel, silicon bronze, copper, or otherwise protected from the corrosive action of the wood member.
- A barrier between the treated members can be used when approved by the design engineer.
- Selection of the appropriate connector and fastener coating shall be based on the intended end use of the connector or fastener and the chemical preservative used in the the treatment of the member for which it is in contact.
- Where connection hardware is used, such as joint hangers, fasteners used shall be made of the same material as the connection hardware.
- Corrosion protection of metal connectors, fasteners, and flashing based on galvanized or stainless steel materials shall be in accordance with the table below.

Preservative	Product Coatings		Stainless Steel
	Hot Dipped Galvanized (ASTM A153)		
	G90	G185	
Untreated Wood SBX/DOT CCA-C	Yes	Yes	Yes
ACQ-C & ACQ-B CBA-A & CA-B NON-DOT No Ammonia and Not Rated For Ground Contact	No	Yes	Yes
Unknown Preservative, Contains Ammonia, Rated For Ground Contact or ACZA	No	No	Yes

SBX = DOT Sodium Borate, CCA-C = Chromated Copper Arsenate, ACQ-C & ACQ-D = Alkaline Copper Quat, CBA-A & CA-B = Copper Azote, Non-DOT = Other Borate, ACZA = Ammoniacal Copper Zinc Arsenate

COASTAL CORROSION PROTECTION

- The corrosion protection requirements in this sections shall apply to all structures located within 3000' landward of the mean high-tide waterline for all metal components or connectors not contained within the pressure envelope of the structure.
- Fasteners or bolts less than 5/8" in diameter shall be Type 316L stainless steel. Fasteners or bolts 5/8" or larger shall be hot dip galvanized per ASTM A653 or ASTM A153 with a zinc coating thickness of 1.85 oz of zinc per square foot of surface area (G185).
- Connection hardware, such as pre-formed connectors, steel plates, or steel straps, exposed to weather and having a base metal thickness equal to or less than 1/8" shall be Type 303, 304, 305 or 316 stainless steel. Steel exposed to weather having a base metal thickness greater than 1/8" shall be hot dip galvanized per ASTM A653 or ASTM A153 with a zinc coating thickness of 1.85 oz of zinc per square foot of surface area (G185) or painted using one of the following formulations:
 - Epoxy-polyamide
 - Coal-tar epoxy-polyamide
 - Zinc chormate-vinyl butyral primer with asphaltic mastic
- Contact between dissimilar materials (stainless steel and carbon steel) shall be avoided.

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Twin Modular Services Inc.
Blackwood , NJ

REVISIONS:	SCALE: NTS	APPROVED BY:		TITLE: General Notes	JOB NO: TMS091619-19
	DATE: 10/08/2019	DRAWN BY: FR		MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 1.1

CHASSIS

Type: Perimeter
Main Beam: 6" C-Channel 8.2 LBS Per Half
Cross Members: 6" C-Channel at 24" o.c.
Paint: Marine Based 2 Part Epoxy - Black
Misc: Steel Fork Slots

FLOOR

Insulation: Ridged Insulation R-19
Moisture Barrier: Ridged Insulation
Decking And Covering: 3/4" Plywood descking with 16Ga
Aluminum Tread Plate guard, 1/8" Vinyl Tile in Bath area
Trim: 4" Vinyl Cove Base

EXTERIOR WALLS

Studs: 2x4 Stud Grade SPF at 16" o.c.
Bottom Plate: Single 2x4 #3 SPF
Top Plate: Single 2x4 #3 SPF
Steel Tube: 3"x3"x3/16" Steel Tube Beams And Corner Post
Wall Height: 8'-3"
Finished Ceiling Height: 7'-6" AFF
Insulation: R-13 Fiberglass Kraft-Backed Batts
Interior Wall Covering: 1/4" Vinyl Covered Panel (Class III)
Moisture Barrier: Tyvek or Equal

INTERIOR WALLS

Studs: 2x4 Stud Grade SPF at 16" oc
Bottom Plate: Single 2x4 #3 SPF
Top Plate: Single 2x4 #3 SPF
Wall Height: 8'-3"
Finished Ceiling Height: 7'-8" AFF
Interior Wall Covering: 1/4" Vinyl Covered Panel (Class III)

INTERIOR DOOR

Door: 30"x80" Hollow Core, Pre-Finished, Hinged

ROOF

Type: Rafter, 2x8 #3 SPF at 16" o.c. Bow Type Roof 2% Slope
(Vented)
Ceiling: 2'x4' T-Grid (Class III) Drop Ceiling at 7'-6" AFF
Insulation: R-30 Unfaced Fiberglass Batts
Ventilated Roof
Overhang: 3" on Sidewalls (Unit Not to Exceed 102" Wide)
6" on Endwalls

ELECTRICAL

Main Distribution Panel: Exterior Surface Mounted (Weatherproof), 100 Amp. 120/240 Volt Single Phase, 3
wire, 60 HZ with Ground, 12 Spaces 24 Circuits
Raceway: Minimum #14/2 with Ground 90 Deg. C Type MC Copper
Interior Lights: (2) 2'x4' 120V LED with Prismatic Lens - Lithonia Type 2GTL460LEZ1LP840
Exterior Lights: (1) Exterior LED Security Light Fixture with Integral Photo Eye Switch (dusk to dawn) per print
Switches: 120V 15 Amp Single Pole Per Print
Receptacles: 120V 15 AMP Duplex Recepts Per Print
120V 15 AMP Duplex GFI Recepts Per Print
120V 15 AMP Duplex GFI, Weatherproof Recepts Per Print
All Electrical Components To Be Factory Wired Directly To Main Service Panel Prior To Shipment

PLUMBING

Water Closet: Elongated Bowl, Open Front Seat, HC Height
Lav: Wall Hung with Wrist Blade Faucets
Water Heater: Instantaneous, Under Sink 120 V.A.C.- Cronomite or Equal
Supply: Type "L" Copper with Shutoff Valves at Each Fixture
Waste: 3" Schedule 40 PVC
Misc: Wall Hung Mirror- 40" AFF Max. to Bottom of Mirror
Accessories: Toilet Paper Holder (Toilet Paper Holder 24" AFF, Soap Dispenser: Tough Guy - #3FPN8-Wall
Mount-Push Operation, Paper Towel Dispenser: Georgia Pacific-#54338)
Bathroom Exhaust Fan - 120V 75CFM

HVAC

Air Conditioning: 208/240V 20 Amp, 12000 BTU AC/Heat Combo Unit Single Phase Dedicated Circuit -
Garrison Model #2477813 Or Equal. Shipped Loose And Installed By Others On Site
Heating: 3000 Watt Wall Heater With Fan 208/240V 20 Amp Dedicated Circuit

EXTERIOR WINDOWS AND DOORS

Doors: 36x80 Steel, 22"x36" Window SG, Lever Hardware, Lockset and Closer (Minimum U - Value 1.2)
Windows: 36"x39" Vinyl Frame, Sliding, DIG Glazing, Thermal Insulated Per Print (Minimum U - value
0.55, Minimum SHGC - 0.6) - 4 Total Per Print

Tint: All Windows

EXTERIOR FINISHES

Siding: 0.19 Aluminum Light Gray
Trim: 0.19 Aluminum Dark Gray
Wall Sheathing: 7/16" OSB or CDX Plywood, 24/16 APA Span Index Rating
Roof Sheathing: 1/2" CDX Plywood, 32/16 Span Rating
Roof: 0.45 EPDM Rubber Roofing

