STANDARD SPECIFICATIONS

WalCon®
Pre-engineered, Prefabricated
Modular Restroom Building
Model No. 3S-CW-4L-RC-GR-ADA,
W/STORAGE ROOM
Serial No. 20240005 A, B, C & D
Conejo Community Park Restroom Building
Conejo Recreation and Park District



Robert V. Nangia P.E.
7423 Hollow Ridge Drive
Houston, Texas 77095

APPROVED
By TI-RADCO a CA Department of Housing and Community Development approved third party design approval agency
DM920272
APPROVAL DATE May 7,2024
EXPIRATION DATE Aug 30,2025
APPROVAL NO.
RAD-16741

Wallis Concrete, LLC
P.O. Box 789
Wallis, Texas 77485
www.walcon.com

APPLICABLE BUILDING CODES:

2022 California Building Code
2022 California Plumbing Code
2022 California Mechanical Code
2022 California Electrical Code
2022 California Energy Code
2022 California Green Code

ADA National Accessibility Standards

Any Other Code Applicable to Local Jurisdiction
Dark Sky Compliance 1112. thru to 1113.

Compliance with the Americans with Disabilities Act

The WalCon Restroom Buildings are manufactured to the most rigorous design factors presented for all geographical areas within the continental United States with the exclusion of barrier islands

REFERENCE STANDARDS

American Concrete Institute

1. ACI-301R Specifications for Structural Concrete for Buildings
2. ACI-315-92 Details and Detailing of Concrete Reinforcement

American Society for Testing and Materials (ASTM)

1. ASTM-A-36 Specification for Structural Steel
2. ASTM-A-615 Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement
3. ASTM-A-82-95 Specification for Steel Wire, Plain, for Concrete Reinforcement
4. ASTM-C-150-97 Standard Specifications for Portland Cement
5. ASTM-C-33-13 Standard Specifications for Concrete Aggregates
6. ASTM-C-920-14a Specification for Elastomeric Joint Sealants

American Welding Society (AWS)

1. AWS-D-1.4 Structural Welding Code-Reinforcing Steel

PART 1 GENERAL:

SUMMARY:

Scope:
WalCon® Buildings are manufactured by Wallis Concrete, LLC (Wallis) with the expressed intent to supply our customers with high quality enduring restroom facilities that with proper maintenance will give years of service. Because these buildings are precast modular structures it is possible that they can be relocated to other areas with only minimal effort should it be necessary.
Wallis has been manufacturing precast modular buildings since 1980. We are responsible for the review and issuance of the State decal plus compliance with local codes. The buyer is responsible for all permits and inspections which deal with the installation of these finished goods. The sale price of these finished goods does not include any taxes or permit fees which may be applicable to the location where these goods are placed.

Substitutions:
The manufacturer reserves the right to change construction as may be required. Substitution of doors, hardware, accessories, and electrical lighting components may be allowed if they are of equal quality. All substitutions and reasons for such shall be submitted in writing for approval by Owner, prior to installation.

Delivery and handling:
Delivery and handling of the modular structures shall be accomplished in such a manner as required to prevent damage to the products and their finishes.

WARRANTY:

Subject to the conditions and discussions set forth herein, Wallis Warrants its manufactured concrete products against defects in materials or workmanship for a period of 1 (one) years from date of purchase. Wallis' sole obligation under this warranty shall be to repair or replace any part of the product that proves, upon our inspections, to be defective in materials and /or workmanship. All finished goods installed in these restrooms carry the warranty of its manufacture.

Warranty Specific Conditions:

1. The product purchased from Wallis must be properly installed, and the operating procedures and maintenance instructions must be followed.
2. Only authorized representatives of Wallis must perform repairs or replacements to the products supplied by Wallis.

Warranty Exclusions:
This warranty does not cover damage resulting from third party transit, accidents, acts of God, misuse, unauthorized repairs, negligence, modifications, tampering, disconnection, improper adjustments, improper care or maintenance, improper installation and out of warranty service. Although every attempt will be made to design the structure in accordance with published wind loads and seismic activity for the specified geographical area where it will be installed, this warranty does

Not cover damage that may result from environmental loads or conditions in excess of those agreed-upon values.

Any implied warranty of merchantability or fitness for a particular purpose applicable to this product is limited to the duration of this written warranty.

WalCon, Inc. will not be liable for incidental or consequential damages resulting from breach of this written warranty or any implied warranty.

The performance of repairs or needed adjustments shall be the exclusive remedy of the user/purchaser under this written warranty or any implied warranty.

This warranty gives the Owner specific rights. There may be additional rights, which vary from state to state. No person shall be authorized to change, add to, or create any warranty or obligation other than set forth herein.

This warranty is valid only in the U.S.A.

PART II PRODUCTS:

MANUFACTURER:
Prefabricated and Preassembled WalCon ® restroom building (comfort station) herein specified are based on Models as manufactured by Wallis Concrete, LLC

MATERIALS:

Precast Components: All concrete used in the precast walls, roof, and floor shall be minimum compressive strength of 5000 psi in 28 days and shall conform with the requirements of the ACI standard listed above. All fine and course aggregate shall conform to ASTM Spec. C-33. Cement shall be gray Portland cement type 1 and shall conform to ASTM Spec. C-150. The water used in the mix shall be clean and non-detrimental to the mix. The water-cement ratio shall not exceed 5 gal. Per bag of cement. A concrete mix review must be provided by an independent testing laboratory certified by the structural engineer.

Reinforcement: All reinforcing steel bars shall conform to ASTM 615 Grade 60 for deformed and plain billet -steel bars for concrete reinforcement (Fy=60 Ksi). Wire mesh and flat sheets used for reinforcing shall conform to ASTM 185 specifications for steel welded wire fabric, plain for concrete reinforcement.

Anchors, clips and fasteners: Conform to ASTM A325.

Doors: Entrance Door shall be 3/0-6/8, 1- 3/4 inch thick pre-hung metal with a matching metal frame attached to the building in a permanent way. Curries model no. 707 is approved.

The Entrance door shall have the following hardware:

Stainless steel 10” x 34” kickplate (inside only)
Yale, cylinder 5400 series lever lockset
Hager SS Hinges-4 1/2” x 26D.
Norton Unitrol 7500 Door Closure
Brush Type Door sweeps
Hager Model 412S ADA 5” Saddle Threshold

Exterior Chase Door, shall be 3/0-6/8, 1 3/4 inch thick pre-hung metal with a matching metal frame attached to the building in a permanent way. Curries model no. 707 is approved.

Yale, 3500 series cylindrical dead bolt
Hager SS Hinges-4 1/2” x 26D
Norton Unitrol 7500 Door Closure
Brush Type Door Sweep
Hager Model 412S ADA 5” Saddle Threshold

Roll Up Door: Best Roll Up Door, Inc. or equal. Steel, Model # ST Flat, eight feet wide by 80” +/- roll up.

Note: All door hardware and the position of the hardware on the door shall meet the requirements of the Americans with Disabilities Act (ADA).

Vents: Wall vent frames shall be shop made of 8 GA Galvalume metal. These vents shall be sight restrictive and shall be attached with tamper proof hardware. These vents shall be painted to the color selected by customer.

Electrical: All Electrical Items shall be pre-wired as shown in conduit on drawings. Hardware shall be as follows:

Interior lighting for storage and chase – RAB VANLED 20Y
Interior lighting for restrooms – RAB LED Slim 17FA
Square D 100 amp panel with 12 spaces and disconnect.
Exterior lighting – RAB LED Slim17FA “Dark Sky Compliant”
1 1/2 inch gray PVC schedule 40 below slab (power into disconnect).
1/2 / 3/4 inch PVC conduit with 12 Gauge braded wire.
Leviton GFCI Receptacle
Leviton Single Pole Switch for Chase
Motion Sensor Model CMR PDT 9 for interior lighting – Public Access
Fantech Exhaust Fan- Model RVF-4 or equal
Fantech Exhaust Fan-Model 2SHE1621
Hot Water Heater, Eemax EMT4 w/Expansion Tank or equal
Intermatic Model ET1105CR 24 hour programmable time switch for exterior lights

Signage: Molded plastic signs with etched surfaces shall have the international handicapped symbol and shall have raised braille characters. Signage shall comply with ADA requirements.

Toilet Accessories: Bradley 812 grab bars with safety grip finish, concealed mounting. The Stainless Steel Mirror shall be a Sentry Mirror 18x30 with Plexiglas. All accessories are to be mounted per ADAGG requirements.

Plumbing: Lavatories shall have a 1/2"copper to1/2 SS flex supply to the fixtures concealed in the plumbing chase. All fixtures shall have a shut-off valve in the plumbing chase, waste and vent lines shall be connected to the fixtures, with traps and vents where necessary for connection by general contractor to waste disposal lines. Waste piping shall be schedule 40 PVC.

Lavatories shall be an American Standard Regalyn 19" by 17" Wall Mounted Enameled Cast Iron Model 4867.001. Wash fountain shall have an American Standard metering faucet model 1340.105. Lavatory faucets shall not exceed 0.5 gpm at 60psi.

Drinking Fountain shall be Haws Model 1011 with 1920, high/low fountain with bottle filler.

Toilets shall be an American Standard Madera 3043.001, 16.5" tall elongated toilet top spudded with a Zurn Exposed Flush Valve,Z6000 AV-WS1, 1.28 gal. The toilet is to be mounted per ADAGG accessibility requirements.

Service sink to be a Trinity with a pull out faucet Model CTHA-0321/THA-0321.

DESIGN AND FABRICATION:

The building structure design and fabrication shall be adequate to withstand wind loads, snow loads and seismic activity for the geographic region in which it will be installed and in accordance with governing building codes and the stresses and shocks common to buildings. Design calculations and shop drawings shall clearly state design loads and all criteria, safety factors, etc. used to arrive at a design load.

The forms for the precast components shall be constructed such that the finished components will have sharp definition, dimensional accuracy, and uniformity of shape and texture. Precast components shall be prefabricated to the sizes and shapes indicated on the project plans. No unfinished edges shall be exposed to view. The finished components shall be straight and square. Waxed, cracked, broken, spalled, stained, or otherwise defective units shall not be used. Components with imperfections in exposed surfaces shall not be used.

Reinforcing assemblies shall be prefabricated into single complete units with a minimum of 3/4 inch clearance from the edges and surfaces of the precast unit.

Placed and secured in the forms shall be all necessary anchors, clips, inserts, lifting devices, stud bolts, ties and any other device that is required for handling and installing the precast components and for the attachment of subsequent items.

Precast concrete components shall be cured in forms for a minimum of 24 hours, or until the concrete reaches 75 percent of design strength. All exposed surfaces must be covered to control the loss of moisture and temperature. After the precast component is removed from the form it must be covered or be moisture cured until the results of a 7 day compression test is available

All precast cover panels shall be attached to the walls in such a way as to form a continuous unit. Wall and floor reinforcing shall be permanently attached to each other. The welding procedure shall be approved by a professional engineer. All welding shall be done by welders having current valid certifications and having current experience in this type of welding. All construction shall be per American Welding Society Codes and Recommendations. All exposed steel plate assemblies both inside and out shall be painted over the shop coat.

The finished floor shall be level along all walls. No area of the floor shall allow wastewater to accumulate. A non-absorbent tile shall be installed on the floor with a cove base no less than four inches in height.

