8'-0" x 14'-0" (ACTUAL SIZE) 814 GUARD BOOTH WITH COMPLIANT HALF BATH Twin Modular Services Inc.

1001 Lower Landing Road Suit 607, Blackwood, NJ

	DESIGN BASIS				
State/Jurisdiction	North Carolina				
Building Code	North Carolina Building Code, 2012 Edition				
Plumbing Code	North Carolina Plumbing Code, 2012 Edition				
Electrical Code	North Carolina Electrical Code, 2011 Edition				
Mechanical Code	North Carolina Mechanical Code, 2012 Edition				
Accessibility Code	North Carolina Building Code, Chapter 11				
	and 2009 ICC/ANSI Accessibility Code				

	STRUCTURAL DES	SIGN CRITERIA	
GRAVITY LOADS Floor Live Fioor Dead Roof Live Roof Dead Exterior Wall Dead	50 psf 10 psf 20 psf 10 psf 5 psf	SEISMIC (IBC) Seismic Design Category Site Class importance Category Occupancy Category Mapped Accelerations Ss	C D 1.25
Ground Snow Load Rain on Snow surcharge WIND Wind Speed (3 Second Gust) Exposure Category Internal Pressure, GC _p Base Wind Pressure, P Mean Roof Height	10 psf 5 psf 130 mph C +/- 0.18 36.0 psf 15 ft	Seismic Force Resisting System Design Base Shear Response Modification Factor Analysis Procedure	0.34 0.26 A13 0.09W 6.5 ASCE 7-05 Sec. 12.8
SETBACKS Setback APPROXIMATE WEIGHT OF BUILDING Building shall not be placed or half of a hill or escarpment excepted in height.		5,000	

COMPONENTS AND CLADDING WIND LOADS						
Component	End Zone (psf)	Interior Zone (psf)				
Windows & Siding	+42.5/-56.9	+42.5/-46.1				
Doors	+36.1/-44.2	+36.1/-39.7				
Roof Cladding	+17.3/-107.3	+17.3/-42.5				
Roof Overhangs	-100.8	-61.2				

	Sprinkl		VB 1.00 1.00 900 ft ² 2 stories 40 ft
LEVEL C	OCCUPANCY	AREA	OCCUPANT LOAD
1	В	112 ft ²	1

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

THIS PLAN MAY BE REVERSED OR MIRRORED.

ACCESSIBILITY EXCEPTIONS

that does not have an accessible rout.

1103.2.7 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 be accessible or to be served by an accessible rout.

1103.2.10 Single occupant structures. Single occupant structures accessed only by passageways below grade or elevated above ground including but not limited to, toll booths that are accessed by underground tunnels are not required to be accessible.

Note: Single occupant guard structures will be placed on and elevated entrance island to the park

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 thermal zone 4.

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.

3. Electrical service connection (including feeders) to the building

NOTICE

REVISIONS:

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.

VS:	SCALE:	APPROVED BY:	Twin Modular Services Inc.	TITLE: COVER SH	JOB NO: HEET TMS
	DATE: 05/15/2013	DRAWN BY:	Blackwood , NJ	MODEL: 8x14 Gaurdbooth w/	DRAWING NO:

0104 2008-05-28

TMS051513-4

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.
- 3. Structural sheathing shall be rated and labeled for compliance with DOC PS 1 or DOC PS 2.
- 4. LVL members shall have the following minimum properties, E=2.0, F_b=2800 psi, unless noted otherwise.
- All wood shall have a moisture content of 19% or less at the time of
- 6. 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.
- 8. 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.
- 9. 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.

 10. 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.
- 11. 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.
- 12. 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,
- 13. 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.
- 14. Bolt nuts shall be finger-tight plus 1/3 to 1/2 turn with a hand wrench 15. Connection hardware shall be the brand and model specified.
- Alternate connectors shall be submitted to the design engineer for 16. Unless otherwise noted, connectors shall be installed with the
- maximum number and size of fasteners as required in the manufacturer's installation instructions. 17. Prefabricated wood I-joist and structural composite lumber shall not
- recommendations. 18. 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.

be notched or drilled except where permitted by the manufacturer's

19. 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
- Corrosion protection of metal connectors, fasteners, and flashing based on galvanized or stainless steel materials shall be in accordance with the table below.