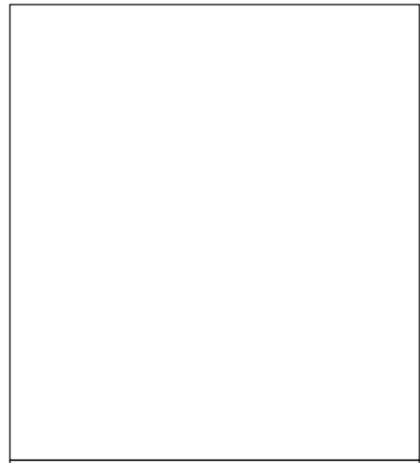
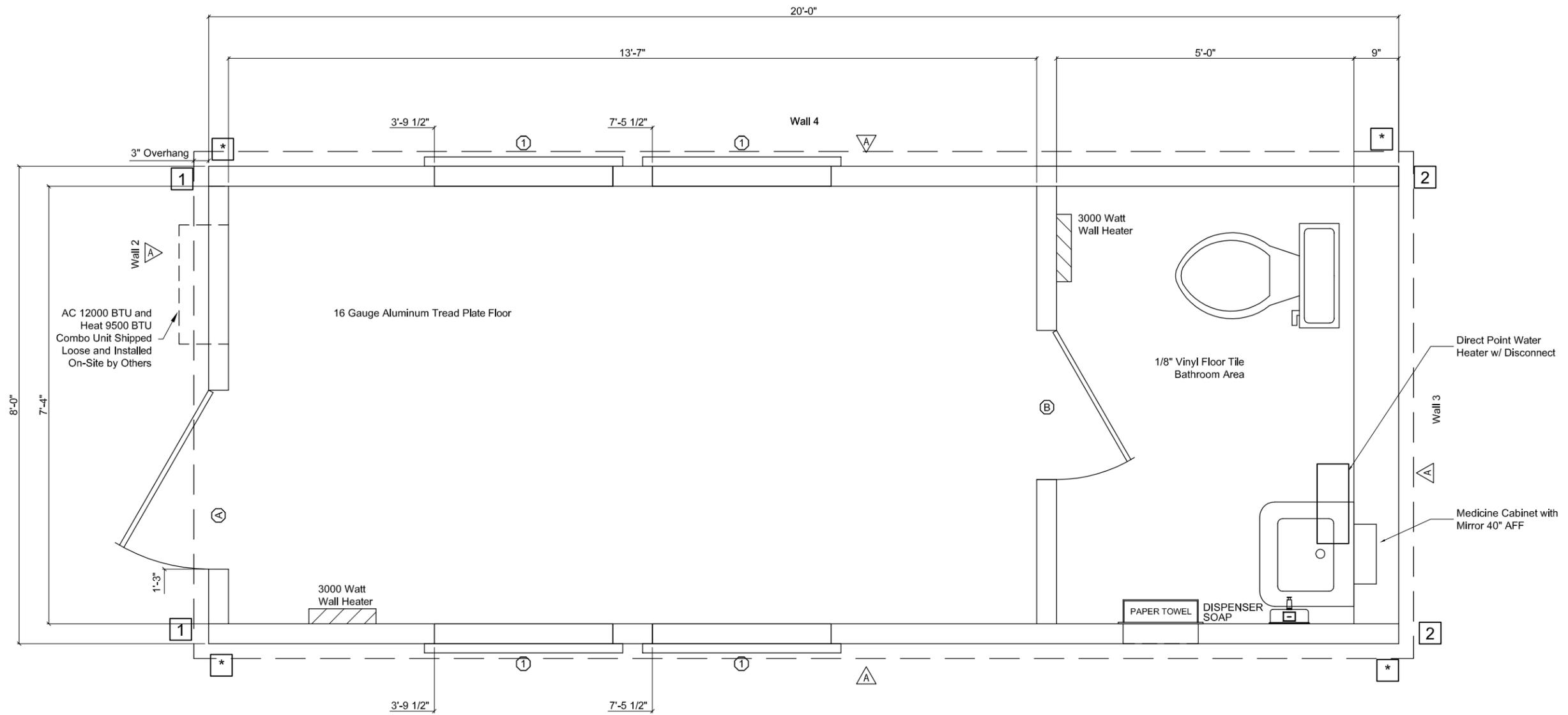
FURNITURE

(2) 18" X 96" Counter Top - White Malimine

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REVISIONS:	SCALE: NTS	APPROVED BY:	<h1 style="margin: 0;">Twin Modular Services Inc.</h1> <p style="margin: 0;">Blackwood , NJ</p>	TITLE: SPECIFICATIONS	JOB NO: TMS091619-19
	DATE: 10/08/2019	DRAWN BY: FR		MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 1.2



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HOLDOWN SCHEDULE	
1	Holdown to Foundation for 175#
2	Holdown to Foundation for 1241#
*	In Lieu of Holdwon Fasten Sidewall to Endwall With 0.131"x2.5" Nails at 6" o.c. For The Height of The Wall

- SHEARWALL CONSTRUCTION**
1. A holdown shall be provided at each "shearwall mark" location on the plan above. The wall between marks shall be constructed as specified in the table above.
 2. In corners, where two holdowns are required (one in each orthogonal direction) the lower capacity holddown may be omitted when the walls are interconnected to transfer the lower chord force to the larger anchor.
 3. Stagger all fasteners spaced 2" oc, or less, in multiple rows with the rows staggered not less than 1.5" apart.
 4. Truss(es) shall be placed over each interior shearwall and the truss(es) shall be sheathed in the same manner as the wall below.
 5. Alternate holddown of equal or greater capacity may be substituted for holdowns specified.
 6. Holddowns to be installed in accordance with manufacturer's installation instructions.
 7. Where holdowns are to be installed on-site, a clearly marked access panel shall be provided.

SHEARWALL SCHEDULE			
Mark	Sheathing	Fastening	Framing
A	7/16" Structural Sheathing, One Side, Blocked	0.113" x 2.5" nails 6/12 (edge/field)	2x4 SPF @ 16" oc

BUYER ACCEPTANCE PLAN A SIGN AND DATE

- GENERAL**
1. All glazing within 24" arc of doors, whose bottom edge is less than 60" above the floor, and all glazing in door shall be safety glazed, tempered or acrylic plastic sheet.
 2. Minimum corridor width shall not be less than 36".
 3. Exterior windows and sliding doors shall be labeled as conforming to AAMA/WDMA/CSA101/1.S.2/A440.
 4. Windows in buildings located in windborne debris regions shall be protected in accordance with Section 301.2.1.2 of the residential code.

DOOR SCHEDULE					
Mark	Description	Hardware	Header	Jack Studs	Jamb Studs
A	36"x80" Steel with Closer, 22"x22" SG Window	Lever	(1) 2x4 #2 SPF	1	1
B	30"x80" Pre Finished, Hollow Core, Hinged	Lever	(1) 2x4 #2 SPF	1	1