FINISHES:

Exterior Walls: The exterior concrete walls of the building shall have a Stucco finish. Two coats of Modified Latex Paint – Benjamin Moore or equal (tinted to customer requirements) applied at the factory. Owner will choose the color for the exterior concrete wall from the manufacture supplied color charts. Inside surfaces of the walls shall receive an application of Super Spec Block Filler prior to any finish coats. Two coats of Benjamin Moore or equal 100% Acrylic Semi-Gloss House Paint applied at the factory.

Exterior Doors, Vents and Frames: Primed with a metal primer and shall have 2 coats of Gloss Enamel. Owner will choose the color from the manufacture supplied color charts.

The exterior roof panels will be primed then two coats of Benjamin Moore paint or equal will be applied per the manufacturer recommendation. The first coat will be tinted to the customer specification and the second will be clear with UV protection.

All paint and sealers shall comply with the California Green Building Code Requirements.

Should caulking be used, it shall comply with the California Green Building Code Requirements.

PLEASE REVIEW THE MSDS LITERATURE WHICH IS PROVIDED WITH THIS BUILDING.

PART III EXECUTION:

INSTALLATION: Safety data information must be supplied on all items used in the production and furnishing of this building and foundation. All technical specifications are to be delivered to the general contractor or contracting officer upon delivery of the building and foundation to the job site.

HINTS:

AFTER THE UTILITIES ARE CONNECTED TO THE PLUMBING IN THE CHASE AREA AND BEFORE THE LAVATORY FAUCET AND TOILET IS ACTIVATED YOU MUST FLUSH OUT THE INCOMING WATER LINES. THERE IS A HOSE BIB INSTALLED ON THE INCOMMING WATER LINE. YOU SHOULD CONNECT A GARDEN HOSE TO THIS HOSE BIB AND TURN IT ON. ALLOW THE WATER TO FLOW FOR ENOUGH TIME TO CLEAR THE NEW LINE WHICH WAS INSTALLED FOR THIS RESTROOM. THIS WILL BEGIN THE PROCESS OF CLEARING THE LINE OF DEBRIS AND DISINFECTING CHEMICALS. SHOULD YOUR RESTROOM BE SERVICED BY A SEPTIC SYSTEM BE SURE AND DIRECT THE WATER AWAY FROM THE SEPTIC FIELD.

PLEASE READ MAINTENANCE INSTRUCTIONS

(WE RECOMMEND A PLUMBER BE CALLED TO COMPLETE THE FLUSHING OF THE FIXTURES)

THE TOILET FLUSH VALVE BODY MAY BE OPENED AND THE DIAPHRAM REMOVED. REPLACE THE CAP ON THE FLUSH VALVE AND SLOWLY TURN ON THE CUT-OFF VALVE LOCATED ADJACENT TO THE FLUSH VALVE BODY. THIS WILL ALLOW WATER TO RUN THRU THE SERVICE LINES AND OUT INTO THE SEWER AND SHOULD REMOVE ANY DEBRIS. START WITH THE FIXTURE FUTHEREST AWAY FROM THE SERVICE WATER LINE. BE CAREFULE NOT TO FLOOD YOUR SEPTIC SYSTEM.

THE FAUCET AT YOUR LAVATORY IS HYDRALIC AND WILL TURN OFF AUTOMATICALLY. WE RECOMMEND YOU TAKE IT APART PER THE INSTRUCTION AND FLUSH THRU THE LINES WHICH SUPPLY THE WATER, BE CAREFUL AND FOLLOW THE INSTRUCTIONS WHEN PUTTING IT BACK TOGETHER. IF YOU NOTICE THERE IS A SCREEN AT THE BASE OF THE FAUCET, THIS MAY REQUIRE CLEANING PERIODICALLY

Subject: Design Calculations
Project: 9019-246
Model: 3S-CW-4L-RC-GR-ADA W/STORAGE
Number of Modules: 4
Installation Site: CONEJO COMMUNITY PARK, THOUSAND OAKS, CALIFORNIA

CERTIFICATION:

THE CALCULATIONS ATTACHED HEREWITH ARE TO VERIFY THAT THE DESIGN OF THE COMFORT STATION; WALCON INC. MODEL NO. 3S-CW-4L-RC-GR-ADA W/ STORAGE HAS BEEN PERFORMED. THE STRUCTURE HAS BEEN DESIGNED FOR 110 MPH (FASTEST 3 SECOND) WIND VELOCITY (EXPOSURE c)(Vult) 85MPH (Vasd), A SEISMIC LOAD OF 240% GRAVITY LOAD (.2 SEC RESPONSE) ROOF LIVE LOAD OF 20 PSFAND A 5 PSF SNOW LOAD. THE COMPLETED STRUCTURE IS TO BE INSTALLED AT THE CONEJO COMMUNITY PARK, IN THOUSAND OAKS, CALIFORNIA. THE STRUCTURAL DRAWINGS FOR THIS PROJECT ARE IDENTIFIED AS SHEETS S1, S2, S6 THRU S8. S3 THRU S5 ARE NOT A PART OF THE STRUCTURE.

_____
Date

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CRITIERIA:

Model:	3S-CW-4L-RC-GR-ADA W/STORAGE
Installation Site:	CONEJO COMMUNITY PARK, THOUSAND OAKS CALIFORNIA
Importance:	II (IBC 1604.5)
Design Criteria:	2022 CALIFORNIA BUILDING CODE
	ASCE 7-15 Minimum Design Loads for Buildings and Other Structures
	ACI 316-14 Building Code Requirements for Structural Concrete
	AISC 360-05 Structural Steel for Buildings
Roof Live Load:	20 PSF
Floor Live Load	50 PSF Rest Rooms 125 PSF Storage Area
Wind Load:	110 mph (Fastest 3 second) Exposure c (Vult) ; 85 mph (Vasd)
Wind importance	Factor 1.0
Seismic	0.2 Second Response 240%
	1 Second Response 90%
Snow Load	5 PSF

WEIGHT:

For weight calculations all panels are considered to be rectangular and solid. Ref S1, S8 and S9 of 9.

Module A

Component	Dimensions	Concrete Volume, Cu. Ft.	Weight, Kips
Floor A	16'-6" x 12'-3" x 6"	100.8	15.2
Wall 1A	11'-11" x 8'-0" x 4"	45.3	6.8
Wall 2A	11'-11" x 8'-0" x 4"	31.9	4.8
Wall 3A	15'-4" x 9'-5" x 4"	45.3	6.8
Wall 4A	8'-6" x 9'-4" x 4	31.9	4.8
Roof A	17'-0" x 12'-6 x 4"	70.1	10.5
	Total	325.6 Cu. Ft.	48.8 Kips

Modules B or C

Component	Dimensions	Concrete Volume, Cu. Ft.	Weight, Kips
Floor B	16'-5" x 8'-11" x 6"	72.2	10.9
Wall 1B	8'-10" x 8'-0" x 4"	45.3	6.8
Wall 2B	8 -10" x 8'-0" x 4"	23.5	3.5
Wall 3B	8'-5" x 9'-5" x 4"	45.3	6.8
Wall 4B	8 -5" x 9'-5 x 4"	23.5	3.5
Wall 5B	8 -3" x 9'-51 x 4"	26.3	3.5
Roof B	17-0" x 8'10 x 4"	49.5	4.0
	Total	282.2 Cu. Ft.	42.3 Kips

Modules D

Component	Dimensions	Concrete Volume, Cu. Ft.	Weight, Kips
Floor D	16'-5" x 9'-1" x 6"	72.9	10.8
Wall 1D	8'-10" x 8'-0" x 4"	45.3	6.8
Wall 2D	8 -10" x 8'-0" x 4"	23.5	3.5
Wall 3D	15'-3" x 9'-3" x 4"	45.3	6.8
Wall 4D	8 -6" x 9'-5 x 4"	23.5	3.5
Wall 5D	8 -6" x 9'-3 x 4"	26.3	4.0
Roof D	17-0" x 9'4 x 4"	45.1	7.4
	Total	285.2 Cu. Ft.	42.8 Kips

Module A = 48.8 kip: Module B or C 42.3 kip: Module D 42.8 kip
Total 178 kip: Add 5% fixtures 9 kip:
Total Dead Load 187 kip.
Roof Area = 670.82 Sq Ft.: Roof Live Load 20 psf 14 kip: Floor Area Restrooms = 167.0 Sq Ft
Restroom Live Load : 50 psf = 8.4 Kip Storage Area = Total Area – Restroom Area = 5.97 – 164 = 433 Sq Ft
Storage Live Load (125 pfs) = 54 kip
Total load on Foundation 255 kip Area grade beams = 8 x 17 + (2 x (38-10)) = 192 sq. ft.
Assumptions:
Dead Load of Completed Building is supported uniformly on the perimeter of the building on a foundation design by others. Pressure – 187 k / 192 sq. ft. = 1 k +/-/ sq. ft.

ANALYSIS FOR LIFTING FOR SHIPING AND UNLOADING AT SITE:

Maximum module weight- Module A 49 kip +5% = 49 x 1.05 = 51.5 kip
Use 4 lift points Therefore lift force = 51.5 / 4 = 12.9 kip
Use 1" diameter coil rod Dayton Superior B-12 Working load in shear 25,300 lb.
Set in 1" F64 Ferrule Loop Insert. .

ANALYSIS FOR WIND:

Using ASCE 7-15 Method
v = 110 MPH (Fastest 3 Second) Exposure c Vult
Importance II factor 1.0
Roof slope approximately 3:12 in A-B direction peak at middle
For Wall pressure: L = 38'-5": B = 16'-6": H = 9'-6' L/B = 2.3: use 2.0
Roof slope Flat Roof in 1-5 direction
For Wall pressure: L = 16'-6": B= 34'-5"": L/B = 0.42" use .5
(Negative force pulls away from surface) 10 PFS minimum

			EXPOSURE C	
Windward Wall	Col 1 or 5	L/B = 1.0	P=25.2 PSF	Table 27.6-1
Windward Wall	Col A or C	L/B = 1.0	P=21.8 PSF	Table 27.6-1

Windward, Vertical	Zone 1	Roof	P= -23.2 PSF	Table 27.6-2
Windward, Vertical	Zone 2	Roof	P= -15.8 PSF	Table 27.6-2
Windward, Vertical	Zone 3	Roof	P= -23.7 PSF	Table 27.6-2
Windward, Vertical	Zone 4	Roof	P= -21.1 PSF	Table 27.6-2
Windward, Vertical	Zone 5	Roof	P= -17.3PSF	Table 27.6-2

h = 8+11.2/2 = 9.6

Length of Zone 3 = .5 h = .5 x 9.4 = 4.7
Length of Zone 4 = .5 h = - 4.7
Length of Zone 5 = .39.5-9.4 = 30.1

Check stability of building due to wind in the 1-5 direction

Overturning due to wind 1-5

Area		Dimension	Area, Sq. Ft.	Force, PSF	Load, Kip	Lever, ft	Moment, Ft Lbs
End Wall		16 x 9.5	152.0	21.8	3.3	4.7	15.5
Roof Suction	3	17 x 4.7	79.9	-23.7	-1.9	-36.7	69.7
Roof Suction	4	17 x 4.7	79.9	-21.1	-1.7	-32.0	54.4
Roof Suction	5	17 x 30.1	511.7	-17.3	-8.9	-15.3	136.1
		Total overturning					275.4
Resisting moment							
Building					178	19.8	3524 KIP FT

By inspection, overturning has a factor of safety of over 12 to 1 – Building is stable.

