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FL Engineering Business #3684

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February 23, 2024

Mr. John Westfall
Manufactured Housing / Factory Built Housing
Division of Codes and Standards
CA Department of Housing & Community Development
PO Box 278180 / Sacramento, CA 95827-8180 (Mailing)

RE: Exeloo
Manufactured Housing Program
Approval # R-21317
Expiration Date: 05-22-2025

Dear Mr. Westfall:

Intertek (Intertek-ATI, Inc.), part of Intertek[1] Building Science Solutions, has completed an engineering code review for the above-referenced document(s) for compliance with all applicable codes as evidenced by the Intertek, Inc. approval stamp on each page. This approval covers the factory build structure only. Any alterations to the factory-built structure on site would avoid the approval. Items installed on-site are subject to review and approval by the local authority having jurisdiction. A signed and sealed plan set is on file with Intertek.

Please contact our office if you need further information or assistance. Thank you.

Respectfully submitted,

Ryan Knowles
Manager, Industrialized Buildings
Building Science Solutions

William Tegeler

William Tegeler
Sr. Project Manager – Constr.
Building Science Solutions

[1] Intertek is a brand name representing the Intertek Group plc legal entities, including but not limited to, Intertek Testing Services NA Inc., Professional Service Industries, Inc. (“INTERTEK-PSI”), Architectural Testing Inc. (“INTERTEK-ATI”), and MT Group Inc. (“INTERTEK-MT)

JUPITER TRIPLE - TWIN STANDARD & SINGLE ACCESSIBLE USA

EXELOO JUPITER TRIPLE- TWIN STANDARD & SINGLE ACCESSIBLE - DRAWING SCHEDULE		
SHEET #	DESCRIPTION	REVISION
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B9	SECTION C-C & D-D	1-A
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B29	AUXILARY BOX LAYOUT	1-A
B30	MAIN CONTROL BOX LINE DIAGRAM	1-A
B31	MAX LOAD TABLE	1-A
B32	ELECTRICAL PANEL SCHEDULE - TWIN & SINGLE BOXES	1-A

THIS DRAWING SET COVERS:
1. *JUPITER 23ATD - AUTOMATIC TRIPLE - TWIN STANDARD & SINGLE ACCESSIBLE*
2. *JUPITER 33ATD - SEMI-AUTOMATIC TRIPLE - TWIN STANDARD & SINGLE ACCESSIBLE*

REFER TO EXELOO QUALITY ASSURANCE MANUAL FOR FIT-OUT OPTIONS

WORK COMPLETED AT EXELOO FACTORY:
1. PRE-FABRICATED TOILET UNIT - CONCRETE SLAB, STEEL FRAME STRUCTURE,
WALL CLADDING, INTERNAL WALLS, RESTROOM FITTINGS, ROOF & FLASHINGS (REMOVED FOR TRANSPORT)
2. PLUMBING & ELECTRICAL WORK

WORK COMPLETED ON SITE BY OTHERS:
1. CONCRETE STRIP FOOTINGS
2. CONCRETE APRON
3. TIE DOWN FIXING CONCRETE SLAB TO STRIP FOOTINGS
4. CONNECTIONS OF SERVICES TO TOILET UNIT - POWER, WATER, WASTEWATER,
STORMWATER, FLOOR DRAINS
5. RE-INSTALL ROOF & FLASHINGS
6. REMOVE TRANSPORT TIE DOWN EYELETS

1. SOILS INFORMATION
A. NO SOILS REPORT PROVIDED. THE FOLLOWING IS AN ASSUMED VALUE:
1. DESIGN SOIL BEARING CAPACITY = 1500 psf
2. THE FOUNDATION IS DESIGNED PER IBC MINIMUM STANDARDS.

B. WITHOUT A SOILS REPORT THOM HUME CONSULTING ENGINEERS CANNOT BE RESPONSIBLE FOR FOUNDATION SETTLEMENTS OR MOVEMENTS.

C. MAINTAIN BOTTOM OF FOOTING SUCH THAT THE HORIZONTAL DISTANCE TO DAYLIGHT IS 40'-0" AND PER SEC 1808.7.2 OF CURRENT CBC EDITION.

2. FOUNDATION INFORMATION
A. CONCRETE:
A.A. MAXIMUM 28-DAY STRENGTH OF 3,000 psi
A.B. MAXIMUM WATER TO CEMENT RATIO OF 0.57
A.C. MAXIMUM AGGREGATE SIZE OF 1"
A.D. SLUMP OF 4" ±1"
A.E. NO SPECIAL INSPECTION REQUIRED

B. REINFORCING:
B.A. ALL REINFORCING SHALL BE ASTM A-615 GRADE 60
B.B. CLEAR COVER TO ALL REBAR SHALL BE 3"

0000 CODES AND REFERENCES
ALL GENERAL STRUCTURAL NOTES AND SPECIFICATIONS REFLECT THE PROVISIONS OF THE:
2022 CBC (CALIFORNIA BUILDING CODE)
ACI 318-14 (CONCRETE)
AISC 360-16/AISC-16/AISC 358-16 (STEEL)

SEISMIC:	
Design Procedure:	
Equivalent Lateral Force Analysis	
Importance	:1
Risk Category	:2
Occupancy Category	:II
Ss	:2.72
S1	:1.0
Sds	:2.00
Sd1	:1.1
Site Class	:D
Seismic Design Cat.	:E
Seismic Force Sys	:OMF
Base Shear	:3.75k
Cs	:0.571
R	:3.5
Analysis Procedure	:LIN. STATIC

WIND:	
Basic Wind Speed:	115 mph
Wind Exposure:	C
Internal Presure Coefficient:	±0.18
Risk Category	II

PROJECT DATA:

ADDRESS: *STATEWIDE APPROVAL*

CODES & STANDARDS:

2022 CALIFORNIA BUILDING STANDARDS CODE
- PART 1, CALIFORNIA ADMINISTRATIVE CODE
- PART 2, CALIFORNIA BUILDING CODE
- PART 3, CALIFORNIA ELECTRICAL CODE
- PART 5, CALIFORNIA PLUMBING CODE DECEMBER 14-16, 2021
- PART 6, CALIFORNIA ENERGY CODE
- PART 9, CALIFORNIA FIRE CODE
- PART 11, CALIFORNIA GREEN BUILDING STANDARDS CODE
- CHAPTERS 11A AND 11B, CALIFORNIA BUILDING CODE
- PART 12, CALIFORNIA REFERENCED STANDARDS

BUILDING INFO:

BLDG USE: PUBLIC RESTROOM
BLDG OCCUP: B
OCCUPANT LOAD: 1/PER STALL
CONSTRUCTION TYPE: (IBC 602) TYPE V-B
BLDG AREA: 83 SF (TABLE 506.2 ALLOWED 9,000 SF)
BLDG HTG: 9'-0" SINGLE STORY
EXITS REQD: 1/STALL
EXITS PROVIDE: 1/STALL
FIRE SUPRESSION: NON-SPRINKLERED

APPLICABLE LOADS:

ROOF LIVE LOAD: 20
DEAD LOAD: 10

FLOOR LOAD: 40

WIND SPEED: 115
EXPOSURE: C
SEISMIC DESIGN CATEGORY: E
RISK CATEGORY: 2

BLDG HVAC: N/A

2/22/24

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C 78754
EXP. 9/30/25
CIVIL
STATE OF CALIFORNIA

NOTE:
1. THIS IS A NON-CONDITIONED BUILDING
2. THIS BUILDING HAS NOT BEEN DESIGNED FOR WILDFIRE LOCATIONS (WUI)
3. SNOW LOADING NOT CONSIDERED IN THIS DESIGN

Jeff Funkhouser, P.E.

Digitally signed by Jeff Funkhouser, P.E.
Date: 2024.02.22 19:46:11 -05'00'

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	Tolerance:	Scale:	Checked by:	Approved by:	
Material:	Finish:	Drawn by: JJG	Creation Date: 5/24/2022	Sheet No.: / 32	Drawing No.: AS-JUP23ATD-US-1

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2023-05-23
Expiration Date: 2025-05-22
Without Foundation Approval
1748 33rd Street
Allentown, PA 18104

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EXELOO FINISHES SCHEDULE

STRUCTURAL				
#	ITEM	SUPPLIER	DETAIL	SPECIFICATION
1	Floor	Stresscrete	Steel Reinforced concrete	Slab thickness 6 5/16"/5 1/8" steel reinforced concrete
2	Walls	Galvanised steel frame	Electro Plated Duragalv	3/16" & 1/8" thick electroplated galvanised steel
3	Roof Frame	Galvanised steel frame	Electro Plated Duragalv	3/16" & 1/8" thick electroplated galvanised steel

EXTERIOR LININGS				
#	ITEM	SUPPLIER	DETAIL	SPECIFICATION
4	Cladding	Fibre Cement Solutions Ltd	Eterpan MD Fibre cement sheet	11/16" & 1/2" Fibre cement laminated sheet
5	Roof	MetalCraft	MetecnoSpan (PIR)	3 1/8" panel M 4880 Approved Class 1 - Unlimited Height. FM 4881 Approved Class 1 - Unlimited Height. FM 4471 Approved Class 1 - External roof and wall endurance standard.
6	Gutter & Flashings	Steel & Tube	Colorsteel	10 -15 years warranty under right maintenence plan
7	Vent Pipes	Ferguson	Schedule 40 PVC or ABS Pipes & Fittings	4" Schedule 40 PVC or ABS pipe and fittings for drain waste and vent applications
8	Doors	Parkwood Doors	Stainless steel T316 Brushed	Stainless steel sheet skin with alloy interior
9	Paint	Altex	Epoxy 2 part paint	5 - 10 years warranty under the right maintenance plan
10	Grills	Exeloo	Solid grills cut and folded by Exeloo	T316 Stainless Steel Brushed #4

INTERIOR LININGS				
#	ITEM	SUPPLIER	DETAIL	SPECIFICATION
11	Cladding	Fibre Cement Solutions LTD	Eterpan MD Fibre cement sheet	11/16" & 1/2" Fibre cement laminated sheet
12	Floor Finish	Cutting Edge Tiling	Brasil Nero Charcoal	Ceramic Non Slip tiles 17 11/16" x 17 11/16"
14	Wall linings - Toilet/Shower	Cutting Edge Tiling	Sanctuary Cool White	Ceramic tiles 11 13/16" x 23 5/8"

ELECTRICAL FITTINGS				
#	ITEM	SUPPLIER	DETAIL	SPECIFICATION
16	Control Box	PLC Power	PLC Control Box	Proface LT3300-T

PLUMBING FITTINGS				
#	ITEM	SUPPLIER	DETAIL	SPECIFICATION
19	Toilet pans	Stoddart	Stainless steel	23 5/8" - 27 9/16" stainless pans.
20	Zurn Valve	MacDonald Industries	Flushing system	1.28gal (4.8L) max. per flush
21	Water supply system	Mico	Stainless steel crimp ring plumbing system	RIIFO Rifeng Pex Pipe & MLP (multilayer pipes) – DZR Universal Fittings
22	Waste water system (DWV)	Ferguson	Schedule 40 PVC or ABS Pipe and Fittings	1-1/2" to 4" Schedule 40 PVC or ABS pipe and fittings for drain waste and vent applications
23	WS 400	Duraclenz	Stainless Steel recessed unit	Soap, Water & hand dryer built in wash station, Lavatory Faucet 0.5gpm (max.) @ 60psi (1.9L/m @ 414kPa)
24	Flush Valve Water Solenoid	SMC	SIRAI L177B04	PS = 30 bar

HARDWARE				
#	ITEM	SUPPLIER	DETAIL	SPECIFICATION
25	Door hardware	Legge	Legge 800 Series	Forged Brass and 10 year warranty
26	Grab rails	Superquip	Stainless Steel	1 1/4" knurled stainless grab rails

SEATING & TABLES				
#	ITEM	SUPPLIER	DETAIL	SPECIFICATION
27	Baby Change table	Duraclenz	Stainless Steel & fibreglass inserts	Weight limit 187lbs

ACCESSORIES				
#	ITEM	SUPPLIER	DETAIL	SPECIFICATION
30	Floor Dry Fans	Fantech	CEG MN80C2 - 0MLT	1.5kw 230V
31	Extract Fans	Fantech	Fantech FR150 USA	120V CFM 263
32	Exterior Lights	Dualcom Technology Ltd	Battenpro-300-12V LED SMD2835	1000Lm 10W IP65
33	Interior Lights	Dualcom Technology Ltd	Battenpro-600-12V LED SMD2835	2000Lm 20W IP65
34	Speakers	VEXX	For music & instruction	5" speaker
35	Security System	Intergrated Consulting	Dahua Starlight pinhole camera	2MP HDCVI covert camera with 3.6mm lens
36	Paper Dispenser	Duraclenz	Stainless Steel EMD8200RH	Dual roll holder
37	Nappy / Sani chute	Duraclenz	Hinged flap chute	Stainless Steel T304 Brushed

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Description: JUPITER TRIPLE - TWIN STANDARD & SINGLE ACCESSIBLE USA

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2023-07-21
Expiration Date: 2025-05-22
Without Foundation Approval

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Orlando, FL 32839

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		1-A	1/30/2024

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		JJG	5/24/2022	G 1	AS-JUP23ATD-US-1

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REAR PERSPECTIVE

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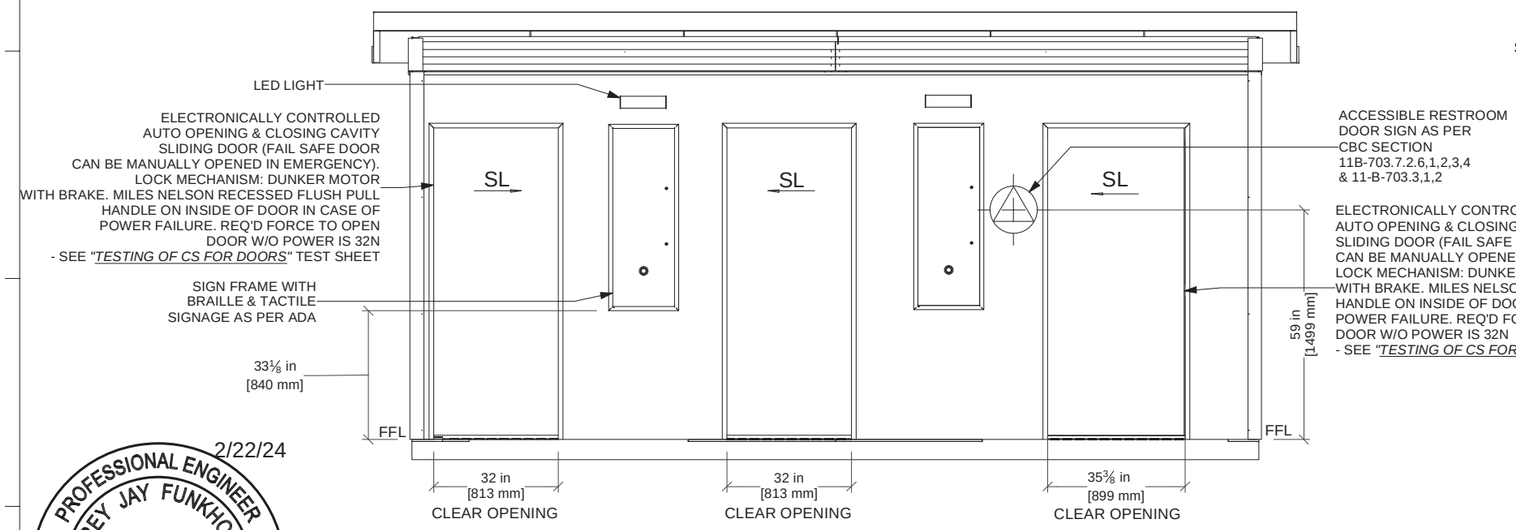
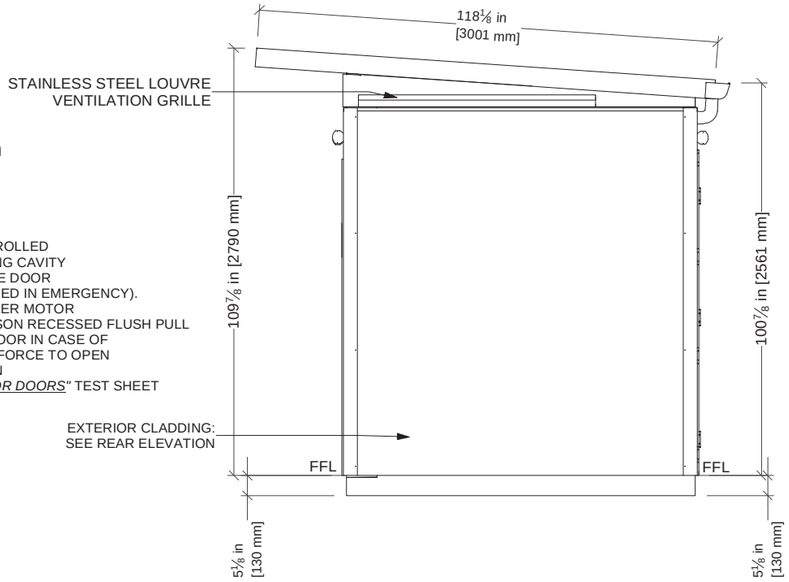
FRONT ELEVATION



RIGHT ELEVATION



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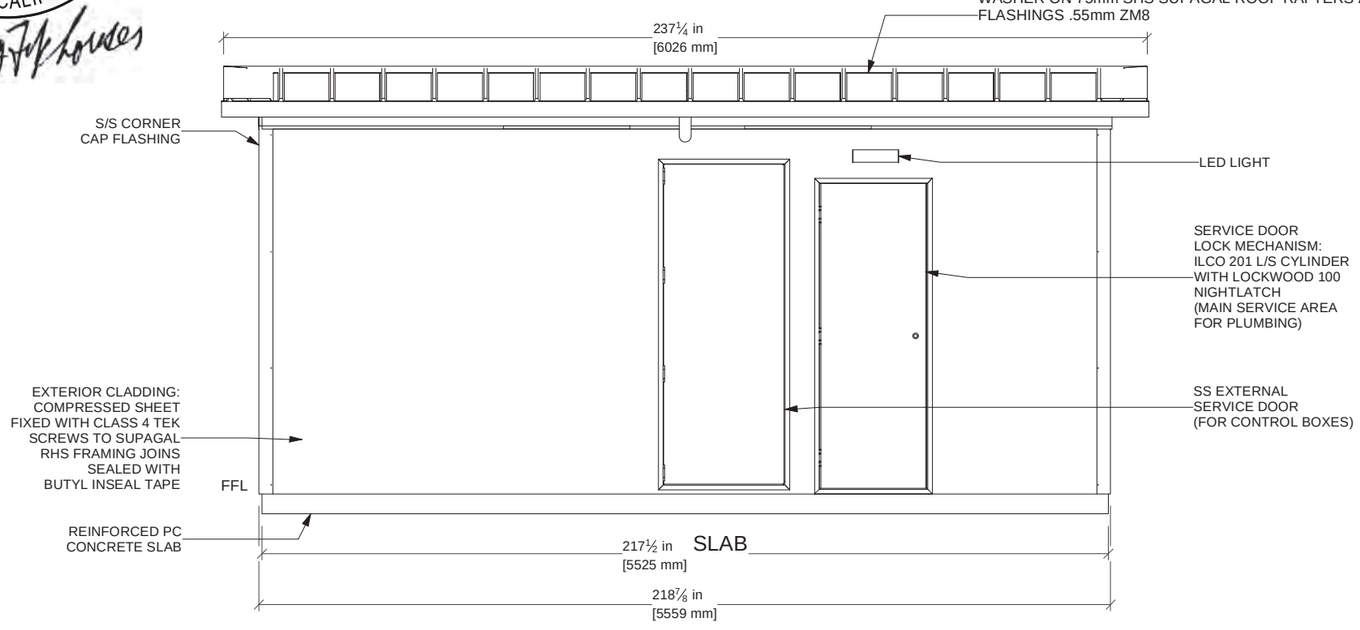
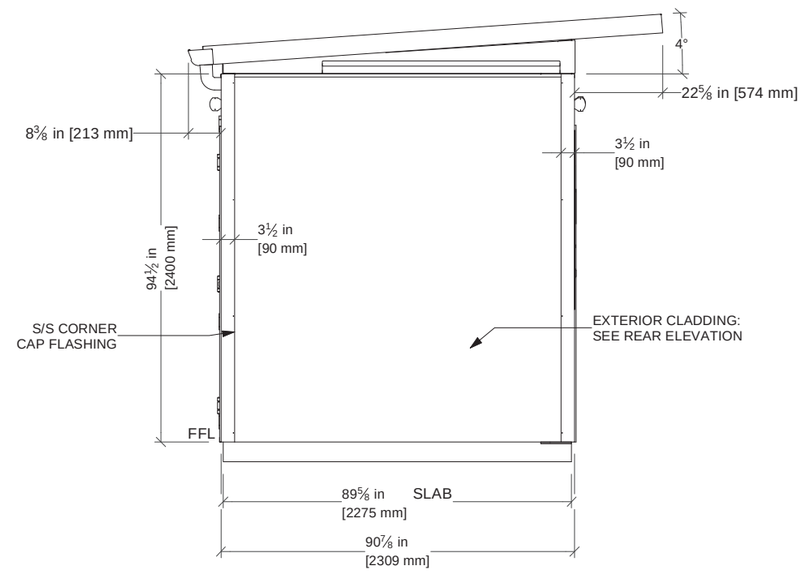
REAR ELEVATION



LEFT ELEVATION



THE UNISEX GEOMETRIC SYMBOL WITH THE PICTOGRAM, RAISED CHARACTERS AND GRADE II BRAILLE IS LOCATED FOR CLEAR AND SAFE ACCESS AND MOUNTED ADJACENT TO THE PUBLIC RESTROOM ACCESSWAYS.

NOTE:
NO BRAILLE ON SIGNS OR BUTTONS BETWEEN FFL & 48" ABOVE FFL

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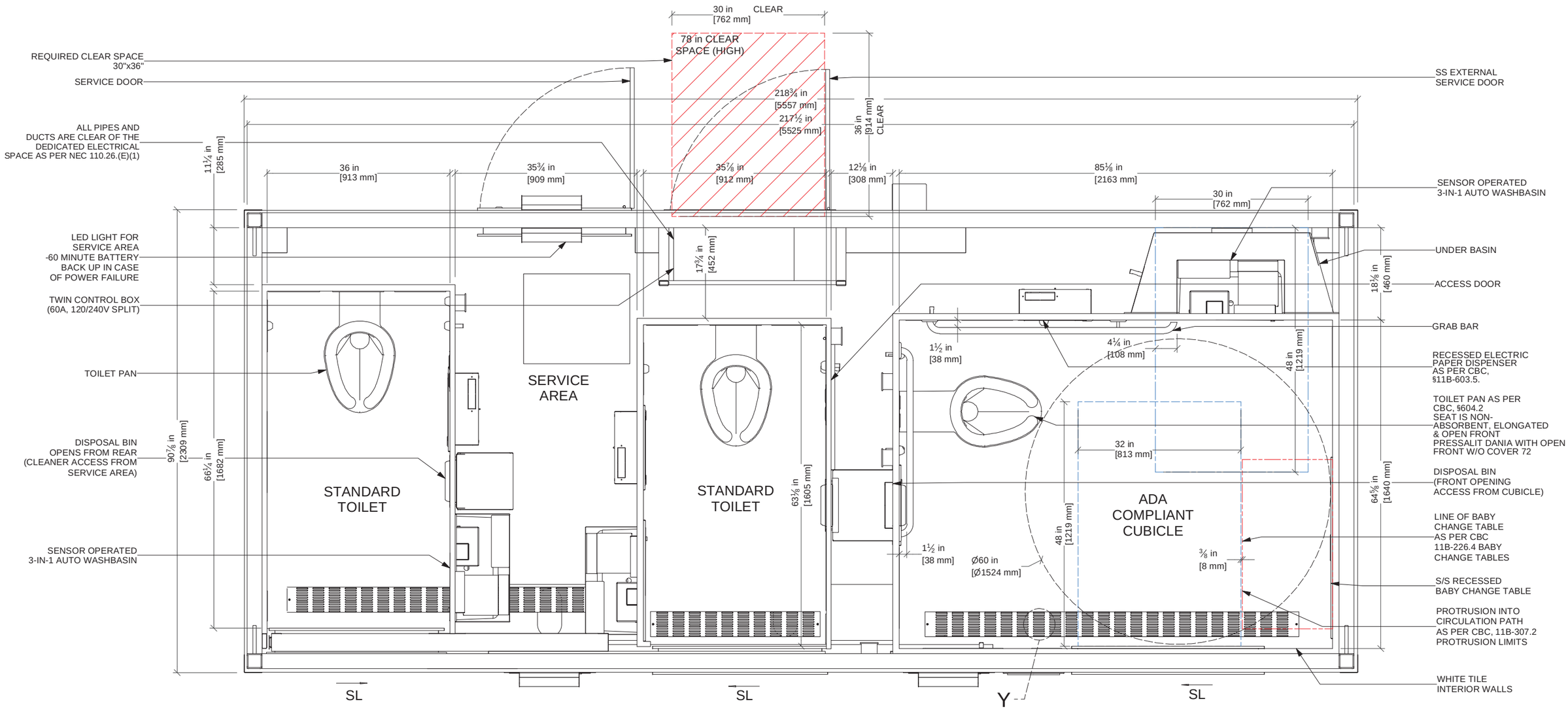
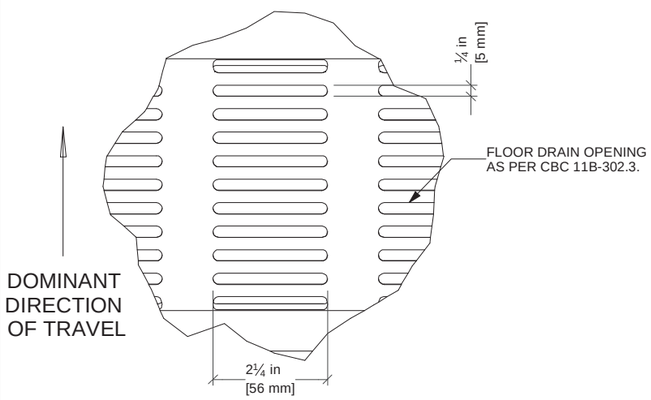
FLOOR PLAN



DETAIL Y
FLOOR GRATE SURFACE
(1 : 3)