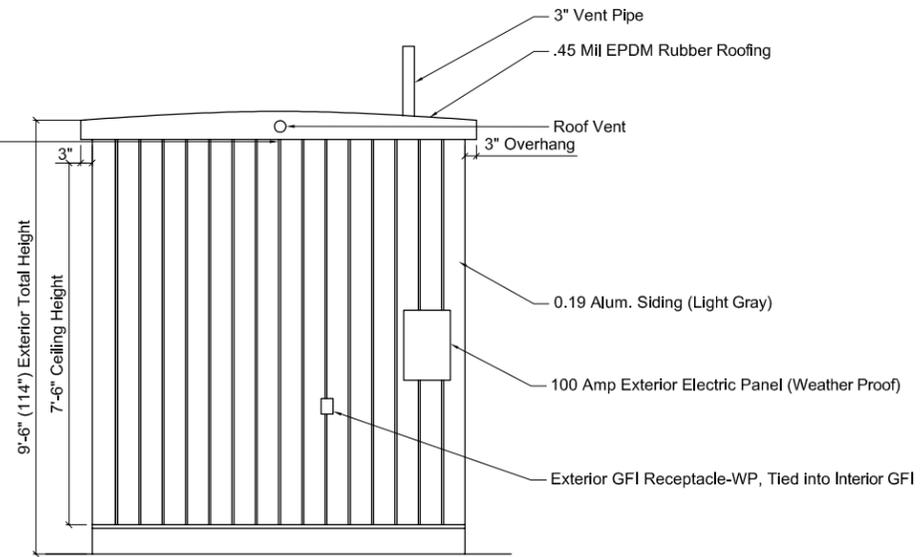
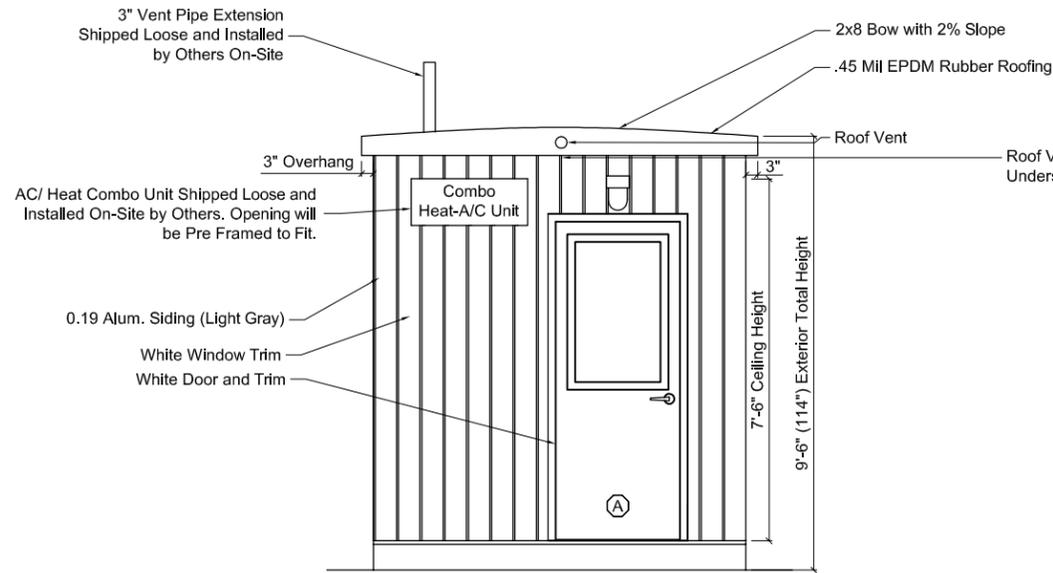
WINDOW SCHEDULE					
Mark	Description	Glazed Area	Vent Area	Header	Jamb Studs
1	36"x39" Vinyl Frame, Horizontal Sliding, DIG Glazing, Thermal Insulated, Tinted	9.75 ft ²	4.87 ft ²	(1) 2x4 #2 SPF	0

REVISIONS:

SCALE:	1/2" = 1'-0"	APPROVED BY:	
DATE:	10/08/2019	DRAWN BY:	FR

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Blackwood, NJ

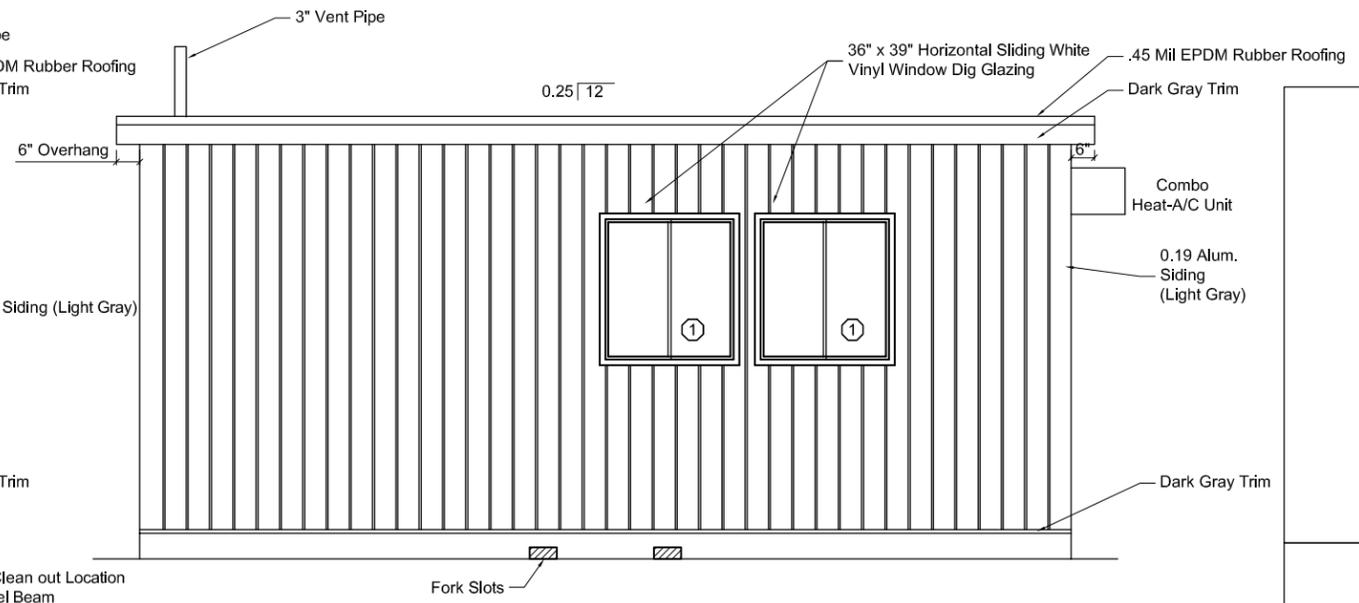
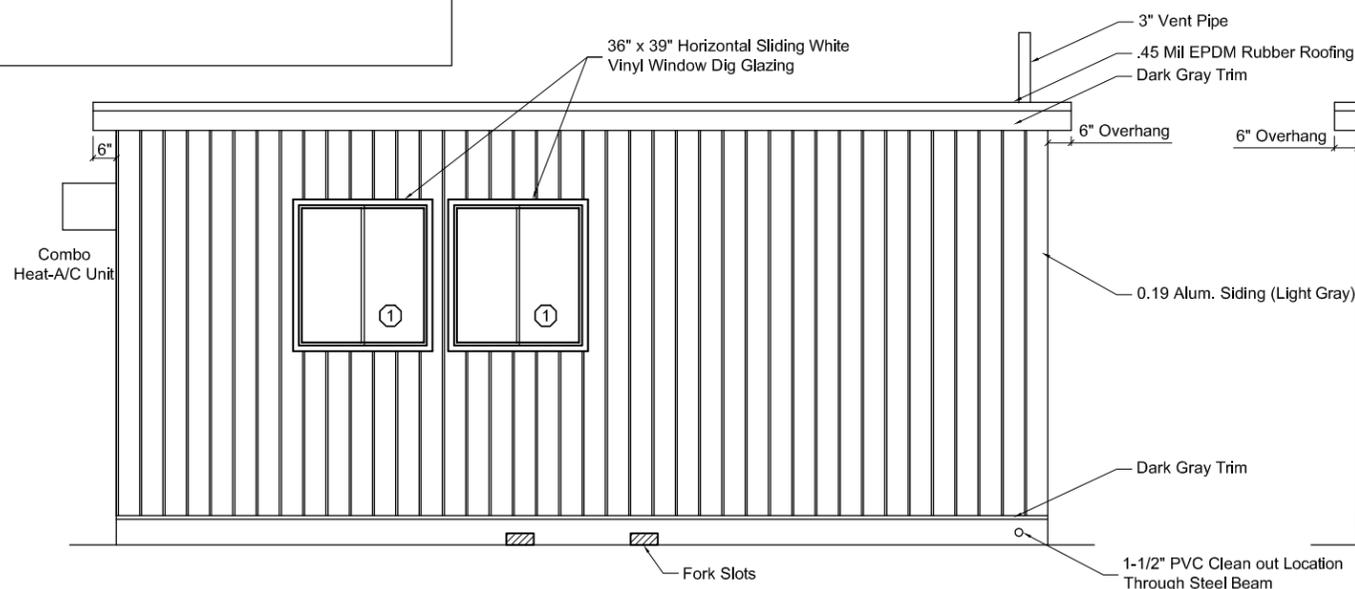
TITLE:	FLOOR PLAN A	JOB NO:	TMS091619-19
MODEL:	8x20 Guardbooth With Restroom	DRAWING NO:	3



BUYER ACCEPTANCE PLAN A SIGN AND DATE

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

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



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

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

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ATTIC VENTILATION
Vents shall be installed to provide a total net free ventilating area not less than 1/150 of the area of the space being ventilated. Vents shall be positioned to provide cross ventilation.