Check stability of building due to wind in the A-C direction

Overturning due to wind

Area		Dimension	Area, Sq. Ft.	Force, PSF	Load, Kip	Lever, ft	Moment, Ft Lbs
Side Wall		38.5 x 9.4	361.9	25.2	9.1	4.7	44.6
Roof Suction	1	39.5 x 8.5	335.8	-23.2	-7.8	-16.5	128.7
Roof Suction	2	39.5 x 8.5	335.8	-18.3	-6.1	-4.0	24.4
		Total overturning					197.7
Resisting moment							
Building					178	8	1425 KIP FT

By inspection, overturning resistance has a factor of safety of over 7 to 1 – Building is stable in wind

ANALYSIS FOR SEISMIC:

SHORT TERM DESIGN FACTOR S_{DS} = 2/3 S_M = 2/3 X 240 =160 % G USE

LONG TERM DESIGN FACTOR S_{DL} = 2/3 SL = 2/3 X 90 = 60 % G

OVERTURNING DUE TO SEISMIC (A-C) B= 38.5' L=16' H= 9.4'

Analysis in A-C direction

	Weight	Factor	Factored Weight	Lever		Moment
Roof	32.1	160 %	51.4	9.4		483.2
Walls	98.4	160 %	156.9	4.7		768.8
Floor	47.8	160 %	76.5	+0.3	0	-22.9
Total Seismic			284.8 Kip horizontal			1229.1 Kip-ft Moment
Resisting Moment			178	8		1424.Kip Ft S.

Analysis for stability due to overturning = .7(E) = .7 x 1229 = 860.3 < 1424

Therefore Assembled Building is stable due to Seismic overturning

Analysis of Building due to sliding = ..7 (E) = .7 x 284.8 = 199.4 kip > 178

Building will slide requires anchoring

MANUFACTURING METHOD:

1. All wall and roof panels are cast on steel plate casting bed.
2. Wall panels are cured for 1 day, lifted from casting bed and brought to a vertical position. Strong backs support panels with openings or irregular shapes.
3. Wall sections are arranged to match the design of the building module. Steel clips are tack welded for stability.
4. Building panels are trued and clips are completely welded.
5. Roof Panels are placed and welded.
6. Units of multiple unit buildings are assembled in final position to assure fit.
7. Floor concrete is placed after plumbing in the floor slab has been placed.
8. Interior and exterior walls receive finish coats
9. Mechanical, electrical and plumbing crafts are completed.
10. Final punchout is made and items are corrected.

STRUCTURAL DESIGN:

A. Walls
B. Floor
C. Roof

Concrete members are designed in flexure using a HP48GX handheld calculator with a structural design card.
Load Combinations per ASCE 10-15 2.3.2 4) 5) or 6)
A. Walls Design Load - Wind 25.2 PSF on Col. 1 or 5
. Seismic 50 x 1.4 x 1.6 = 112 PFS
Concrete strength fc = 5 ksi
Reinforcing steel fs = 60 ksi
Analyze the inplace condition, minimum dimension
Panel (exterior wall) vertical dimension = 9'-4"
Basic combinations 4) 1.0 D + 1.0 W + .5 E There is no Dead Load in bending on a vertical wall
Wu = 1.0 x 25.2 + .5 x 112
Wu = 81.2 PFS

Mu = w(l^2)/8
Mu = 0.082 x (9.3^2)/8
= 0.89 k-ft.
d = 1.75 depth to reinforcing steel w = 12" (design of a 12" width of wall)
Reinforcement analysis from HP48GX

As, min = 0.074 Sq in per ft.
As, max = 0.528 Sq in per ft.
Computed As, = 0.118 Sq in per ft.. minimum As = 0.074
use No 4 bars at 12" each way provided As = 0.20 Sq in/ft

Remaining wall panels have smaller spans and will use the same reinforcing steel. Panels with doors are braced with cross panels and door headers are not designed. Wind pressure design for rollup door or window .7 x 25.2= 17.6. *Obtain roll up door with 30 psf Wind Load design.*

B. Floor Design Load - Live Load 125 PSF Storage
Dead Load 50 PSF 4" slab Restroom
Seismic Load 50 x 1.6 = 80 PFS

2) 1.2 D + 1.6L
Wu= 1.2 x 50 + 1.6 X 125= 60 + 200 = 260 PSF USE
4) 1.2D +L
Wu = 1.2 X 50 + 125 = 60 + 125 = 185 PSF
= 185 PFS
5) 1.2D + E
Wu = 1.2 X 50 + 80= 50 + 80 = 130 PSF
Concrete strength fc = 5 ksi
Reinforcing steel fs = 60 ksi
Analyze the inplace condition, minimum dimension
l = max dimension 10'-0"" Module A
Module A
Mu = w(l^2)/8
Mu = (..260) X (10.0^2)/12
= 2.16 k-ft
d = 1.75 depth to reinforcing steel w = 12" (design of a 12" width of floor)
Reinforcement analysis from HP48GX Floor thickness 4" d=1.75"
As = 0.3 Sq. im. Per foot Use #4 at 8" each way.

L = max dim 7'9" Module B, C and D
As, min = 0.074 Sq in per ft.
As, min = 0.528 Sq in per ft.
Mu = (.260) x 7.75^2 = 1.95
Computed As, = 0.273 Sq in per ft. use # 4 @ 8" (.30 sq in / ft

C. Inspection of preliminary architectural of Module A shows a support for the roof is required near Col B
Analyze a steel beam to place at Col. B to support roof panels in Module A

Load Wu = 160 PSF Beam supports 4' of roof panel from each side
Therefore w for design of beam w=8x.160 = 1.28 klf assume beam will weigh 20 plf (seismic factor 1.6) add 32plf .032. WuSteel beam = 1.28+.032=1.312
Beam length = 11'4"
Mu = w*l^2/8
= .1.312 x (11.33.^2)/8
Mu = 21 kip feet for a stress of 30 ksi a beam with a section modulus (S) of 18.4.5 in^3 is required

Try W8X13 S= 9.9 f= 21x12/9.9 = 25.5 ksi Deflection = .43" l/delta = 11.33x12/.43 = 316 R= 7.5 kip each ebd
Provide 8" wide x 4 " bump outs to support beams
Concrete Roof panel design:

Roof Design Load - Wind perpendicular to gable -25.4 PSF suction
Dead load 50 PSF
Roof Live Load 20 PSF
Snow Load 5 PSF
Seismic (E) 1.6 S = 80 PFS

Concrete strength fc = 5 ksi
Reinforcing steel fs = 60 ksi
Basic Combination 3) 1.2 D + 1.6 L +.5 Roof s
= 1.2 x 50 + 1.6 x 50 +.5 X 20 = 60 + 80 + 10
Wu = 150 PFS
5) 1.2 D + E + L +
= 1.2 * 50 + 80 +20 =
Wu = 160 PFS USE

Rood Panels Modules B, C, and D meet over the fixture wall. L= 8' max

Analyze the inplace condition, minimum dimension
Horizontal length 8'A
Mu = w(l^2)/8
Mu = .160(8^2)/8
= 1.20 k-ft
d = 1.75 depth to reinforcing steel
Reinforcement analysis from HP48GX
As, min = 0.074 Sq in per ft.
As, min = 0.528 Sq in per ft.
Computed As, = 0..161 Sq in per ft. use No 4 bars at 12" each wayt
Computed As = .191 sq. in. per foot As min = 0.

CONCREETE CONNECTIONS Wall to Wall Connections:

The wall connections are the plates cast into the walls or roof to provide structural integrity for the buildings. The critical loading for these connections is the seismic load. The lateral load due to seismic for the assembled building is 130 kips (see seismic calculation). The 3/8" plates cast into the walls are 2 ½" by 10" and 1 ½" x 7" so that the connection can be made by a fillet weld. There are 3 sets of plates for each cross wall. Assume that the

seismic load is resisted by five walls (15 sets of plates plates).

Seismic Design load ~ 130 kips horizontal.

Shear per connection ~ 130 kip / 15 = 8.7 kips each

Weld length ~ 2 x 7= 14"

Shear per inch ~ 8.7 / 14 = 0.62 kip per inch. A 3/16" fillet weld in ASTM A36 material has an allowable stress of 1.35 kips / inch. Total resisting load 14 x 1.35 = 18.9 kips.
Use a 3/16" weld each side.

Tensile load. The force on the connection is also 8.7 kips. The 3/16" filled weld is adequate in both shear and tension.

Conclusion: The connection capacity is greater than the seismic load.
The plates are secured to the concrete panels with Nelson Studs ½" x 3". The area of a stud is .2 sq. in. with the tensile strength of the studs is 80 ksi or 16 kips. With two studs on each plate, a capacity of 32 kips is available to resist the forces on the plate. The force is 8.7 kips which is less than the available strength. The studs are adequate for the design in tension and shear.
The studs are ½" x 3" giving a 1 1/2 sq. in. of concrete in bearing. The concrete strength is a minimum of 5,000 psi. Two studs will resist 15 kip which is greater than the load.

WALL TO SLAB CONNECTION:

Maximum Moment –due to seismic 835 Kip-FT

Distance from Edge to center of panel on far wall 15'-10"'. There are a minimum of 3 B-12 Bolts for anchor in each wall.

Analyze panel for twelve B-12 Coil Bolts T = 835/(4)x(3)x(15.83) =.4.5 Kip

Capacity of ¾" B-12 Coil Rod Bolt in Tension = 18 kip

18 kip is greater than 4.5 kip Use B-12 Coli Rod Bolts Manufactured by Dayton Superior (Attached cut sheet)

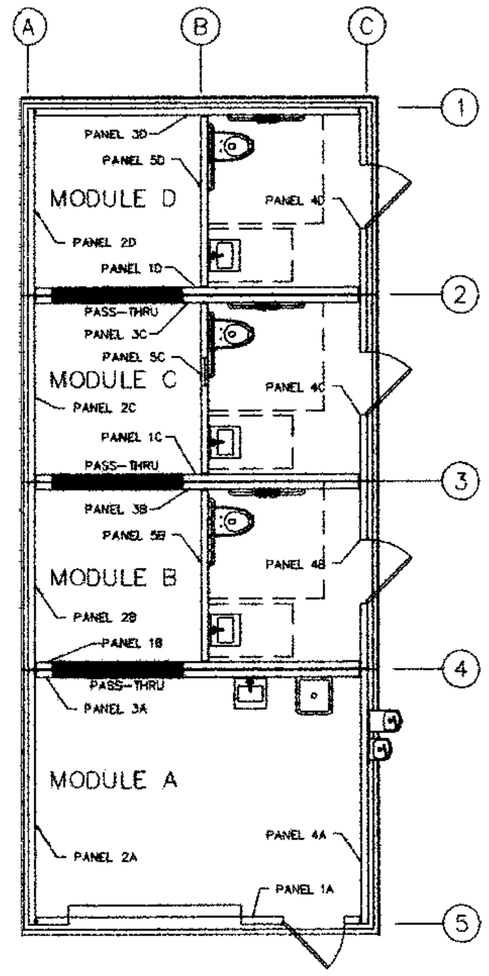
WALL TO ROOF CONNECTION:

The factored load of the roof is 53 kips. There are a minimum of 4 connections plates on each of the four module walls in the 1-5 direction making a total of 32 plates. The load per plate is 53/32 = 1.6 kip per plate. The weld length is per plate 8" long. Thus the stress is 1.6 kips / 16 just over 100 lbs. per inch with an allowable of 1.35 kip per inch