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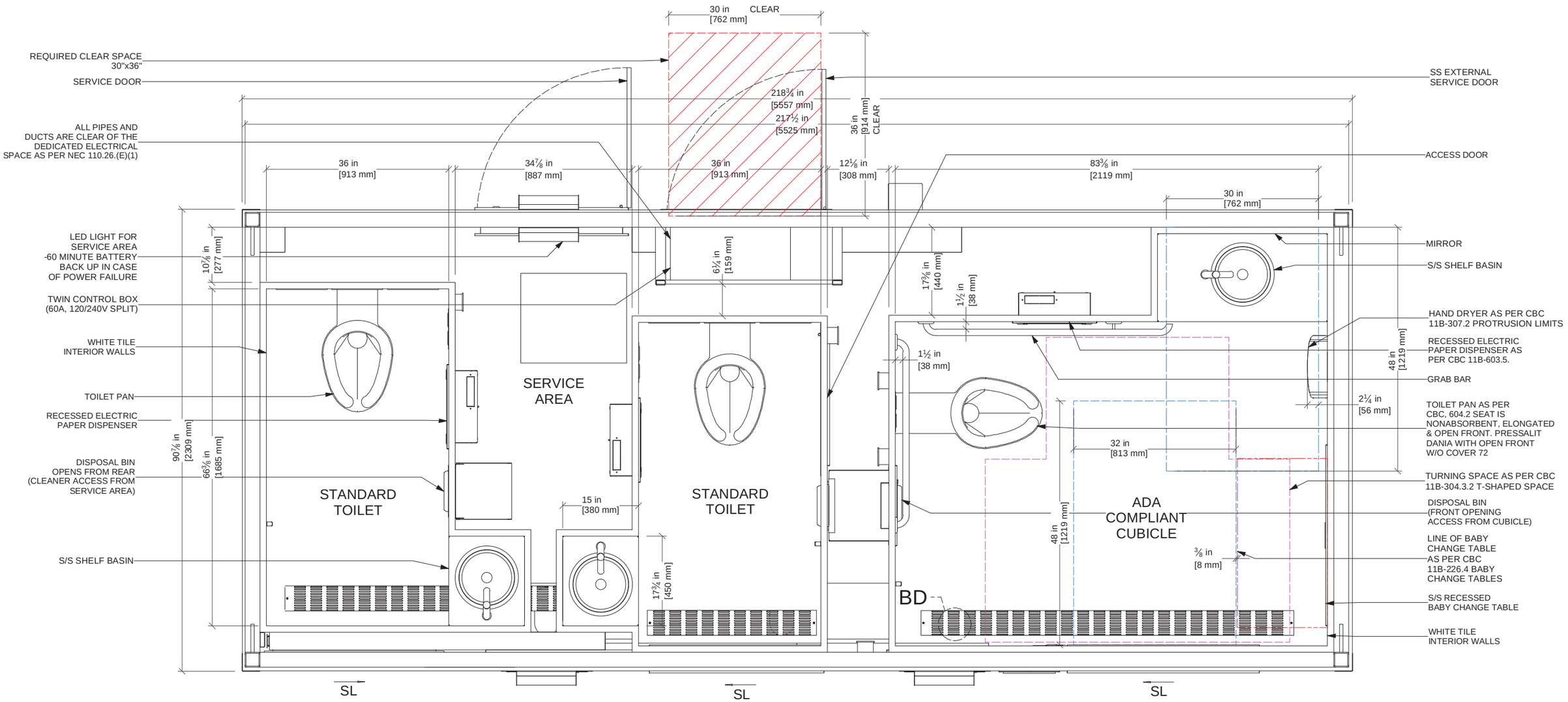
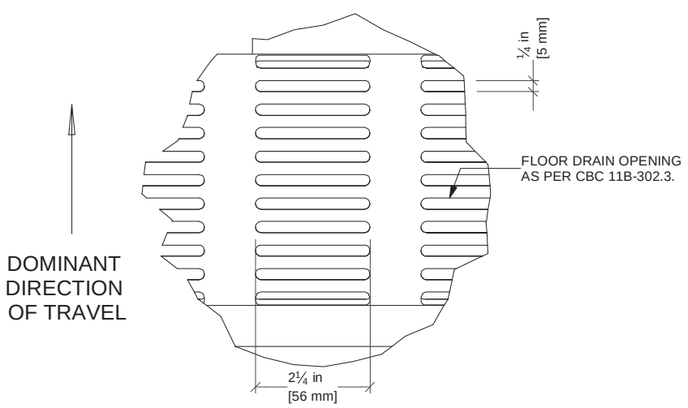
FLOOR PLAN - MANUAL BASINS



DETAIL BD
FLOOR GRATE SURFACE (1 : 3)



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Material:	Finish:	Proj:	Units:	Rev.	Rev Date.
				1-A	1/30/2024
		Tolerance:	Scale:	Checked by:	Approved by:
		Drawn by: JJG	Creation Date: 5/24/2022	Sheet No. B 6	Drawing No: AS-JUP23ATD-US-1

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SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE

A-A

ROOFING: 3⅛" METECONOSPAN (PIR) STRUCTURAL INSULATED PANEL FIXED WITH STEEL TITE HWF CLASS 5 14g 14x150mm TEK SCREW WITH AS 3566/EPDM SEAL, PAINTED GALVANISED PROFILE WASHER & 30mm EPDM WASHER ON 75mm SHS SUPAGAL ROOF RAFTERS ALL FLASHINGS .55mm ZM8

WHITE TILE INTERIOR WALLS

ADA COMPLIANT CUBICLE

STANDARD CUBICLE

SERVICE AREA

STANDARD CUBICLE

WHITE TILE INTERIOR WALLS

SL

SL

SL

COAT HOOK AS PER CBC, 11B-603.4.

MILES NELSON RECESSED FLUSH PULL HANDLE ON INSIDE OF DOOR TO OPEN IN CASE OF POWER FAILURE

DOOR RELEASE BUTTON REFER CBC, 11B-213.2.1.

MILES NELSON RECESSED FLUSH PULL HANDLE ON INSIDE OF DOOR TO OPEN IN CASE OF POWER FAILURE

47½ in [1208 mm]

39½ in [1002 mm]

POSITION OF EMERGENCY BUTTON

15¼ in [387 mm]

FFL

CONCRETE SLAB BASE

FOOTING (BY OTHERS)

18" W x 30" D FOOTING W/3-#5 T&B & #3 TIES @ 12" OC TYP

30 in [762 mm]

30 in [762 mm]

18" W x 30" D FOOTING W/3-#5 T&B & #3 TIES @ 12" OC TYP

34¼ in [870 mm]

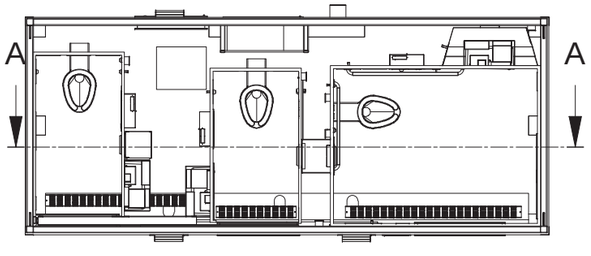
18 in [457 mm]

113 in [2871 mm]

18 in [457 mm]

34¼ in [870 mm]

PLAN



PROFESSIONAL ENGINEER
JEFFREY JAY FUNKHOUSER
C 78754
EXP. 9/30/25
CIVIL
STATE OF CALIFORNIA

2/22/24

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1015 Nipomo St, Suite 100,
San Luis Obispo, CA 93401
PO Box 13310, San Luis Obispo, CA 93406
T: (800) 676-5290 or 1-800-303-3506

Description: JUPITER TRIPLE - TWIN STANDARD & SINGLE ACCESSIBLE USA

Approved for Commercial
Approved by: State of California
NH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #8-21317
Approval Date: 2024-02-23
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Orlando, FL 32839

Proj:	Units:	Rev.	Rev Date.
		1-A	1/30/2024

Material:	Finish:	Tolerance:	Scale:	Checked by:	Approved by:

Drawn by:	Creation Date:	Sheet No.	Drawing No:
JJG	5/24/2022	B 7	AS-JUP23AAD-US-1

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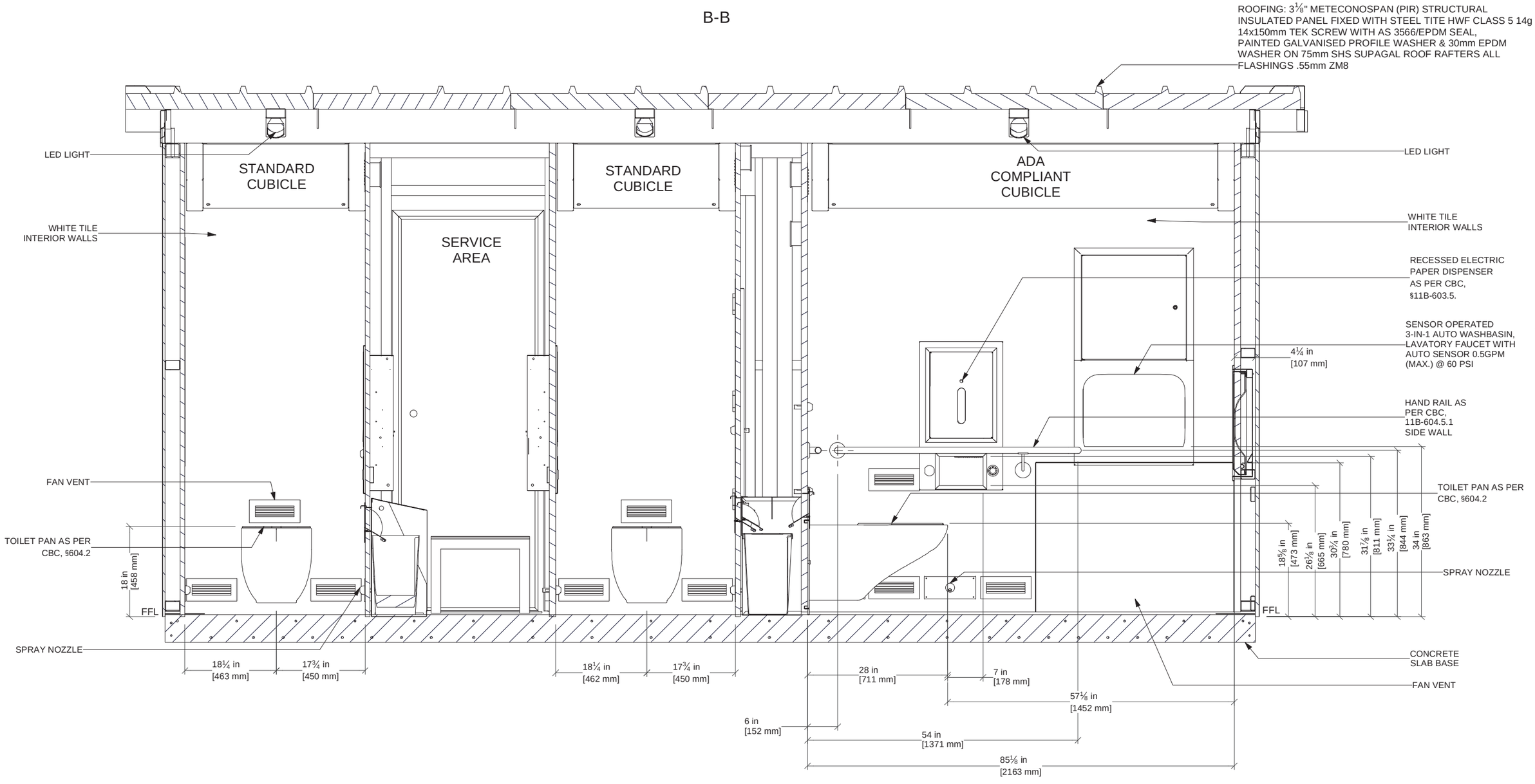
B-B



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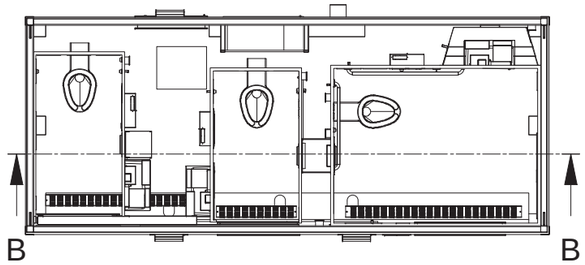

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Description: JUPITER TRIPLE - TWIN STANDARD & SINGLE ACCESSIBLE USA

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2020-07-23
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Orlando, FL 32839

Proj:		Units:	Rev.	Rev Date.
			1-A	1/30/2024
Tolerance:	Scale:	Checked by:	Approved by:	
Material:	Finish:	Drawn by: JJG	Creation Date: 5/24/2022	Sheet No. B 8
				Drawing No: AS-JUP23AAD-US-1

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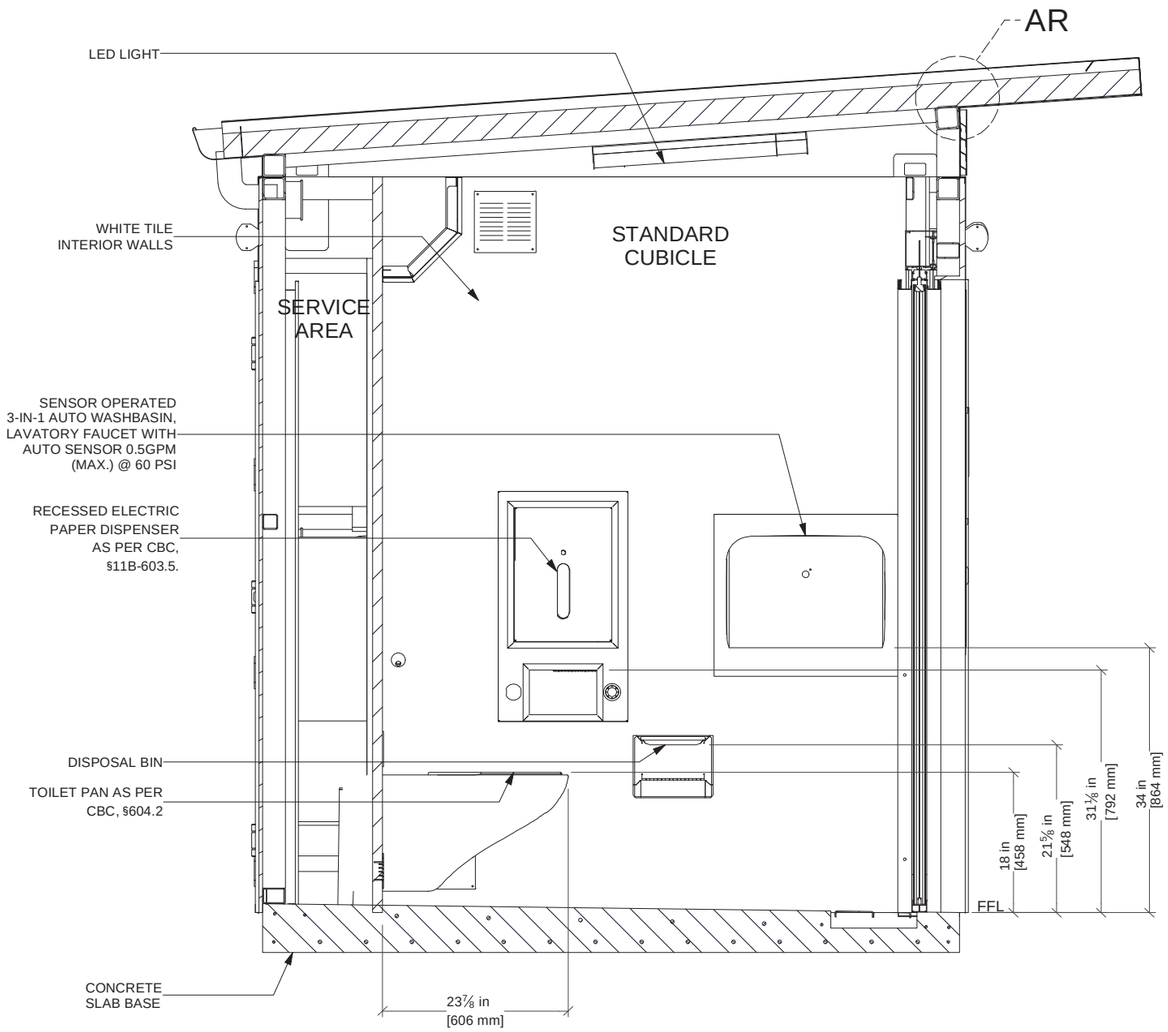
C-C



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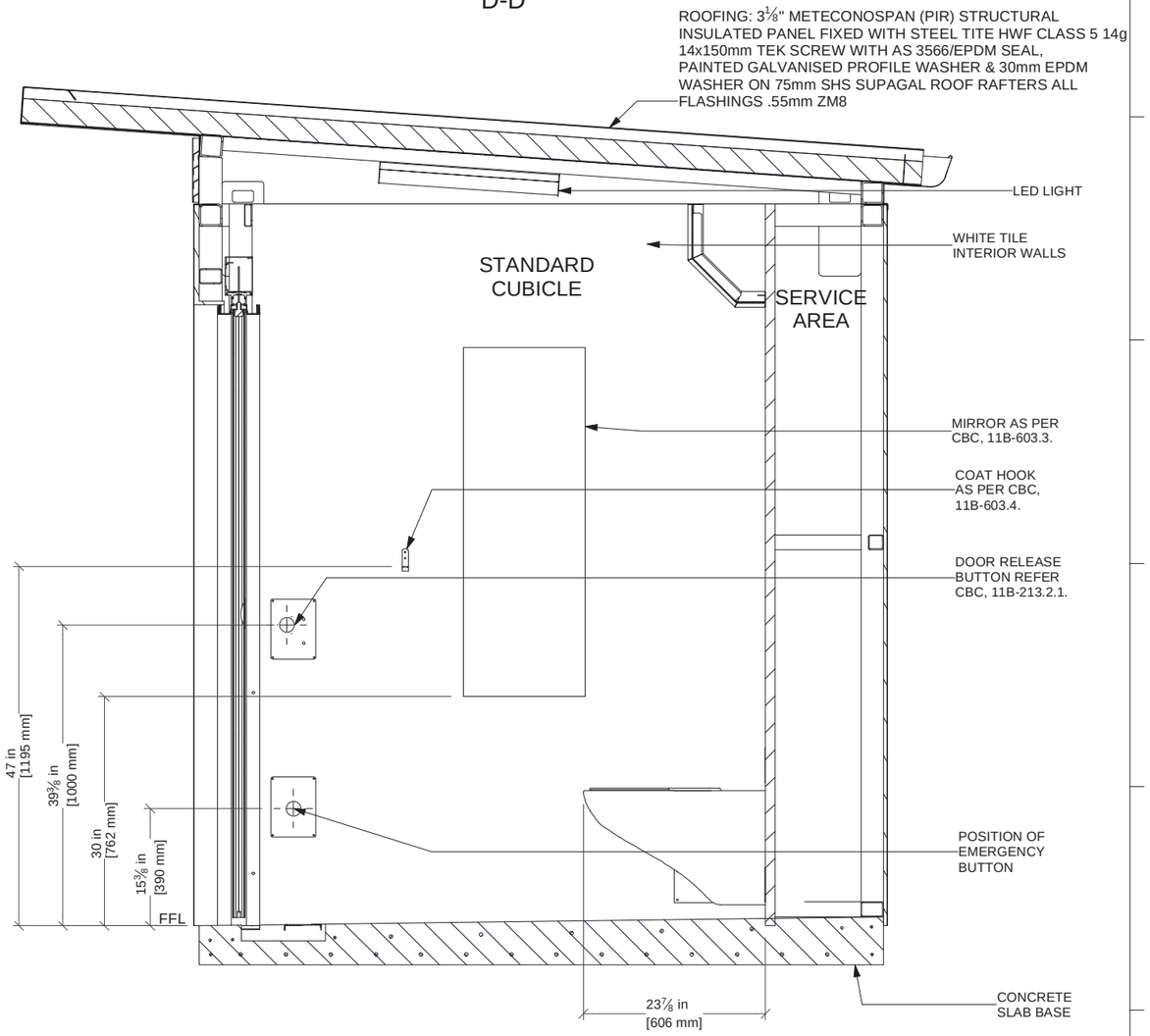
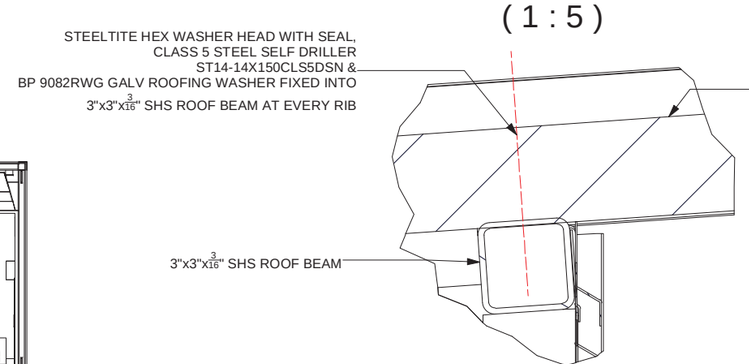
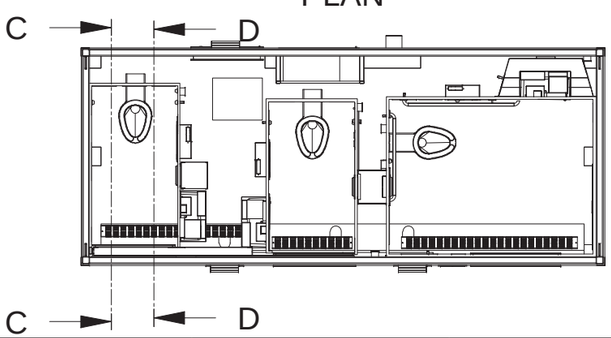


DETAIL AR
SIP PANEL FIXING INTO ROOF BEAM (FRONT & REAR)
(1 : 5)



PLAN



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Material:	Finish:	Drawn by: JJG	Creation Date: 5/24/2022	Sheet No.: B 9	Drawing No.: AS-JUP23AAD-US-1

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MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
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Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Rhinelin, IL 61252

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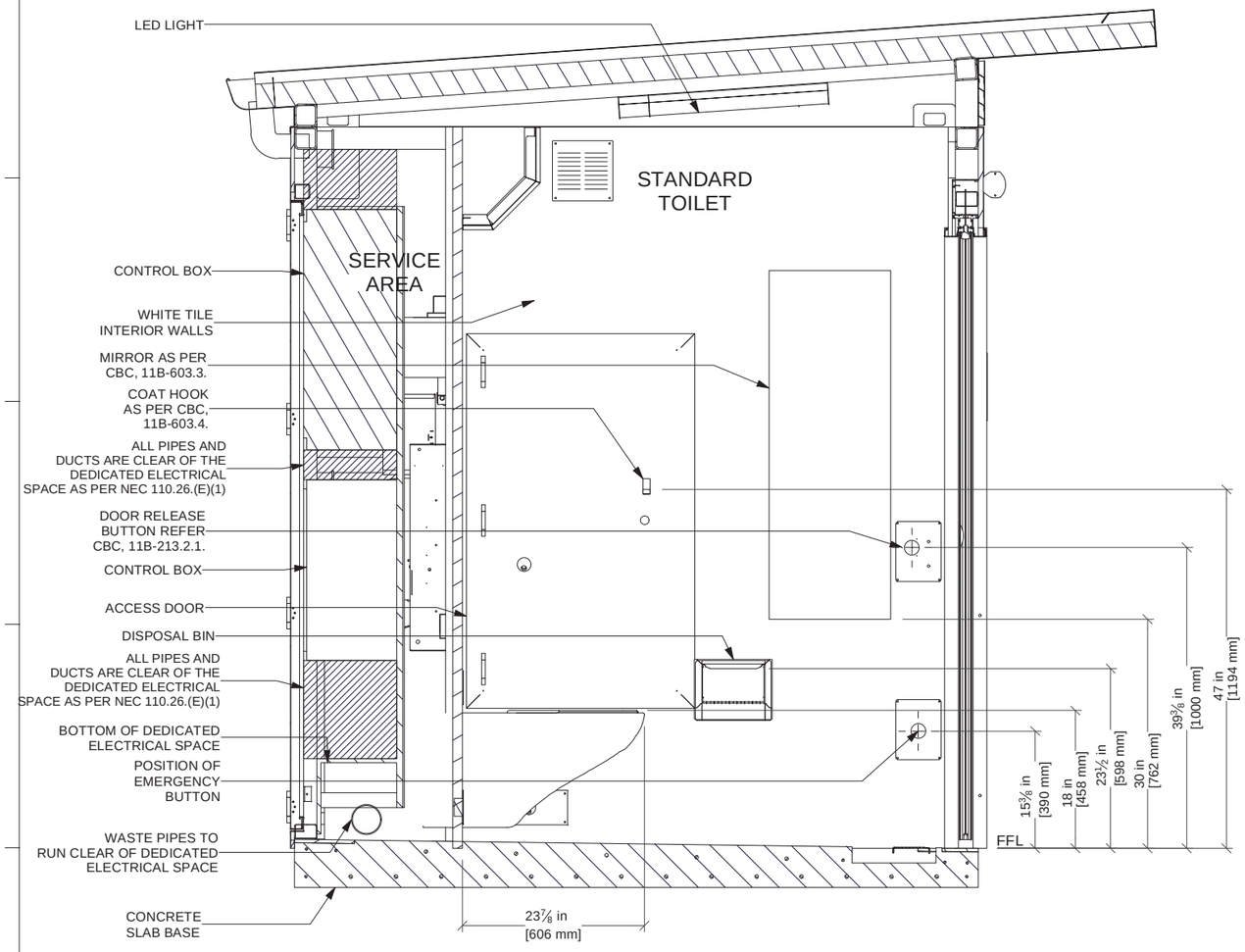
E-E



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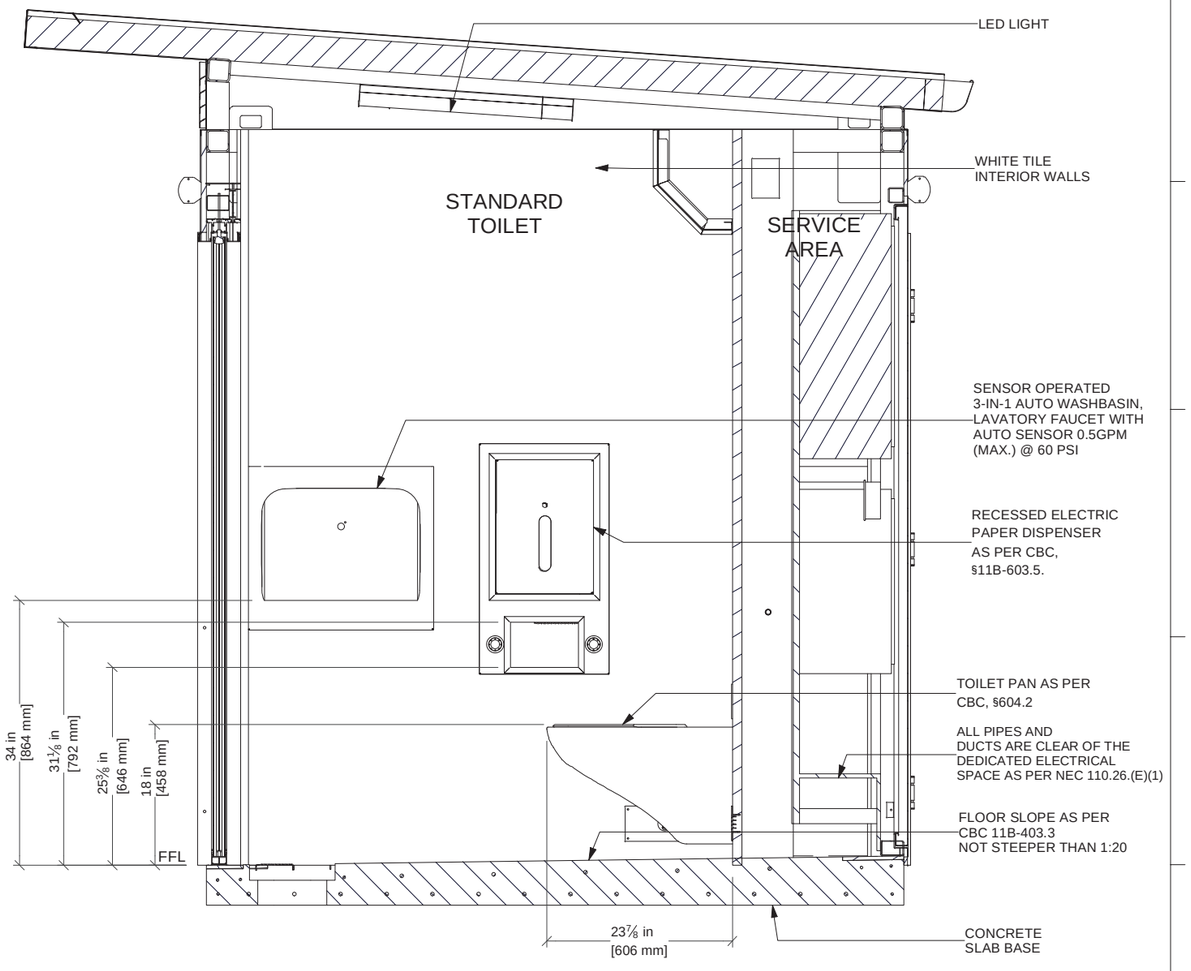