SITE INSTALLED ITEMS
Steps, rails, and decks are to be designed by others and built on-site in accordance with local codes and subject to approval by the local authority having jurisdiction.

160 Area /150= 1.07 sq. ft. Ventilation Required

DISTANCE FROM EXPOSED EARTH:
Wood Framing Members, Including Wood Sheathing, That Are Less Than 8 Inches From Exposed Earth Shall Be Of Naturally Durable Or Presservative-Treated Wood

0105.1151 2008-12-02

Twin Modular Services Inc.
Blackwood, NJ

REVISIONS:	SCALE: 1/4" = 1'-0"	APPROVED BY:	TITLE: ELEVATIONS	JOB NO: TMS091619-19
	DATE: 10/08/2019	DRAWN BY: FR	MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 2

Anchor Roof To Top Plate With Simpson Hurricane Tie H-1Z. Install In Pairs Each Side Of Roof Rafters With #8 Strong Tie Nails. Install On Interior Side Of 20' Walls

3"x 3"x 3/16" Steel Tube Corner Post With Steel Tube Top Beams. 1/4" Fillet Weld All Connections. All Walls Tech Screwed To Steel

6" Overhang

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Continuous Weld Steel Post To 6" Base Frame

Tect Screws Base Plate Every 24" Through Steel Floor Into 6" Steel Base Frame

Wall 1 Elevation

Continuous Weld Steel Post To 6" Base Frame

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3" Overhang

AC Unit Framing (If Applicable)

3'-0"

6'-8"

Continuous Weld Steel Post To 6" Base Frame

(2) 1/4" x 3" Torx Screws at Corner, Add Blocking Between Studs

Wall 2 Elevation

Tect Screws Base Plate Every 24" Through Steel Floor Into 6" Steel Base Frame

Continuous Weld Steel Post To 6" Base Frame

Note:
1. Fasten Sheathing to bottom plate and additional blocking at 2" o.c. entire perimeter.

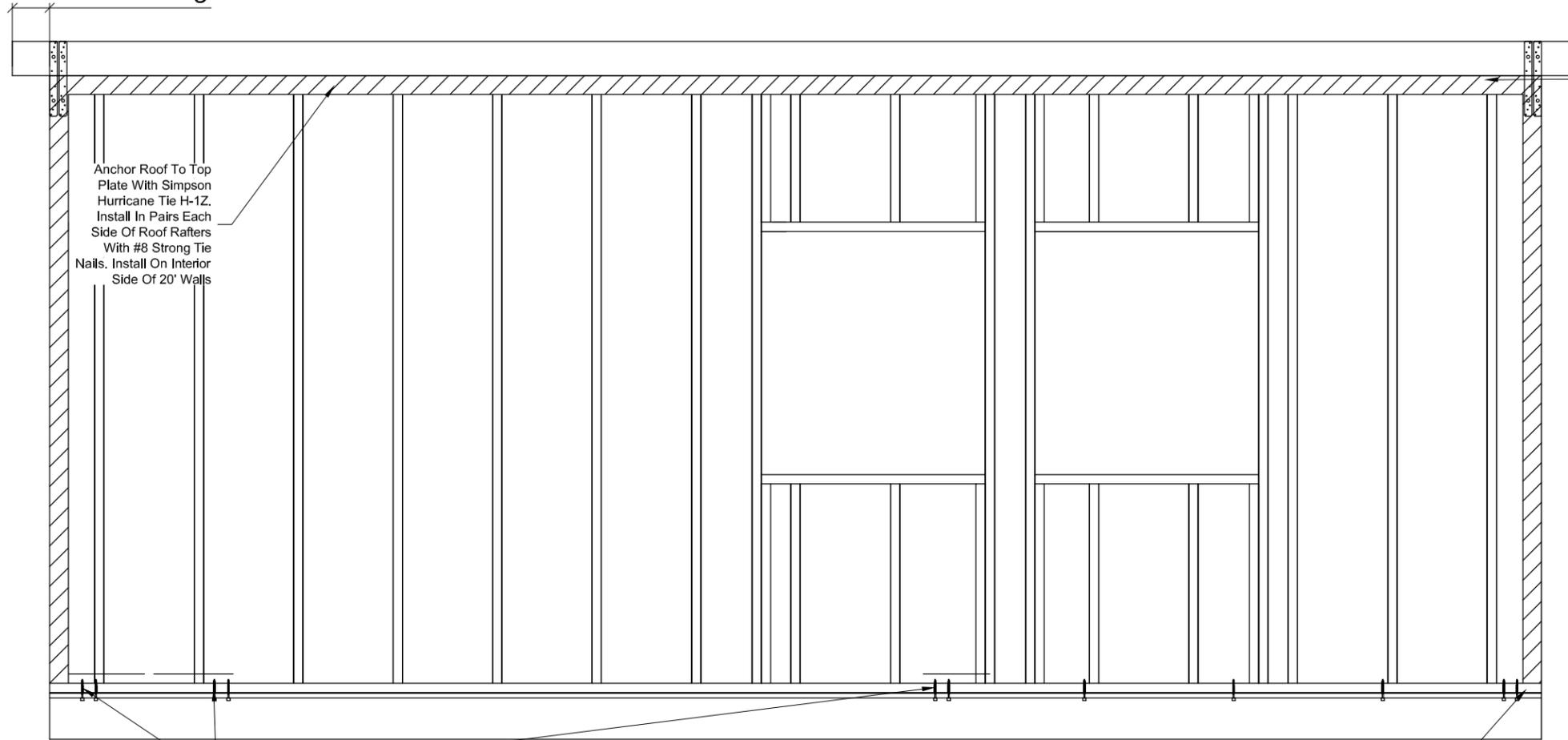
0106 2008-09-23

REVISIONS:	SCALE: 1/2" = 1'-0"	APPROVED BY:
	DATE: 10/08/2019	DRAWN BY: FR

Twin Modular Services Inc.
Blackwood, NJ

TITLE: Framing Details	JOB NO: TMS091619-19
MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 3.1

6" Overhang



Wall 4 Elevation

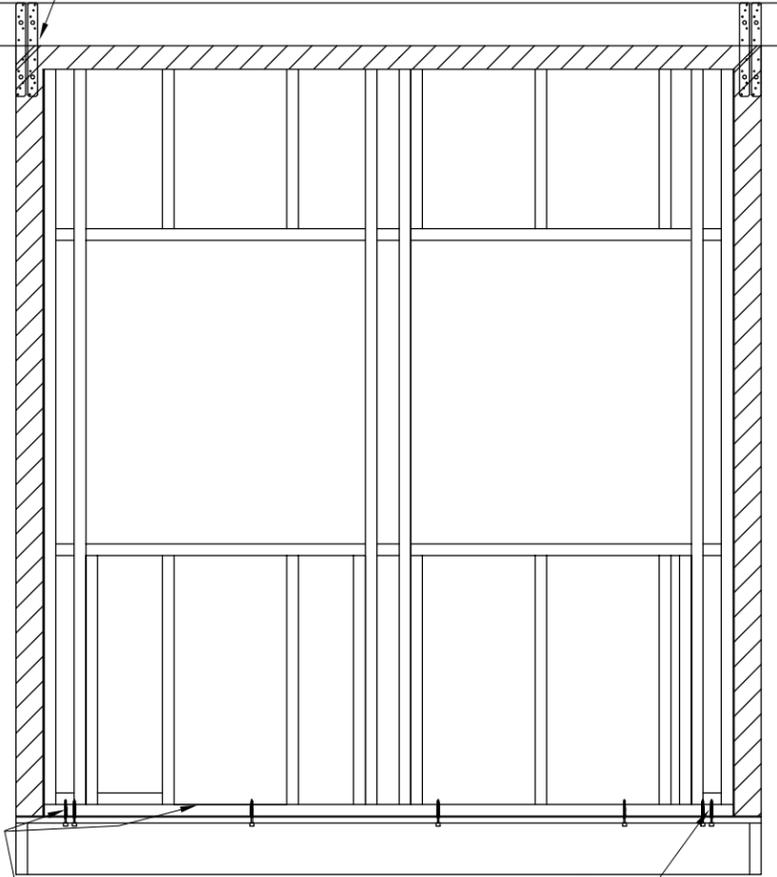
3"x 3"x 3/16" Steel Tube
Corner Post With Steel Tube
Top Beams. 1/4" Fillet Weld All
Connections. All Walls Tech
Screwed To Steel