Product Coatings		Hot Dipped Galvanized (ASTM A153)	
Preservative	G90	G185	Steel
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

- 1. 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.
- 2. 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:
 - A. Epoxy-polyamide
 - Coal-tar epoxy-polyamide
- Zinc chormate-vinyl butyral primer with asphatic mastic
- Contact between dissimilar materials (stainless steel and carbon

REVISIONS: SCALE: APPROVED BY NTS DATE: DRAWN BY: 05/15/2013

Twin Modular Services Inc. Blackwood, NJ

		06.04 2007-06-19
TITLE:		JOB NO:
	COVER SHEET	TMS051513-4
MODEL:		DRAWING NO:
8)	x14 Gaurdbooth w/ADA restroom	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: Asphalt Based MARINE BASED TWO PART EPOXY-BLACK

Misc: Steel Fork Slots

FLOOR

Insulation: Ridged Insulation R-19

Moisture Barrier: Ridged Insulation

Decking And Covering: 3/16" Steel Tread Plate Floor Tack Welded 3/4" T&G PLYWOOD All Electrical Components To Be Factory Wired Directly To Main Service Panel Prior To Shipment And Screwed To Steel C Channel Members 1/8" VINYL TILE IN RESTROOM

Trim: 4" Vinyl Cove Base

3/16" ALUMINUM TREAD

PLATE IN GUARD AREA

EXTERIOR WALLS

Studs: 2x4 Stud Grade SPF at 16" o.c.

Bottom Plate: Single 2x4 #3 SPF Top Plate: Single 2x4 #3 SPF

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)

INTERIOR WALLS

Studs: 2x4 Stud Grade SPF at 16" oc

Bottom Plate: Single 2x4 #3 SPF

Top Plate: Single 2x4 #3 SPF

★Steel Tube: 3"x3"x1/4 Steel Tube Beams And Corner Post

Wall Height: 8'-3"

Finished Ceiling Height: 7'-8" AFF

Interior Wall Covering: 1/4" Vinyl Covered Panel (Class III)

*Steel Tube is Optional - See Quote

INTERIOR DOOR

Door: 36"x80" Hollow Core, Pre-Finished, Hinged

Type: Rafter, 2x8 #3 SPF at 16" o.c. Bow Type Roof 2% Slope

Ceiling: 2'x4' T-Grid (Class III) Drop Ceiling at 7'-6" AFF

Insulation: R-30 Unfaced Fiberglass Batts

Overhang: 3" All Sides (Unit Not to Exceed 102" Wide)

Main Distribution Panel: Exterior Serface 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'x4' Two Tube Lay-In Florescent Troffer Per Print

Exterior Lights: 150 Watt Quartz Halogen Security Light (Weatherproof)(2 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

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: Grab Bars (1) 36" and (1) 42"- Horizontal, (1) 18" Vertical, Toilet Paper Holder (Horizontal Grab

Bars at 34" Center AFF, Vertical Grab Bar at 39"-41" AFF to bottom and 39"-41" from Wall Behind Water

Closet, Toilet Paper Holder 24" AFF, Soap Dispenser: Tough Guy - #3FPN8-Wall Mount-Push Operation,

Paper Towel Dispenser: Georgia Pacific-#54338)

HVAC

Air Conditioning: 208/240V 20 Amp, 11600 BTU AC/Heat Combo Unit Single Phase Dedicated Circuit -

Frigidaire Model FRA12E2 Or Equal. Shipped Loose And Installed By Others On Site

Heating: 4000 Watt Wall Heater With Fan 208/240V 20 Amp Dedicated Circuit

EXTERIOR WINDOWS AND DOORS

Doors: 36x80 Steel, 22"x22" Window SG, Lever Hardware, Lockset and Closer DOOR WINDOW TO BE 22" X 36"