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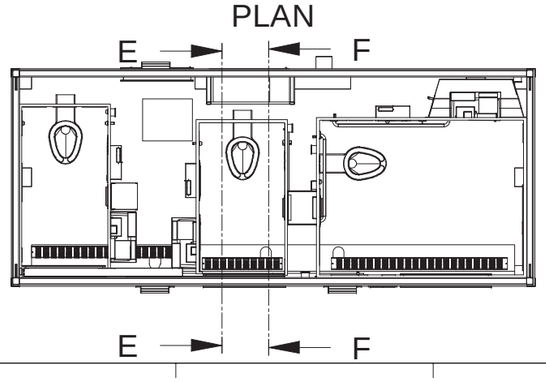

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Material:	Finish:	Drawn by: JJG	Creation Date: 5/24/2022	Sheet No. B 10	Drawing No: AS-JUP23AAD-US-1

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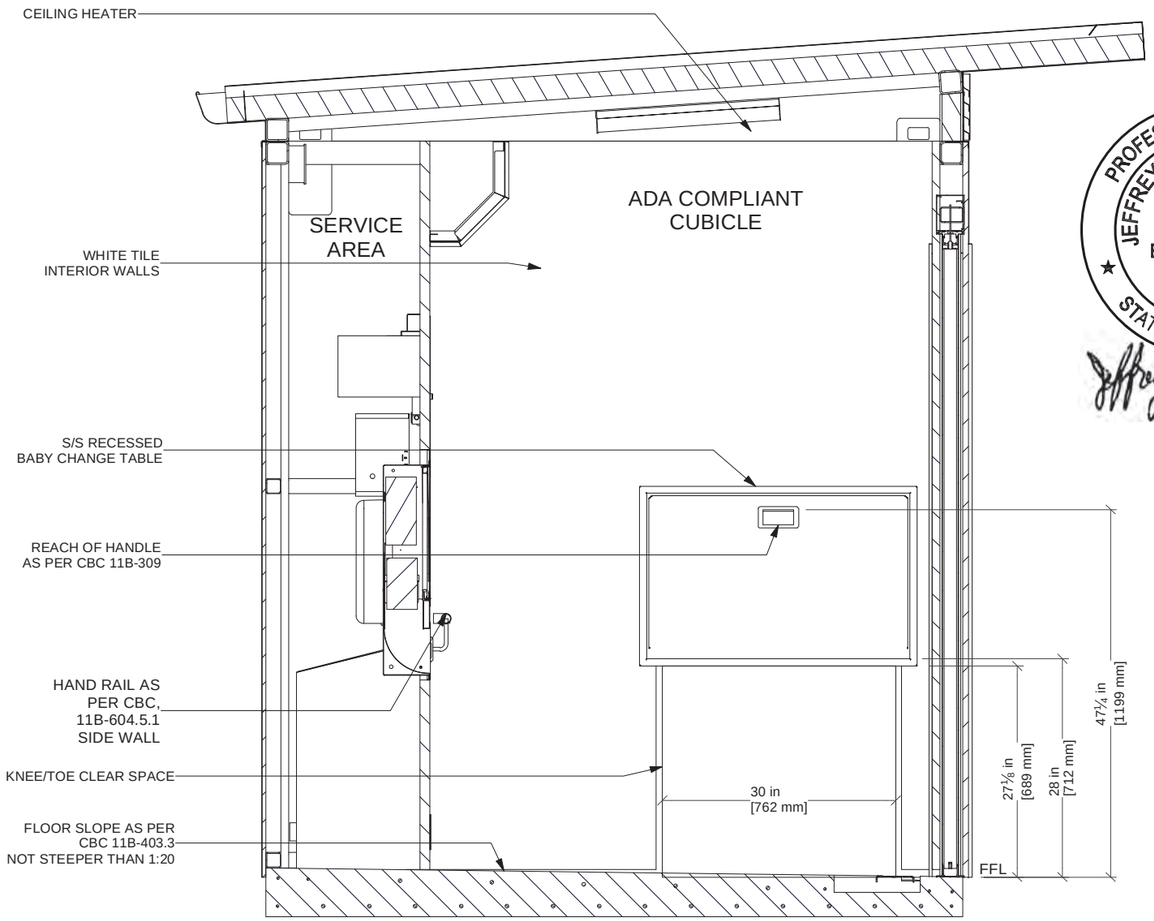
J-J



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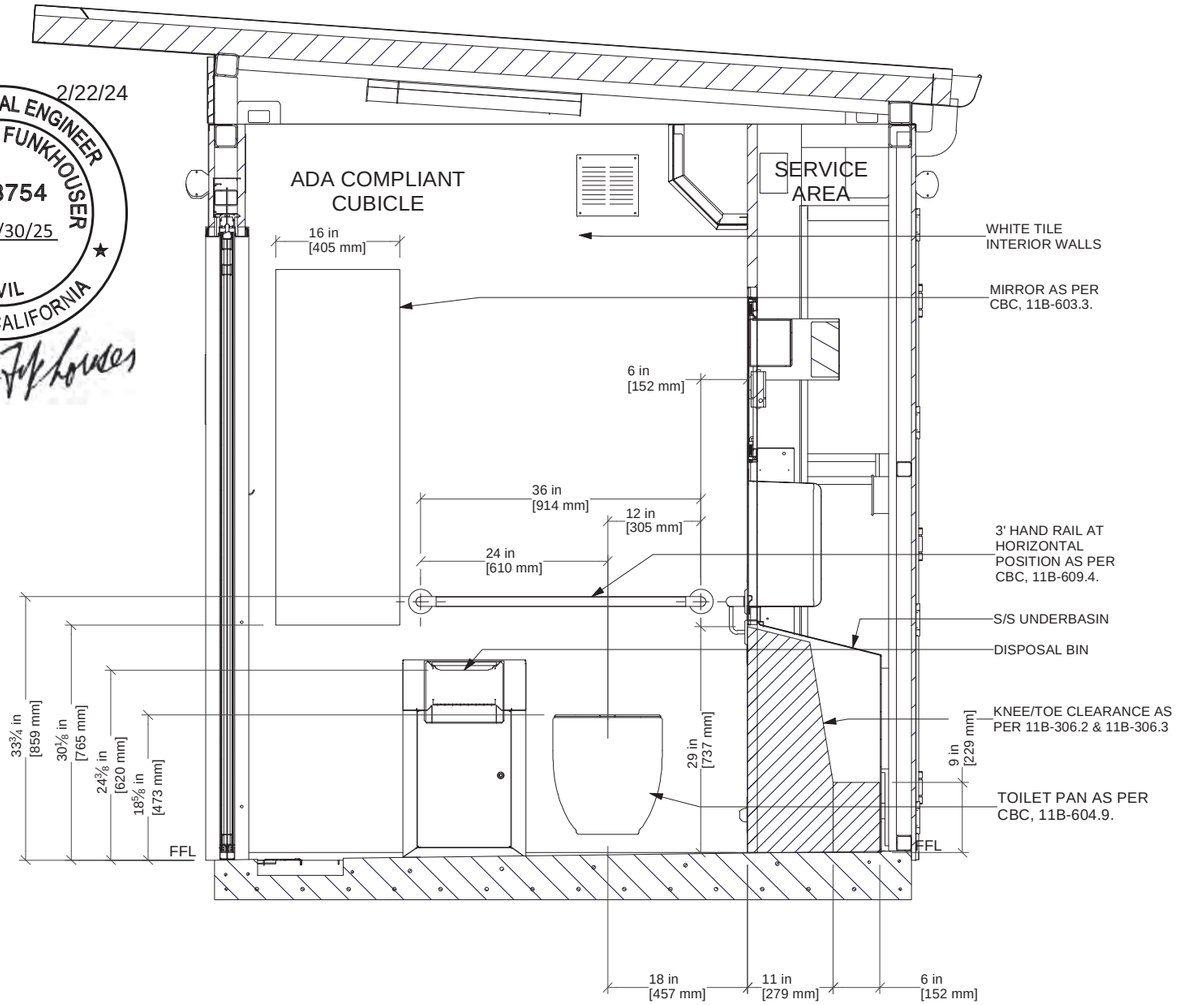
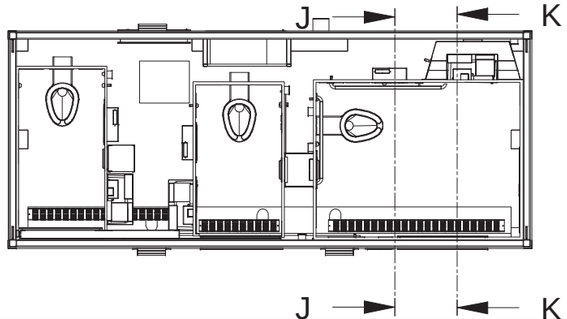
C 78754
EXP. 9/30/25
CIVIL
STATE OF CALIFORNIA

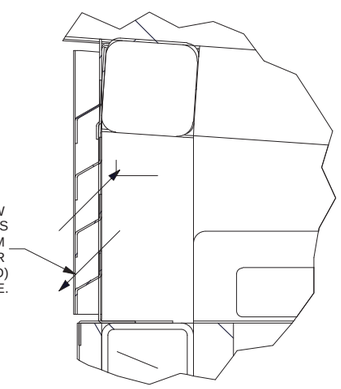
K-K



PASSIVE AIR FLOW REQUIREMENT

PLAN





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Material:	Finish:	Drawn by: JJG	Creation Date: 5/24/2022	Sheet No. B 11	Drawing No: AS-JUP23AAD-US-1

Approved for Commercial
Approved by: State of California
MH (IAA #DMI1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2024-01-23
Expiration Date: 2025-05-22
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Rosenberg, TX 77471

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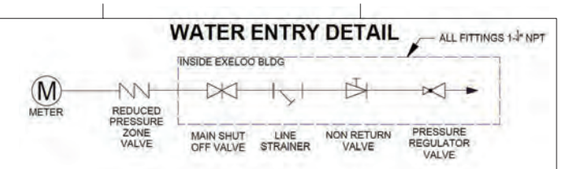
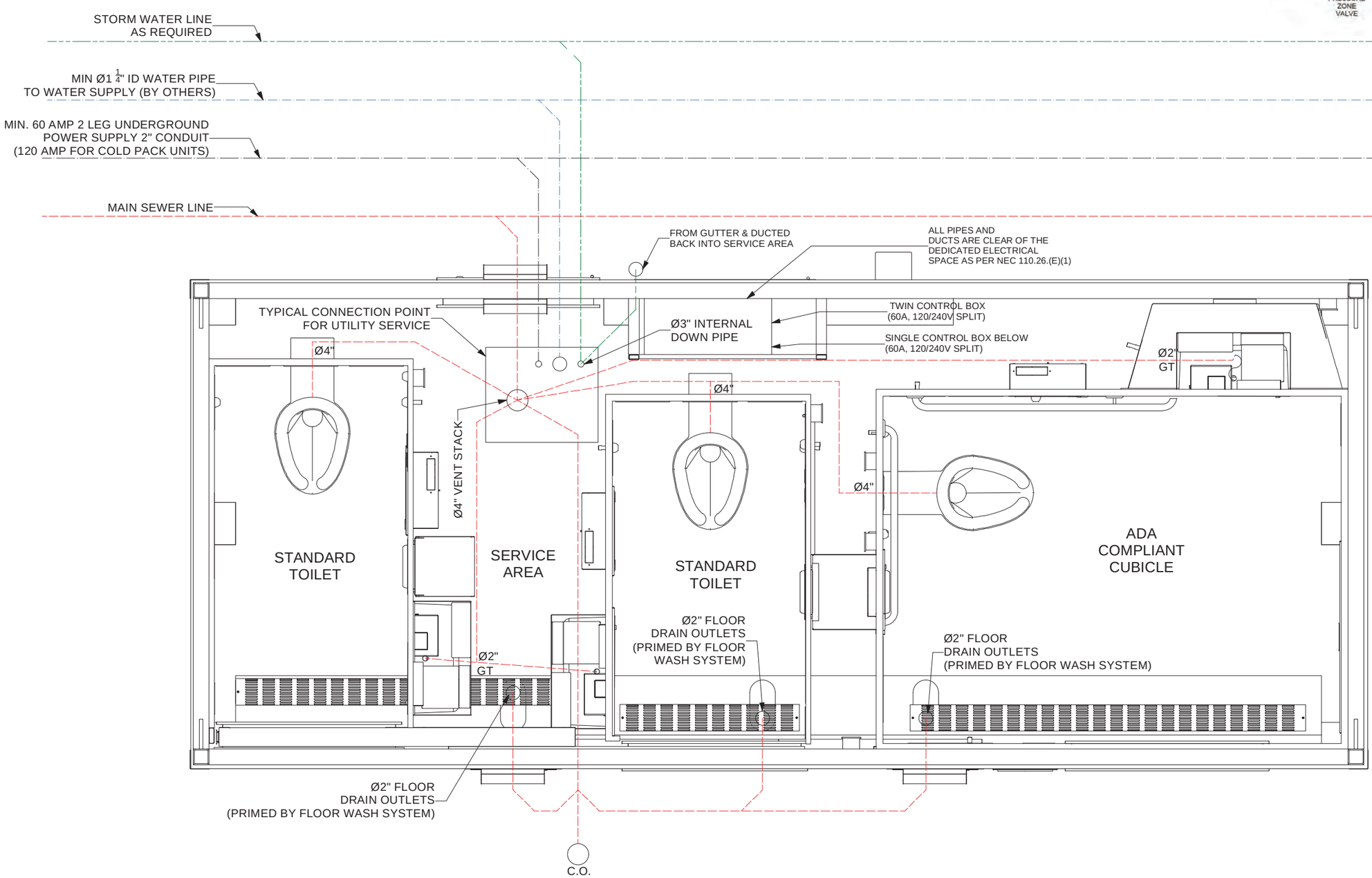
SCHEMATIC SERVICES PLAN





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1. THIS DIAGRAM IS A VISUAL REPRESENTATION AND INDICATIVE ONLY - NOT TO SCALE
2. CIVIL CONTRACTOR/ENGINEER IS RESPONSIBLE FOR PROVIDING CONNECTIONS TO THE UNIT.

Exeloo Corp. does not guarantee that information shown on these drawings indicate any more than the presence or absence of such services and will not accept liability for any damage or losses caused to any party, by the actions of the Contractor or its agents and subcontractors. The Contractor is required to make its own investigations, contact all service providers and verify the type and location of all services prior to commencement of any construction work on site.

2/22/24

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		Tolerance:	Scale:	Checked by:	Approved by:
Material:	Finish:	Drawn by: JJG	Creation Date: 5/24/2022	Sheet No. B 12	Drawing No: AS-JUP23ATD-US-1

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MH DAA #DM1507408
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Orlando, FL 32839

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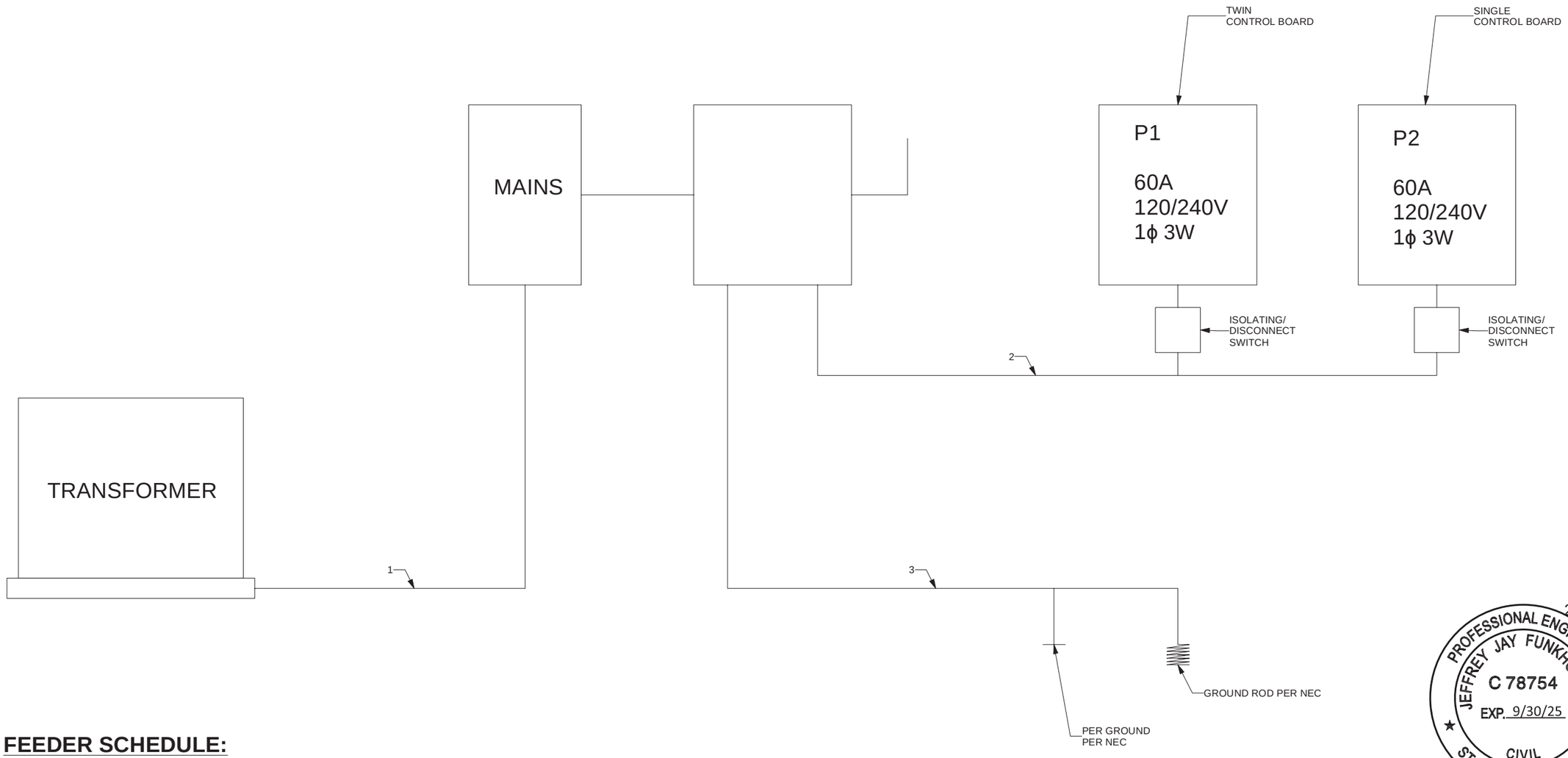
ONE LINE DIAGRAM



FEEDER SCHEDULE:

SIZE REQUIREMENTS TO MEET P1 & P2 CONTROL BOARD SPECIFICATIONS

2/22/24

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Description:			Proj:	Units:	Rev.	Rev Date.
JUPITER 23AAD PLATINUM TWIN AMBULANT & ACCESSIBLE US					1-D	10/2/2019
			Tolerance:	Scale:	Checked by:	Approved by:
Material:	Finish:		Drawn by: JJG	Creation Date: 7/27/2018	Sheet No. B 13	Drawing No: AS-JUP23AAD-US

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Approved by: State of California
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Intertek (Intertek-ATI)
Plan Approval: #P-21317
Approval Date: 2020-09-23
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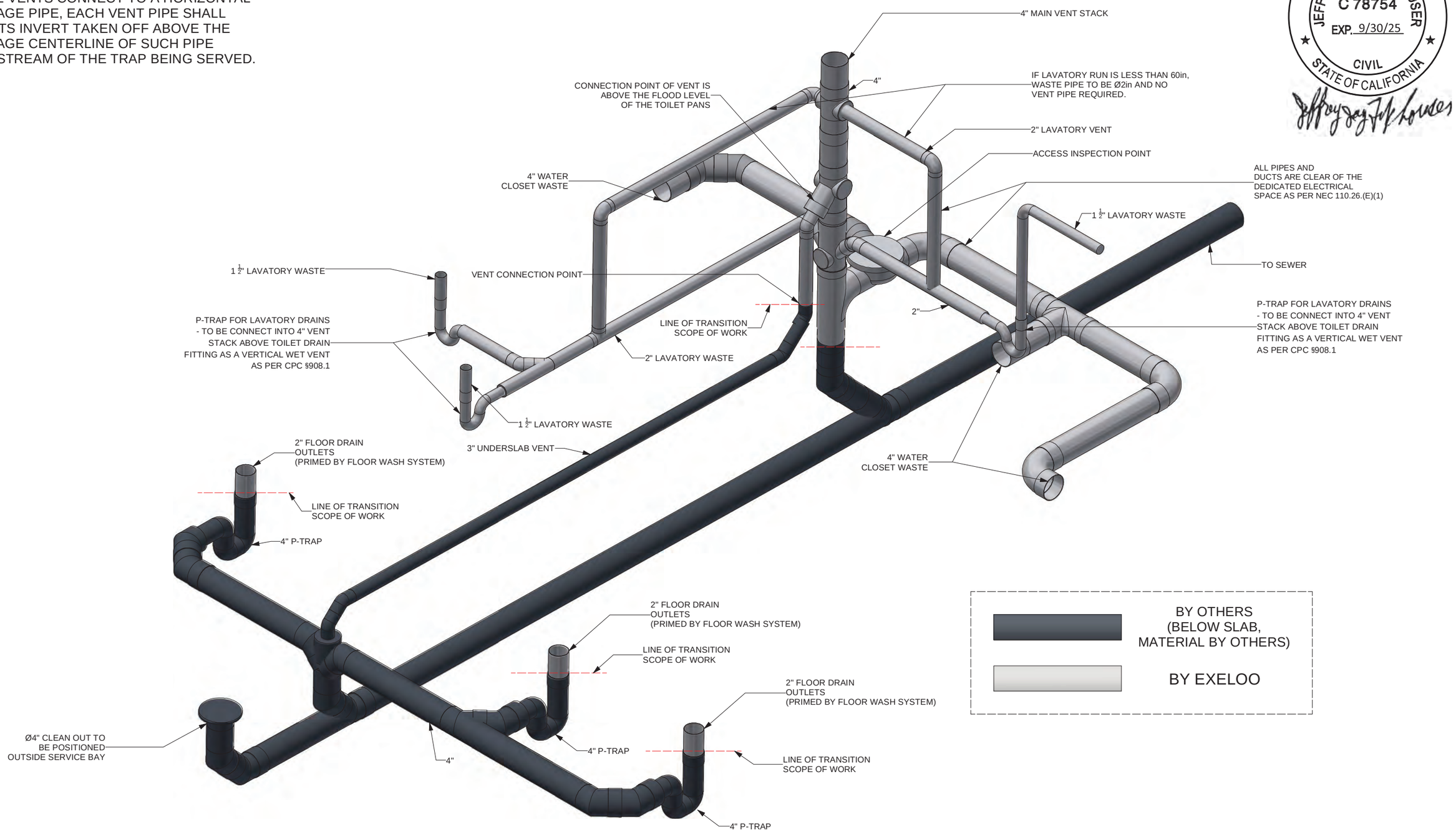
ISOMETRIC - WASTEWATER JUPITER TRIPLE

2/22/24

CPC §905.2.
WHERE VENTS CONNECT TO A HORIZONTAL DRAINAGE PIPE, EACH VENT PIPE SHALL HAVE ITS INVERT TAKEN OFF ABOVE THE DRAINAGE CENTERLINE OF SUCH PIPE DOWNSTREAM OF THE TRAP BEING SERVED.