3"x 3"x 3/16" Steel Tube
Corner Post With Steel Tube
Top Beams. 1/4" Fillet Weld All
Connections. All Walls Tech
Screwed To Steel

Anchor Roof To Top
Plate With Simpson
Hurricane Tie H-1Z.
Install In Pairs Each
Side Of Roof Rafters
With #8 Strong Tie
Nails. Install On Interior
Side Of 20' Walls

Continuous Weld Steel
Post To 6" Base Frame

Continuous Weld Steel
Post To 6" Base Frame



Wall 3 Elevation

Tect Screws Base Plate Every
24" Through Steel Floor Into 6"
Steel Base Frame

Continuous Weld Steel
Post To 6" Base Frame

Note:
1. Fasten Sheathing to bottom plate and additional blocking at 2" o.c. entire perimeter.

BUYER ACCEPTANCE PLAN A SIGN AND DATE

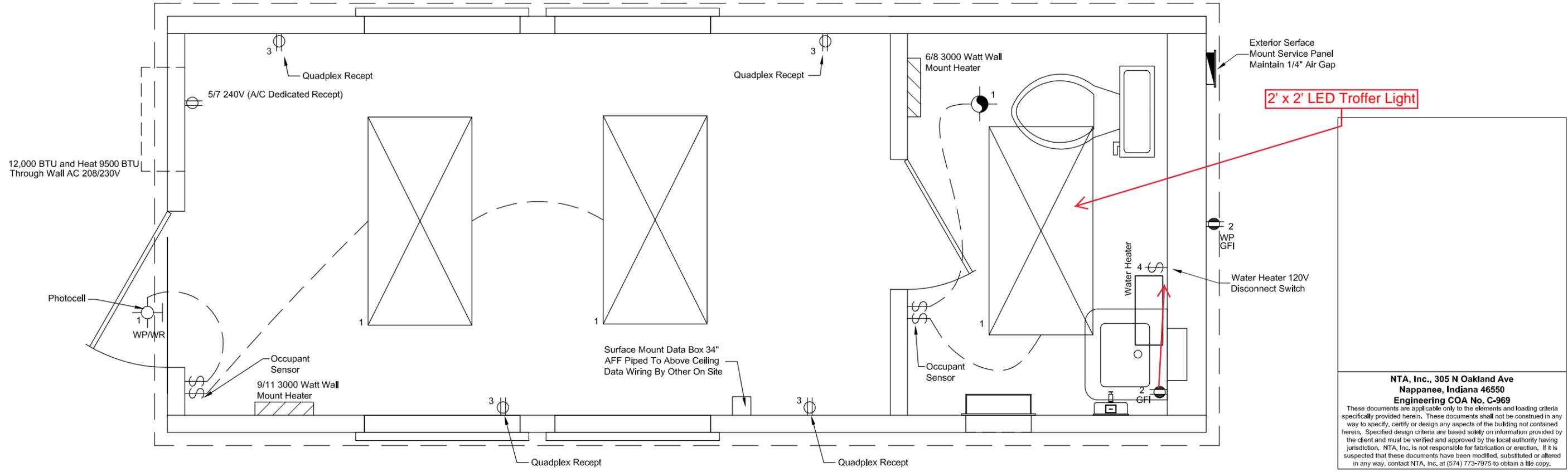
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	DATE: 10/08/2019	DRAWN BY: FR

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TITLE: Framing Details	JOB NO: TMS091619-19
MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 3.2



2' x 2' LED Troffer Light

**NTA, Inc., 305 N Oakland Ave
Nappanee, Indiana 46550
Engineering COA No. C-969**
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Electrical Specifications

Product	Manufacturer	Model and Specifications
Heat A/C Combo Unit	Garrison	Model #2477813 12000 BTU 230/208
Interior Drop in Light	Lithonia	(2) 2'x4' 120V LED with Prismatic Lens - Lithonia Type 2GTL460LEZ1LP840
Exterior Lighting	Commercial Electric	LED Dual Head 120V Model #1002028546
Wall Heater	Marley Fahrenheat	Model # FZL3004E 240V
Water Heater	Chronomite	Model # SR-15L 120V 1800 W

Note: Products may be substituted for an equal or better model.

BUYER ACCEPTANCE PLAN A SIGN AND DATE

ELECTRICAL PANEL SCHEDULE (Exterior WP)
120/240-V, 3-Wire, Single Phase
12 Space, 24 Circuit Minimum
Panel Manufacturer: **Siemens Model #W1224B1100CU**
100 Amp Main Breaker
Breaker Type: **Siemens QP**

DISTRIBUTION PANEL SIZING
120/240-V, 3-Wire, Single Phase

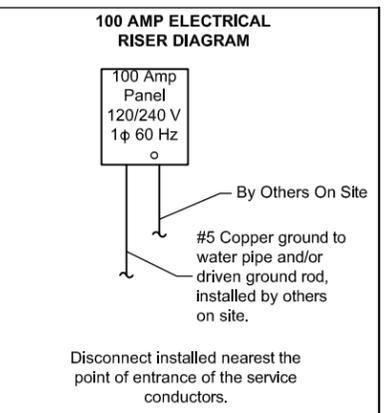
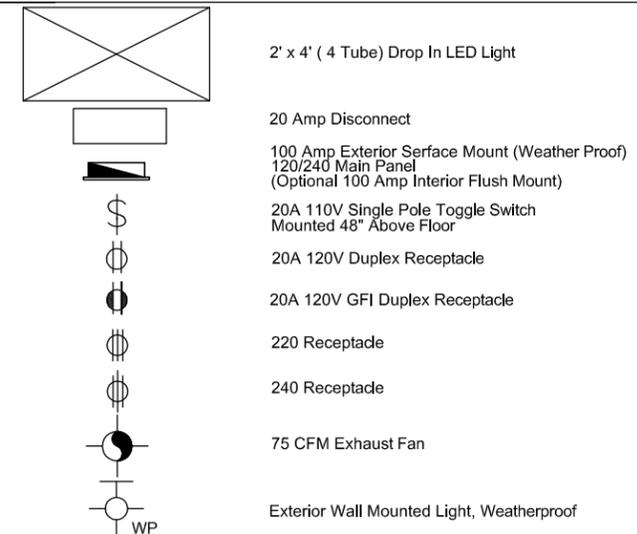
ELECTRICAL LEGEND

All Electrical Components To Be Factory Wired Directly To Main Service Panel Prior To Shipment

Circuit Number & Type	Wire Size & Quantity	Breaker		Description
		Trip	Pole	
1	14-2	15	1	Office/Exterior Lights & Exhaust Fan
2	12-2	20	1	GFCI Recept
3	12-2	20	1	Recept Below Counter
4	12-2	20	1	Direct Point Water Heater
5/7	12-2	20	2	A/C Heat Combo
6/8	12-2	20	2	Wall Heater
9/11	12-2	20	2	Wall Heater
10				Space
12				Space

Wall Heaters	6000 W
Water Heater	1800 W
Interior Lighting	630 W
Exhaust Fan	14 W
Exterior Lighting	250 W
HVAC	5500 W
Receptacle Load	720 W