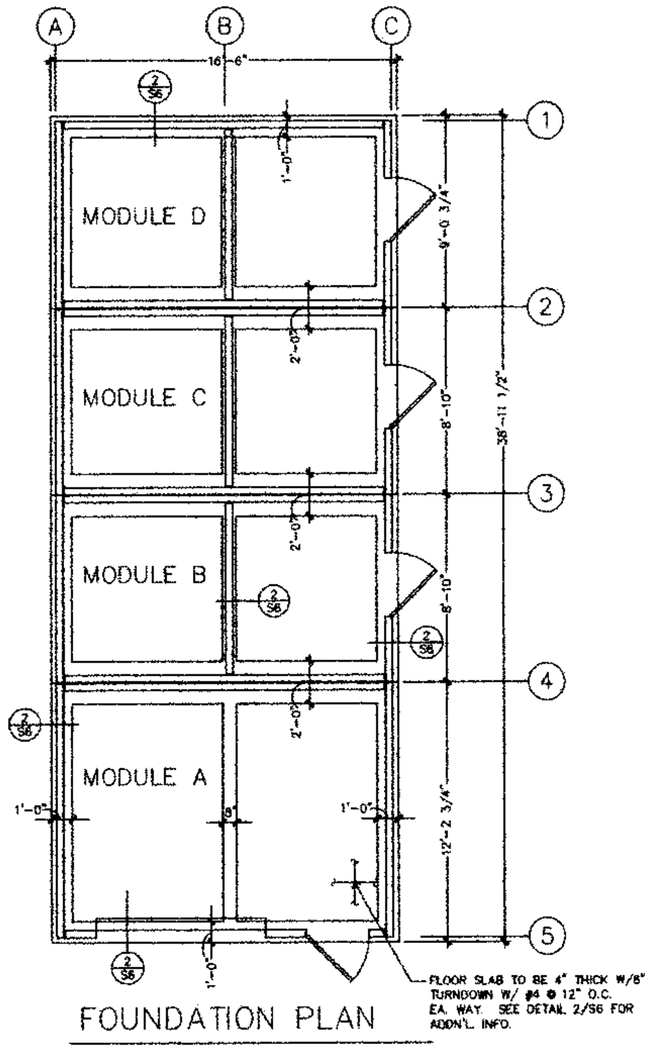
Thus the connection is safely designed.

Nelson studs have been analyzed in a previous calculation.

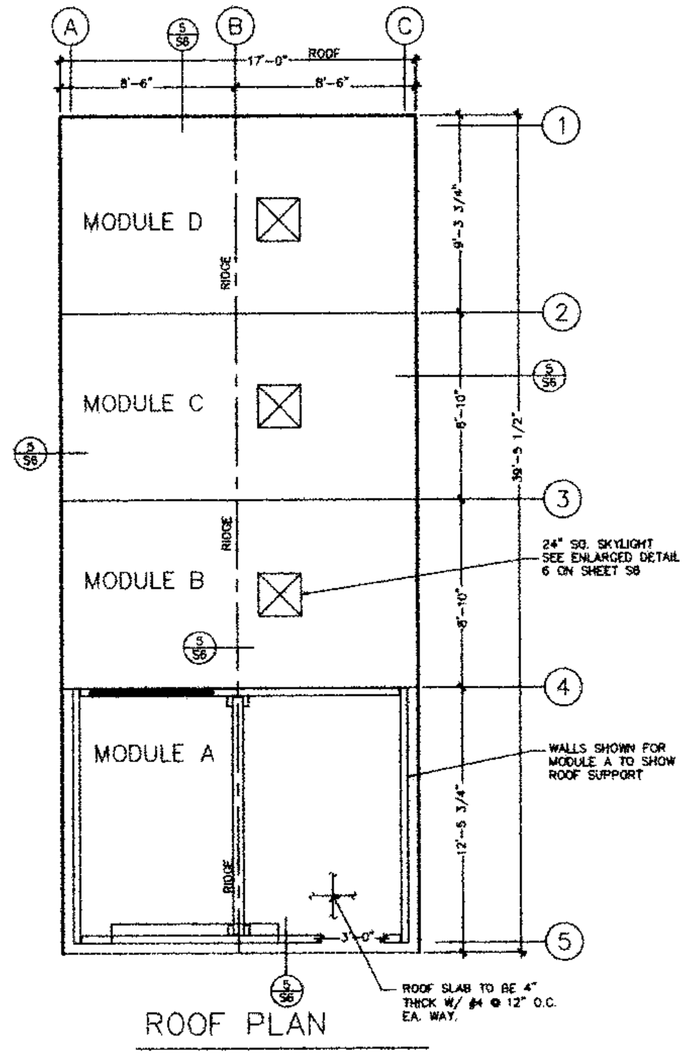
ATTACHMENTS:
Sheet 7 and 8 of 8
Dayton Superior data sheet for F64 Ferrule Loop Insert
Dayton Superior data sheet for B12 Coil Rod



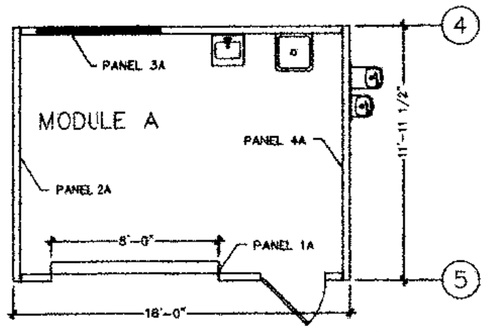
PANEL REFERENCE PLAN



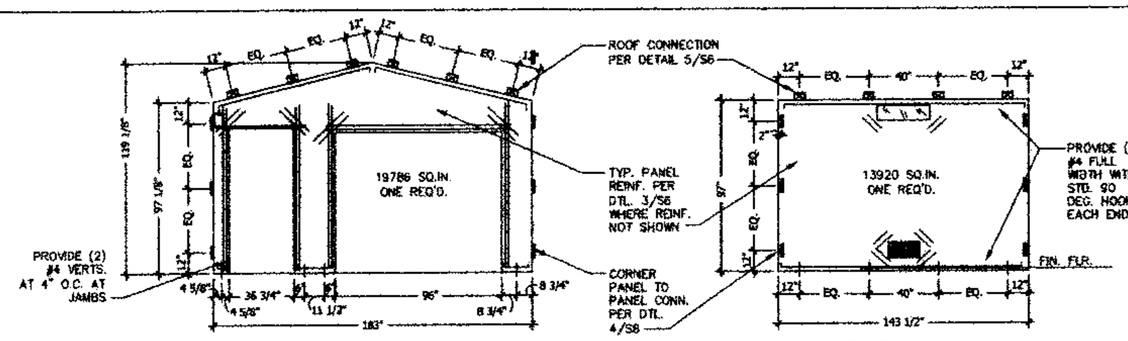
FOUNDATION PLAN



ROOF PLAN



FLOOR PLAN MODULE A

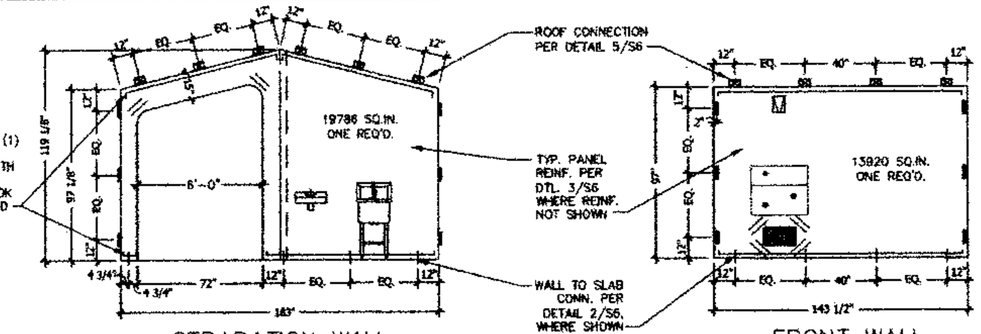


SIDE WALL

PANEL 1A
VIEW FROM INSIDE

BACK WALL

PANEL 2A
VIEW FROM INSIDE

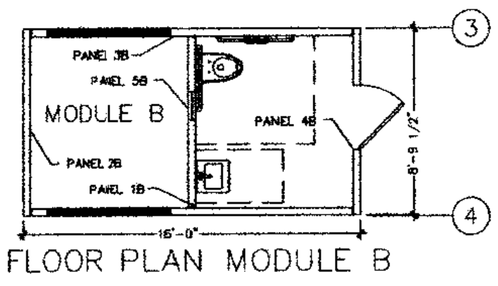


SEPARATION WALL

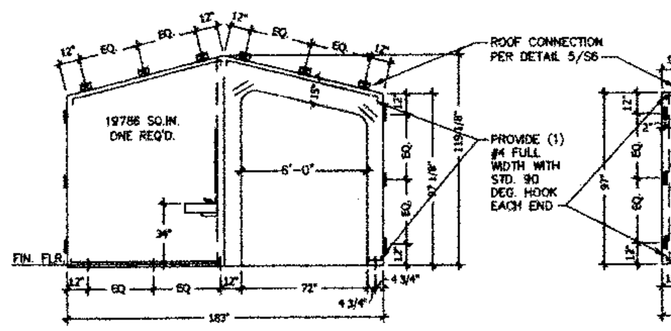
PANEL 3A
VIEW FROM INSIDE

FRONT WALL

PANEL 4A
VIEW FROM INSIDE



FLOOR PLAN MODULE B

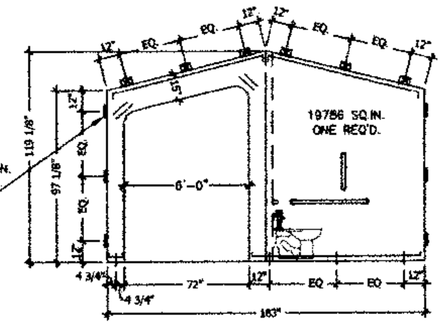


SEPARATION WALL

PANELS 1B
VIEW FROM INSIDE

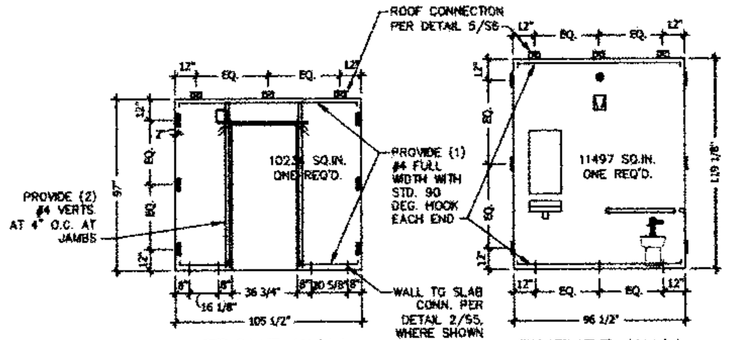
BACK WALL

PANEL 2B
VIEW FROM INSIDE



SEPARATION WALL

PANELS 3B
VIEW FROM INSIDE



FRONT WALL

PANEL 4B
VIEW FROM INSIDE

FIXTURE WALL

PANEL 5B
VIEW FROM INSIDE

TYPICAL PANEL ELEVATION NOTES :

1. PANELS ARE VIEWED FROM THE INTERIOR FACE.
2. SEE DETAIL 3/S6 FOR TYPICAL PANEL INFORMATION AND REINFORCEMENT. SPECIAL REINF. CALLED OUT ON PANEL ELEVATION SUPERCEDES REINF. CALLED OUT IN TYPICAL DETAIL.
3. ALL PANELS ARE 4" THICK WITH NO REVEALS UNLESS NOTED OTHERWISE.
4. ALL PANEL REINF. AND CONNECTIONS CALLED OUT ARE FOR FINAL IN-PLACE CONDITION. ADDITIONAL REINF. AND CONNECTIONS REQUIRED FOR ERECTION AND TRANSPORTATION ARE NOT PART OF THESE DRAWINGS AND ARE PERFORMED BY OTHERS.
5. SEE DETAIL 2/S6 FOR CONNECTION AT BASE OF WALL.