BY OTHERS (BELOW SLAB, MATERIAL BY OTHERS)

BY EXELOO

NOTE:
1. THIS DIAGRAM IS A VISUAL REPRESENTATION AND INDICATIVE ONLY - NOT TO SCALE

REV	DESCRIPTION	DATE
1-D	FLOOR OUTLET SIZE CHANGED FROM 2-1/2" TO 2"	01/20/2023

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USA
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PO Box 13310 San Luis Obispo CA 93406
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Description:
JUPITER TRIPLE AMBULANT & ACCESSIBLE US - WASTEWATER SYSTEM

Proj:	Units:	Rev.	Rev Date.
		1-D	1/20/2023

Tolerance:	Scale:	Checked by:	Approved by:

Material:	Finish:	Drawn by:	Creation Date:	Sheet No.	Drawing No:
		JJG	12/12/2019	P 14	JUP23AAD-US-WASTE SYSTEM

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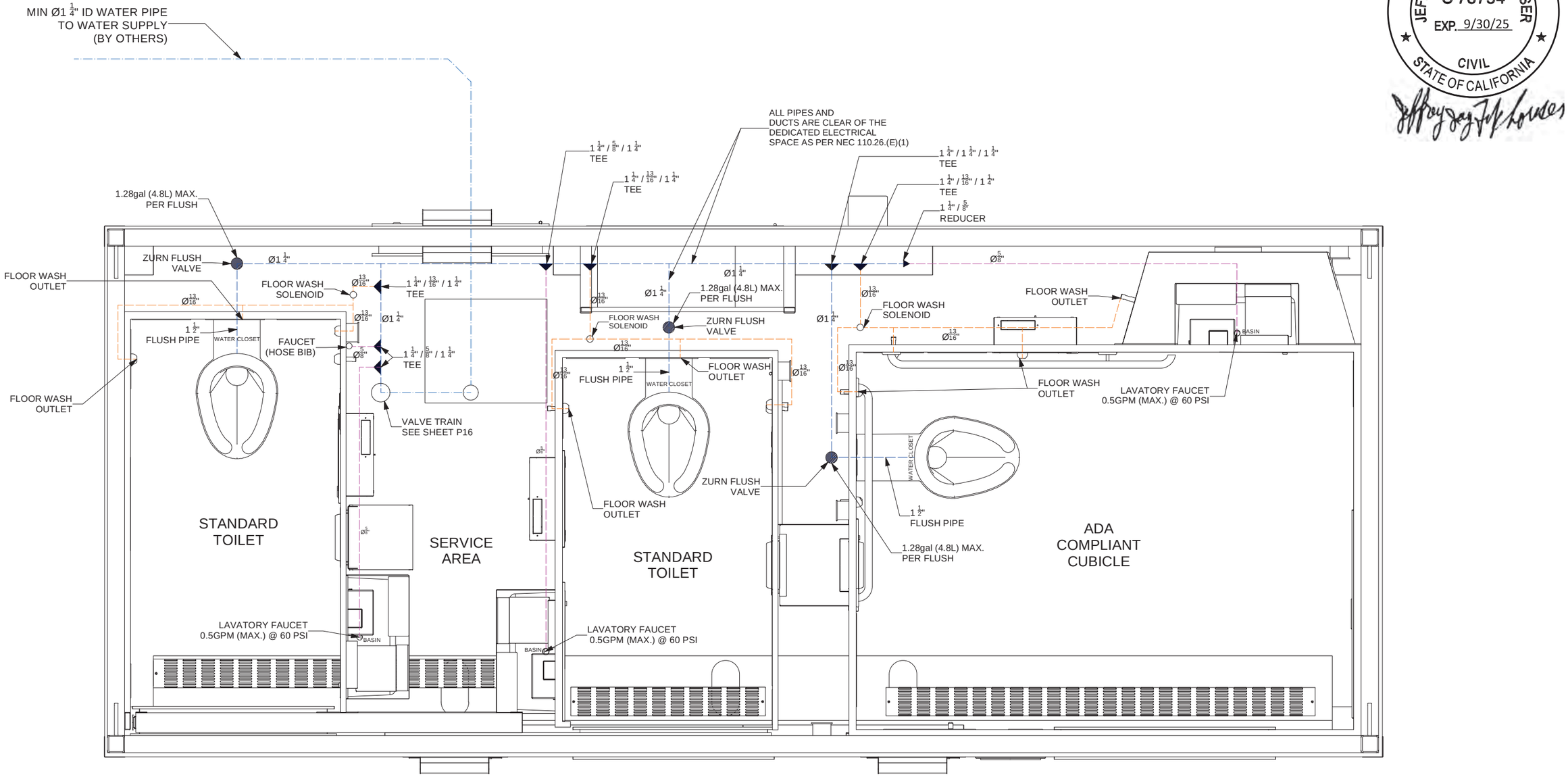
STATE OF CALIFORNIA

WATER SUPPLY SCHEMATIC PLAN



NOTE:
1. THIS DIAGRAM IS A VISUAL REPRESENTATION AND INDICATIVE ONLY - NOT TO SCALE
2. ALL PIPES AND DUCTS ARE CLEAR OF THE DEDICATED ELECTRICAL SPACE AS PER NEC 110.26.(E)(1)

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		Tolerance:	Scale:	Checked by:	Approved by:
Material:	Finish:	Drawn by: JJG	Creation Date: 5/24/2022	Sheet No. B 15	Drawing No: AS-JUP23ATD-US-1

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MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2023-05-23
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Anderson, IN 46016

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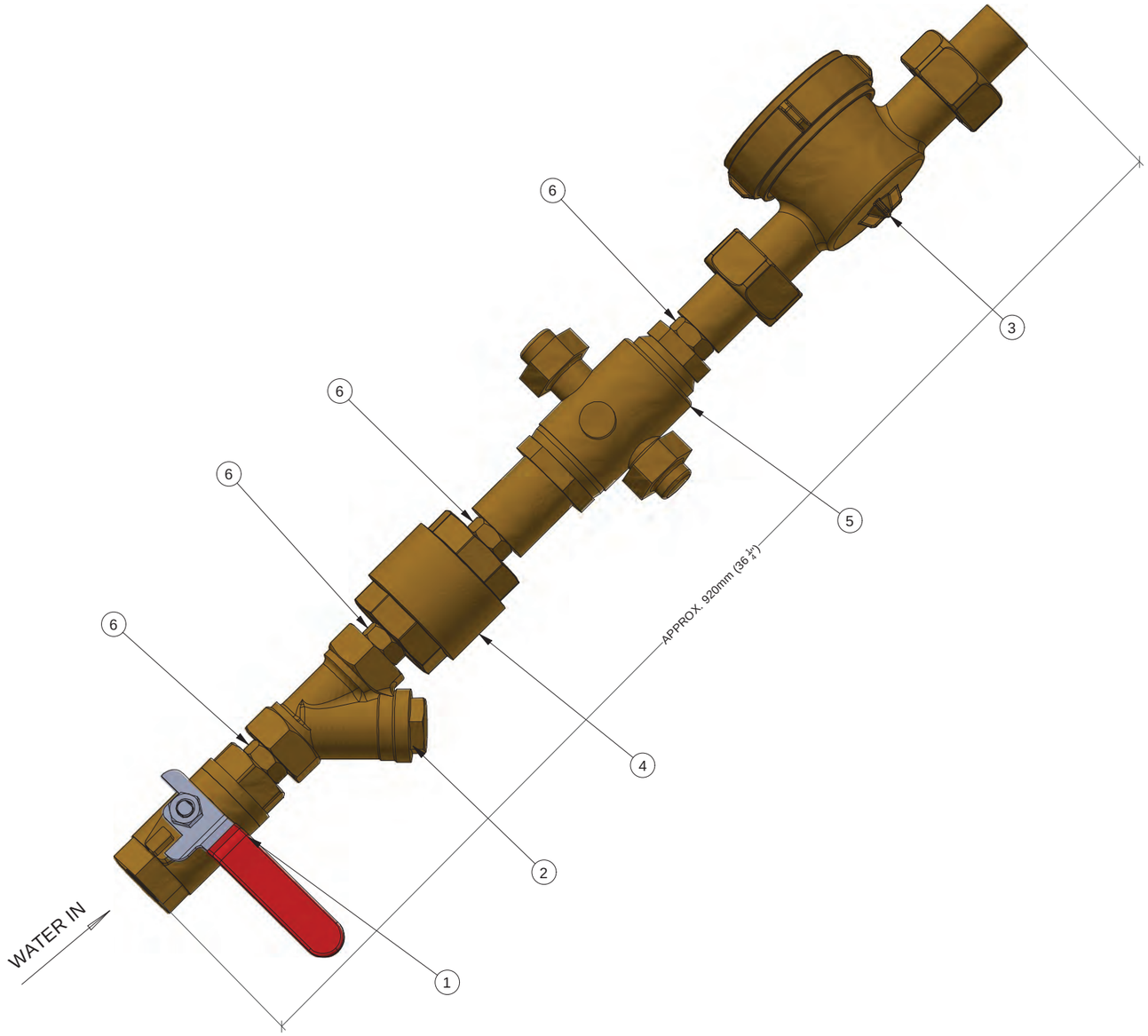
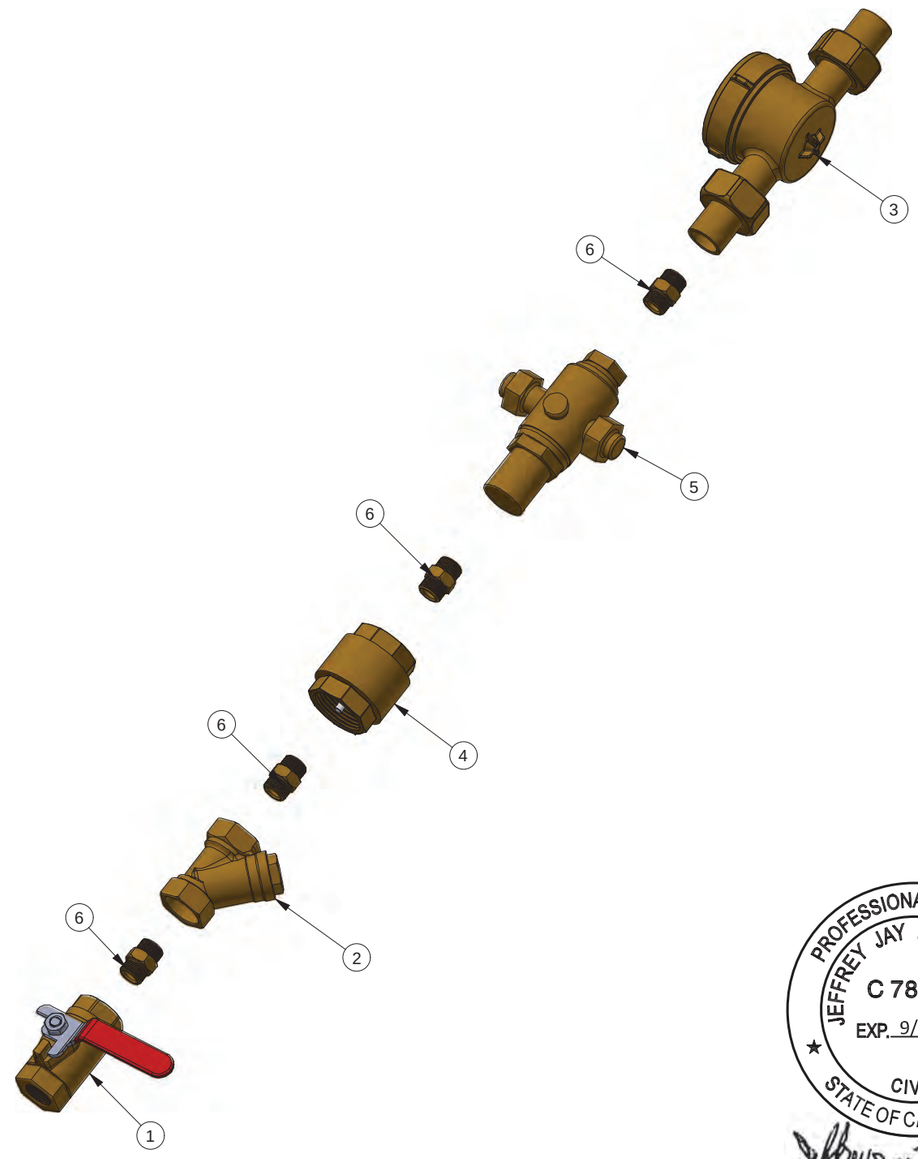
ISOMETRIC VIEW



EXPLODED VIEW



APPROXIMATE LENGTH OF TRAIN = 920mm (36 1/4")

Parts List			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	5505008	VALVE TRAIN USA 1-1/4 VALVE BALL FEM/FEM LONG HANDLE WATER	1
2	5505015	VALVE TRAIN USA 1-1/4 BRONZE 150 SWP THREADED Y STRAINER	1
3	55160056	WATER METER - FOR REMOTE MONITORING (AS REQUIRED)	1
4	5505016	VALVE TRAIN USA 1-1/4 BRASS THREADED SPRING CHECK VALVE	1
5	5505013	VALVE TRAIN USA 1-1/4 BRONZE PRESSURE REDUCING VALVE FNPT X FNPT	1
6	5505017	VALVE TRAIN USA 1-1/4 X 2 BRASS NIPPLE GLOBAL	4

2/22/24

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Unit 18, 62-66 Newton Rd Wetherill Park
PO Box 12 Liverpool NSW 1871
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954 Toro St San Luis Obispo CA 93401
PO Box 13310 San Luis Obispo CA 93406
T: (800) 676-5290 or 1-800-303-3506

Description: VALVE TRAIN ASSEMBLY - USA

Approved for Commercial
Approved by: State of California
MH DAA #DMS107408
Intertek (Intertek-ATI)
Plan Approval: #P-21317
Approval date: 2024-02-23
Expiration Date: 2025-05-22
Without Foundation Approval

Proj:	Units:	Rev.	Rev Date.
		1-A	15/09/2021

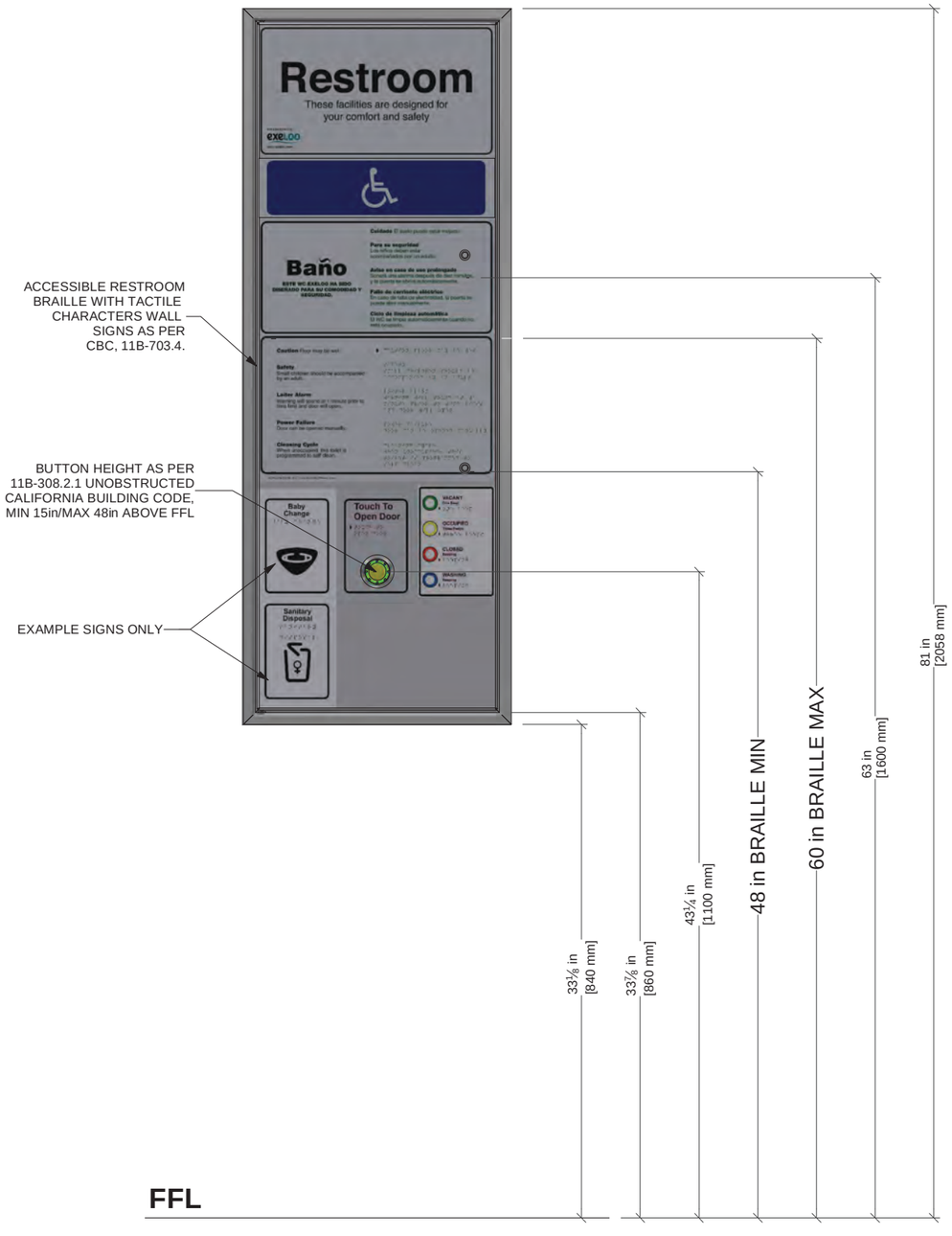
Tolerance:	Scale:	Checked by:	Approved by:

Material:	Finish:	Drawn by:	Creation Date:	Sheet No.	Drawing No:
		JJG	15/09/2021	P 16	VALVE TRAIN - USA

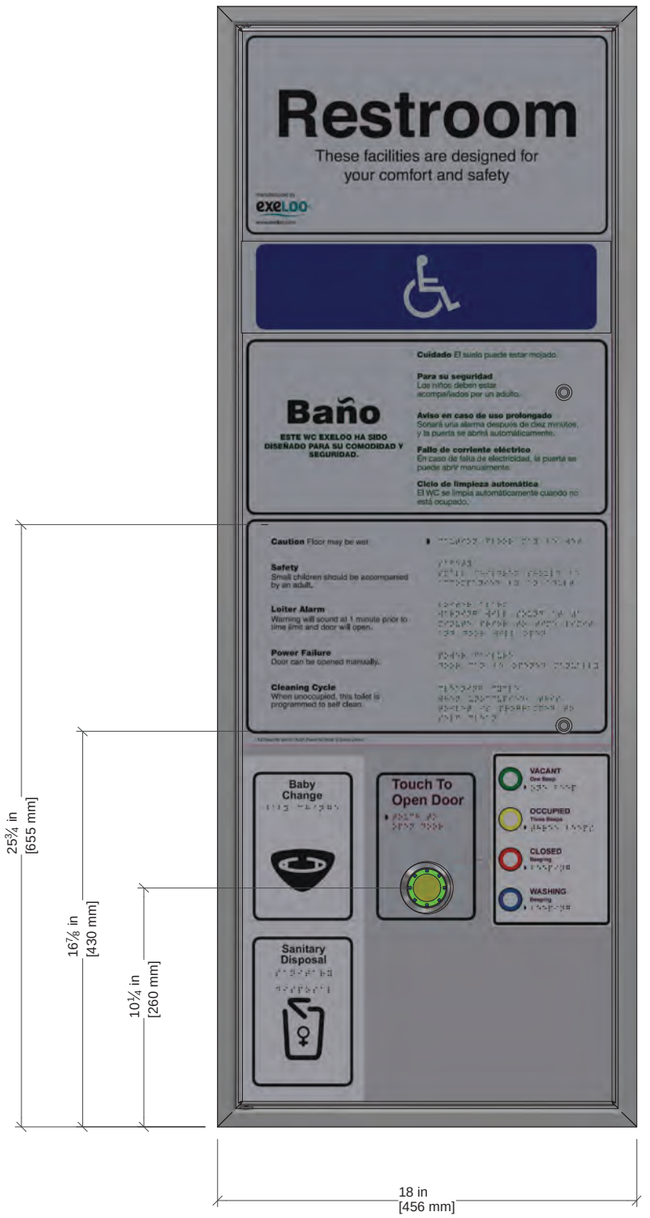
DO NOT SCALE - IF IN DOUBT ASK

SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE

BUTTON, LIGHT AND BRAILLE POSITIONS



BUTTON, LIGHT AND BRAILLE POSITIONS



2/22/24

PROFESSIONAL ENGINEER
JEFFREY JAY FUNKHOUSER
C 78754
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CIVIL
STATE OF CALIFORNIA

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USA
1015 Nipomo St, Suite 100,
San Luis Obispo, CA 93401
PO Box 13310, San Luis Obispo, CA 93406
T: (800) 676-5290 or 1-800-303-3506

Description: SIGN DOOR ASSEMBLY USA - ADA

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2023-05-23
Expiration Date: 2025-05-22
Without Foundation Approval
1748 33rd Street Orlando, FL 32839

Material:	Finish:	Proj:	Units:	Rev.: 1-A	Rev Date.: 3/18/2020
		Tolerance:	Scale:	Checked by:	Approved by:
		Drawn by: JJG	Creation Date: 5/1/2006	Sheet No.: G 17	Drawing No.: SIGN FRAME MU001 - ADA

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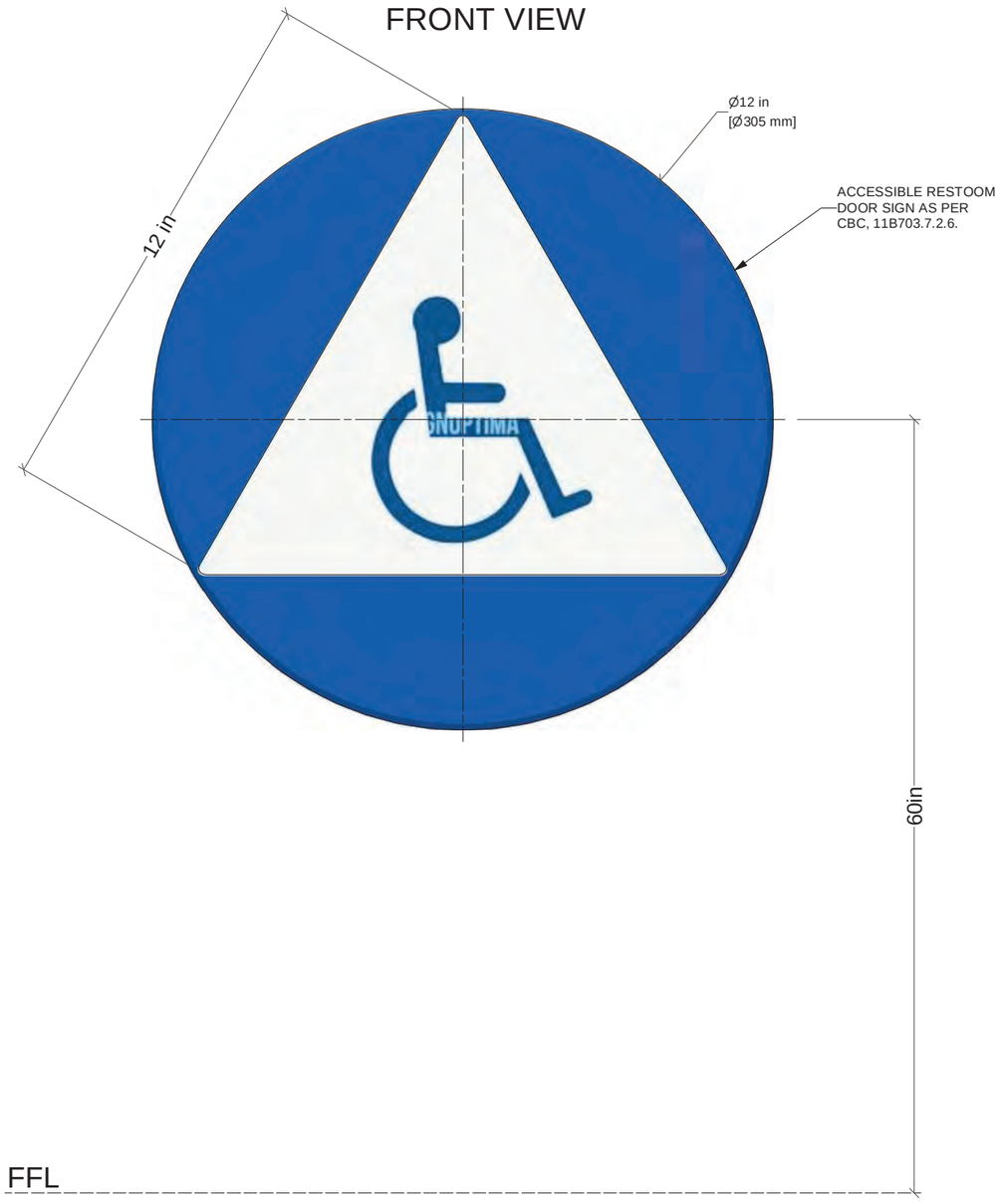
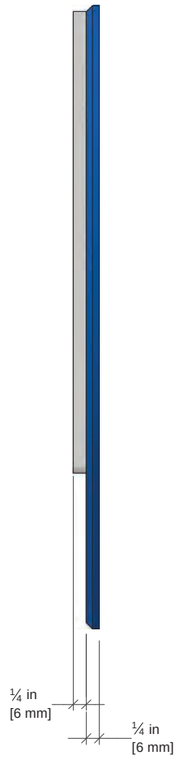
FRONT VIEW



SIDE



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CIVIL
STATE OF CALIFORNIA

THE UNISEX GEOMETRIC SYMBOL WITH THE PICTOGRAM, RAISED CHARACTERS AND GRADE II BRAILLE IS LOCATED FOR CLEAR AND SAFE ACCESS AND MOUNTED ADJACENT TO THE PUBLIC RESTROOM ACCESSWAYS.

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San Luis Obispo, CA 93401
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Description: ACCESSIBLE RESTROOM DOOR SIGN			Proj:	Units:	Rev.: 1-A / Rev Date.: 9/21/2018
			Tolerance: / Scale:	Checked by:	Approved by:
Material: Generic	Finish:		Drawn by: JJG	Creation Date: 9/20/2018	Sheet No.: G 18

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #P-21317
Approval Date: 2025-05-21
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Allendale, IL 62410

Drawing No.: **US ADA GENDER NEUTRAL SIGN**

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SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE

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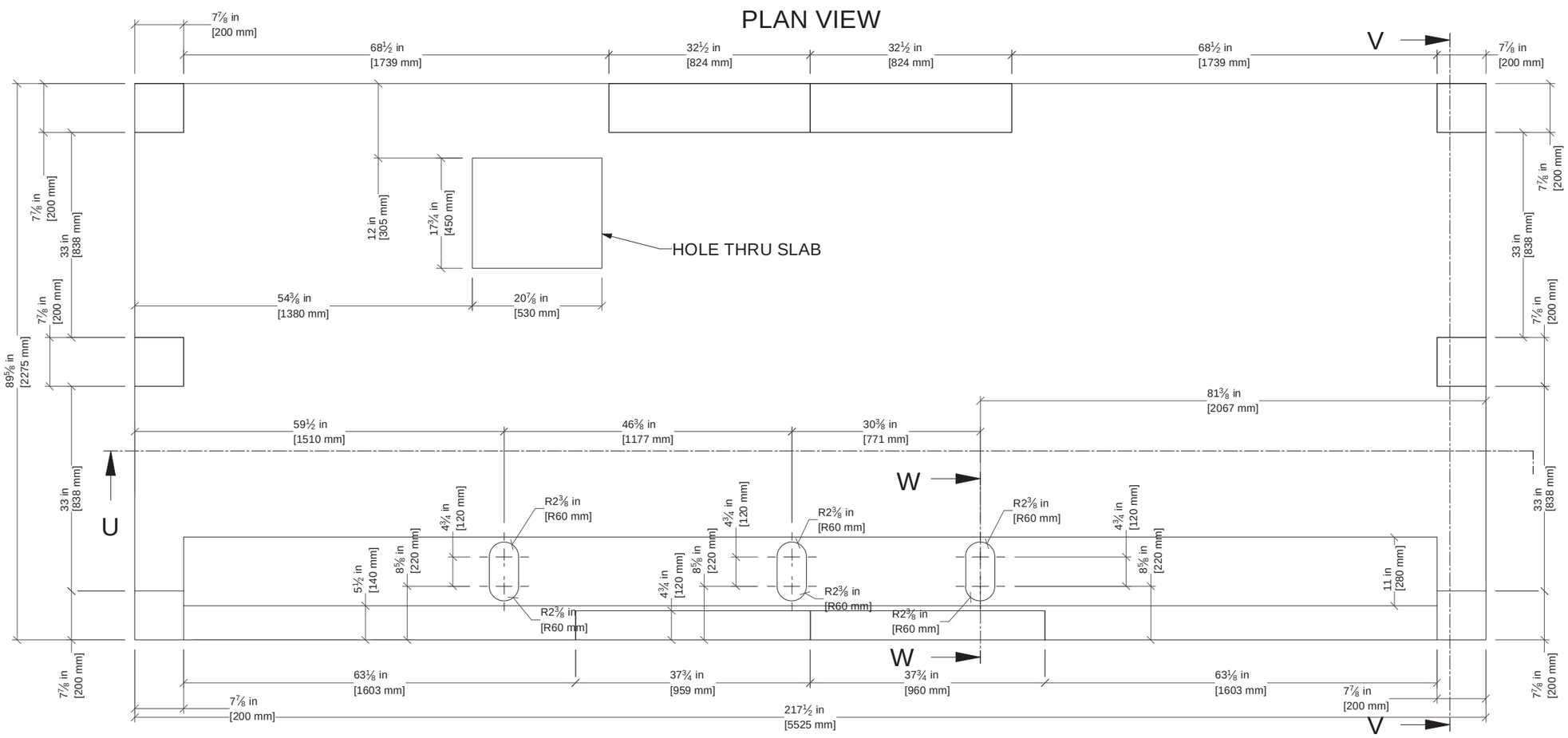
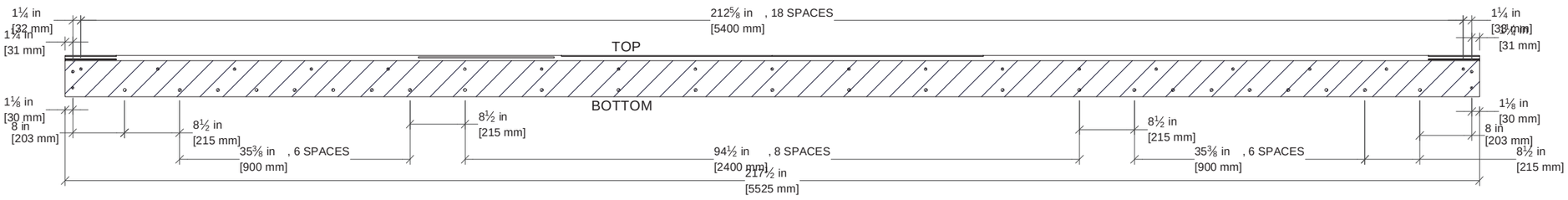
PLAN VIEW