14,914 W / 240 V = 62.2 A Service Rating



ELECTRICAL

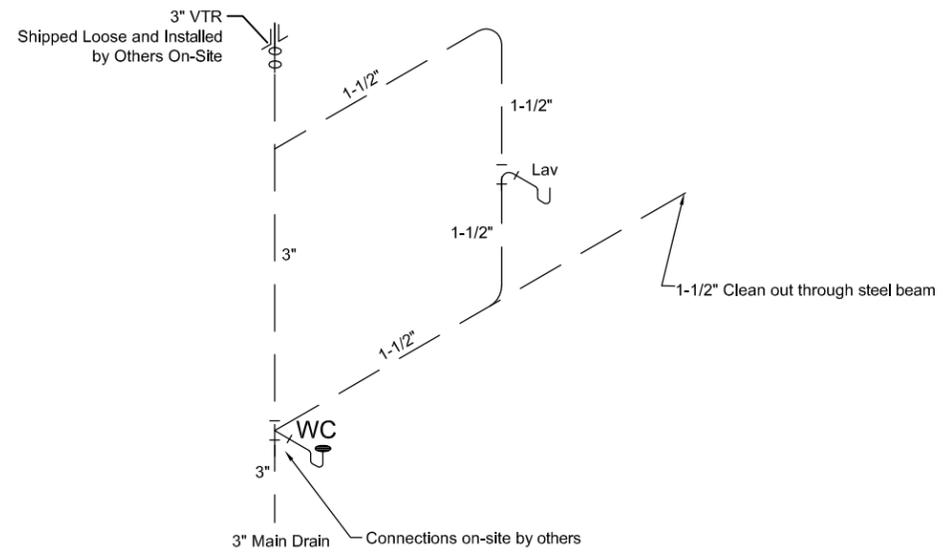
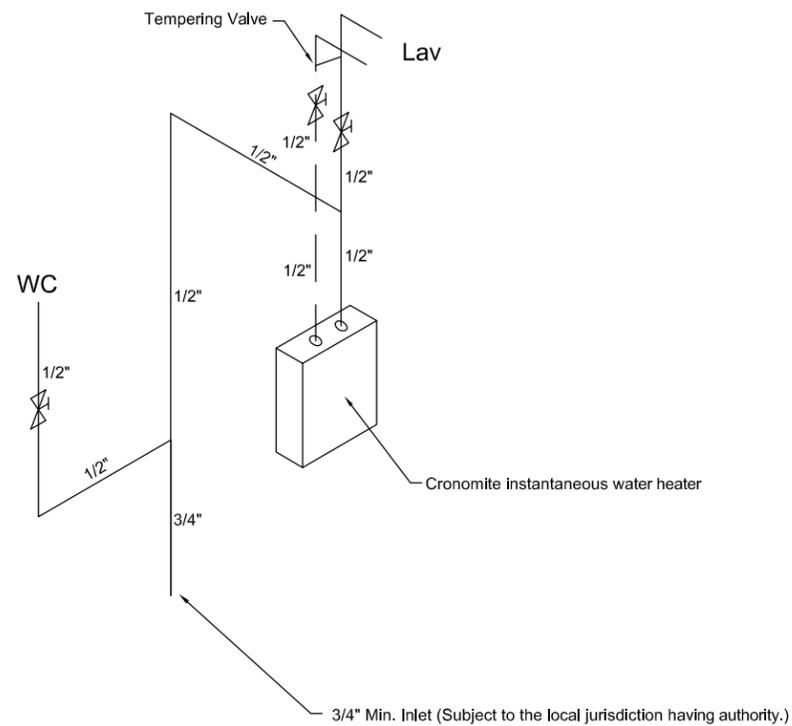
- All Receptacles to be the grounding type.
- All Wiring to be per the edition of the NEC Listed on the Cover Page, Type MC CU with ground.
- Main panel to be marked "Suitable For Use As Service Equipment" and be equipped with breaker/ fuse type overcurrent protection.
- proper thermal overload protection to be provided for all motors.
- Disconnecting means within sight required for all motors.
- Weather proof protection required for all outdoor lights, receptacles and disconnects.
- proper working clearances shall be provided and maintained for all electrical equipment.
- All florescent fixture's required thermal protection and proper clearances from insulation, also applicable for incandescent fixture's.
- Combination exhaust fan/light and all recessed incandescent fixture's to be with thermal protection.
- Exit lights, if electric, must be fed from an approved emergency service connected ahead of, but not within main service disconnection means enclosure, and installed as per service requirements, or be battery backup type units.
- Service conductors located within the perimeter of the building, shall be installed in accordance with article 230-6, per the edition of the NEC on the cover page.
- Maximum 15 (2) tube florescent lights in 15A circuit, Maximum 10 recepts on 15A circuit, Maximum 7 (4) Tube florescent lights on a 15A circuit.
- Maximum 20 (2) tube florescent lights in 20A circuit, Maximum 13 recepts on 20A circuit, Maximum 10 (4) Tube florescent lights on a 120A circuit.
- All circuits and equipment shall be grounded in accordance with the appropriate articles of the National Electrical Code (NEC).
- HVAC equipment shall be provided with readily accessible disconnects adjacent to the equipment served. A unit switch with a marked "off" position that is a part of the HVAC equipment and disconnects all ungrounded conductors shall be permitted as the disconnecting means where other disconnecting means are also provided by a readily accessible circuit breaker.
- prior to energizing the electrical system the interrupt rating of the main breaker must be designed by a local electrical consultant to verify compliance with NEC 110-9.
- The electrical feeders are designed by others, site installed and subject to review and approval by the authority having jurisdiction.
- Ceiling Luminary boxes shall be designed for the purpose and required to support a minimum of 50 lbs.

REVISIONS:	SCALE: 1/2" = 1'-0"	APPROVED BY:
	DATE: 10/08/2019	DRAWN BY: FR

Twin Modular Services Inc.
Blackwood, NJ

TITLE: ELECTRICAL PLAN A	JOB NO: TMS091619-19
MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 4

DWV LEGEND	
	Drain/waste
	Vent
	Fixture Trap
	Clean Out
ABBREVIATIONS	
LP	Loop vent
AV	Auto vent (optional)
VTR	Vent through roof
WHA	Water hammer arrestor
WC	Water closet
LAV	Lavatory



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BUYER ACCEPTANCE PLAN A SIGN AND DATE