WALLIS CONCRETE, LLC.
646 WALLIS CONCRETE ROAD * P.O. BOX 789
WALLIS, TEXAS 77485
PH (800) 852-7880
FAX (979) 478-6753

NO.	DATE	REVISIONS DESCRIPTION

DESIGNED	RCF
DRAWN	RCF
CHECKED	RCF
DATE	09/03/20
SCALE	
PROJECT	CONEJO
FILE NAME	COMMUNITYPARK

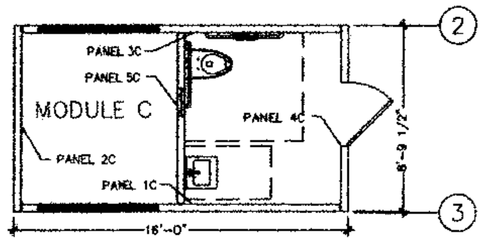
CONEJO COMMUNITY PARK RESTROOM BUILDING
THOUSAND OAKS, CALIFORNIA

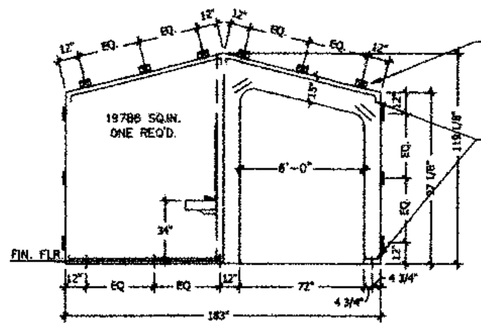
MODEL NO. 3S-CW-4L-RC-GR-ADA, W/STORAGE ROOM

SERIAL NO. 20240005 A, B, C & D

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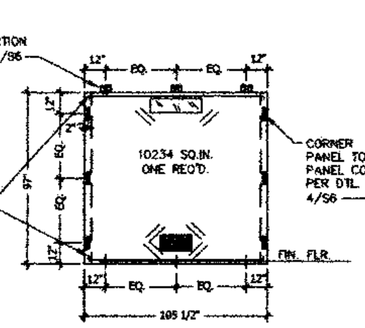
SHEET S7 OF 8





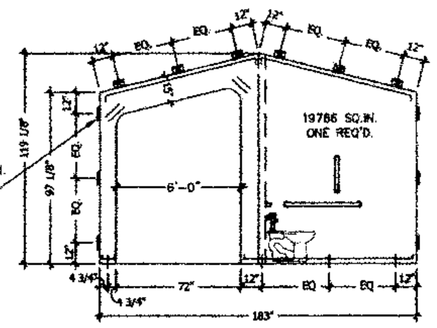
SEPARATION WALL

PANELS 1C
VIEW FROM INSIDE



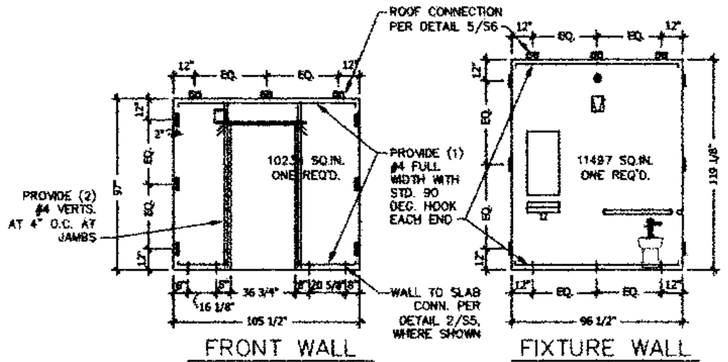
BACK WALL

PANEL 2C
VIEW FROM INSIDE



SEPARATION WALL

PANELS 3C
VIEW FROM INSIDE

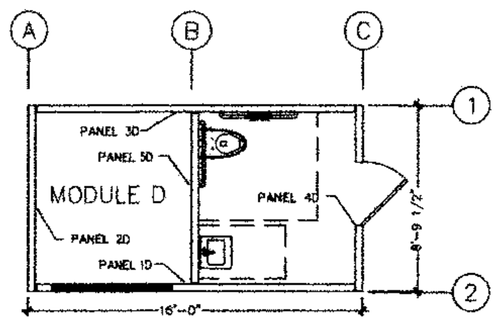


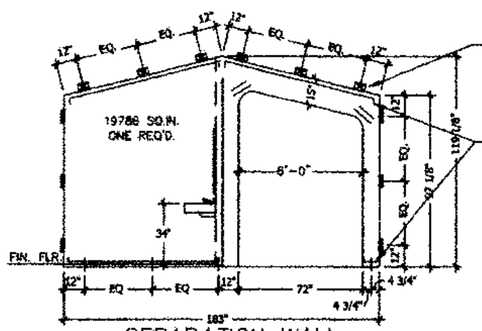
FRONT WALL

PANEL 4C
VIEW FROM INSIDE

FIXTURE WALL

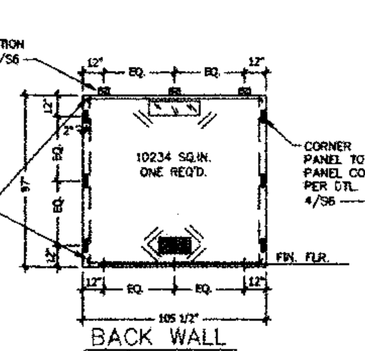
PANEL 5C
VIEW FROM INSIDE





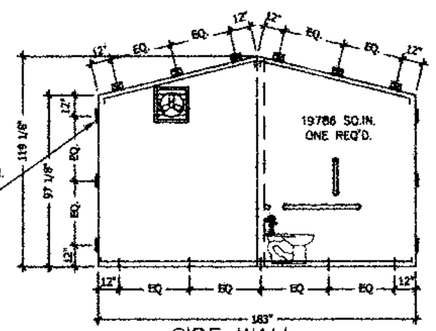
SEPARATION WALL

PANELS 1D
VIEW FROM INSIDE



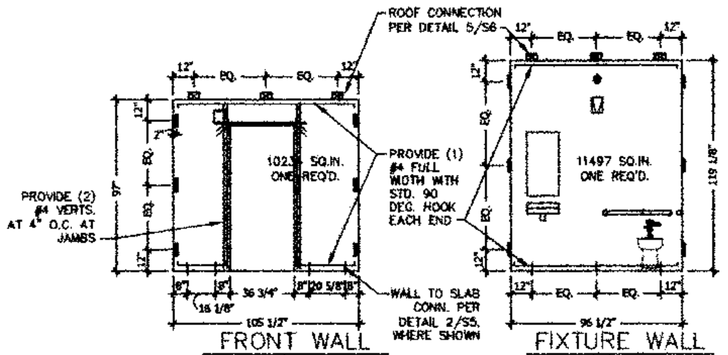
BACK WALL

PANEL 2D
VIEW FROM INSIDE



SIDE WALL

PANELS 3D
VIEW FROM INSIDE



FRONT WALL

PANEL 4D
VIEW FROM INSIDE

FIXTURE WALL

PANEL 5D
VIEW FROM INSIDE

GENERAL JOBSITE NOTES :

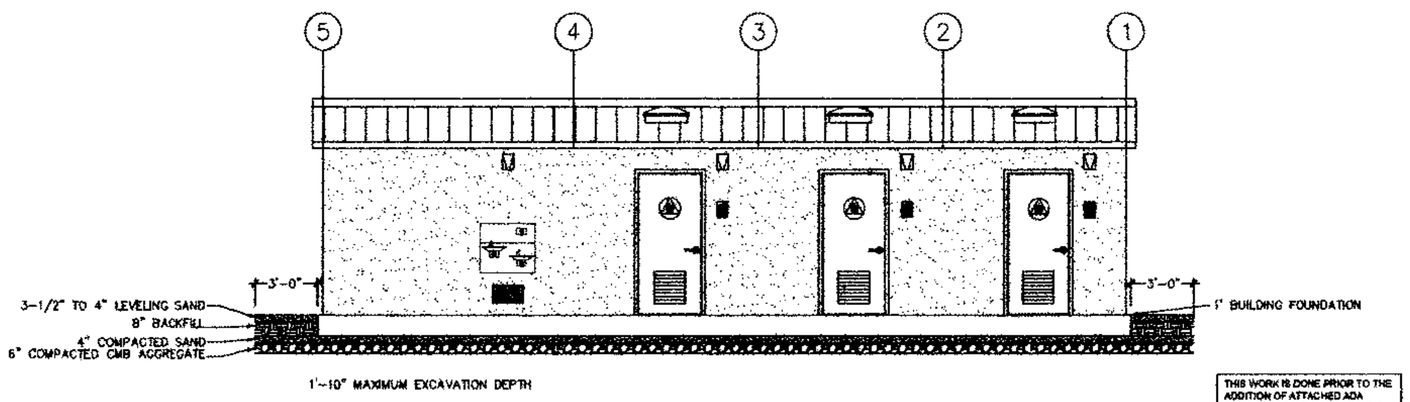
SITE PREPARATION:

1. LAY-OUT EXCAVATION AREA FROM OFF-SETS PROVIDED BY OWNER. (EXCAVATION AREA WILL BE AT LEAST 3'-0" OUTSIDE BUILDING FOUNDATION IN ALL DIRECTIONS.)
2. EXCAVATE UP TO 22" OF SOILS (14" FOR BUILDING FOUNDATION SYSTEM, 6" FOR AGGREGATE BASE AND UP TO 4" FOR LEVELING SAND) DEPENDING ON EXISTING GRADE, AND LOAD, TRANSPORT AND DISPOSE OF UP TO A MAXIMUM OF 45 CUBIC YARDS OF BURDEN MATERIAL TO AN APPROVED DISPOSAL SITE.
3.
4. INSTALL AND COMPACT 6" CMB AGGREGATE BASE MATERIAL.

   INSTALL AND COMPACT UP TO 4" OF LEVELING SAND.

BUILDING PLACEMENT:

1. BUILDING TO BE OFF-LOADED AND PLACED ON PREPARED SITE. SEE DETAIL THIS SHEET.
2. CONNECT SEWER OUTFLOW TO EXISTING SEWER MAIN UP TO 5'-0" FROM OUTFLOW LOCATION.
3. CONNECT WATER INLET TO EXISTING WATER MAIN UP TO 5'-0" FROM INLET LOCATION.
4. CONNECT WIRING TO OWNERS POWER SUPPLY AND TEST.
5. BACKFILL AND COMPACT UP TO 8" OF EXCAVATED MATERIALS AROUND BUILDING.
6. CLEAN BUILDING AND TOUCH UP PAINT TO MATCH IF NEEDED.