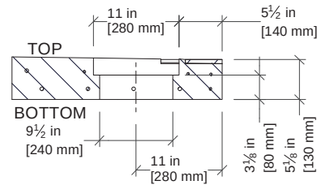


NOTES (METRIC):
1. CONCRETE STRENGTH TO BE 40MPa
2. CONCRETE COVER TO BE 30mm U.N.O
3. REFER TO AS 3600-2018 (SECTION 17.5) FOR PRECAST TOLERANCES
4. REINFORCING TO BE 10mm DEFORMED GRADE 500E
5. PANEL TO BE LIFTED AT MIN 20MPa

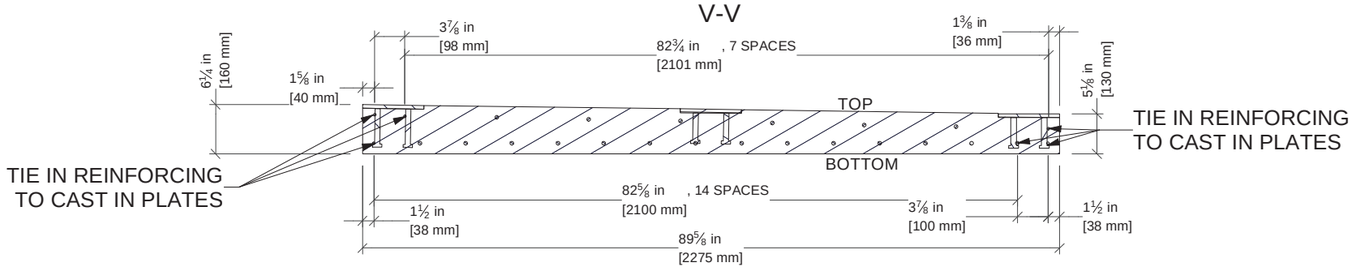
U-U



W-W



V-V



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Description: JUPITER SUPER TRIPLE BASE FOR MODELS 23AAD USA

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2024-01-23
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Orlando, FL 32839

Proj:	Units:	Rev.	Rev Date.
		1-B	7/5/2022
Tolerance: / Scale:	Checked by:	Approved by:	
Material: / Finish:	Drawn by: JJG	Creation Date: 6/16/2011	Sheet No. B 19
			Drawing No: 3D-2757

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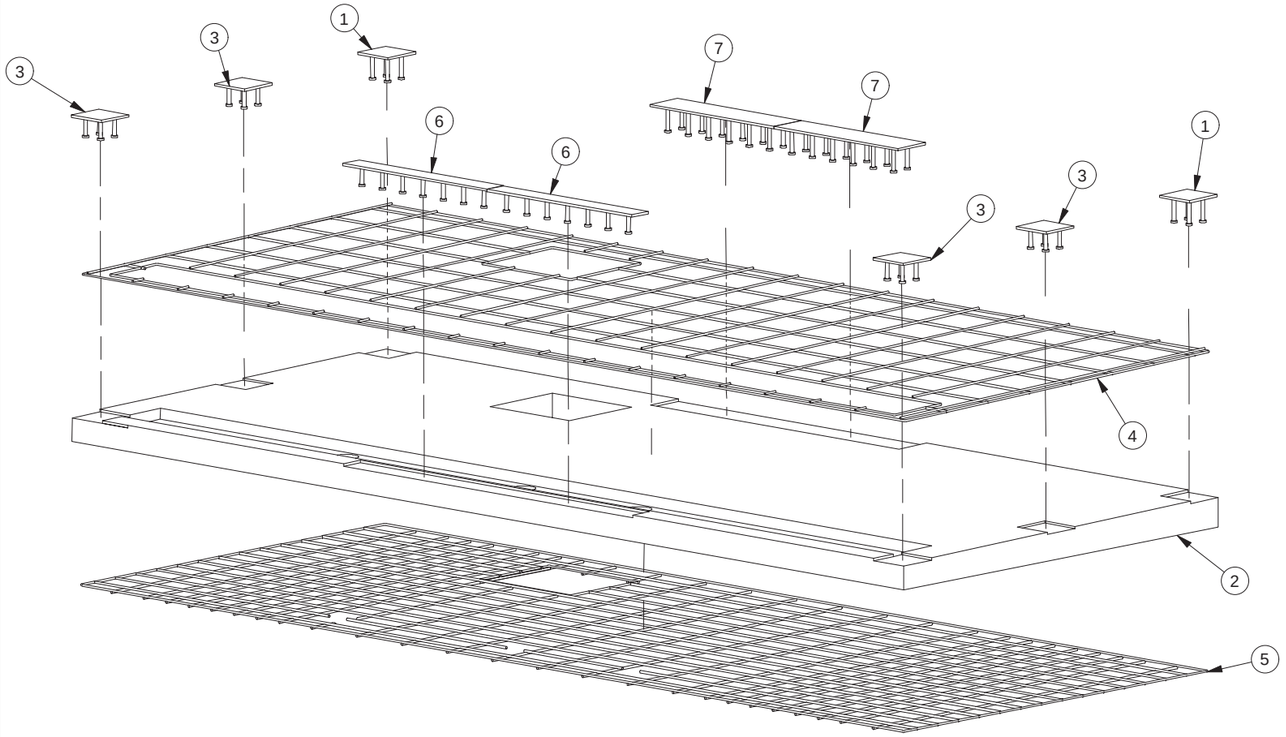
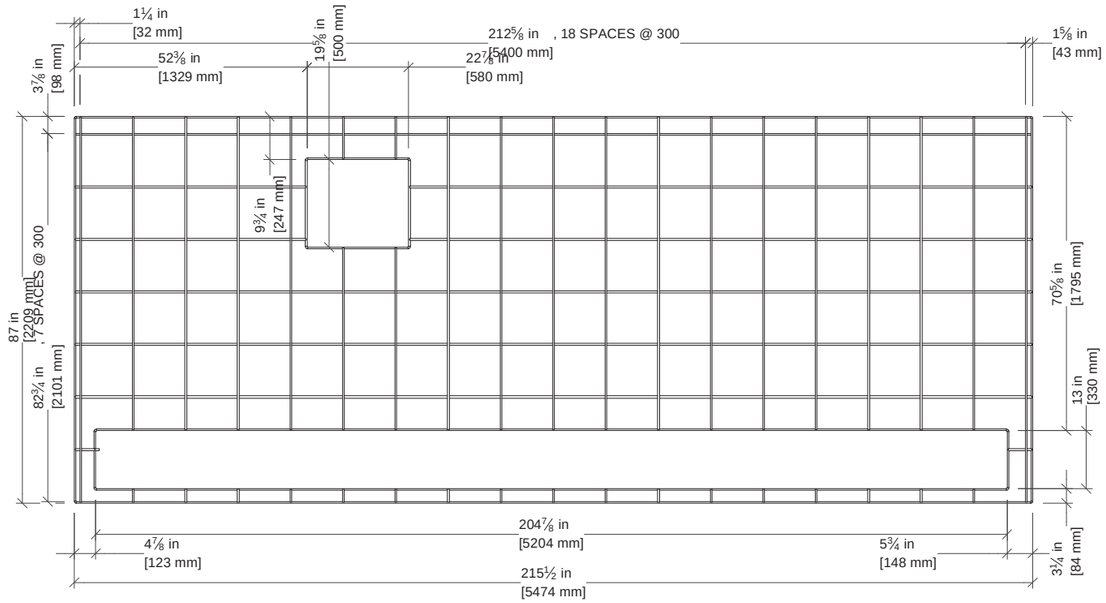
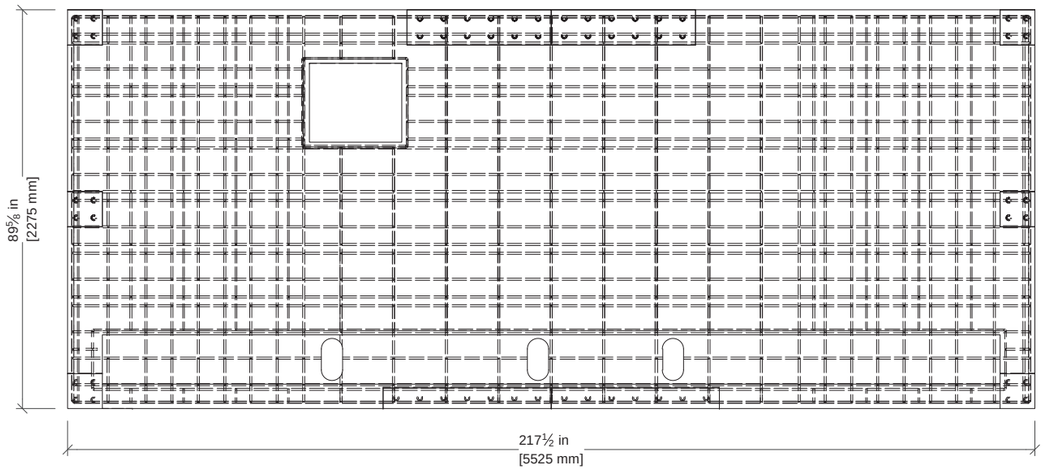
EXPLODED PERSPECTIVE VIEW



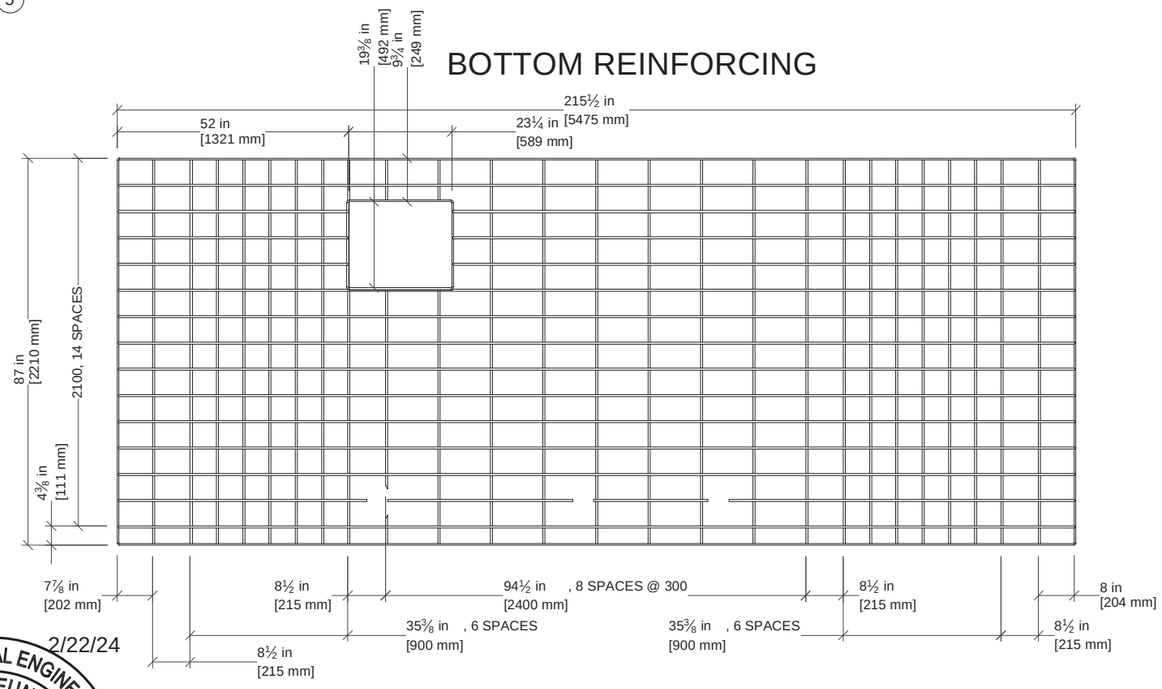
TOP REINFORCING



REINFORCING HIDDEN VIEW



BOTTOM REINFORCING



Parts List			
ITEM	PART NUMBER	DESCRIPTION	QTY
1	JUP 10025	CORNER REAR CASTING PLATE	2
2	JUP23AAD 80002	JUPITER 23AAD CONCRETE FLOOR SLAB USA	1
3	JUP 10024	CORNER FRONT CASTING PLATE	4
4	JUP23AAD 50012	JUPITER 23AAD TOP REINFORCING	1
5	JUP23AAD 50022	JUPITER 23AAD BOTTOM REINFORCING	1
6	JUP 10022	FRONT CASTING PLATE	2
7	JUP 10023	REAR CASTING PLATE	2

2/22/24

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Description:
JUPITER SUPER TRIPLE BASE FOR MODELS 23AAD USA

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2020-05-22
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Orlando, FL 32839

Proj:		Units:	Rev.	Rev Date.
			1-B	7/5/2022
Tolerance:	Scale:	Checked by:	Approved by:	
Material:	Finish:	Drawn by: JJG	Creation Date: 6/16/2011	Sheet No. B 20
			Drawing No: 3D-2757	

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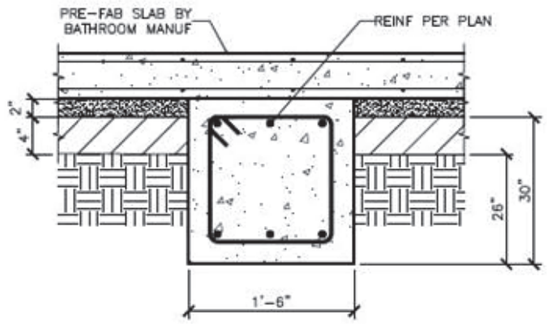
NOTE:

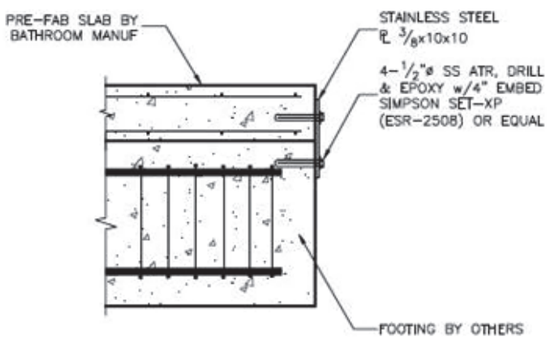
SLAB SLOPES FROM 5-1/8" (5-5/8" INC TILES) AT FRONT
TO 6-1/4" (6-3/4" INC TILES) AT REAR.
FOOTING IS NOT PART OF THE BASE
- CONTRACTOR TO SUPPLY



NOTE:
1. THE SUBGRADE (BELOW THE AGGREGATE BASE) SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 12 INCHES, MOISTURE CONDITIONED TO AT LEAST 3 PERCENT ABOVE OPTIMUM MOISTURE CONTENT, AND RE-COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION PER ASTM D-1557.
2. THE BOTTOM OF THE FOOTING EXCAVATION SHOULD BE COMPACTED WITH A JUMPING JACK COMPACTOR WITH AT LEAST 4 PASSES.
3. THE SLAB SHOULD BE UNDERLAIN BY 2 INCHES OF MASON SAND (ASTM C-144) COMPACTED WITH A VIBRATORY PLATE OVER A MINIMUM 4 INCHES OF CLASS 2 AGGREGATE BASE COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION.

1 FOOTING @ SLAB

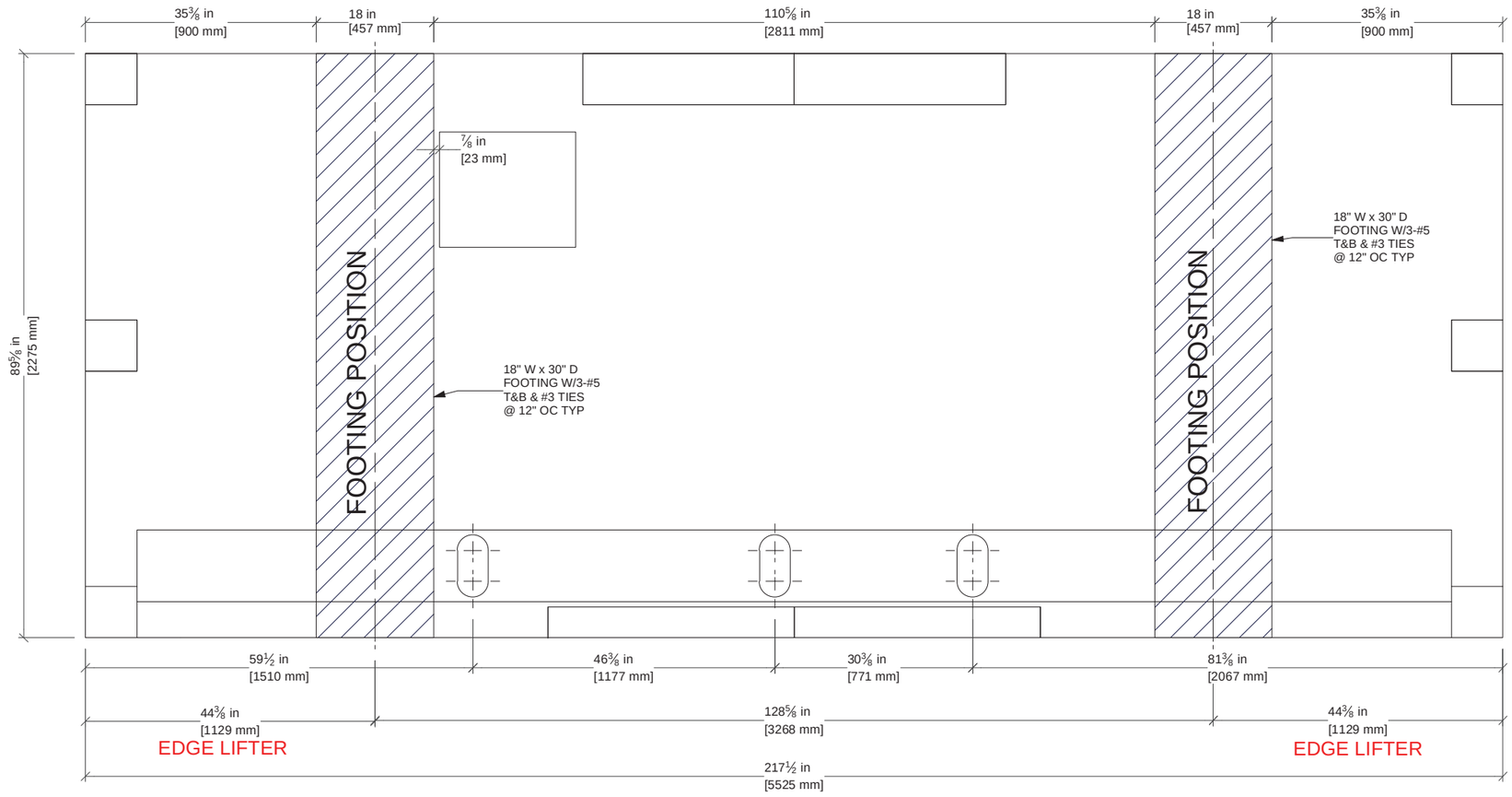
PARTIAL SCALE 1"=1'-0"



3 ALTERNATE SLAB TO FTG TIE

PARTIAL SCALE 1"=1'-0"

FOUNDATION DETAIL



REFER TO HUME ENGINEERING DRAWINGS,
RS1.1 & RS2, FOR DETAILS OF THE FOUNDATION

2/22/24

PROFESSIONAL ENGINEER
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Description:
JUPITER SUPER TRIPLE BASE FOR MODELS 23AAD USA

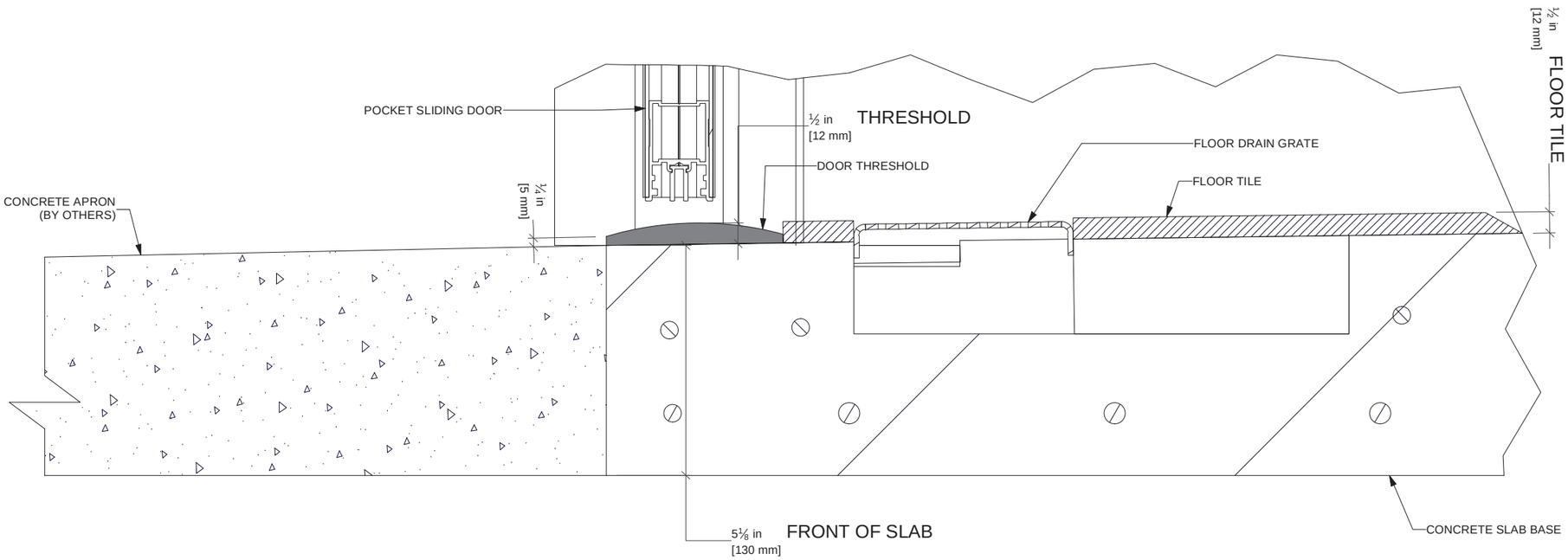
Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #8-21317
Approval Date: 2024-07-23
Expiration Date: 2025-05-22
Without Foundation Approval
1748 33rd Street Orlando, FL 32839

Proj:		Units:	Rev.	Rev Date.
			1-B	5/07/2022
Tolerance:	Scale:	Checked by:	Approved by:	
Material:	Finish:	Drawn by: JJG	Creation Date: 16/06/2011	Sheet No. B 21	Drawing No: 3D-2757

DO NOT SCALE - IF IN DOUBT ASK

SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE

DOOR ENTRY & CONCRETE APRON
(1 : 3)



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San Luis Obispo, CA 93401
PO Box 13310, San Luis Obispo, CA 93406
T: (800) 676-5290 or 1-800-303-3506

Description: JUPITER TRIPLE - TWIN STANDARD & SINGLE ACCESSIBLE USA		Proj:	Units:	Rev.: 1-A	Rev Date.: 1/30/2024
		Tolerance: / Scale:	Checked by:	Approved by:	
Material:	Finish:	Drawn by: JJG	Creation Date: 5/24/2022	Sheet No.: G 22	Drawing No.: AS-JUP23ATD-US-1

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #8-21317
Approval Date: 2024-07-23
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Orlando, FL 32839

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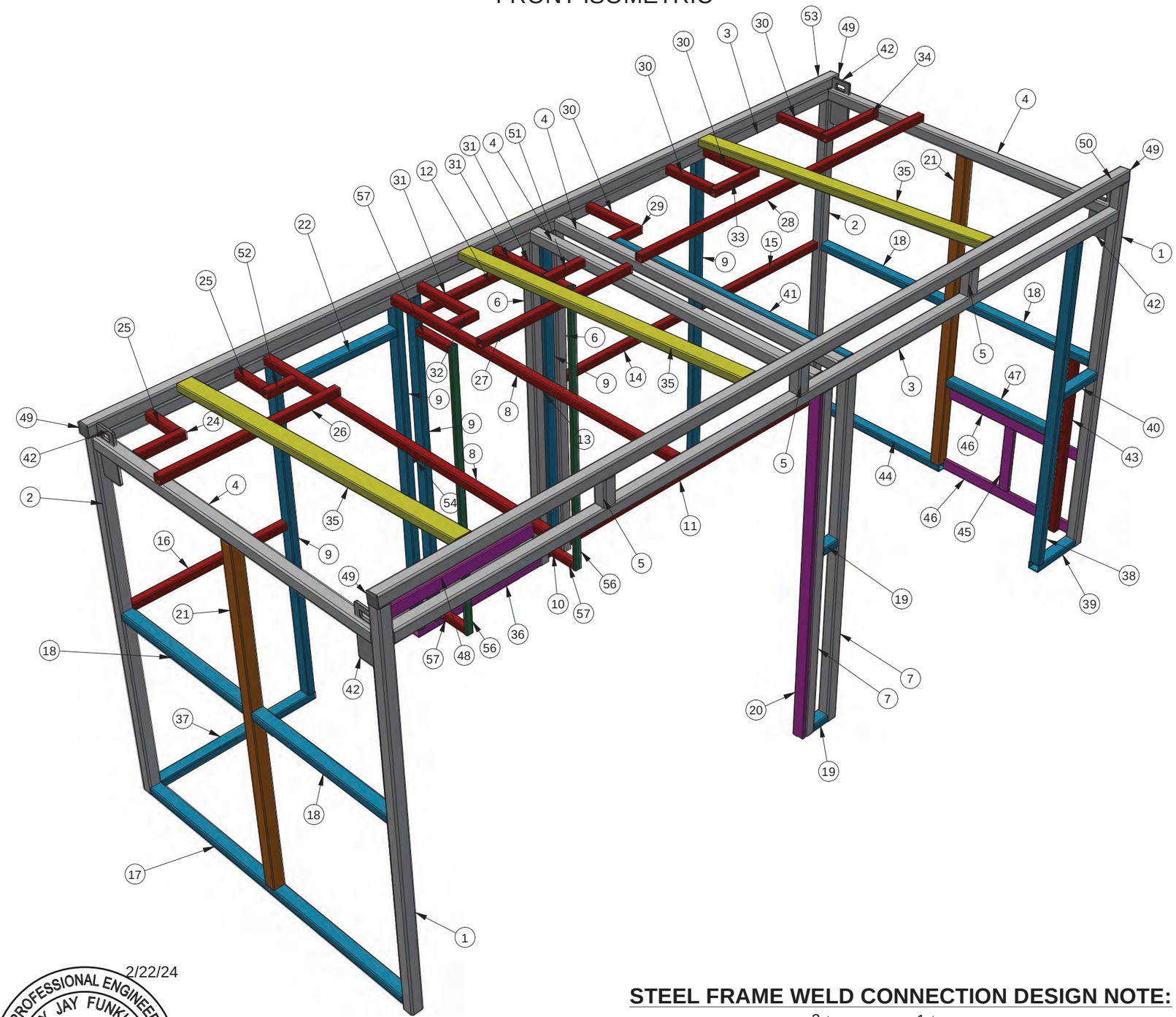
SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE

Parts List				
ITEM	PART NUMBER	ITEM QTY	UNIT QTY	QTY
1	AS 1163 - C350L0 75x75x5.0 SHS - 2558	2	100 ¾ in	201 ⅜ in
2	AS 1163 - C350L0 75x75x5.0 SHS - 2370	2	93 ¼ in	186 ⅝ in
3	AS 1163 - C350L0 75x75x5.0 SHS - 5375	2	211 ⅝ in	423 ¼ in
4	AS 1163 - C350L0 75x75x5.0 SHS - 2125	4	83 ⅝ in	334 ⅝ in
5	AS 1163 - C350L0 75x75x5.0 SHS - 158	3	6 ¼ in	18 ⅝ in
6	AS 1163 - C350L0 75x75x5.0 SHS - 2295	2	90 ⅜ in	180 ¾ in
7	AS 1163 - C350L0 75x75x5.0 SHS - 2325	2	91 ½ in	183 ⅛ in
8	AS 1163 - C350L0 50x50x3.0 SHS - 2125	2	83 ⅝ in	167 ⅜ in
9	AS 1163 - C350L0 75x50x3.0 RHS - 2245	5	88 ⅜ in	441 ⅞ in
10	AS 1163 - C350L0 50x50x3.0 SHS - 112	1	4 ⅜ in	4 ⅜ in
11	AS 1163 - C350L0 50x50x3.0 SHS - 2273	1	89 ½ in	89 ½ in
12	AS 1163 - C350L0 50x50x3.0 SHS - 810	1	31 ⅞ in	31 ⅞ in
13	AS 1163 - C350L0 50x50x3.0 SHS - 37	1	1 ½ in	1 ½ in
14	AS 1163 - C350L0 50x50x3.0 SHS - 1110.5	1	43 ¾ in	43 ¾ in
15	AS 1163 - C350L0 50x50x3.0 SHS - 1087.5	1	42 ⅞ in	42 ⅞ in
16	AS 1163 - C350L0 50x50x3.0 SHS - 1020	1	40 ⅛ in	40 ⅛ in
17	AS 1163 - C350L0 75x50x3.0 RHS - 2125	1	83 ⅝ in	83 ⅝ in
18	AS 1163 - C350L0 75x50x3.0 RHS - 1025	4	40 ⅜ in	161 ⅜ in
19	AS 1163 - C350L0 75x50x3.0 RHS - 112	2	4 ⅜ in	8 ⅞ in
20	AS 1163 - C350L0 75x25x2.5 RHS - 2325	2	91 ½ in	183 ⅛ in
21	AS 1163 - C350L0 75x75x3.0 SHS - 2245	2	88 ⅜ in	176 ¾ in
22	AS 1163 - C350L0 75x50x3.0 RHS - 780	1	30 ¾ in	30 ¾ in
23	AS 1163 - C350L0 75x25x2.5 RHS - 2400	1	94 ½ in	94 ½ in
24	AS 1163 - C350L0 50x50x3.0 SHS - 285	1	11 ¼ in	11 ¼ in
25	AS 1163 - C350L0 50x50x3.0 SHS - 228	2	9 in	18 in
26	AS 1163 - C350L0 50x50x3.0 SHS - 1095	1	43 ⅛ in	43 ⅛ in
27	AS 1163 - C350L0 50x50x3.0 SHS - 1094	1	43 ⅛ in	43 ⅛ in
28	AS 1163 - C350L0 50x50x3.0 SHS - 2423	1	95 ⅜ in	95 ⅜ in
29	AS 1163 - C350L0 50x50x3.0 SHS - 223	1	8 ¾ in	8 ¾ in
30	AS 1163 - C350L0 50x50x3.0 SHS - 359	4	14 ⅛ in	56 ½ in
31	AS 1163 - C350L0 50x50x3.0 SHS - 398	2	15 ⅝ in	31 ⅜ in
32	AS 1163 - C350L0 50x50x3.0 SHS - 184.5	1	7 ¼ in	7 ¼ in
33	AS 1163 - C350L0 50x50x3.0 SHS - 371	1	14 ⅝ in	14 ⅝ in
34	AS 1163 - C350L0 50x50x3.0 SHS - 479	1	18 ⅞ in	18 ⅞ in
35	AS 1163 - C350L0 100x50x3.0 RHS - 2128.551	3	83 ¾ in	251 ⅜ in
36	AS 1163 - C350L0 75x50x3.0 RHS - 990	1	39 in	39 in
37	AS 1163 - C350L0 75x50x3.0 RHS - 1070	1	42 ⅛ in	42 ⅛ in
38	AS 1163 - C350L0 75x50x3.0 RHS - 2275	1	89 ⅝ in	89 ⅝ in
39	AS 1163 - C350L0 75x50x3.0 RHS - 373	1	14 ⅝ in	14 ⅝ in
40	AS 1163 - C350L0 75x50x3.0 RHS - 323	1	12 ¾ in	12 ¾ in
41	AS 1163 - C350L0 75x50x3.0 RHS - 1716	1	67 ½ in	67 ½ in
42	55254235	4	0 in	⅛ in
43	AS 1163 - C350L0 50x50x3.0 SHS - 1281	1	50 ⅜ in	50 ⅜ in
44	AS 1163 - C350L0 75x50x3.0 RHS - 1100	1	43 ¼ in	43 ¼ in
45	AS 1163 - C350L0 75x25x2.5 RHS - 478	1	18 ⅞ in	18 ⅞ in
46	AS 1163 - C350L0 75x25x2.5 RHS - 1025	2	40 ⅜ in	80 ¾ in
47	AS 1163 - C350L0 75x50x3.0 RHS - 891	1	35 ⅛ in	35 ⅛ in
48	AS 1163 - C350L0 75x25x2.5 RHS - 945	1	37 ¼ in	37 ¼ in
49	55254335	4	0 in	⅛ in
50	AS 1163 - C350L0 75x75x5.0 SHS - 5513	1	217 in	217 in
51	AS 1163 - C350L0 50x50x3.0 SHS - 284.5	1	11 ¼ in	11 ¼ in
52	AS 1163 - C350L0 50x50x3.0 SHS - 185	1	7 ¼ in	7 ¼ in
53	AS 1163 - C350L0 75x75x5.0 SHS - 5558	1	218 ⅞ in	218 ⅞ in
54	AS 1163 - C350L0 50x50x3.0 SHS - 80	1	3 ⅛ in	3 ⅛ in
56	AS 1163 - C350L0 50x25x2.5 RHS - 2000	2	78 ¾ in	157 ½ in
57	AS 1163 - C350L0 50x50x3.0 SHS - 265	4	10 ⅜ in	41 ¾ in

FRONT ISOMETRIC



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CIVIL
STATE OF CALIFORNIA

STEEL FRAME WELD CONNECTION DESIGN NOTE:

ALL HSS 3" x 3" x $\frac{3}{16}$" WITH $\frac{1}{4}$" WELDS ALL AROUND

exeLOO®

New Zealand
26 Paramount Dve Henderson 0610
PO Box 33-256 Takapuna, Auckland
T: +64-9-838-8912 F: +64-9-838-8913

Australia
Unit 18, 62-66 Newton Rd Wetherill Park
PO Box 12 Liverpool NSW 1871
T: +61-2-975-3444 F: +61-2-1-800-105-504

USA
954 Toro St San Luis Obispo CA 93401
PO Box 13310 San Luis Obispo CA 93406
T: (800) 676-5290 or 1-800-303-3506

Description: JUPITER TRIPLE AAD TWIN STANDARD & ACCESSIBLE STEEL FRAME USA

Proj:

Units:

Rev.: 1-C

Rev Date.: 1/30/2024

Tolerance:

Scale:

Checked by:

Approved by:

Material:

Finish:

Drawn by: JJG

Creation Date: 2/2/2022

Sheet No.: S 23

Drawing No.: JUP23AAD-US-TF1001

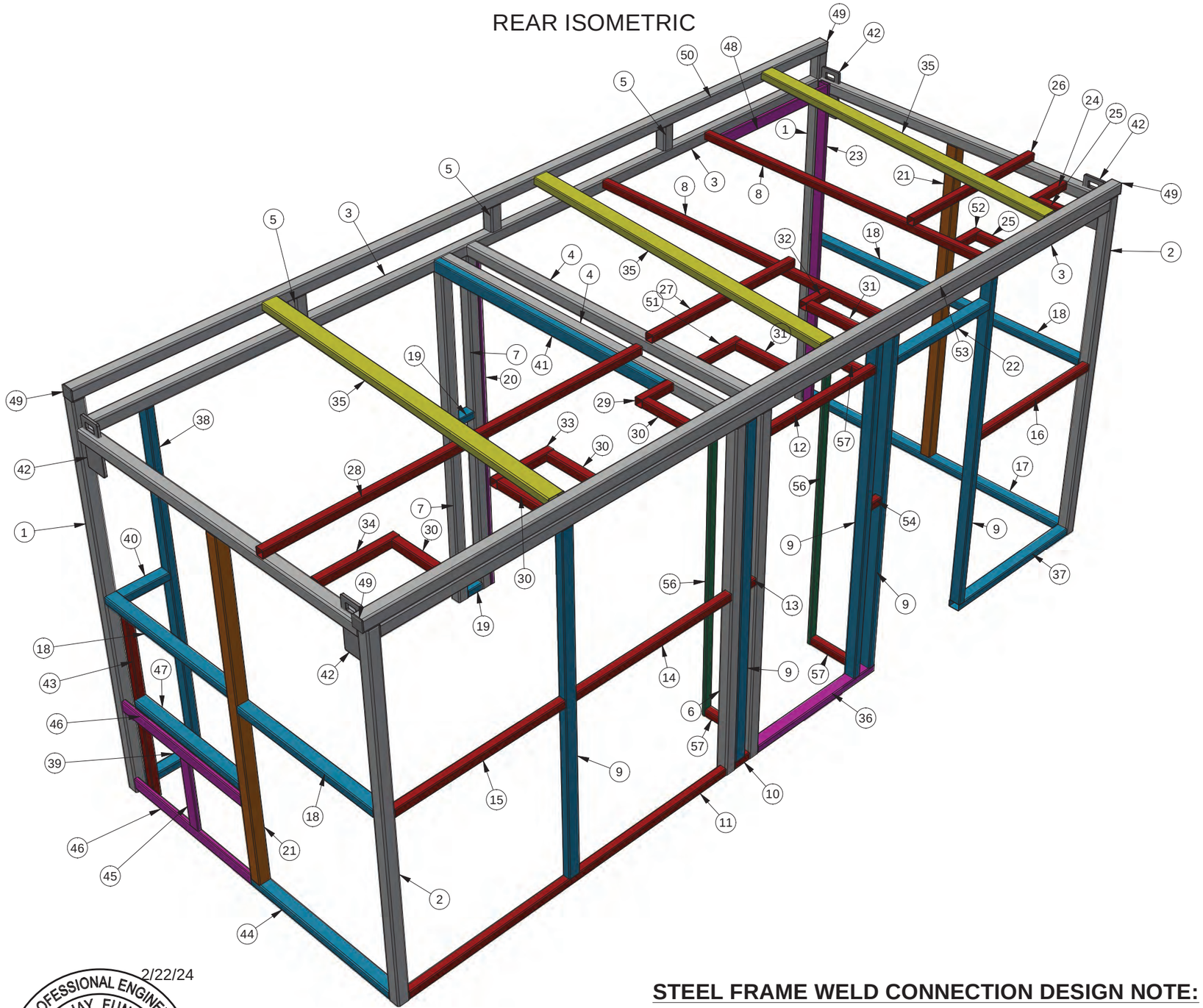
Engineered for Wind Speed: 130 mph
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #8-21317
Approval Date: 2024-07-23
Expiration Date: 2025-05-22
Without Foundation Approval
1748 33rd Street
Orlando, FL 32839

DO NOT SCALE - IF IN DOUBT ASK

SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE

Parts List				
ITEM	PART NUMBER	ITEM QTY	UNIT QTY	QTY
1	AS 1163 - C350L0 75x75x5.0 SHS - 2558	2	100 ¾ in	201 ⅜ in
2	AS 1163 - C350L0 75x75x5.0 SHS - 2370	2	93 ¼ in	186 ⅝ in
3	AS 1163 - C350L0 75x75x5.0 SHS - 5375	2	211 ⅝ in	423 ¼ in
4	AS 1163 - C350L0 75x75x5.0 SHS - 2125	4	83 ⅝ in	334 ⅝ in
5	AS 1163 - C350L0 75x75x5.0 SHS - 158	3	6 ¼ in	18 ⅝ in
6	AS 1163 - C350L0 75x75x5.0 SHS - 2295	2	90 ⅜ in	180 ¾ in
7	AS 1163 - C350L0 75x75x5.0 SHS - 2325	2	91 ½ in	183 ⅛ in
8	AS 1163 - C350L0 50x50x3.0 SHS - 2125	2	83 ⅝ in	167 ⅜ in
9	AS 1163 - C350L0 75x50x3.0 RHS - 2245	5	88 ⅜ in	441 ⅞ in
10	AS 1163 - C350L0 50x50x3.0 SHS - 112	1	4 ⅜ in	4 ⅜ in
11	AS 1163 - C350L0 50x50x3.0 SHS - 2273	1	89 ½ in	89 ½ in
12	AS 1163 - C350L0 50x50x3.0 SHS - 810	1	31 ⅞ in	31 ⅞ in
13	AS 1163 - C350L0 50x50x3.0 SHS - 37	1	1 ½ in	1 ½ in
14	AS 1163 - C350L0 50x50x3.0 SHS - 1110.5	1	43 ¾ in	43 ¾ in
15	AS 1163 - C350L0 50x50x3.0 SHS - 1087.5	1	42 ⅞ in	42 ⅞ in
16	AS 1163 - C350L0 50x50x3.0 SHS - 1020	1	40 ⅛ in	40 ⅛ in
17	AS 1163 - C350L0 75x50x3.0 RHS - 2125	1	83 ⅝ in	83 ⅝ in
18	AS 1163 - C350L0 75x50x3.0 RHS - 1025	4	40 ⅜ in	161 ⅜ in
19	AS 1163 - C350L0 75x50x3.0 RHS - 112	2	4 ⅜ in	8 ⅞ in
20	AS 1163 - C350L0 75x25x2.5 RHS - 2325	2	91 ½ in	183 ⅛ in
21	AS 1163 - C350L0 75x75x3.0 SHS - 2245	2	88 ⅜ in	176 ¾ in
22	AS 1163 - C350L0 75x50x3.0 RHS - 780	1	30 ¾ in	30 ¾ in
23	AS 1163 - C350L0 75x25x2.5 RHS - 2400	1	94 ½ in	94 ½ in
24	AS 1163 - C350L0 50x50x3.0 SHS - 285	1	11 ¼ in	11 ¼ in
25	AS 1163 - C350L0 50x50x3.0 SHS - 228	2	9 in	18 in
26	AS 1163 - C350L0 50x50x3.0 SHS - 1095	1	43 ⅛ in	43 ⅛ in
27	AS 1163 - C350L0 50x50x3.0 SHS - 1094	1	43 ⅛ in	43 ⅛ in
28	AS 1163 - C350L0 50x50x3.0 SHS - 2423	1	95 ⅜ in	95 ⅜ in
29	AS 1163 - C350L0 50x50x3.0 SHS - 223	1	8 ¾ in	8 ¾ in
30	AS 1163 - C350L0 50x50x3.0 SHS - 359	4	14 ⅛ in	56 ½ in
31	AS 1163 - C350L0 50x50x3.0 SHS - 398	2	15 ⅝ in	31 ⅜ in
32	AS 1163 - C350L0 50x50x3.0 SHS - 184.5	1	7 ¼ in	7 ¼ in
33	AS 1163 - C350L0 50x50x3.0 SHS - 371	1	14 ⅝ in	14 ⅝ in
34	AS 1163 - C350L0 50x50x3.0 SHS - 479	1	18 ⅞ in	18 ⅞ in
35	AS 1163 - C350L0 100x50x3.0 RHS - 2128.551	3	83 ¾ in	251 ⅜ in
36	AS 1163 - C350L0 75x50x3.0 RHS - 990	1	39 in	39 in
37	AS 1163 - C350L0 75x50x3.0 RHS - 1070	1	42 ⅛ in	42 ⅛ in
38	AS 1163 - C350L0 75x50x3.0 RHS - 2275	1	89 ⅝ in	89 ⅝ in
39	AS 1163 - C350L0 75x50x3.0 RHS - 373	1	14 ⅝ in	14 ⅝ in
40	AS 1163 - C350L0 75x50x3.0 RHS - 323	1	12 ¾ in	12 ¾ in
41	AS 1163 - C350L0 75x50x3.0 RHS - 1716	1	67 ½ in	67 ½ in
42	55254235	4	0 in	⅛ in
43	AS 1163 - C350L0 50x50x3.0 SHS - 1281	1	50 ⅜ in	50 ⅜ in
44	AS 1163 - C350L0 75x50x3.0 RHS - 1100	1	43 ¼ in	43 ¼ in
45	AS 1163 - C350L0 75x25x2.5 RHS - 478	1	18 ⅞ in	18 ⅞ in
46	AS 1163 - C350L0 75x25x2.5 RHS - 1025	2	40 ⅜ in	80 ¾ in
47	AS 1163 - C350L0 75x50x3.0 RHS - 891	1	35 ⅛ in	35 ⅛ in
48	AS 1163 - C350L0 75x25x2.5 RHS - 945	1	37 ¼ in	37 ¼ in
49	55254335	4	0 in	⅛ in
50	AS 1163 - C350L0 75x75x5.0 SHS - 5513	1	217 in	217 in
51	AS 1163 - C350L0 50x50x3.0 SHS - 284.5	1	11 ¼ in	11 ¼ in
52	AS 1163 - C350L0 50x50x3.0 SHS - 185	1	7 ¼ in	7 ¼ in
53	AS 1163 - C350L0 75x75x5.0 SHS - 5558	1	218 ⅞ in	218 ⅞ in
54	AS 1163 - C350L0 50x50x3.0 SHS - 80	1	3 ⅛ in	3 ⅛ in
56	AS 1163 - C350L0 50x25x2.5 RHS - 2000	2	78 ¾ in	157 ½ in
57	AS 1163 - C350L0 50x50x3.0 SHS - 265	4	10 ⅜ in	41 ¾ in

REAR ISOMETRIC



2/22/24

PROFESSIONAL ENGINEER
JEFFREY JAY FUNKHOUSER
C 78754
EXP. 9/30/25
CIVIL
STATE OF CALIFORNIA

STEEL FRAME WELD CONNECTION DESIGN NOTE:

ALL HSS 3" x 3" x 3/16" WITH 1/4" WELDS ALL AROUND

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Description: JUPITER TRIPLE AAD TWIN STANDARD & ACCESSIBLE STEEL FRAME USA	Proj:	Units:	Rev.: 1-C	Rev Date.: 1/30/2024	
	Tolerance:	Scale:	Checked by:	Approved by:	
Material:	Finish:	Drawn by: JJG	Creation Date: 2/2/2022	Sheet No.: S 24	Drawing No.: JUP23AAD-US-TF1001

Intertek Testing Services NA, Inc.
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2025-05-22
Expiration Date: 2025-05-22
Without Foundation Approval
1748 33rd Street Orlando, FL 32839

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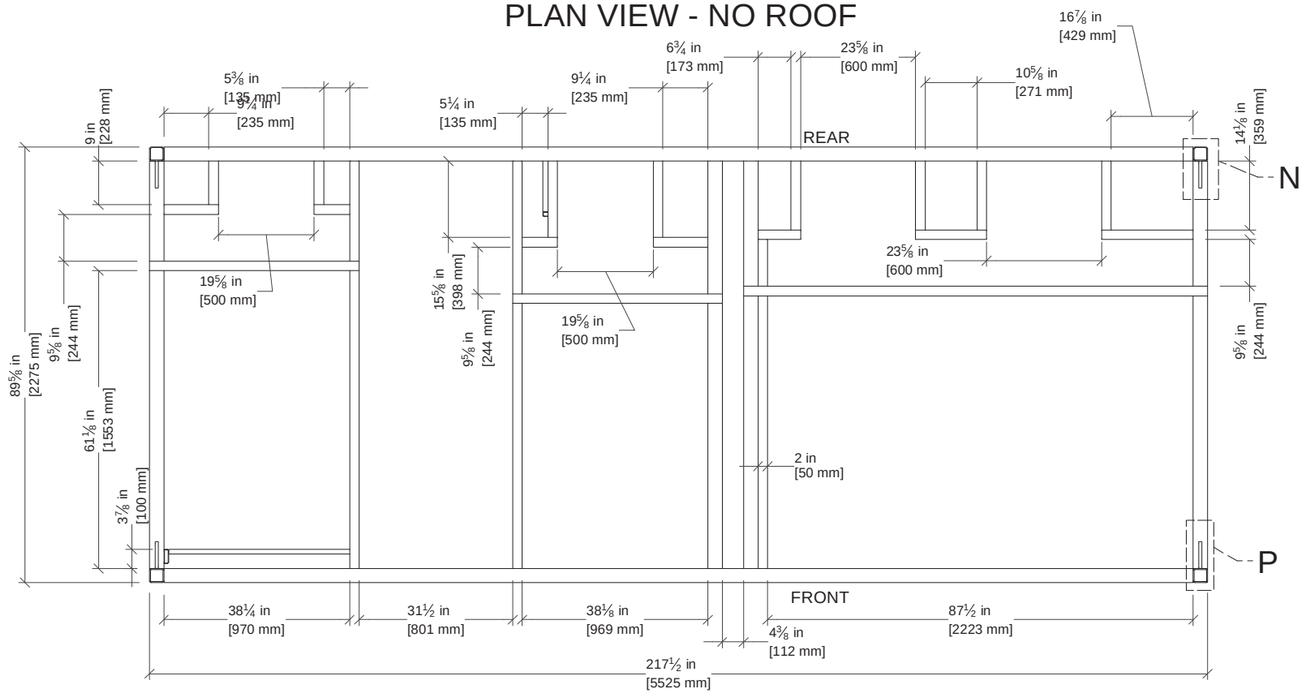
2/22/24

PLAN VIEW - NO ROOF



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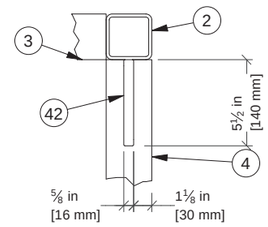

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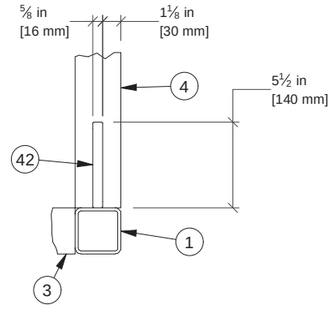
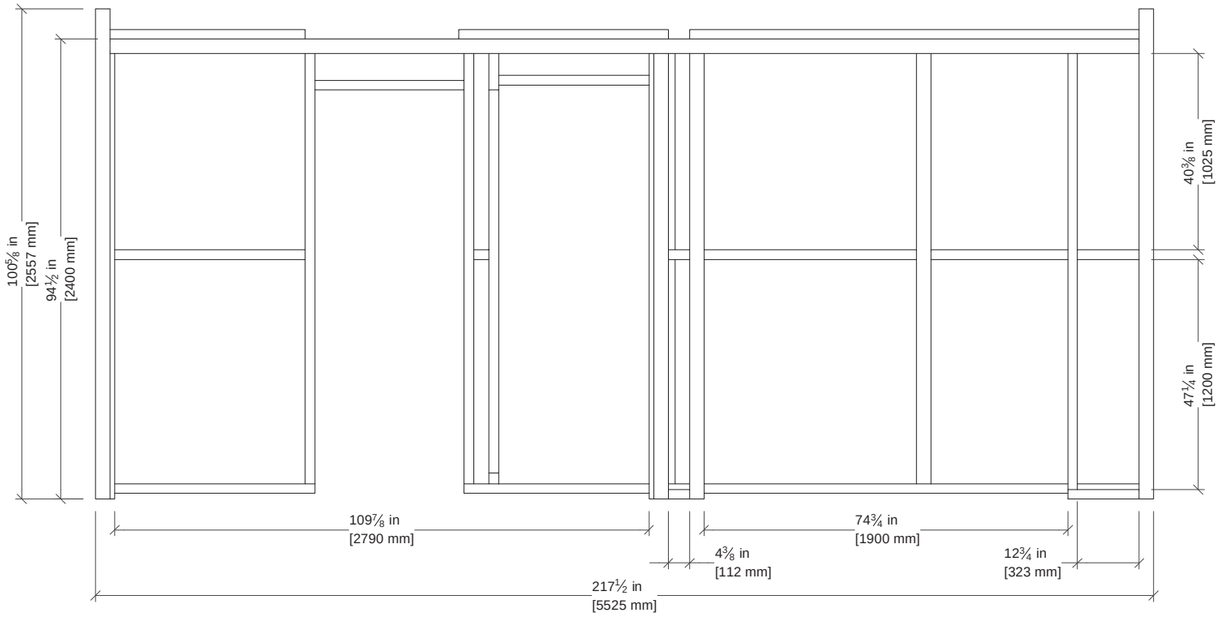
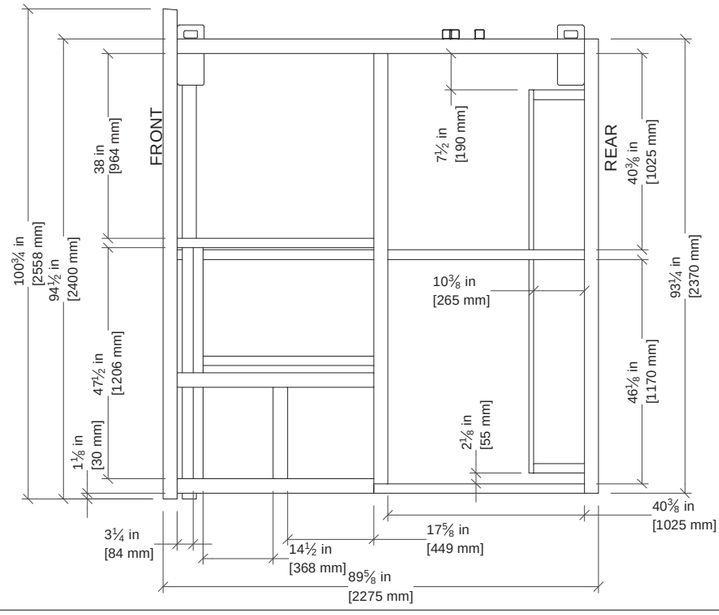


PROFESSIONAL ENGINEER
JEFFREY JAY FUNKHOUSER
C 78754
EXP. 9/30/25
CIVIL
STATE OF CALIFORNIA

FRONT ELEVATION - NO ROOF



RIGHT ELEVATION - NO ROOF



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Description:
JUPITER TRIPLE AAD TWIN STANDARD & ACCESSIBLE STEEL FRAME USA

Material:

Finish:

Approved for Construction
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2025-01-23
Expiration Date: 2025-05-22
Without Foundation Approval
1748 33rd Street
Orlando, FL 32839

Proj:	Units:	Rev.	Rev Date.
		1-C	1/30/2024

Tolerance:	Scale:	Checked by:	Approved by:

Drawn by:	Creation Date:	Sheet No.	Drawing No:
JJG	2/2/2022	S 25	JUP23AAD-US-TF1001