Windows: 36"x39" Vinyl Frame, Fixed, DIG Glazing, Thermal Insulated (2) Per Print

36"x39" Vinyl Frame, Sliding, DIG Glazing, Thermal Insulated (1) Per Print

Tint: All Windows **OPTION NOT ACCEPTED**

EXTERIOR FINISHES

Siding: 0.19 Aluminum Light Gray

Trim: 0.19 Aluminum Dark Gray

Wall Sheathing: 7/16" OSB or CDX Plywood, 16/0 APA Span Index Rating

Roof Sheathing: 1/2" CDX Plywood, 16/0 Span Rating

Roof: 0.45 EPDM Rubber Roofing

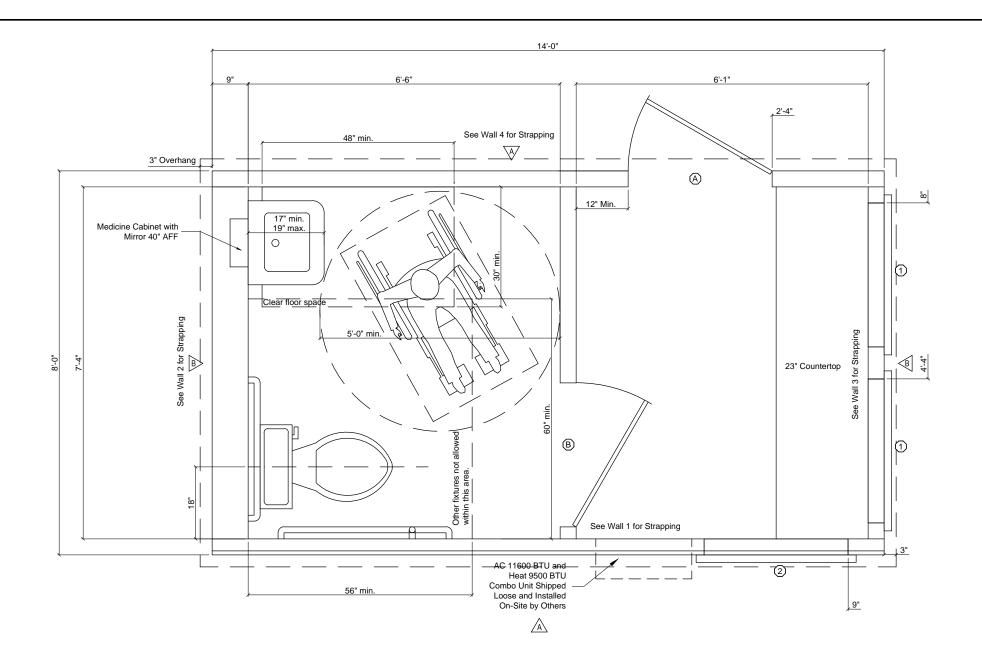
FURNITURE

Option: 23" x 7'-4" Counter Top, White Mica

REVISIONS:	SCALE:	APPROVED BY:
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Single Control of the	DATE:	DRAWN BY:
	05/15/2013	рг

Twin Modular Services Inc. Biackwood, NJ

	06.04 2007-06-19
TITLE:	JOB NO:
SPECIFICATIONS	TMS051513-4
MODEL:	DRAWING NO:
8x14 Gaurdbooth w/ADA restroom	1.2



GENERAL

REVISIONS:

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.

Minimum corridor width shall not be less than 36". Exterior windows and sliding doors shall be labeled as conforming to

AAMA/WDMA/CSA101/I.S.2/A440.