BUILDING PLACEMENT

WALLIS CONCRETE, LLC.
646 WALLIS CONCRETE ROAD * P.O. BOX 789
WALLIS, TEXAS 77485
PH (800) 852-7880
FAX (979) 478-6753

REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED	RCF
DRAWN	RCF
CHECKED	RCF
DATE	09/03/20
SCALE	
PROJECT	CONEJO
FILE NAME	COMMUNITYPARK

CONEJO COMMUNITY PARK RESTROOM BUILDING
THOUSAND OAKS, CALIFORNIA

MODEL NO. 3S-CW-4L-RC-GR-ADA, W/STORAGE ROOM

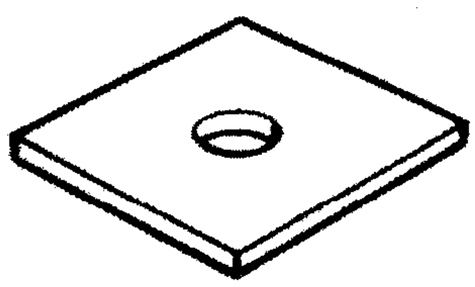
SERIAL NO. 20240005 A, B, C & D

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DAYTON® SUPERIOR

B-11 Flat Washers

Dayton Superior B-11 Flat Washers are made from flat steel plate and are available in the sizes shown in the accompanying chart. For best results the space spanned by the washer should not exceed the bolt diameter plus 1/4".



B-11 Flat Washer

To Order:
Specify: (1) quantity, (2) name, (3) bolt diameter.

Example:
1,200 pcs. B-11 Standard, 1/2" bolt.

B-11 Flat Washer Selection Chart

Bolt Diameter	Type	Safe Working Load (lbs.)	Size
1/2"	Standard	6,750	3" x 4" x 1/4"
1/2"	Heavy	8,750	4" x 5" x 1/4"
3/4"	Standard	14,000	4" x 5" x 3/8"
3/4"	Heavy	14,000	5" x 5" x 3/8"
1"	Standard	18,500	5" x 5" x 1/2"
1"	Heavy	38,000	7" x 7" x 3/4"
1 1/4"	Standard	22,750	5" x 5" x 5/8"
1 1/4"	Heavy	50,750	7" x 7" x 3/4"
1 1/2"	Standard	26,250	5" x 5" x 3/4"
1 1/2"	Heavy	41,500	7" x 7" x 3/4"

SWL provides a factor of safety of approximately 2 to 1.

B-12 Coil Rod

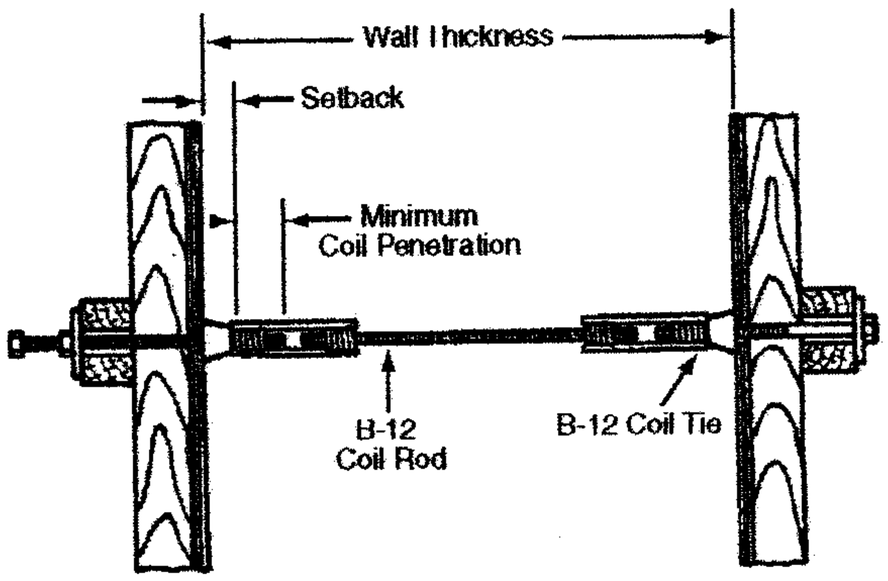
Dayton Superior B-12 Coil Rod is available in 1/2" to



B-12 Coil Rod

1-1/2" diameters in 12' lengths. Field cutting can be accomplished with bolt cutters or carborundum blades.

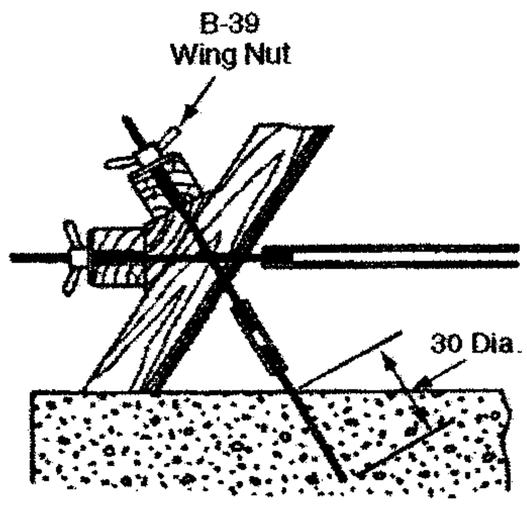
B-12 threaded rod can be used with Coil Ties in many forming combinations to tie formwork, for adjustable ties, for concrete embedments and/or emergency ties.



B-12 Coil Rod Selection Chart

Coil Rod Diameter	Safe Working Loads		Minimum Root Area (sq. in.)	Tensile Stress (psi.)	Yield Stress (psi.)	Minimum Coil Penetration
	Tension (lbs.)	Shear (lbs.)				
1/2"	9,000	6,000	.1385	130,000	110,000	2"
5/8"	12,000	8,000	.2124	113,000	96,000	2-1/4"
3/4"	18,000	12,000	.3079	117,000	100,000	2-1/4"
7/8"	24,000	16,000	.4477	117,000	100,000	2-1/2"
1"	38,000	25,300	.5410	140,000	120,000	2-1/2"
1-1/8"	45,000	30,000	.7163	126,600	105,000	2-1/2"
1-1/4"	56,000	37,500	.9161	123,000	105,000	2-1/2"
1-1/2"	68,000	45,300	1.3892	98,000	85,000	3"

SWL provides a factor of safety of approximately 2 to 1.
Warning: See Page 7 before using B-12 Coil Rod.



To Order:
Specify: (1) quantity, (2) name, (3) diameter, (4) length.

Example:
500 pcs. B-12 Coil Rod, 1" diameter x 12'-0" long.

F64 Ferrule Loop Insert

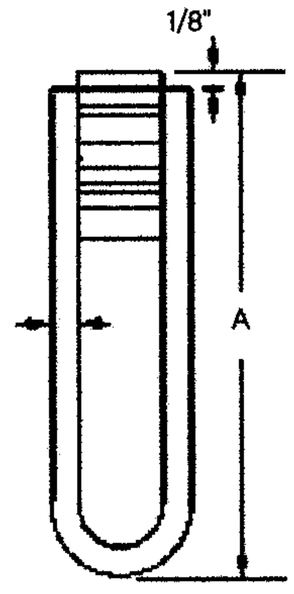
The Dayton Superior F64 Ferrule Loop Insert is manufactured by welding a wire loop to a steel ferrule which has been machined from bar stock. One end of the ferrule is closed, while the other end is drilled and tapped to accept an NC threaded bolt.

Typically, this insert is used to attach a precast wall panel to a building frame, as well as provide attachment of other structural elements that may be required.

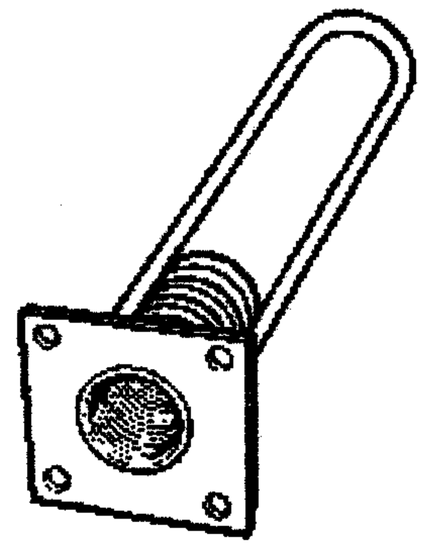
Mounting Washer Option for all Ferrule Type Inserts

All ferrule type inserts are available with a 16 gauge x 2" x 2" mounting washer as an option. The mounting washer allows you to nail a ferrule type insert to the form.

To keep concrete from entering the threaded portion of an insert with mounting washer, cover the open face of the washer with duct tape.



F64 Ferrule Loop Insert



Insert with Optional Mounting Washer.

F64 Ferrule Loop Insert Selection Table

Bolt Diameter and Threads per Inch	Insert Height (A)	Minimum Edge Distance	Minimum Corner Distance	Safe Working Load Tension	Safe Working Load Shear	B	Maximum Bolt Engagement
1/2" — 13 NC	4-1/8"	5"	10"	3,000 lbs.	1,810 lbs.	0.223"	1"
		9"	15"	3,000 lbs.	3,000 lbs.		
1/2" — 13 NC	6-1/8"	7"	12"	5,000 lbs.	3,410 lbs.	0.306"	1"
		9"	12"	5,000 lbs.	3,410 lbs.		
5/8" — 11 NC	4-1/8"	5"	10"	3,000 lbs.	1,810 lbs.	0.223"	1-1/8"
		9"	12"	3,000 lbs.	3,000 lbs.		
5/8" — 11 NC	6-1/8"	7"	12"	5,000 lbs.	3,420 lbs.	0.306"	1-1/8"
		11"	15"	5,000 lbs.	5,000 lbs.		
3/4" — 10 NC	4-1/8"	5"	10"	3,000 lbs.	1,810 lbs.	0.223"	1-1/8"
		9"	12"	3,000 lbs.	3,000 lbs.		
3/4" — 10 NC	6-1/8"	7"	12"	5,000 lbs.	3,420 lbs.	0.306"	1-1/8"
		11"	15"	5,000 lbs.	5,000 lbs.		
7/8" — 9 NC	6-1/8"	7"	12"	5,000 lbs.	3,420 lbs.	0.306"	1-1/8"
		11"	15"	5,000 lbs.	5,000 lbs.		
1" — 8 NC	6-1/8"	7"	12"	5,000 lbs.	3,420 lbs.	0.306"	1-1/8"
		11"	12"	5,000 lbs.	4,650 lbs.		
1" — 8 NC	8-1/8"	7"	12"	5,000 lbs.	3,830 lbs.	0.306"	1-1/8"
		11"	15"	5,000 lbs.	5,000 lbs.		

Safe Working Load provides a factor of safety of approximately 3 to 1 in 3,000 psi normal weight concrete.
Safe Working Loads are based on 1/2" setback from the face of the concrete.
Minimum spacing between inserts is twice the minimum corner distance.

To Order:

Specify: (1) quantity, (2) name, (3) bolt diameter, (4) insert length, (5) finish.

Example:

200, F64 Ferrule Loop Insert, 5/8" bolt diameter, 6-1/8" insert length, plain finish.

Indoor Lighting

CERTIFICATE OF COMPLIANCE	**NRCC-LTI-E**

This document is used to demonstrate compliance with requirements in 110.9, 110.12(c), 130.0, 130.1, 140.6 and 141.0(b)2 for indoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e) and 180.2(b)4 for indoor lighting scopes using the prescriptive path for multifamily occupancies. Multifamily includes dormitory and senior living facilities.