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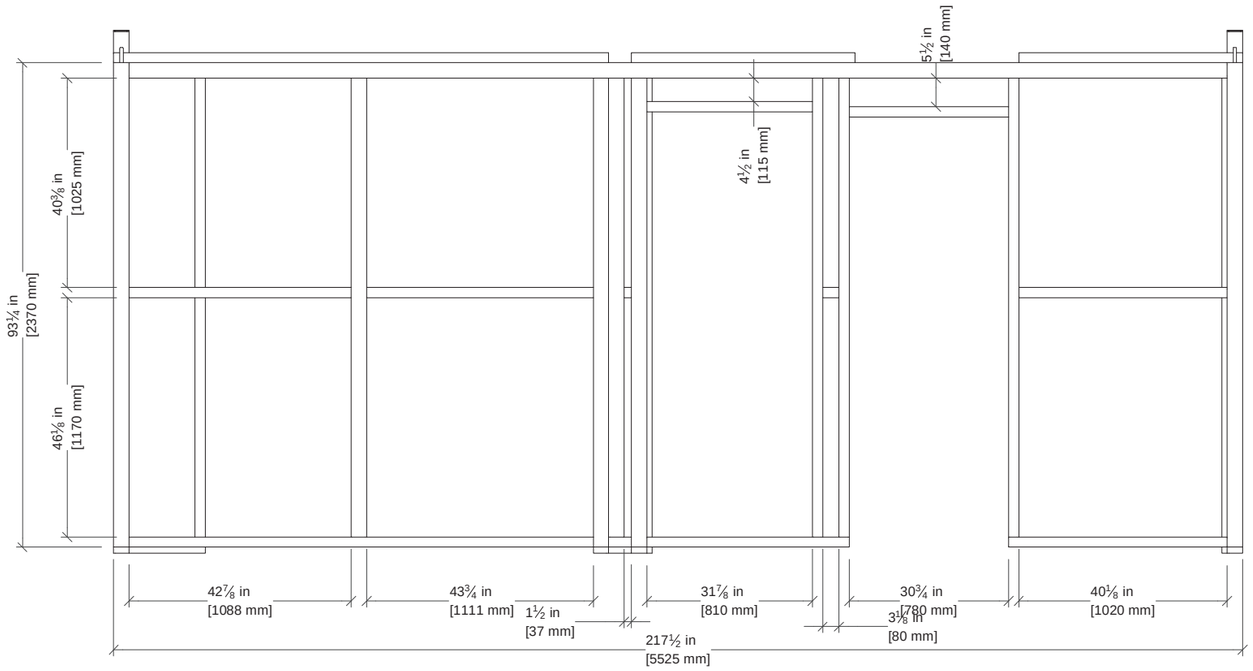
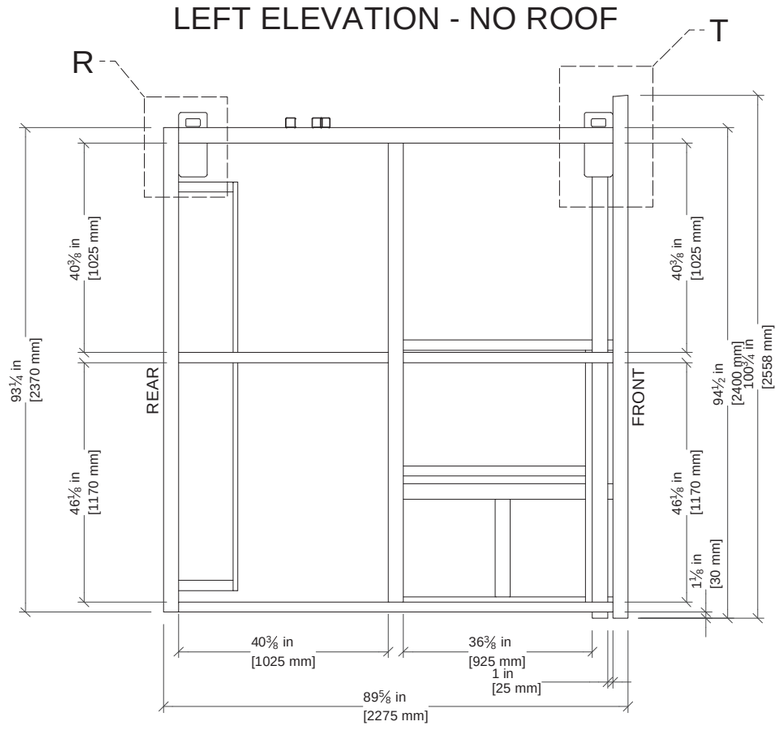
REAR ELEVATION - NO ROOF



LEFT ELEVATION - NO ROOF



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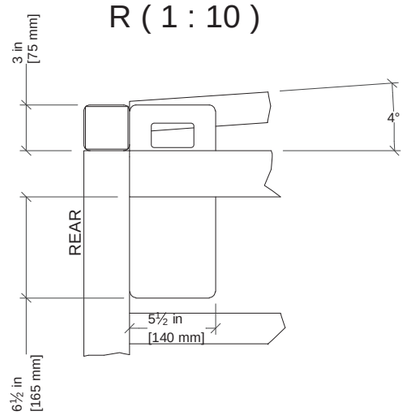

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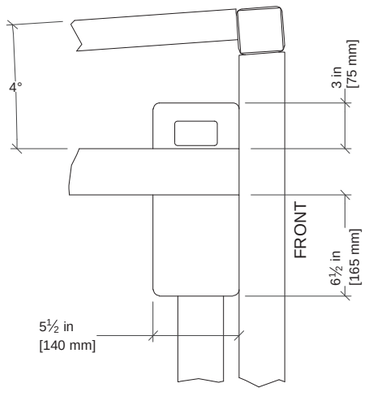

STEEL FRAME WELD CONNECTION DESIGN NOTE:

ALL HSS 3" x 3" x $\frac{3}{16}$" WITH $\frac{1}{4}$" WELDS ALL AROUND

2/22/24

PROFESSIONAL ENGINEER
JEFFREY JAY FUNKHOUSER
C 78754
EXP. 9/30/25
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		Tolerance:	Scale:	Checked by:	Approved by:
Material:	Finish:	Drawn by: JJG	Creation Date: 2/2/2022	Sheet No. S 26	Drawing No: JUP23AAD-US-TF1001

Issued for Permit
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Intertek (Intertek-ATI)
Plan Approval: #R-21317
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Expiration Date: 2025-05-22
Without Foundation Approval
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Orlando, FL 32839

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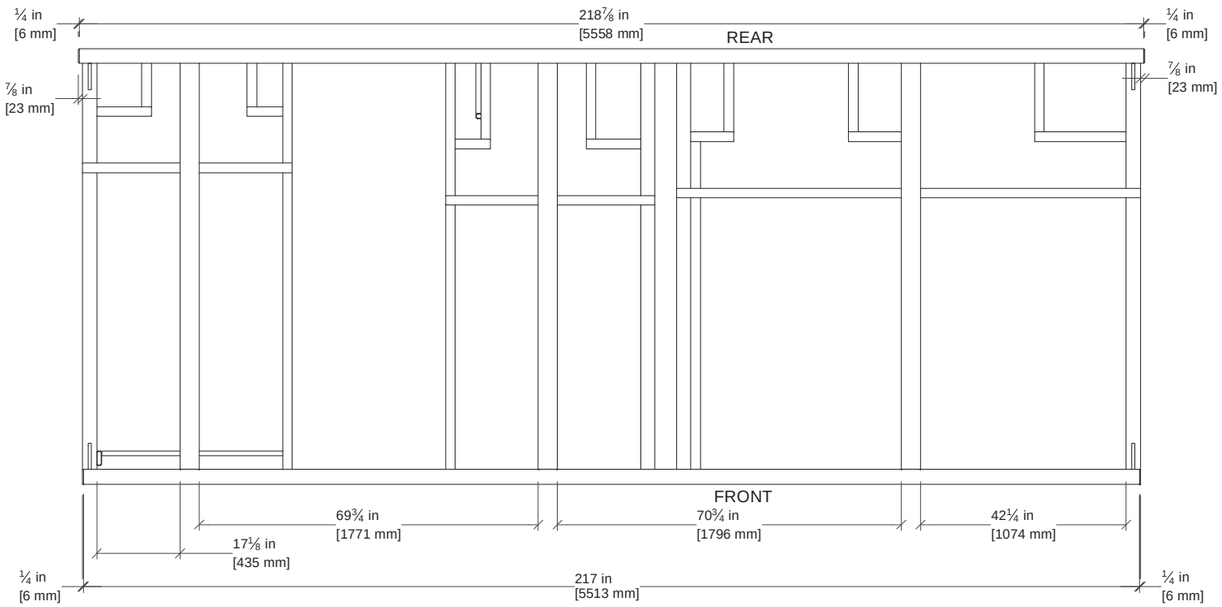
PLAN VIEW



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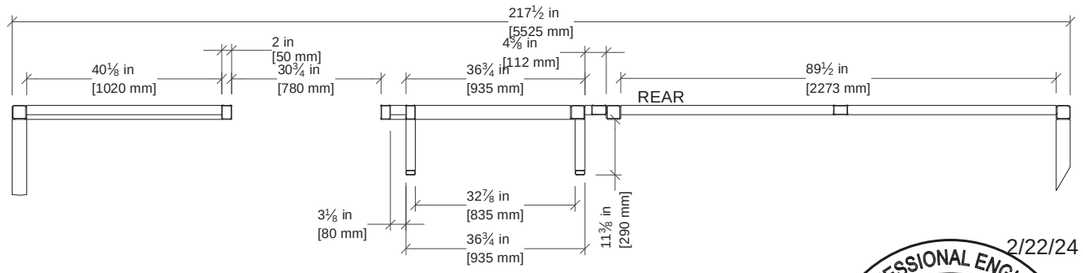
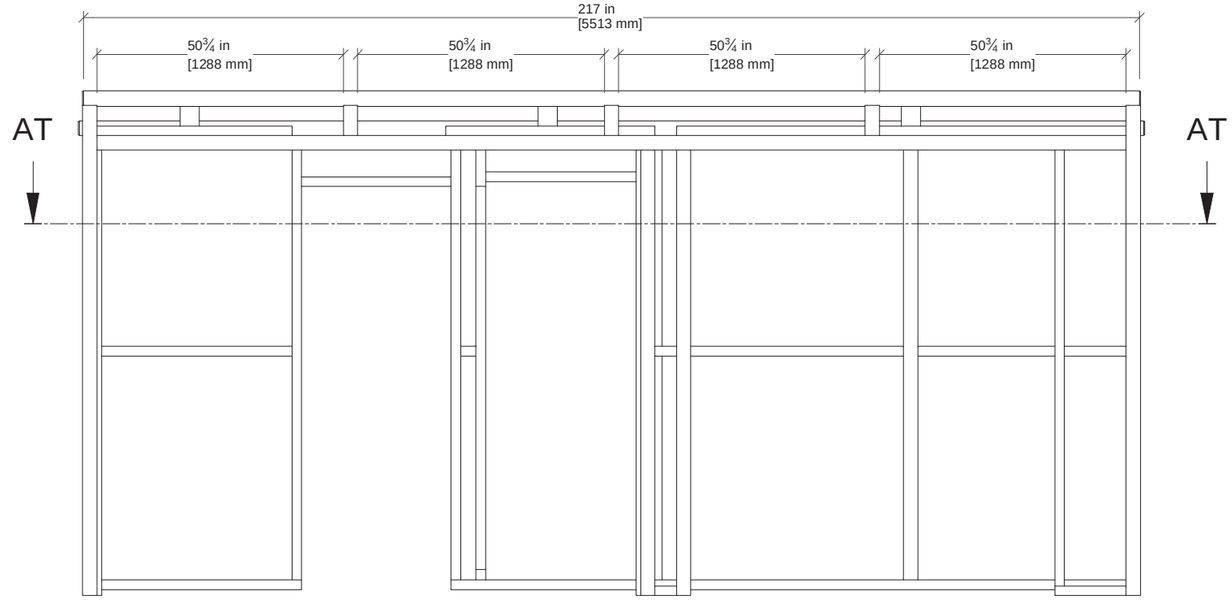


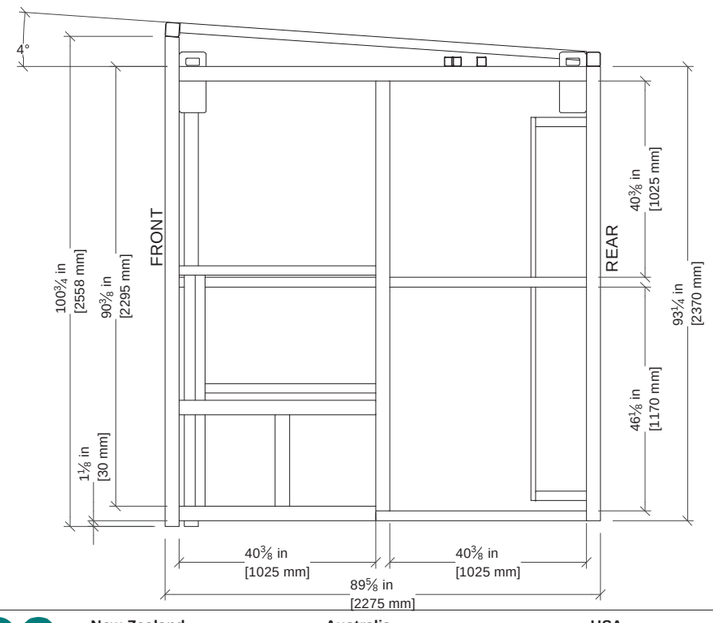
2/22/24

PROFESSIONAL ENGINEER
JEFFREY JAY FUNKHOUSER
C 78754
EXP. 9/30/25
CIVIL
STATE OF CALIFORNIA

FRONT ELEVATION



RIGHT ELEVATION



STEEL FRAME WELD CONNECTION DESIGN NOTE:

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		Tolerance:	Scale:	Checked by:	Approved by:
Material:	Finish:	Drawn by: JJG	Creation Date: 2/2/2022	Sheet No. S 27	Drawing No: JUP23AAD-US-TF1001

Issued for Approval
MH SAA WEM1507408
Intertek (Intertek-ATI)
Plan Approval: #P-21317
Approval Date: 2024-02-23
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Edmonds, FL 33832

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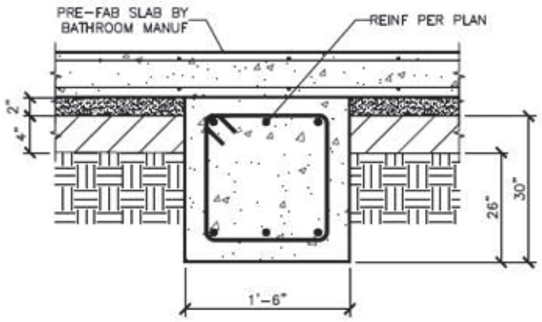
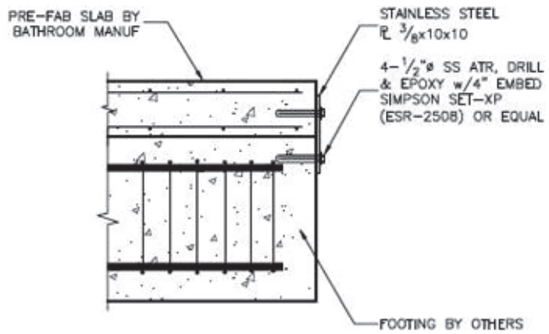
REFER TO HUME ENGINEERING DRAWINGS,
RS4, FOUNDATION, DATE 2020-09-21
FOR FOUNDATION DETAILS



NOTE:
1. THE SUBGRADE (BELOW THE AGGREGATE BASE) SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 12 INCHES, MOISTURE CONDITIONED TO AT LEAST 3 PERCENT ABOVE OPTIMUM MOISTURE CONTENT, AND RE-COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION PER ASTM D-1557.
2. THE BOTTOM OF THE FOOTING EXCAVATION SHOULD BE COMPACTED WITH A JUMPING JACK COMPACTOR WITH AT LEAST 4 PASSES.
3. THE SLAB SHOULD BE UNDERLAIN BY 2 INCHES OF MASON SAND (ASTM C-144) COMPACTED WITH A VIBRATORY PLATE OVER A MINIMUM 4 INCHES OF CLASS 2 AGGREGATE BASE COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION.

FOOTING @ SLAB (1)
PARTIAL SCALE 1"=1'-0"

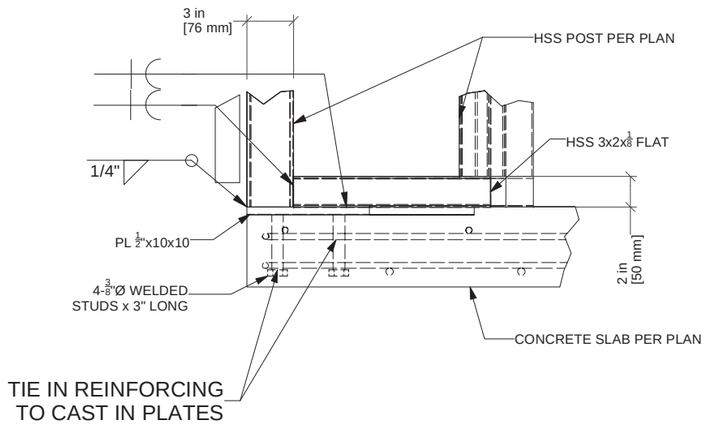


ALTERNATE
SLAB TO FTG TIE (3)
PARTIAL SCALE 1"=1'-0"

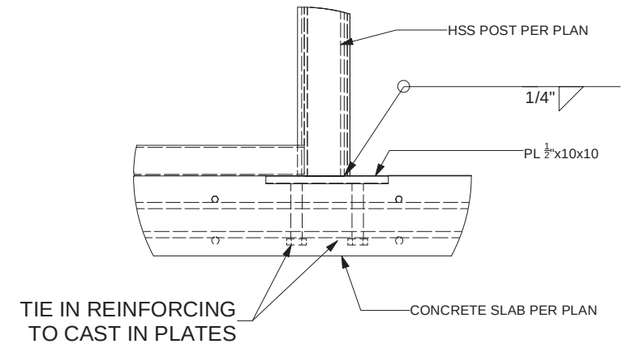
2/22/24

PROFESSIONAL ENGINEER
JEFFREY JAY FUNKHOUSER
C 78754
EXP. 9/30/25
CIVIL
STATE OF CALIFORNIA

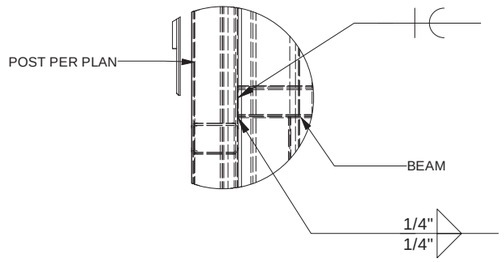
DETAIL AG
TYPICAL BASE PLATE CONNECTION
CORNER PORTAL POSTS
(1 : 10)



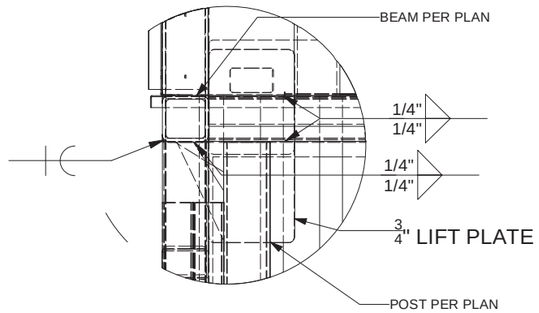
DETAIL AE
TYPICAL BASE PLATE CONNECTION
CENTRE PORTAL POST
(1 : 10)



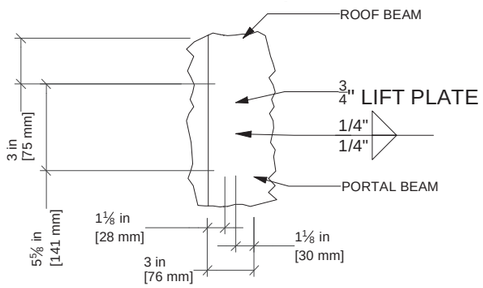
DETAIL AB - TYPICAL
"T" CONNECTION & VERTICAL WELDS
(1 : 10)



DETAIL AD
POST TO BEAM CONNECTION (1 : 10)



DETAIL AP
LIFT PLATE TO
PORTAL/ROOF BEAM
1 : 10)



STEEL FRAME WELD CONNECTION DESIGN NOTE:

ALL HSS 3" x 3" x 3/16" WITH 1/4" WELDS ALL AROUND

NOTE (FOR DETAIL C - FOOTING @ SLAB):
1. THE SUBGRADE (BELOW THE AGGREGATE BASE) SHOULD BE SCARIFIED TO A DEPTH OF ABOUT 12 INCHES, MOISTURE CONDITIONED, TO AT LEAST 3 PERCENT ABOVE OPTIMUM MOISTURE CONTENT, AND RE-COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION PER ASTM D-1557.
2. THE BOTTOM OF THE FOOTING EXCAVATION SHOULD BE COMPACTED WITH A JUMPING JACK COMPACTOR WITH AT LEAST 4 PASSES.
3. THE SLAB SHOULD BE UNDERLAIN BY 2 INCHES A MASON SAND (ASTM C-144) COMPACTED WITH A VIBRATORY PLATE OVER A MINIMUM 4 INCHES OF CLASS 2 AGGREGATE BASE COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION.

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Description:		Proj:	Units:	Rev.	Rev Date.
JUPITER TRIPLE - TWIN STANDARD & SINGLE ACCESSIBLE USA	Approved for Commercial Approved by: State of California MH DAA #DM1507408 Intertek (Intertek-ATI) Plan Approval: #R-21317 Approval Date: 2024-02-23 Expiration Date: 2025-05-22 Without Foundation Approval			1-A	1/30/2024
		Tolerance:	Scale:	Checked by:	Approved by:
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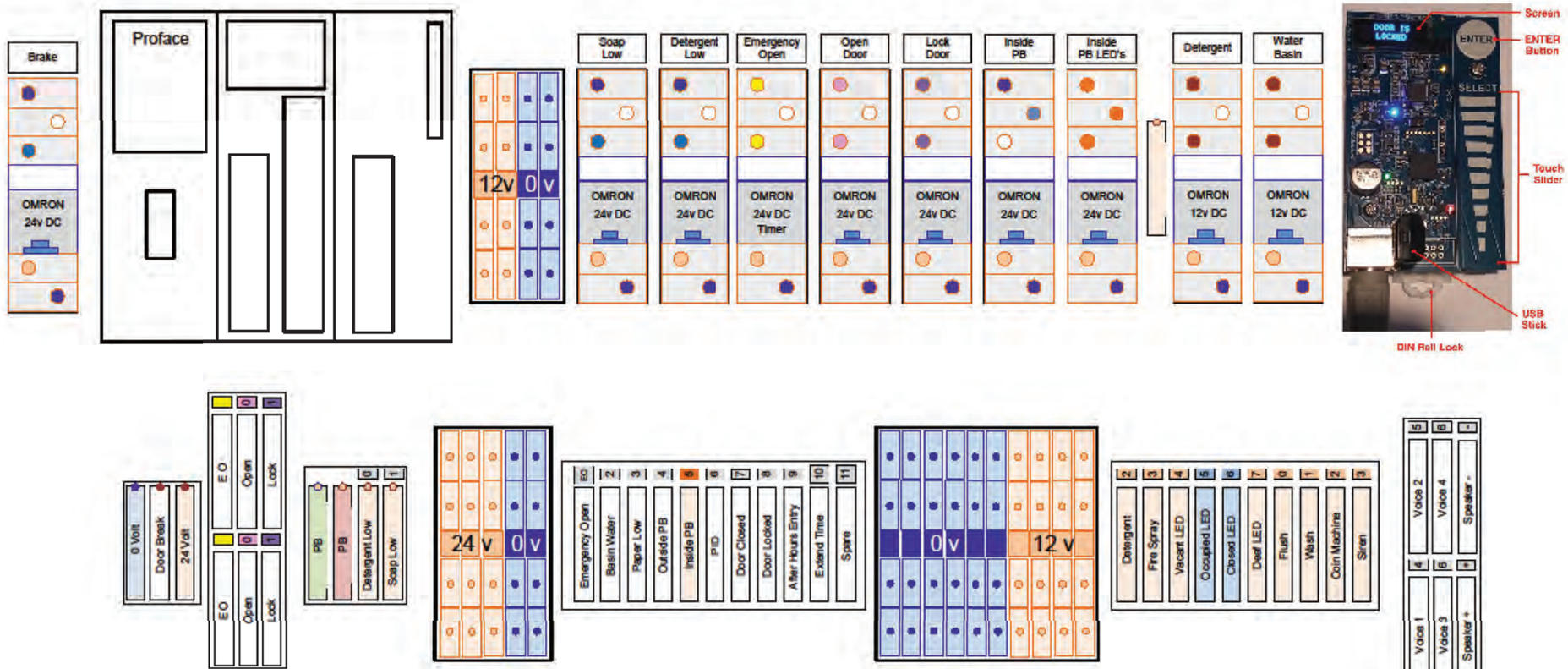
Auxillary Control Box

Layout

PLC POWER LTD



2/22/24

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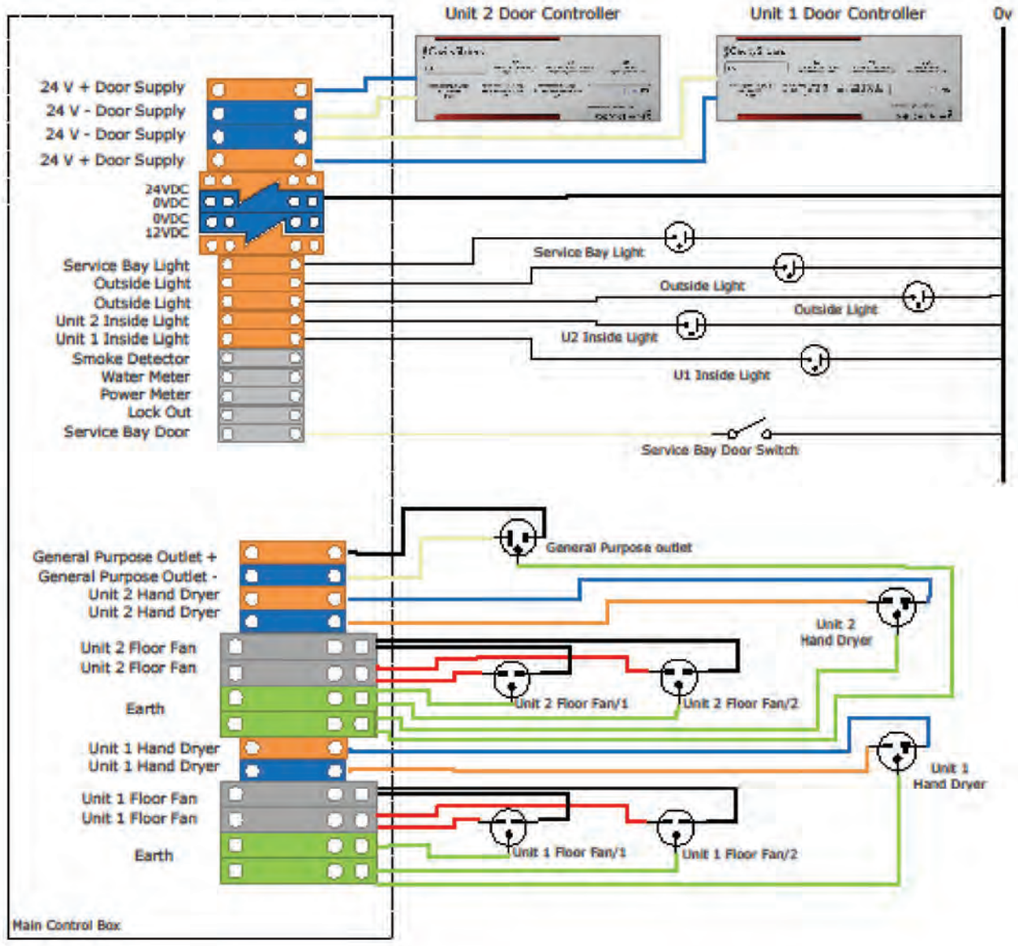
Main Control Box