Windows in buildings located in windborne debris regions shall be BTotected in accordance with Section 301.2.1.2 of the residential

Glazing, Thermal Insulated, Tinted

SCALE:

Mark	ark Description		Ha	rdware	Header	Jack Studs	Jamb Studs
(A)	36"x80" Steel with Closer, 22"x22" SG Window	W	l	_ever	(1) 2x4 #2 SPF	1	1
B	36"x80" BTe Finished, Hollow Core, Hinged		l	_ever	(1) 2x4 #2 SPF	1	1
WII			OW SCI	HEDULE			
Mark	Description	Glazed	d Area	Vent Area	Header	Jack Studs	Jamb Studs
1	36"x39" Vinyl Frame, Fixed, DIG Glazing, Thermal Insulated, Tinted	9.75	5 ft ²	4.87 ft ²	(1) 2x4 #2 SPF	0	1
2	36"x39" Vinyl Frame, Horizontal Slidiing, DIG	9.75	5 ft ²	4.87 ft ²	(1) 2x4 #2 SPF	0	1

1/2" = 1'-0"

05/16/2017

APPROVED BY:

DRAWN BY:

DOOR SCHEDULE

SHEARWALL CONSTRUCTION

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

	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					
B	7/16" Structural Sheathing, One Side, Blocked	0.113" x 2.5" nails 4/12 (edge/field)	2x4 SPF @ 16" oc					

BUYER ACCEPTANCE PLAN A SIGN AND DATE

Twin Modular Services Inc.
Blackwood, NJ

	0106 2008-09-23
TITLE:	JOB NO:
FLOOR PLAN A	TMS051517-35
MODEL:	DRAWING NO:
8x14 Gaurdhooth w/ADA restroom	3

Blackwood, NJ

MODEL:

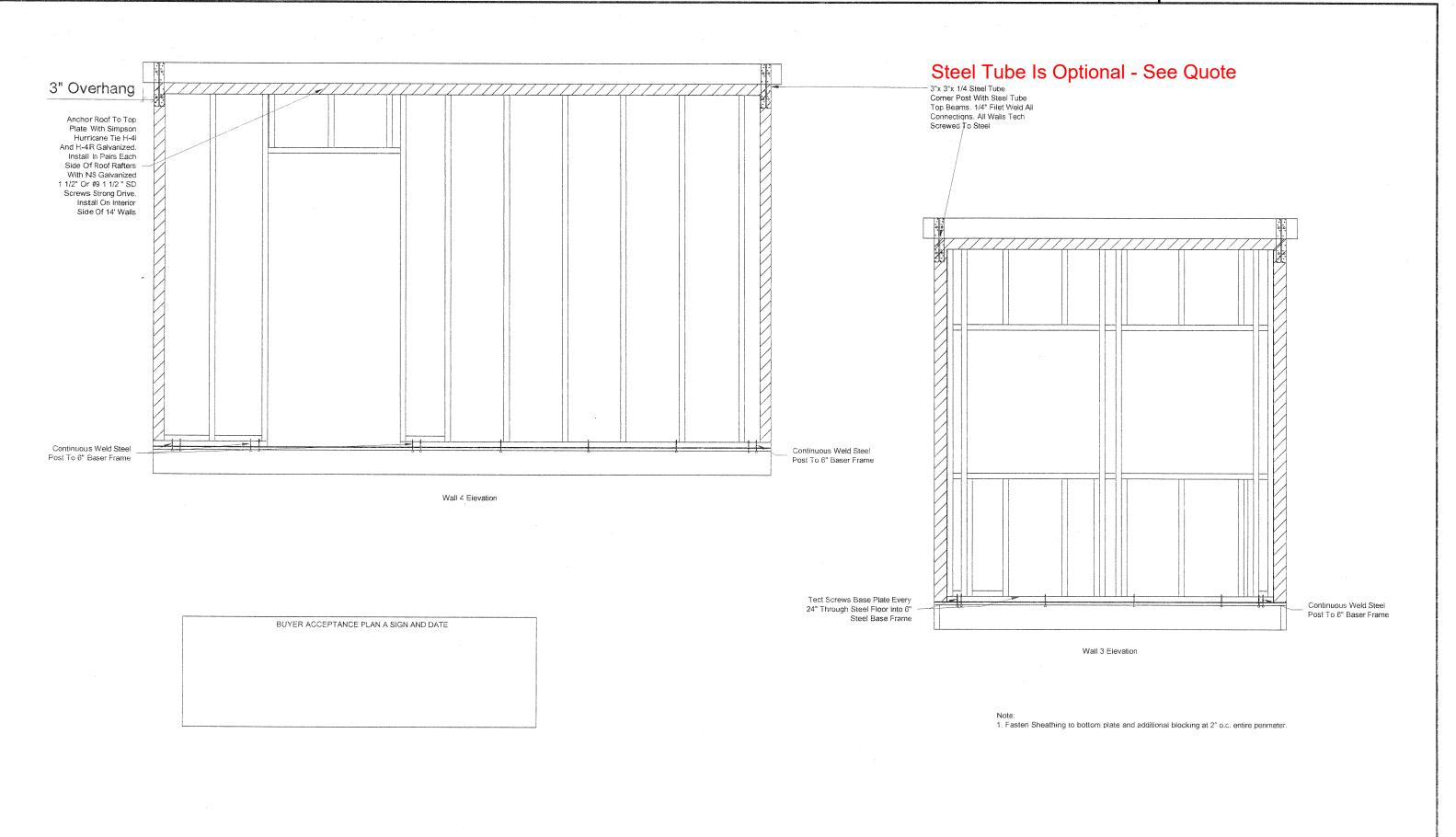
8x14 Gaurdbooth w/ADA restroom

DRAWING NO:

3.1

DRAWN BY:

REVISIONS:



DATE:

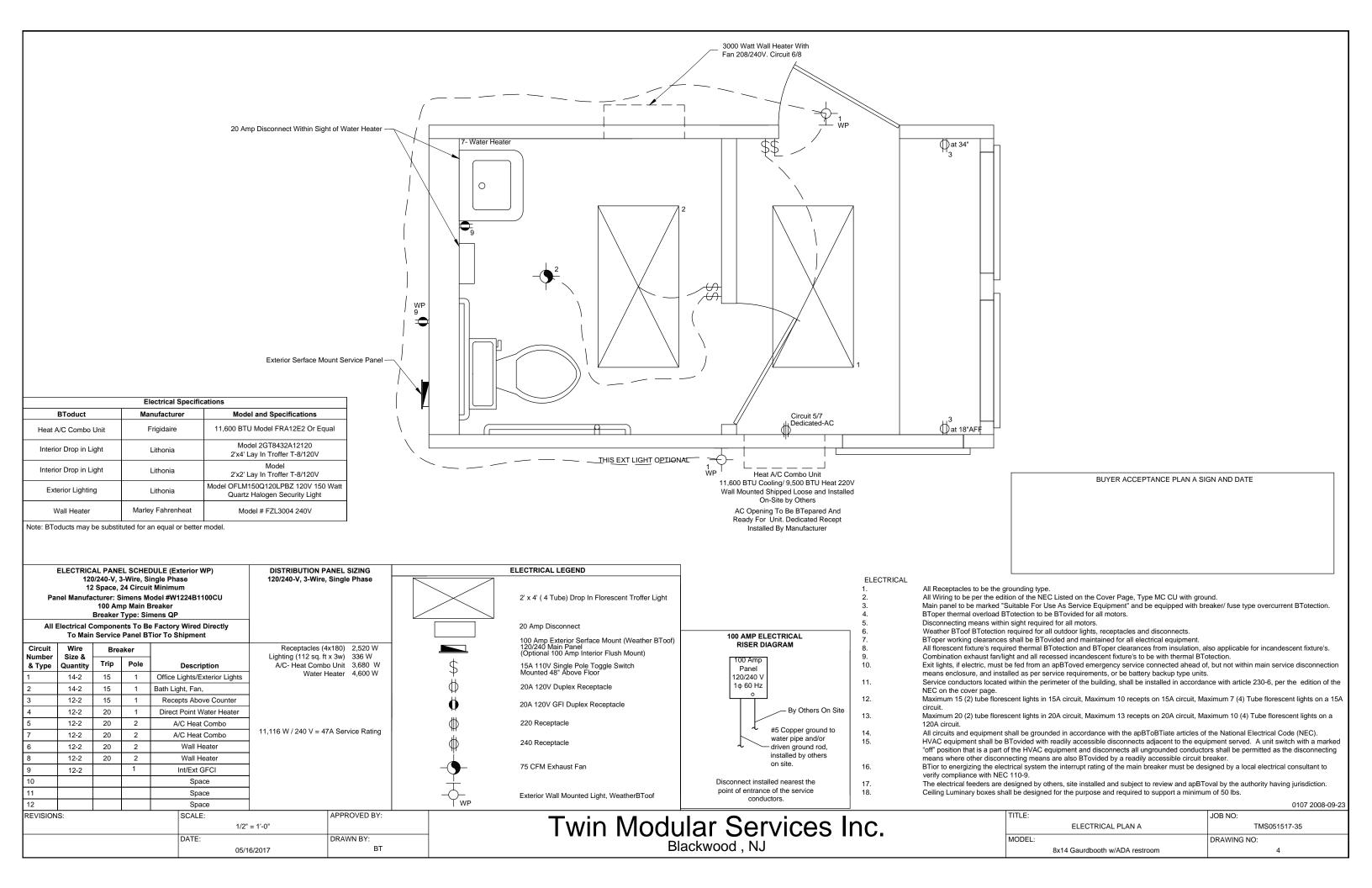
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DEAWN BY:

DEA

TITLE: JOB NO: TMS051513-4

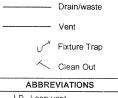
| MODEL: 8x14 Gaurdbooth w/ADA restroom ### 3.2



WATER SUPPLY LEGEND

--- Hot water line

Shut off valve



LP Loop vent

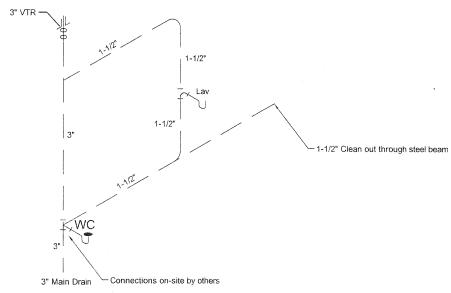
AV Auto vent (optional)

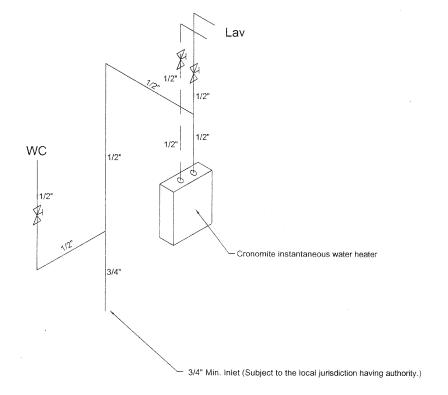
VTR Vent through roof

WHA Water hammer arresto

WC Water closet LAV Lavatory

3" ROOF VENT EXTENSION PIPE SHIPPED LOOSE AND INSTALLED BY OTHERS ON SITE





PLUMBING SYSTE

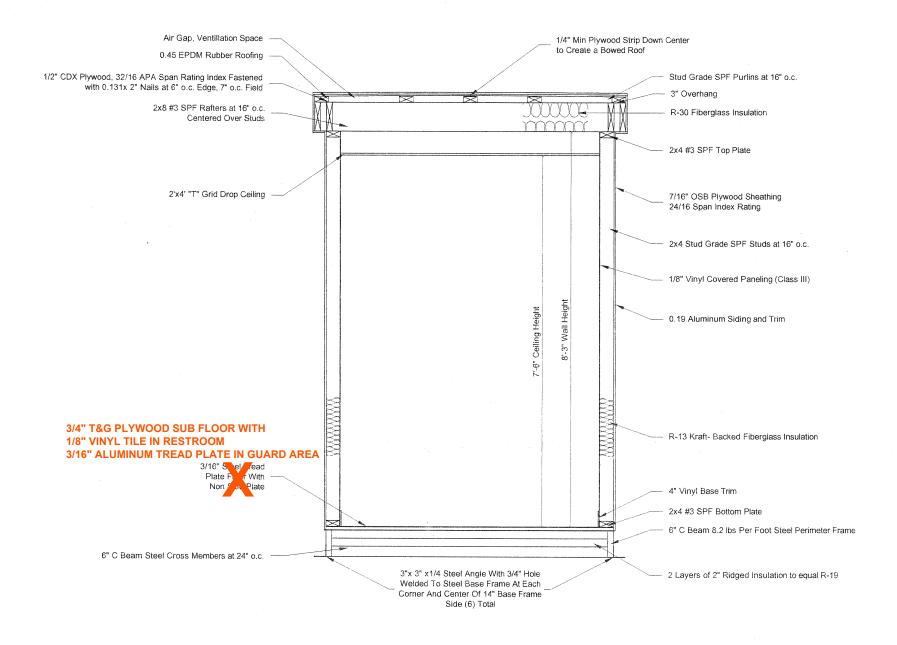
- 1. Plumbing fixtures shall have separate shut-off valves.
- Water heater shall have a safety pan with 3/4" minimum drain to exterior, T&P relief valve with drain to exterior, and a shut off valve within 3' on a cold water supply line.
- Water pipes installed in a wall exposed to the exterior shall 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.
- DWV system shall be either ABS or PVC
 Weter symply lines shall be separated PEX
- Water supply lines shall be copper or PEX.
- Building drain and cleanouts are to be designed by others on site and subject to review and approval by the local authority having jurisdiction.
- 7. Tub access provided under home unless otherwise noted.
- 8. Shower stalls shall be covered with non-absorbent material to a height of 72" above the finish floor.
- A thermal expansion device shall be provided at the water heater if required by the manufacturer's installation instructions.
- 10. 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.
- 11. Building must be connected to a public water supply and sewer system if available.
- Shower and tub/shower combination valves shall be equipped with control valves of the pressure-balance, thermostatic-mixing or combination pressure-balance/thermostatic-mixing valve types with a high limit stop in accordance with ASSE 1016 or CSA B125. High limit stop shall limit the maximum water temperature to 120° F.
- 13. Bathtubs and whirlpool bathtubs hot water shall be limited to a maximum temperature of 120° F by a water temperature limiting device.

0110.1150 2008-12-02

REVISIONS:	SCALE: 1/2" = 1'-0"	APPROVED BY:	Twin Modular Services Inc
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	05/15/2013	рг	Blackwood , NJ

BUYER ACCEPTANCE PLAN A SIGN AND DATE

TITLE:	JOB NO:
PLUMBING SCHEMATIC	TMS051513-4
MODEL:	DRAWING NO:
8x14 Gaurdbooth w/ADA restroom	5