Project Name:	Conejo Community Park Restroom Building	**Report Page:**	**(Page 1 of 7)**
Project Address:	1175 Hendrix Avenue	**Date Prepared:**	4/29/2024

A. GENERAL INFORMATION

01	Project Location (city)	Thousand Oaks	04	Total Conditioned Floor Area (ft^2)	0
02	Climate Zone	9	05	Total Unconditioned Floor Area (ft^2)	643
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	1

● Support Areas

B. PROJECT SCOPE

This table includes any lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.6 / 170.2(e) or 141.0(b)2 / 180.2(b)4 for alterations.

Scope of Work	**Conditioned Spaces**		**Unconditioned Spaces**	
01	02	03	04	05
My Project Consists of (check all that apply):	Calculation Method	Area (ft^2)	Calculation Method	Area (ft^2)
☒ New Lighting System	Area Category Method	0	Area Category Method	643
☐ New Lighting System - Parking Garage				
Total Area of Work (ft^2)	0		643	

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
Project Name: Conejo Community Park Restroom Building	**Report Page:**	**(Page 2 of 7)**
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C. COMPLIANCE RESULTS

If any cell on this table says "DOES NOT COMPLY" or "COMPLIES with Exceptional Conditions" refer to Table D. for guidance.

Lighting in conditioned and unconditioned spaces must not be combined for compliance per 140.6(b)1 / 170.2(e)	**Allowed Lighting Power per 140.6(b) / 170.2(e) (Watts)**							**Adjusted Lighting Power per 140.6(a) / 170.2(e) (Watts)**					**Compliance Results**
	01	02	03	04		05		06	07		08		09
	Complete Building 140.6(c)1	Area Category 140.6(c)2 / 170.2(e)4	Area Category Additional 140.6(c)2G / 170.2(e)4Av (+)	Tailored 140.6(c)3 / 170.2(e)4B (+)	=	**Total Allowed** (Watts)	≥	Total Designed (Watts)	Adjustments PAF Lighting Control Credits 140.6(a)2 / 170.2(e)1B (-)	=	**Total Adjusted** (Watts) *Includes Adjustments		**05 must be >= 08 140.6 / 170.2(e)**
	(See Table I)	(See Table I)	(See Table J)	(See Table K)				(See Table F)	(See Table P)				
Conditioned					=		≥			=			
Unconditioned		311.2	0		=	311	≥	199	0	=	199		COMPLIES
Controls Compliance (See Table H for Details)													COMPLIES
Rated Power Reduction Compliance (See Table Q for Details)													

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
Project Name: Conejo Community Park Restroom Building	**Report Page:**	**(Page 3 of 7)**
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F. INDOOR LIGHTING FIXTURE SCHEDULE

This table includes all planned permanent and portable lighting other than dwelling unit/ hotel/ motel room lighting. Multifamily dwelling unit and hotel/motel room lighting is documented in Table T. If using Table T to document lighting in multifamily common use areas providing shared provisions for living, eating, cooking or sanitation, those luminaires are not included here.

Designed Wattage: Unconditioned Spaces

01	02	03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description	Modular (Track) Fixture	Small Aperture & Color Change[1]	Watts per luminaire[2]	How is Wattage determined	Total Number of Luminaires	Excluded per 140.6(a)3 / 170.2(e)2C	Design Watts	Field Inspector	
									Pass	Fail
E5	Dedicated LED 29.7 Max Input Watts	No	NA	29.7	Mfr. Spec	3	No	89.1	☐	☐
E7	Dedicated LED 22 Input Watts	No	NA	22	Mfr. Spec	5	No	110	☐	☐
							Total Designed Watts: UNCONDITIONED SPACES	199		

[1]FOOTNOTE: Design Watts for small aperture and color changing luminaires which qualify per 140.6(a)4B / 170.2(e)2D is adjusted to be 75% /80% of their rated wattage. Table F automatically makes this adjustment, the permit applicant should enter full rated wattage in column 05.

[2]Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b). Wattage used must be the maximum rated for the luminaire, not the lamp.

G. MODULAR LIGHTING SYSTEMS

This section does not apply to this project.

H. INDOOR LIGHTING CONTROLS (Not including PAFs)

This table includes lighting controls for conditioned and unconditioned spaces.

Building Level Controls

01	02	03	
Mandatory Demand Response 110.12(c)	Shut-off controls 130.1(c) / 160.5(b)4C	Field Inspector	
		Pass	Fail
NA < 4,000W subject to multilevel	See Area/Space Level Controls	☐	☐

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
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H. INDOOR LIGHTING CONTROLS (Not including PAFs)

Area Level Controls

04	05	06	07	08	09	10	11	12	
Area Description	Complete Building or Area Category Primary Function Area	Manual Area Controls 130.1(a) / 160.5(b)4A	Multi-Level Controls 130.1(b) / 160.5(b)4B	Shut-Off Controls 130.1(c) // 160.5(b)4C	Primary/Skylit Daylighting 130.1(d) / 160.5(b)4D	Secondary Daylighting 130.1(d) / 160.5(b)4D	Interlocked Systems 140.6(a)1/ 170.2(e)2A	Field Inspector	
								Pass	Fail
E5 Fixtures	Restroom	Auth. Personnel	NA: Enclosed area <100SF	Occupancy Sensor	NA: Rm < 24sf Glazing	NA: Rm < 24sf Glazing	No	☐	☐
E7 Fixtures	Electrical Mechancial Telephone Room	Readily Accessible	NA: General Ltg <= 0.5W/SF	Occupancy Sensor	NA: Rm < 24sf Glazing	NA: Rm < 24sf Glazing	No	☐	☐

13
Plan Sheet Showing Daylit Zones:
Lighting Plan

I. LIGHTING POWER ALLOWANCE: COMPLETE BUILDING OR AREA CATEGORY METHODS

Each area complying using the Complete Building or Area Category Methods per 140.6(b) are included in this table. Column 06 indicates if additional lighting power allowances per 140.6(c) or adjustments per 140.6(a) are being used .

Unconditioned Spaces

01	02	03	04	05	06	
Area Description	Complete Building or Area Category Primary Function Area	Allowed Density (W/ft^2)	Area (ft^2)	Allowed Wattage (Watts)	Additional Allowance / Adjustment	
					Area Category	PAF
Restrooms	Restroom	0.65	216	140.4	No	No
Modules	Electrical Mechancial Telephone Room	0.4	427	170.8	No	No
		TOTALS:	643	311.2	See Tables J, or P for detail	

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
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J. ADDITIONAL ALLOWANCE: AREA CATEGORY METHOD QUALIFYING LIGHTING SYSTEM

This section does not apply to this project.

K. TAILORED METHOD GENERAL LIGHTING POWER ALLOWANCE

This section does not apply to this project.

L. ADDITIONAL LIGHTING ALLOWANCE: TAILORED WALL DISPLAY

This section does not apply to this project.

M. ADDITIONAL LIGHTING ALLOWANCE: TAILORED FLOOR AND TASK LIGHTING

This section does not apply to this project.

N. ADDITIONAL LIGHTING ALLOWANCE: TAILORED DECORATIVE /SPECIAL EFFECTS

This section does not apply to this project.

O. ADDITIONAL LIGHTING ALLOWANCE: TAILORED VERY VALUABLE MERCHANDISE

This section does not apply to this project.

P. POWER ADJUSTMENT: LIGHTING CONTROL CREDIT (POWER ADJUSTMENT FACTOR (PAF))

This section does not apply to this project.

Q. RATED POWER REDUCTION COMPLIANCE FOR ONE-FOR-ONE ALTERATIONS

This section does not apply to this project.

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
Project Name: Conejo Community Park Restroom Building	**Report Page:**	**(Page 6 of 7)**
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R. 80% LIGHTING POWER FOR ALL ALTERATIONS - CONTROLS EXCEPTIONS

This section does not apply to this project.

S. DAYLIGHT DESIGN POWER ADJUSTMENT FACTOR (PAF)

This section does not apply to this project.

T. DWELLING UNIT LIGHTING

This section does not apply to this project.

U. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selections have been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTI-E - Must be submitted for all buildings

V. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selections have been changed by the permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and any with "-A" in the form name must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTI-02-A - Must be submitted for occupancy sensors and automatic time switch controls.	E5 Fixtures; E7 Fixtures;

CERTIFICATE OF COMPLIANCE			NRCC-LTI-E
Project Name:	Conejo Community Park Restroom Building	**Report Page:**	(Page 7 of 7)
Project Address:	1175 Hendrix Avenue	**Date Prepared:**	4/29/2024

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Steve K. Means, CEA	Documentation Author Signature: Steve K. Means
Company: EasyTitle24	Signature Date:
Address: 654 Oakland Avenue	CEA/ HERS Certification Identification (if applicable): NR19-90-30004
City/State/Zip: Oakland CA 94611	Phone: customer.service@easytitle24.com

CABEC
California Association of Building Energy Consultants
CERTIFIED ENERGY ANALYST
Steve K. Means
R22-90-40018 & NR19-90-30004

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Robert C. Fischer	Responsible Designer Signature: Robert C Fischer
Company: Wallis Concrete, LLC	Date Signed: 2024-04-29
Address: 646 Wallis Concrete Rd. P.O. Box 789	License: MF 1197624
City/State/Zip: Wallis, TX 77485	Phone: 979-478-6734

APPROVED
By TI-RADCO a CA Department of Housing and Community Development approved third party design approval agency
DM920272
APPROVAL DATE May 7,2024
EXPIRATION DATE Aug 30,2025
APPROVAL NO. RAD-16741

Outdoor Lighting

CERTIFICATE OF COMPLIANCE	**NRCC-LTO-E**

This document is used to demonstrate compliance with requirements in 110.9, 130.0, 130.2, 140.7, and 141.0(b)2L for outdoor lighting scopes using the prescriptive path for nonresidential and hotel/motel occupancies. It is also used to document compliance with requirements in 160.5, 170.2(e)6, 180.1(a) and 180.2(b)4Bv for outdoor lighting scopes using the prescriptive path for multifamily and mixed-use occupancies. Multifamily includes dormitory and senior living facilities.

Project Name:	Conejo Community Park Restroom Building	**Report Page:**	**(Page 1 of 8)**
Project Address:	1175 Hendrix Avenue	**Date Prepared:**	4/29/2024

A. GENERAL INFORMATION

01	Project Location (city)	Thousand Oaks	04	Total Illuminated Hardscape Area (ft^2)	333
02	Climate Zone	9			

03 Outdoor Lighting Zone per Title 24 Part 1 10.114 or as designated by Authority Having Jurisdiction (AHJ):

☐	LZ-0: Very Low - Undeveloped Parkland	☐	LZ-2: Moderate - Urban Clusters	☐	LZ-4: High - Must be reviewed by CA Energy Commission for Approval
☐	LZ-1: Low - Rural Areas	☒	LZ-3: Moderately High - Urban Areas		

05 Occupancy Types within Project

- Support Areas

B. PROJECT SCOPE

This table includes outdoor lighting systems that are within the scope of the permit application and are demonstrating compliance using the prescriptive path outlined in 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv for alterations.

My Project Consists of:

01		02		
☒	New Lighting System	Must Comply with Allowances from 140.7 / 170.2(e)6		
☐	Altered Lighting System	Is your alteration increasing the connected lighting load (Watts)?	○ Yes	○ No

03	04	05
% of Existing Luminaires Being Altered[1]	Sum Total of Luminaires Being Added or Altered	Calculation Method
☐ < 10% ☐ >= 10% and < 50% ☐ >= 50%		

Please proceed to Table F. Outdoor Lighting Fixture Schedule to define the project's luminaires.