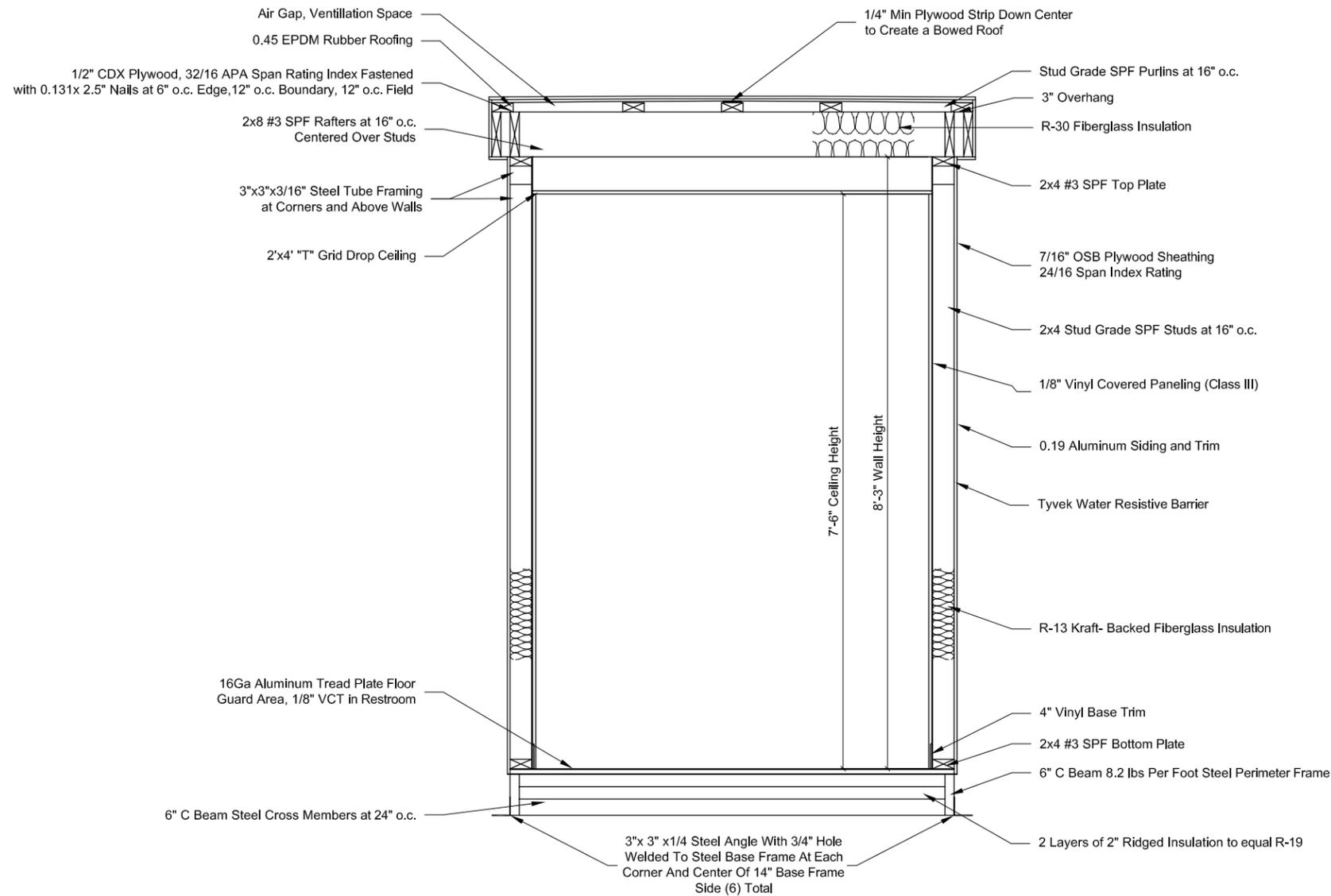
- PLUMBING SYSTEM**
1. Plumbing fixtures shall have separate shut-off valves.
 2. Water pipes installed in a wall exposed to the exterior shall be located on the heated side of the wall insulation. Water piping installed in an unconditioned attic shall be insulated with R6.5 insulation minimum.
 3. DWV system shall be either ABS or PVC
 4. Water supply lines shall be copper or PEX.
 5. Building drain and cleanouts are to be designed by others on site and subject to review and approval by the local authority having jurisdiction.
 6. Shower stalls shall be covered with non-absorbent material to a height of 72" above the finish floor.
 7. A thermal expansion device shall be provided at the water heater if required by the manufacturer's installation instructions.
 8. A water hammer arrestor shall be installed where quick closing valves are utilized, unless otherwise approved. Water hammer arrestors shall be installed in accordance with manufacturer's installation instructions.
 9. Building must be connected to a public water supply and sewer system if available.

WATER SUPPLY LEGEND	
	Cold water line
	Hot water line
	Shut off valve

REVISIONS:	SCALE: 1/2" = 1'-0"	APPROVED BY:
	DATE: 10/08/2019	DRAWN BY: FR

Twin Modular Services Inc.
Blackwood , NJ

TITLE: PLUMBING SCHEMATIC	JOB NO: TMS091619-19
MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 5



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BUYER ACCEPTANCE SIGN AND DATE

- NOTES**
- Fireblocking shall be installed at the floor and ceiling level. Fireblocking material shall be as permitted in MT Building Code. Exterior joints in the building envelope that are sources of air leakage, such as floor and ceiling lines, door and windows, or any other penetrations through the building envelope shall be caulked, gasketed, weather-stripped, wrapped or otherwise sealed to limit uncontrolled air movement. Stopping materials installed on-site are subject to local review, approval and inspection.
 - In all framed walls, floors and roof/ceiling comprising elements of the building thermal envelope, a vapor retarder shall be installed on the warm-in-winter side of the insulation with the following exceptions:
 - Where the framed cavity or space is ventilated to allow moisture to escape.
 - Where required, the vapor retarder shall be comprised of any material (kraft backing, polyethylene, spray applied) approved for such use and having a perm rating of 1 or less.
 - Connections not specified, per typical systems manual.

0110.1150 2008-12-02

REVISIONS:	SCALE: 1/2" = 1'-0"	APPROVED BY:
	DATE: 10/08/2019	DRAWN BY: FR

Twin Modular Services Inc.
Blackwood, NJ

TITLE: CROSS SECTION	JOB NO: TMS091619-19
MODEL: 8x20 Guardbooth With Restroom	DRAWING NO: 6

STRUCTURAL DESIGN CRITERIA		
GRAVITY LOADS		SEISMIC (IBC)
Floor Live	50 psf	Seismic Design Category
Floor Dead	10 psf	Site Class
Roof Live	20 psf	Importance Category
Roof Dead	10 psf	Risk Category
Exterior Wall Dead	5 psf	Mapped Accelerations
SNOW		S_s
Ground Snow Load	40 psf	S_1
WIND		Spectral Response
Wind Speed (Vult)	115 mph	S_{DS}
Wind Speed (Vasd)	90 mph	S_{D1}
Exposure Category	C	Seismic Force Resisting System
Internal Pressure, G_{C_i}	+/- 0.18	Design Base Shear
Base Wind Pressure, F_b	15 psf	Response Modification Factor
Mean Roof Height	15 ft	
SETBACKS		Allowable bearing Pressure
Setback	Greater than 10 feet to a common or assumed property line.	2000 psf
APPROXIMATE WEIGHT OF BUILDING	8,000 lbs	FLOOD
Building shall not be placed on the upper half of a hill or escarpment exceeding 15 feet in height.		Building shall not be located, in whole or in part, in a flood hazard area as established by the authority having jurisdiction unless set on a foundation designed in accordance with ASCE/SEI 25. The flood resistant foundation shall be designed by a registered design professional and constructed to resist all flood loads without transferring loads to the modular structure.

- GENERAL**
- Design basis, design limitations, and design criteria must be reviewed and approved by the authority having jurisdiction. Foundation installation is to be inspected by the local authority having jurisdiction.
 - Foundation design is based on minimum presumptive soil properties are to be verified on-site by the local building official or local geotechnical engineer. Minimum soil properties are assumed to exist at the bottom of the footing. Soil classification and bearing capacity must be verified before the foundation is constructed. Soil capacity must be determined by one of the following methods:
 - Soils investigation in accordance with accepted engineering practice
 - Existing soil records from adjacent areas that are deemed acceptable to the local authority having jurisdiction
 - Presumptive load-bearing capacities based on code soil classifications are permitted to be used where acceptable to the local authority having jurisdiction
 - Soil at bottom of footer shall be compacted to 95% of the Standard Proctor Density (ASTM D698).
 - Foundation is not designed for placement on expansive or organic soils. If located in areas likely to have expansive soil, or the soil appears to be composed of peat, organic clays, or uncompacted fill, or appears to have unusual conditions, a registered professional geologist or geotechnical engineer must perform a soils investigation.
 - Contractor is responsible for erection bracing and to make allowance for building growth.
 - Support points may be offset 6" in either direction along supported members to allow for plumbing, electrical or mechanical equipment.