BUYER ACCEPTANCE SIGN AND DATE

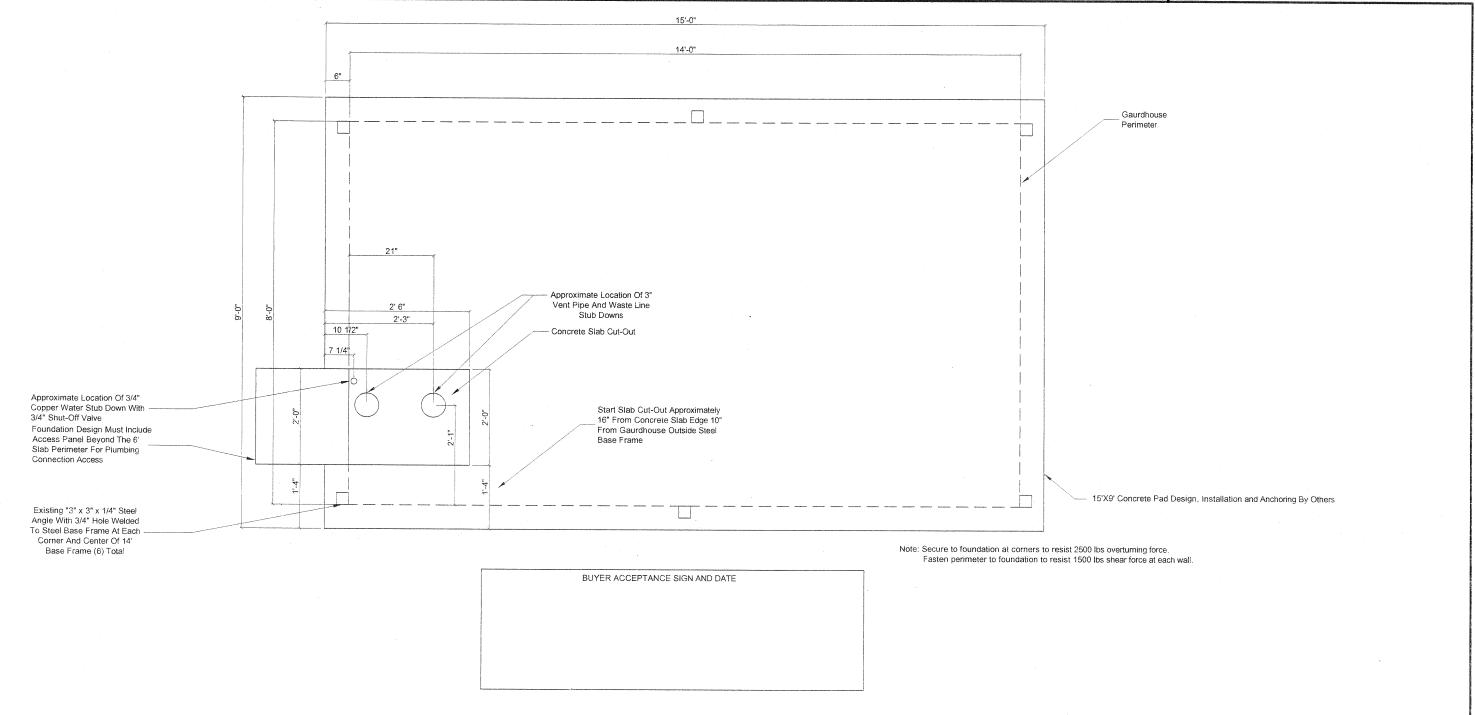
NOTE

- 1. Fireblocking shall be installed at the floor and ceiling level. Fireblocking material shall be as permitted in NC 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:
 - A. 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.
- 4. Connections not specified, per typical systems manual.

0110.1150 2008-12-02

REVISIONS:	SCALE: 1/2" = 1'-0"	APPROVED BY:	Twin Modular Services Inc.
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TITLE:	JOB NO:
CROSS SECTION	TMS051513-4
MODEL:	DRAWING NO:
8x14 Gaurdbooth w/ADA restroom	6



- 1. 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.
- 2. 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.

			25. Additionally, the foundation designed by others shall be reviewed and approved by the local authority having jurisdiction.			0110.1150.2008-12-0	12
REVISIONS:	SCALE:	APPROVED BY:		TITLE:		LIOB NO:	7
-	1/2" = 1'-0"		I win Modular Services Inc.		Example Foundation	TMS051513-4	
	DATE:	DRAWN BY:		MODEL:		DRAWING NO:	\dashv
	05/15/2013	рг	Blackwood , NJ		8x14 Gaurdbooth w/ADA restroom	7	

	JOB NO:	
Example Foundation	TMS051513-4	
	DRAWING NO:	