[1] FOOTNOTES: % of Existing Luminaires Being Altered = (Sum Total of Luminaires Being Added or Altered / Existing Luminaires within the Scope of the Permit Application) x 100.

CERTIFICATE OF COMPLIANCE		**NRCC-LTO-E**
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C. COMPLIANCE RESULTS

Results in this table are automatically calculated from data input and calculations in Tables F through N. Note: If any cell on this table says "COMPLIES with Exceptional Conditions" refer to Table D. Exceptional Conditions for guidance or see applicable Table referenced below.

Calculations of Total Allowed Lighting Power (Watts) 140.7 / 170.2(e)6 or 141.0(b)2L / 180.2(b)4Bv											**Compliance Results**			
01		02		03		04		05		06		07		08	09
General Hardscape Allowance 140.7(d)1 / 170.2(e)6 (See Table I)	+	Per Application 140.7(d)2 / 170.2(e)6 (See Table J)	+	Sales Frontage 140.7(d)2 (See Table K)	+	Ornamental 140.7(d)2 / 170.2(e)6 (See Table L)	+	Per Specific Area 140.7(d)2 / 170.2(e)6 (See Table M)	OR	Existing Power Allowance 141.0(b)2L / 180.2(b)4Bv (See Table N)	=	**Total Allowed** (Watts)	≥	**Total Actual** (Watts)	**07 must be >= 08**
275	+	76	+	---	+	---	+	---	OR	---	=	351	≥	148	COMPLIES
Shielding Compliance (See Table G for Details)															N/A
Controls Compliance (See Table H for Details)															COMPLIES

D. EXCEPTIONAL CONDITIONS

This table is auto-filled with uneditable comments because of selections made or data entered in tables throughout the form.

E. ADDITIONAL REMARKS

This table includes remarks made by the permit applicant to the Authority Having Jurisdiction.

CERTIFICATE OF COMPLIANCE		**NRCC-LTO-E**
Project Name: Conejo Community Park Restroom Building	**Report Page:**	**(Page 3 of 8)**
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F. OUTDOOR LIGHTING FIXTURE SCHEDULE

For new or altered lighting systems demonstrating compliance with 140.7 / 170.2(e)6 all new luminaires being installed and any existing luminaires remaining or being moved within the spaces covered by the permit application are included in the Table below. For altered lighting systems using the Existing Power method per 141.0(b)2L only new luminaires being installed and replacement luminaires being installed as part of the project scope are included (ie, existing luminaires remaining or existing luminaires being moved are not included). Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

Designed Wattage:

01	02		03	04	05	06	07	08	09	10	
Name or Item Tag	Complete Luminaire Description		Watts per luminaire[1, 2]	How is Wattage determined	Total Number Luminaires [2]	Luminaire Status[3]	Excluded per 140.7(a) / 170.2(e)6A	Design Watts	Cutoff Req. > 6,200 initial lumen output 130.2(b) / 160.5(c)1[4]	Field Inspector	
										Pass	Fail
E8	Dedicated LED 29.7 Max Input Watts	☐ Linear	29.7	Mfr. Spec	5	New	☐	148.5	NA: < 6200 lumens	☐	☐
							Total Design Watts:	148			

* NOTES: Selections with a * require a note in the space below explaining how compliance is achieved.
EX: Luminaire is lighting a statue; EXCEPTION 2 to 130.2(b)

[1]FOOTNOTES: Authority Having Jurisdiction may ask for Luminaire cut sheets to confirm wattage used for compliance per 130.0(c) / 160.5(b)

[2] For linear luminaires, wattage should be indicated as W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 05 instead of number of luminaires.

[3] Select "New" for new luminaires in a new outdoor lighting project, or for added luminaires in an alteration. Select "Altered" for replacement luminaires in an alteration. Select "Existing to Remain" for existing luminaires within the project scope that are not being altered and are remaining. Select "Existing Reinstalled" for existing luminaires which are being removed and reinstalled as part of the project scope.

[4] Compliance with mandatory shielding requirements is required for luminaires with initial lumen output >= 6,200 unless exempted by 130.2(b)/ 160.5(c)

G. SHIELDING REQUIREMENTS (BUG)

This section does not apply to this project.

CERTIFICATE OF COMPLIANCE		**NRCC-LTO-E**
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H. OUTDOOR LIGHTING CONTROLS

This table demonstrates compliance with controls requirements for all new or altered luminaires installed as part of the permit application. For alteration projects, luminaires which are existing to remain (ie untouched) and luminaires which are removed and reinstalled (wiring only) do not need to be included in this table even if they are within the spaces covered by the permit application.
Outdoor lighting for nonresidential buildings, parking garages and common service areas in multifamily buildings must be documented separately from outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit

Mandatory Controls for Nonresidential Occupancies, Parking Garages & Common Areas in Multifamily Buildings

01	02	03	04	05	
Area Description	Shut-Off 130.2(c)1 / 160.5(c)	Auto-Schedule 130.2(c)2 / 160.5(c)	Motion Sensor 130.2(c)3 / 160.5(c)	Field Inspector	
				Pass	Fail
E8 Fixtures	Astronomical Timer	Provided	NA: Each Luminaire <= 40 Watts	☐	☐

[1]*FOOTNOTE: Text has been abbreviated, please refer to Table 160.5-A to confirm compliance with the specific light source technologies listed.*

[2]*Authority having jurisdiction may ask for cutsheets or other documentation to confirm compliance of light source.*

[3]*Recessed luminaires marked for use in fire-rated installations, and recessed luminaires installed in non-insulated ceilings are excepted from ii and iii.*

CERTIFICATE OF COMPLIANCE		**NRCC-LTO-E**
Project Name: Conejo Community Park Restroom Building	**Report Page:**	**(Page 5 of 8)**
	Date Prepared:	4/29/2024

I. LIGHTING POWER ALLOWANCE (per 140.7 / 170.2(e))

This table includes areas using allowance calculations per 140.7 / 170.2(e). General Hardscape Allowance is per Table 140.7-A/Table 170.2-R while "Use it or lose it" Allowances are per Table 140.7-B /Table 170.2-S. Indicate which allowances are being used to expand sections for user input. Luminaires that qualify for one of the "Use it or lose it" allowances shall not qualify for another "Use it or lose it" allowance. Outdoor lighting attached to multifamily buildings and controlled from the inside of a dwelling unit are included in Table H. and are not included here. All other multifamily outdoor lighting is included here.

01				
	"Use it or lose it" Allowance (select all that apply) (select all that apply)			
☒ General Hardscape Allowance Table I (below)	☒ Per Application Table J	☐ Sales Frontage Table K	☐ Ornamental Table L	☐ Per Specific Area Table M

Calculated General Hardscape Lighting Power Allowance per Table 140.7-A for Nonresidential & Hotel/Motel

02	03	04	05	06	07	08	09
Area Description	Area Wattage Allowance (AWA)			Linear Wattage Allowance (LWA)			Total General AWA + LWA (Watts)
	Illuminated Area (ft^2)	Allowed Density (W/ft^2)	Area Allowance (Watts)	Perimeter Length (lf)	Allowed Density (W/lf)	Linear Allowance (Watts)	
Pedestrian Paving	333	0.021	7	91	0.2	18.1	25
						Initial Wattage Allowance for Entire Site (Watts):	250
						Instances of Initial Wattage Allowance (LZ 0 only)[1]	
						Total General Hardscape Allowance (Watts):	275

CERTIFICATE OF COMPLIANCE		**NRCC-LTO-E**
Project Name: Conejo Community Park Restroom Building	**Report Page:**	**(Page 6 of 8)**
	Date Prepared:	4/29/2024

J. LIGHTING ALLOWANCE: PER APPLICATION

This table includes areas using the wattage allowance per application from Table 140.7-B / Table 170.2-S.

01	02	03	04	05	06	07	08	09	10
Area Description	Application per Table 140.7-B[1]	**CALCULATED ALLOWANCE (Watts)**			**DESIGN WATTS**				Additional Allowance (Watts)
		# of Locations	Allowance per Location[2]	Extra Allowance (Watts)	Luminaire Name or Item Tag	Watts per Luminaire	# of Luminaires	Design Watts	
Entry Doors	Building Entrance/Exit	4	19	76	E8	29.7	4	118.8	76
							Total Design Watts for this Area:	118.8	
								Total Allowance (Watts) All Areas:	76

[1] *FOOTNOTES: Primary entrance applications are only available for senior care facilities, healthcare facilities, police stations, hospitals, fire stations, and emergency vehicle facilities.*

[2] *The Allowance per Location for ATMs is 100W for the first ATM and 35W for each additional per Table 140.7-B /Table 170.2-S.*

[3] *For luminaires indicated in Table F as linear, wattage in column 07 is W/lf instead of Watts/luminaire. Total linear feet should be indicated in column 08 instead of number of luminaires.*

K. LIGHTING ALLOWANCE: SALES FRONTAGE

This section does not apply to this project.

L. LIGHTING ALLOWANCE: ORNAMENTAL

This section does not apply to this project.

M. LIGHTING ALLOWANCE: PER SPECIFIC AREA

This section does not apply to this project.

N. EXISTING CONDITIONS POWER ALLOWANCE (alterations only)

This section does not apply to this project.

CERTIFICATE OF COMPLIANCE		**NRCC-LTO-E**
Project Name: Conejo Community Park Restroom Building	**Report Page:**	**(Page 7 of 8)**
	Date Prepared:	4/29/2024

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and can be found online

Form/Title
NRCI-LTO-E - Must be submitted for all buildings

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

Selections have been made based on information provided in this document. If any selection has been changed by permit applicant, an explanation should be included in Table E. Additional Remarks. These documents must be provided to the building inspector during construction and must be completed through an Acceptance Test Technician Certification Provider (ATTCP). For more information visit: http://www.energy.ca.gov/title24/attcp/providers.html

Form/Title	Systems/Spaces To Be Field Verified
NRCA-LTO-02-A - Must be submitted for all outdoor lighting controls except for alterations where controls are added to <= 20 luminaires.	E8 Fixtures;

CERTIFICATE OF COMPLIANCE		NRCC-LTO-E
Project Name: Conejo Community Park Restroom Building	**Report Page:**	(Page 8 of 8)
Project Address: 1175 Hendrix Avenue	**Date Prepared:**	4/29/2024

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

I certify that this Certificate of Compliance documentation is accurate and complete.

Documentation Author Name: Steve K. Means, CEA	Documentation Author Signature: Steve K. Means
Company: EasyTitle24	Signature Date:
Address: 654 Oakland Avenue	CEA/ HERS Certification Identification (if applicable): NR19-90-30004
City/State/Zip: Oakland CA 94611	Phone: customer.service@easytitle24.com

CABEC California Association of Building Energy Consultants CERTIFIED ENERGY ANALYST Steve K. Means R22-90-40018 & NR19-90-30004

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer)
3. The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name: Robert C. Fischer	Responsible Designer Signature: Robert C Fischer
Company: Wallis Concrete, LLC	Date Signed: 2024-04-29
Address: 6446 Wallis Concrete Rd. P.O. Box 789	License: MF 1197624
City/State/Zip: Wallis, TX 77485	Phone: 979-478-6734

APPROVED
By TI-RADCO a CA Department of Housing and Community Development approved third party design approval agency
DM920272
APPROVAL DATE May 7,2024
EXPIRATION DATE Aug 30,2025
APPROVAL NO. RAD-16741