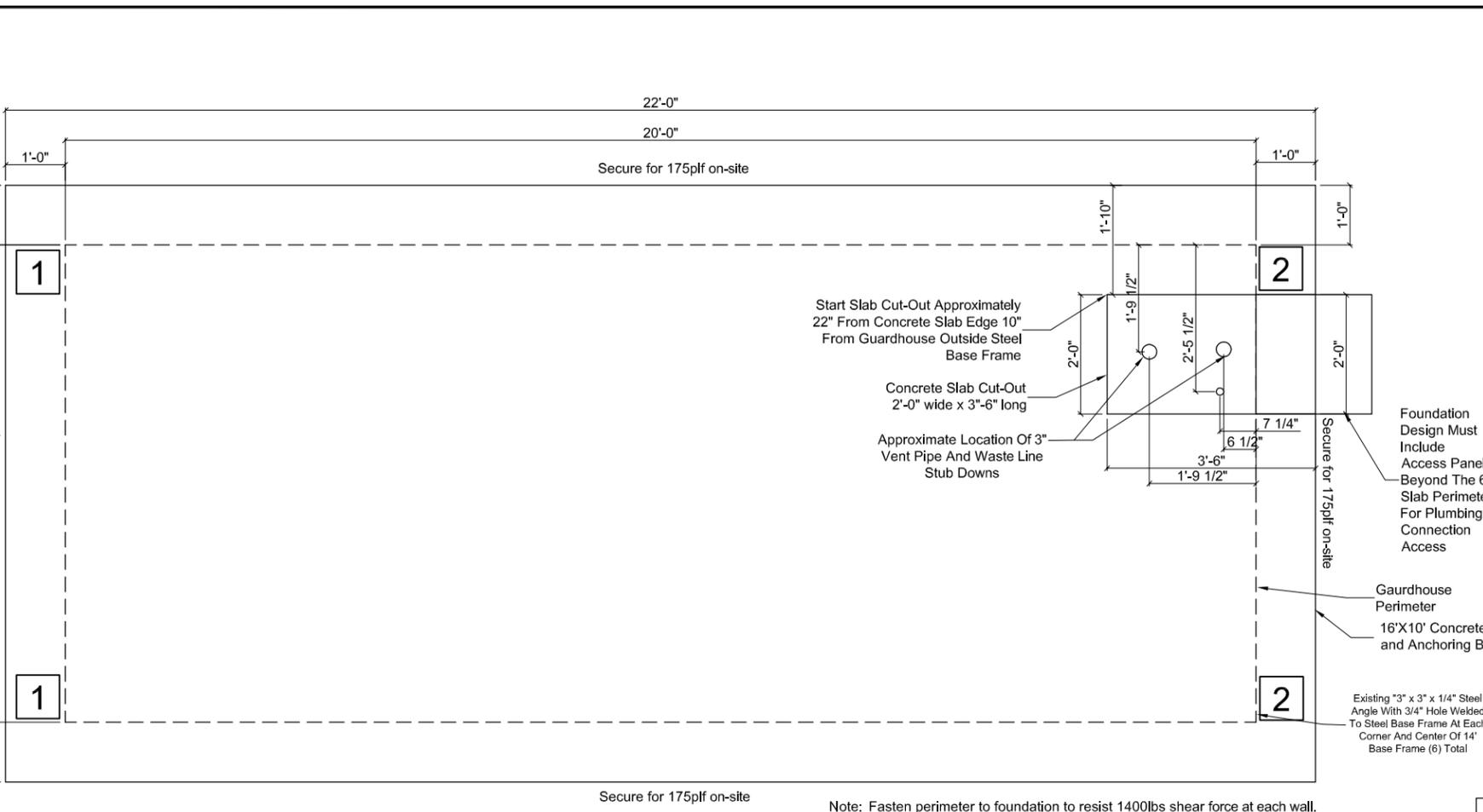
- MOISTURE PROTECTION**
- Adjacent grade must be sloped away from the structure for a minimum distance of 10' measured perpendicular to the face of the wall. The finished grade shall be sloped not less than one unit vertical in 20 units horizontal (6" in first 10' away from building).

- CONCRETE CONSTRUCTION**
- Concrete shall be of normal weight concrete with a compressive strength not less than 3000 psi at 28 days.
 - All concrete shall be in accordance with the latest edition of ACI-318 and ACI-315.
 - Portland cement shall conform to ASTM C150; aggregates shall conform to ASTM C33.
 - Reinforcement shall be secured in place prior to placement of concrete within a tolerance of +/-3/8" where d is less than or equal to 8" or +/-1/2" where d is greater than 8".
 - Mix water shall be free from injurious quantities of oil, alkali, vegetable mater and salt. Non-potable water shall not be used in mixing concrete.
 - Concrete exposed to freezing temperatures shall be air entrained to 6% air content with a maximum coarse aggregate size not less than 3/4-inch. Air-entraining admixtures shall conform to ASTM C494.
 - All exterior footers shall be placed below the frostline and not less than 12" below undisturbed grade.

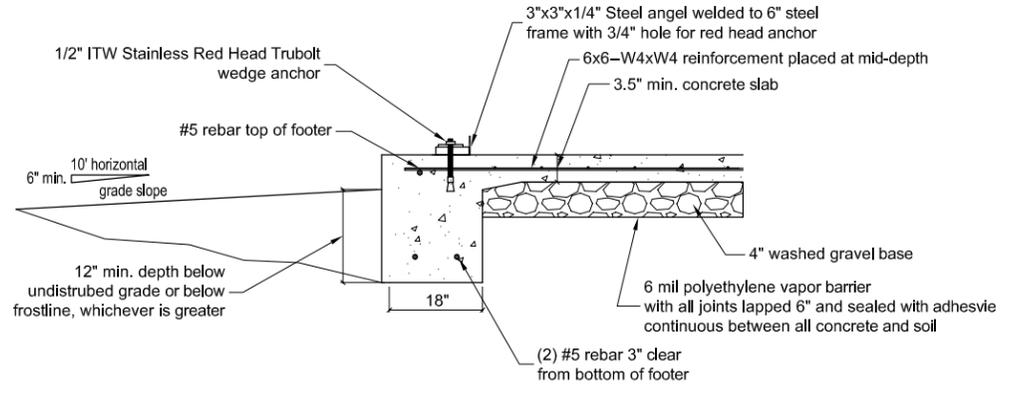
NOTICE

These drawings are applicable only to the elements and loading criteria specifically provided herein. These drawings shall not be construed in any way to specify, certify or design any aspects of the building not contained herein. Elements not contained herein are to be constructed in accordance with the prescriptive requirements of the adopted building code or designed by other registered design professionals, as applicable. Specified design criteria are based solely on information provided by the client and must be verified and approved by the local authority having jurisdiction. NTA, Inc. is not responsible for fabrication or erection. If it is suspected that these drawings have been modified, substituted or altered in any way, contact NTA, Inc. directly to obtain a file copy.

REVISIONS:	SCALE:	APPROVED BY:
	3/8" = 1'-0"	
	DATE:	DRAWN BY:
	10/08/2019	FR



- 1** = Holddown For 175lbf
- 2** = Holddown For 1241lbf

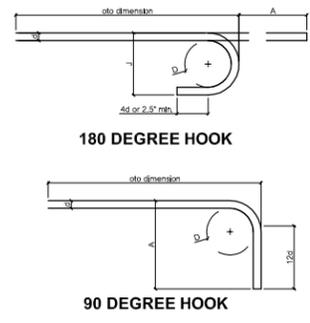


SLAB ON GRADE PERIMETER FOOTER
SCALE: N.T.S.

- Notes:
- Pier locations shown on this plan are for the purpose of identifying the location of the required blocking points and the loads applied at each point for this building. Foundation requirements are not known due to varying soil conditions.
 - Foundation Design by others. Foundation review and approval is to be performed by the local official having jurisdiction.
 - Provide positive drainage under unit.

THIS DRAWING IS NOT FOR CONSTRUCTION. This drawing is intended to show the minimum foundation loads and minimum foundation support locations and is not to be used for construction or certification of any foundation for any building. The foundation for this modular building shall be designed and sealed by a local engineer for the conditions present on-site in accordance with local codes. Additionally, the foundation designed by others shall be reviewed and approved by the local authority having jurisdiction.

STANDARD END HOOKS				
Bar Size No.	D (in.)	180 Degree Hook A (in.)	J (in.)	90 Degree Hook A (in.)
3	2.25	5	3	6
4	3	6	4	8
5	3.75	7	5	10
6	4.5	8	6	12
7	5.25	10	7	14
8	6	11	8	16



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Blackwood, NJ

TITLE:	Foundation Design	JOB NO:	TMS091619-19
MODEL:	8x20 Guardbooth With Restroom	DRAWING NO:	7