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Running Load

General Load	315	480	2.63	4.00	-1.38
Heating	0	0	0.00	0.00	0.00
Extra's	0	0	0.00	0.00	0.00
Unit 1 Drying	3000	3000	12.50	12.50	
Unit 2 Hand Dryer	2000	2000	8.33	8.33	
Running Load	5315	5480	23.46	24.83	-1.38

Full Load - Not Possible with PLC

General Load	315	480	2.63	4.00	-1.38
Heating	0	0	0.00	0.00	0.00
Unit 1 Drying	3000	3000	12.50	12.50	0.00
Unit 2 Drying	3000	3000	12.50	12.50	0.00
Both Units Hand Dryer	4000	4000	16.67	16.67	0.00
Extra's	0	0	0.00	0.00	0.00
Full Load	10315	10480	44.29	45.67	-1.38
	Watts	0 0 0 0	Amps		

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Running Load

General Load	195	480	1.63	4.00	-2.38
Heating	0	0	0.00	0.00	0.00
Extra's	0	0	0.00	0.00	0.00
Unit 1 Drying	3000	3000	12.50	12.50	
Unit 2 Hand Dryer	0	0	0.00	0.00	
Running Load	3195	3480	14.13	16.50	-2.38

Full Load - Not Possible with PLC

General Load	195	480	1.63	4.00	-2.38
Heating	0	0	0.00	0.00	0.00
Unit 1 Drying	3000	3000	12.50	12.50	0.00
Unit 2 Drying	0	0	0.00	0.00	0.00
Both Units Hand Dryer	2000	2000	8.33	8.33	0.00
Extra's	0	0	0.00	0.00	0.00
Full Load	5195	5480	22.46	24.83	-2.38
	Watts	0 0 0 0	Amps		

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1748 33rd Street
Orlando, FL 32839

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		Drawn by: JJG / Creation Date: 5/24/2022	Sheet No.: B 31	Drawing No.: AS-JUP23ATD-US-1

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Electrical Panel Schedule Box 1

Twin Control Box

Mounted on the wall in the Service Bay

Main	63 Amp		Volts 120/240		Single Phase Three Wire	
Load Description	Watts A Ø	Watts B Ø	Breaker	Poles	Circuit	WS
Unit 1 Floor Fans		1500	20 Amps	2	AC 1	12
Unit 1 Hand Dryer		1600	15 Amps	2	AC 2	14
Box 1 General Power	0		15 Amps	1	AC 3	10
Unit 2 Floor Fans		1500	20 Amps	2	AC 4	12
Unit 2 Hand Dryer		1600	15 Amps	2	AC 5	14
Unit 1 12 Volt DC Power Supply	120		6 Amps	1	AC 6	18
Unit 2 12 Volt DC Power Supply	120		6 Amps	1	AC 7	18
PLC Power 24 Volt DC Power Supply	75		6 Amps	1	AC 8	18
Door Power 24 Volt DC Power Supply		480	6 Amps	1	AC 9	18
Unit 1 DC Lighting			6 Amps	1	DC 10	16
Unit 1 12 Volt DC	DC		6 Amps	1	DC 11	16
PLC Power 24 Volt			3 Amps	1	DC 12	16
Unit 1 Door Power 24 Volt DC			20 Amps	1	DC 13	10
Unit 2 DC Lighting			6 Amps	1	DC 14	16
Unit 2 12 Volt DC	DC		6 Amps	1	DC 15	16
Unit 2 Door Power 24 Volt DC			20 Amps	1	DC 16	10

	Watts A Ø	Watts B Ø	Amps A Ø	Amps B Ø
Vacant Mode	315	48	2.63	0.40
Max Running Load	4915	5080	21.79	23.17
Full Load - Not Possible	9515	9680	40.96	42.33

Electrical Panel Schedule Box 2

Single Control Box

Mounted on the wall in the Service Bay

Main	63 Amp		Volts 120/240		Single Phase Three Wire	
Load Description	Watts A Ø	Watts B Ø	Breaker	Poles	Circuit	WS
Unit 3 Floor Fans		1500	20 Amps	2	AC 1	12
Unit 3 Hand Dryer		1600	15 Amps	2	AC 2	14
Box 2 General Power	0		15 Amps	1	AC 3	10
Unit 2 12 Volt DC	120		6 Amps	1	AC 4	18
PLC Power 24 Volt DC	75		6 Amps	1	AC 5	18
Door Power 24 Volt DC		480	6 Amps	1	AC 6	18
Unit 3 DC Lighting			6 Amps	1	DC 10	16
Unit 3 12 Volt DC	DC		6 Amps	1	DC 11	16
PLC Power 24 Volt			3 Amps	1	DC 12	16
Unit 3 Door Power 24 Volt DC			20 Amps	1	DC 13	10

	Watts A Ø	Watts B Ø	Amps A Ø	Amps B Ø
Vacant Mode	315	48	2.63	0.40
Max Running Load	3195	3480	14.13	16.50
Full Load - Not Possible	4795	5080	20.79	23.17

	Box 1 Twin				Box 2 Single				Triple Unit			
	Watts A Ø	Watts B Ø	Amps A Ø	Amps B Ø	Watts A Ø	Watts B Ø	Amps A Ø	Amps B Ø	Watts A Ø	Watts B Ø	Amps A Ø	Amps B Ø
Vacant Mode	315	48	2.63	0.40	315	48	2.63	0.40	630	96	5.26	0.80
Max Running Load	4915	5080	21.79	23.17	3195	3480	14.13	16.50	8110	8560	35.92	39.67
Full Load - Not Possible	9515	9680	40.96	42.33	4795	5080	20.79	23.17	14310	14760	61.75	65.50

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0750 WELDING REQUIREMENTS

1. All welding shall be performed by Certified Welders and conform to AWS standards, latest edition.
2. All structural welding shall be detailed and fabricated in an approved fabricator's shop in accordance with. See note 3 for exceptions:
   a. For licensed fabricators refer to Section 1704.2.2 of **2022 CBC**
   b. AISC specification for the Design, Fabrication and Erection of Structural steel for Buildings.
   c. A.W.S. Structural Welding Code D 1.1–77.
   d. Welding electrodes shall be as stated on tables 4.1.1 of the above referenced specification.
3. Structural steel fabrication and welding not performed in an approved shop including field welding requires special inspection. See note 4 for exceptions.
4. The special inspector need not be continuously present during welding of the following items, provided the materials, qualifications of welding procedures and welders are verified prior to the start of work, periodic inspections are made of work in progress, and a visual inspection of all welds is made prior to completion or prior to shipment of shop welding:
   a. Single pass fillet welds not exceeding 5/16 inch.
   b. Floor and roof deck welding.
   c. Welded studs when used for structural diaphragm or composite systems.
   d. Welded sheet steel for cold–formed steel framing members such as studs and joists.
   e. Welding of stairs and railing systems.
5. All welding of reinforcing steel bars to structural steel members will require continuous inspection by a registered Deputy Inspector. Submit a welding procedure for approval to the Engineer of Record prior to any welding of any reinforcing steel bars. Refer to "0410 REINFORCING STEEL" notes for additional info.
6. Welds designed as Demand Critical Welds (DCW) shall be made with filler materials meeting the requirements specified in AWS D1.8/D1.8M clause 6.3.
7. Testing of studs welded through metal deck is required. See AWS 7.6 for required testing.

ABBREVIATIONS

AB———— ANCHOR BOLT
ABV———— ABOVE
ADD'L———— ADDITIONAL
ALT———— ALTERNATE
ARCH'L———— ARCHITECTURAL
ATR———— ALL THREADED ROD
BLK(G)———— BLOCK(ING)
BLW———— BELOW
BM———— BEAM
BN———— BOUNDARY NAILING
BOB———— BOTTOM OF BEAM
BOTT———— BOTTOM
B/T———— BETWEEN
CALIF———— CALIFORNIA
CANT'L———— CANTILEVER
CB———— CEILING BEAM
"CB"———— SIMPSON CONNECTOR (FDN)
"CC" or "ECC" SIMPSON CONNECTOR (alt. CONTRACTOR MAY USE "CCQ" or "ECCQ")
CCB———— COLAPSIBLE CARDBORD
CJ———— CEILING JOISTS
CJP———— COMPLETE JOINT PENETRATION
℄———— CENTERLINE
CLNG———— CEILING
CLR———— CLEAR(ANCE)
CMU———— CONCRETE MASONRY UNIT
CONC———— CONCRETE
CONN———— CONNECTION
CONT———— CONTINUOUS
CT———— COLLAR TIE
CTR(D) OR ℄———— CENTER(ED)
D———— DEEP
DBL———— DOUBLE
DCW———— DEMAND CRITICAL WELD
DIA OR ø———— DIAMETER
DJ———— DECK JOIST
DWG———— DRAWING
(E) ———— EXISTING
EA———— EACH
EF———— EACH FACE
ELEV———— ELEVATION
EMBED———— EMBEDMENT
EN———— EDGE NAILING
ENG———— ENGINEER
EQ———— EQUAL
EWL———— ENTIRE WALL LENGTH
EXP———— EXPOSED
EXT———— EXTERIOR
FDN———— FOUNDATION
FF———— FINISH FLOOR
FG———— FINISH GRADE
FJ———— FLOOR JOIST
FLR———— FLOOR
FN———— FIELD NAILING
FOC———— FACE OF CONCRETE
FOS———— FACE OF STUD
FOSH———— FACE OF SHEATHING
FRMG———— FRAMING
FS———— FINISH SLAB
FTG———— FOOTING
GA———— GAUGE
GALV———— GALVANIZED
GB———— GRADE BEAM
GLB———— GLUE LAMINATED BEAM
HD———— HOLDOWN
HDR———— HEADER
HGR———— HANGER
HORIZ———— HORIZONTAL
HT———— HEIGHT
INFO———— INFORMATION
INT———— INTERIOR
ISB———— ILEVEL SHEAR BRACE
K———— KING POST
LOC———— LOCATION(S)
LONG———— LONGITUDINAL
LSL———— TIMBERSTRAND
MANUF———— MANUFACTURER
MAX———— MAXIMUM
MB———— MACHINE BOLT
MF———— MOMENT FRAME
MIN———— MINIMUM
ML———— MICROLLAM
(N) ———— NEW
NC———— NO CHANGE(S)
NG———— NATURAL GRADE
NLR———— NAILER
NTS———— NOT TO SCALE
N/S———— NON–STRUCTURAL
O/———— OVER
oc———— ON CENTER
OH———— OPPOSITE HAND (MIRROR)
PA———— POST ABOVE
PERP———— PERPENDICULAR
PJP———— PARTIAL JOINT PENETRATION
PL or———— PLATE
PMW———— PRE–MAUFACTURED WALL
PSL———— PARALLAM BEAM
P.T.D.F. ———— PRESSURE TREATED DOUGLAS FIR
RB———— ROOF BEAM
REINF———— REINFORCING(MENT)
REQ'D———— REQUIRED
RET———— RETAINING (RETENTION)
RR———— ROOF RAFTER
SCHED———— SCHEDULE
SHTG———— SHEATHING
SIM———— SIMILAR
SQ———— SQUARE
SS———— SELECT STRUCTURAL WOOD BEAM
SS———— STAINLESS STEEL
STD———— STANDARD
STL———— STEEL
STRUCT'L———— STRUCTURAL
SW———— STRONG WALL (SIMPSON)
T———— TRIMMER POST
T&G———— TONGUE & GROOVE
TBR———— TO BE REMOVED
THK———— THICK(NESS)
TO———— TOP OF
TOW———— TOP OF WALL
TYP———— TYPICAL
UNO———— UNLESS NOTED OTHERWISE
URM———— UNREINFORCED MASONRY
VERT———— VERTICAL
VF———— VERIFY
VIF———— VERIFY IN FIELD
VWA———— VERIFY WITH ARCHITECTURAL

0400 CONCRETE NOTES FOR COMMERCIAL:

1. Concrete mix design shall be designed by an approved testing laboratory or Licensed Engineer and submitted to the Structural Engineer for approval.
2. Concrete shall have a minimum ultimate compressive strength (f'c) at 28 days as noted at the following locations: [For structures that are three stories and less(latest edition **2022 CBC** section 1905)]
3. NOTE: Max water–to–cement ratio of 0.57 shall be used at all locations, Typical (UNO.)

	(f'c)	Hardrock Aggregate Size*	Max Slump*	Inspection Req'd.
Footings, stemwalls, slabs & Ret. Walls	3,000 psi	1"	4"	No
Conc. walls and grade beams (see note below)	3,000 psi	1"	4"	Yes
Caisson shafts (In marine Env.)(note#16)	4,000 psi	1"	notes #16	Yes
Topping for steel deck	3,500 psi	1"	4"	Yes
All other concrete	3,000 psi	1"	4"	Yes

*** All slabs connecting to grade beam shall be 3000 psi with special inspection, unless noted otherwise.**
*** Pea Gravel shall not be used unless written approval is obtained from Structural Engineer.**
*** Slump measured without plasticizer. If plasticizer is used a higher final slump may be allowed upon Engineer's review.**

4. Fly Ash, where used, shall be limited to 20% of total cementitious mix.
5. For projects near the beach and/or ocean refer to "Marine Environment" notes for additional constraints. (Project that are ocean front)
6. Portland Cement shall conform to ASTM C–150, Type I or Type II. Aggregate for hardrock concrete shall conform to all requirements and tests of the latest ASTM C–33. Concrete mixing operations, etc., shall conform to ASTM C–94.
7. All phases of concrete work shall conform to the latest approved edition of Building Code Requirements for Reinforced Concrete: ACI–318.
8. Clear concrete coverage for reinforcing bars shall be as follows (U.N.O.):
   a. Concrete cast against and exposed to earth 3" min.
   b. Concrete exposed to earth/weather cast in forms:
      b.a. No. 6 – No. 18 bars = 2"
      b.b. No. 5 bar and smaller = 1½"
   c. Concrete not exposed to weather above grade:
      c.a. Slabs/Walls/Joists:
         c.a.a. No. 14 – No. 18 bars = 1⅜"
         c.a.b. No. 11 bar and smaller = ¾"
      c.b. Beams/Columns = 1½"

   Refer to "0450 Marine Environment" under general notes for projects near the ocean.
9. Before concrete is poured, check with all trades for proper placement of sleeves, curbs, conduits, etc.
10. All reinforcing bars, anchor bolts, and other concrete inserts shall be well–secured in position prior to placing concrete. Additionally, the concrete should be thoroughly vibrated during placement.
11. Grout or Non–shrink grout called for on the drawing may be:
    a. Embeco or equal–below the slab–on–grade.
    b. Masterflow 713 grout or equal, above slab–on–grade.
12. Concrete shall not fall more than 1.8 m (6 feet).
13. Embedded anchor bolts shall conform to ASTM 1554 (old 325) grade 55 (75ksi tensile), U.N.O. See also "0300 Lumber Notes" and "0450 Marine Environment" under General Notes for more info.
14. Water reducing plasticizers incorporated per manufacturers specifications may be used to achieve design slump at max w/cm ratio noted.
    (1997 Green Book (Standard Specifications for Public Works Construction) specifies in Section 303–1.8.3)
15. Waterproofing beneath slab and foundation per Architect.

0405 DRY PACK/ NON–SHRINK GROUT AND PATCHING

1. Grout or Non–shrink grout called for on the drawing may be:
   a. Embeco or equal–below the slab–on–grade.
   b. Masterflow 713 grout or equal, above slab–on–grade.
2. Non– shrink grout and/or dry pack:
   a. Custom "Pour–Stone"
   b. Five Star "Special Grout 400"
   c. Master Builders "Master Flow 713".
3. Mix with the least water required to place grout without voids.
4. Cement grout and drypack Proportions by volume shall be:
   a. 2 parts sand
   b. 1 part cement and a minimum of water consistent with placing requirements.

0410 REINFORCING STEEL –Concrete & Masonry

Reinforcing steel shall conform to the requirements listed below for use noted:

Use	Bar size	ASTM designation	Grade
------Footings, Stemwalls, Slabs, Grade Beams & Retaining walls	All	ASTM A–615	60
------All walls, Beams & Columns above Grade	All	ASTM A–615	60
------Bars to be welded*	All	ASTM A–706	60

* Refer to 'Welding Requirements' notes for additional information.

1. All reinforcing bar bends shall be made cold. See "Standard hooks, bends & lap" detail on Typical Detail Sheet for more information.
2. All horizontal bars at corners and intersections shall be lapped. See "Typical corner/intersection" detail on Typical Detail Sheet for more information.
3. Refer to "Standard hooks, bends & lap" detail for minimum lap splice lengths.
4. Welded wire fabric shall conform to ASTM A–185. Minimum lap shall be 6" for one full mesh, whichever is greater.
5. All slab–on–grade shall be tied to footings or walls. Verify with soils report where occurs for stricter requirements. Contact Soils Engineer for "floating" slabs
   a. Minimum dowels size and spacing shall match slab reinforcement U.N.O.
6. Reinforcing steel dowel's between footing and walls, columns or pilasters shall be the same grade, size, spacing and number as the vertical reinforcing, respectively..

0700 STRUCTURAL STEEL

1. Wide flange shapes shall conform to ASTM A–992 (Fy=50 ksi) Unless noted otherwise.
2. Pipe columns shall conform to ASTM A–53, Grade B (Fy=35 ksi).
3. Hollow Steel Sections ("HSS") shall conform to the following:
   Square & Rectangular ASTM A500, Grade B (Fy=46 ksi)
   Round ASTM A500, Grade B (Fy=42 ksi)
4. Steel Angles shall conform to ASTM A36 (Fy=36 ksi).
5. Steel Plates and Bars shall conform to ASTM A36 (Fy=36 ksi).
6. All other structural steel shall conform to ASTM A–572 (Gr. 50). Unless noted otherwise.
7. 'Dry–Pack'/Grout beneath column base plates or similar applications where called for, shall be non–shrink type. Use "Rapid Set" by "CTS Cement Mfg. Co." City of L.A. Report #RR 24654. Alternate equivalent may be used upon written approval of Engineer.
8. All bolts shall conform to ASTM A325 unless noted otherwise. Bolts designated MB (machine bolts) and threaded rods where called for, shall conform to ASTM A307 OR f1554 Gr.36 typ. U.N.O. Refer to concrete notes for embedded anchor bolts.
9. Bolt holes in steel shall be 1/16" larger diameter than nominal size of bolt used.
10. All exposed structural steel shall:
    Hot dip galvanized after fabrication per ASTM A123 if exposed to weather.
    Painted/finished per architect.
    All welds/cuts shall be ground smooth per architecture specifications.
    All fasteners used to connect galvanized members shall be hot dip galvanized per ASTM A153.
    DO NOT USE STAINLESS STEEL FASTENERS AT ANY GALVANIZED MEMBER CONNECTION.
11. All interior covered structural steel surfaces shall be primed and painted.
12. The structural steel fabricator shall furnish copies of shop drawings for review by the architect prior to any fabrication. See specifications for requirements.
    The shop drawings shall note all eccentric ("offset") conntections.
13. See also "0450 MARINE ENVIRONMENT" notes when noted on foundation plan or in general notes.

0000 CODES AND REFERENCES

All general structural notes and specifications reflect the providsions of the
2022 CBC (California Building Code)
ASCE 7–16 (Minimum Design Loads)
AISC 360–16/AISC 341–16/AISC 358–16 (Steel)
ACI 318–14 (Concrete)
ACI 530–16/ASCE5–16/TMS 402–16 (Masonry)
NDS–18/AWC–18 (Wood)

0100 STRUCTURAL GENERAL NOTES

GENERAL

1. The plans provided will be acceptable for building for only two years after the date noted. Afterwards, Thorn Hume Consulting Engineers will require a thorough review of the plans and details and make the changes as needed. This additional time will require one month of notice prior to beginning of construction.
2. The General Contractor shall be responsible for coordinating all the work of the Subcontractors indicated on the structural construction drawings and project specifications. The contractor shall verify all dimensions prior to starting construction. The Architect shall be notified of any discrepancies or inconsistencies.
3. All omissions or conflicts between the various elements of the working drawings and/or specifications shall be brought to the attention of the Architect before proceeding with any work so involved.
4. Site preparations and Temporary bracing:
   a. The General Contractor shall investigate the site during clearing and earthwork operations for fill excavations or buried structures such as cesspools, cisterns, foundations, etc. Where such structures are found the Architect shall be notified immediately.
   b. The Contractor shall be solely responsible for all excavation procedures including lagging, shoring and protection of adjacent property, structures, streets and utilities in accordance with all national state and local safety ordinances.
   c. The Contractor shall be responsible for and provide adequate shoring, bracing and guys in accordance with all national state and local safety ordinances. All temporary bracing of structural elements (steel members, masonry, concrete or work walls, etc.) during construction shall conform with all applicable codes and safety requirements of all governing agencies.
   d. Any deviation from approved and permitted conditions must be approved by the local agencies prior to erection.
5. Deviations from the structural design as indicated on the structural construction drawings are not permitted without written approval from the Structural Engineer. It will be the Contractor's responsibility to request written approval, even if the Structural Engineer has provided verbal authorization. Approval from the local governing authority Building Inspector does not constitute authority to deviate from the contract documents.

AUTHORITY OF WORK'

6. All work shall conform to the minimum standards of the latest edition of the California Building Code (**2022 CBC**) edition and any other regulating agencies which have authority over any portion of the work, including the State of California, Division of Industrial Safety.

CAL O.S.H.A.

7. The General Contractor shall be solely responsible for following, maintaining and being familiar with Cal O.S.H.A. standards and procedures for all aspects of the construction, including, but not limited to, safety of the construction personnel, excavation procedures, temporary shoring or bracing, site safety procedures, etc. All erection procedures shall conform to OSHA Standards. Any deviation must be approved by OSHA prior to erection.

TYPICAL DETAILS

8. All details designated as standard or typical shall occur in addition to any other specific detail. A detail, section, elevation, etc. reference may be indicated only once on a structural construction drawing, but is to be used at all like and similar construction conditions.
9. The work typical adjacent to a detail, section, elevation, etc. reference is implied at each like and similar construction conditions. During the construction period the General Contractor may, at their convenience, request an interpretation and/or clarification of the structural construction drawing and project specifications.

ASTM SPECIFICATION

10. All ASTM specification designations shall be of the latest revision, unless noted otherwise.

SAFETY

11. Nothing contained within the contract documents shall relieve the General Contractor and the subcontractor of:
    a. the responsibility to determine any aspect of how the work is to be performed.
    b. dealing with matters of safety of personnel.
    c. safety of property.
    d. superintending of the work.
12. It is the sole responsibility of the General Contractor to initiate, maintain and supervise:
    a. all safety instructions with regard to personnel
    b. safety precautions with regard to personnel
    c. security of property and construction material in connection with any portion of the work as the work progresses.
    d. During the construction period the Contractor shall be responsible for the safety of the building.

TRADES

13. The Contractor shall be responsible for coordinating the work of all trades and shall check all dimensions. All discrepancies shall be called to the attention of the Architect and be resolved before proceeding with the work.

0200 CONTRACTOR NOTES:

These notes are intended to help the Contractor locate special areas of consideration. They are not to be solely relied on. A complete review of the Construction Documents, including: Structural, Architectural, Mechanical, Electrical and Plumbing is required to construct this project.

1. Per Civil Code § 832. Lateral and subjacent support
   a. If at any time it appears that the excavation is to be of a greater depth than are the walls or foundations of any adjoining building or other structure, and is to be so close as to endanger the building or other structure in any way, then the owner of the building or other structure must be allowed at least 30 days, if he so desires, in which to take measures to protect the same from any damage, or in which to extend the foundations thereof, and he must be given for the same purposes reasonable license to enter on the land on which the excavation is to be or is being made.
2. Special fasteners to Pressure Treated Douglas Fir is required
   a. Refer to General Notes/Lumber/Nailing #5 and Lumber Hardware #4.
3. Drywall and shear sheathing nailing.
   Our office recommends the roof be loaded and drywall stacked 7 days prior to final edge nailing of the sole plate and hanging drywall. This will allow the framing members to "settle" and tighten up and reduce the plaster cracking.
4. Each Contractor responsible for the construction of the main wind or seismic force resisting system designated seismic system or a wind or seismic resisting component listed in the statement of special inspections shall submit a written statement of responsibility to the Building Official and the Owner prior to the commencement of work on the system or component. The Contractor's statement of responsibility shall contain the following:
   a. Acknowledgement of awareness of the special requirements contained in the statement of special inspections.
   b. Acknowledgement that control will be exercised to obtain conformance with the construction documents approved by the Building Official.
   c. Procedures for exercising control within the Contractor's Organization, the method and frequency of reporting and the distribution of the reports.
   d. Identification and qualifications of the Person(s) exercising such control and their position(s) in the organization.

SPECIAL INSPECTION STATEMENT

Project:–_____ Plan Check #:–_____

Location:–_____

This Statement of Special Inspections is submitted in fulfillment of the requirements of CBC Sections 1704 and 1705. Included are:

- Schedule of Special Inspections and tests applicable to this project:
  Special Inspections per Sections 1704 and 1705
- List of the Testing Agencies and other special inspectors that will be retained to conduct the tests and inspections.
- Special Inspections and Testing shall be performed in accordance with the approved plans and specifications, this statement and CBC sections 1704, 1705, 1707, and 1708. The Schedule of Special Inspections summarizes the Special Inspections and tests required. Special Inspectors will refer to the approved plans and specifications for detailed special inspection requirements. Any additional tests and inspections required by the approved plans and specifications will also be performed.
- Interim reports will be submitted to the Building Official and the Registered Design Professional in Responsible Charge in accordance with CBC Section 1704.2.4
- A Final Report of Special Inspections documenting required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy (Section 1704.2.4). The Final Report will document:
  •• Required special inspections.
  •• Correction of discrepancies noted in inspections.

The Owner recognizes his or her obligation to ensure that the construction complies with the approved permit documents and to implement this program of special inspections. In partial fulfillment of these obligations, the Owner will retain and directly pay for the Special Inspections as required in CBC Section 1704.2.

This plan has been developed with the understanding that the Building Official will:

- Review and approve the qualifications of the Special Inspectors who will perform the inspections.
- Monitor Special Inspection activities on the job site to assure that the Special Inspectors are qualified and are performing their duties as called for in this Statement of Special Inspection.
- Review Structural Observation reports and insure contractor complied with corrections.
- Review submitted Inspection reports.
- Perform inspections as required by the local building code.

Prepared by:

THOM HUME CONSULTING ENGINEERS
Registered Design Professional in Responsible Charge

Signature Date

Owner's Authorization:

Owner

Signature Date

Building Official's Acceptance:

Building Official

Signature Date

SPECIAL INSPECTION SUMMARY

Notation Used in Table:
Column headers:
C Indicates continuous inspection is required.
P Indicates periodic inspections are required. The notes and or contract documents should clarify.
Box entries:
X Is placed in the appropriate column to denote either "C" continuous or "P" periodic inspections.
––– Denotes an activity that is either a one–time activity or one whose frequency is defined in some other manner.

Additional detail regarding inspections and tests are provided in the project specifications or notes on the drawings.

LIST OF WORK & INDIVIDUALS

CONCRETE Table 1705.3 Refer to General Notes "0400"	C*	P*
1. Inspection of reinforcing steel and placement.		X
2. Verifying use of required design mix.		X
3. At time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests and determine the temperature of the concrete.	X	
4. Inspection of concrete placement for proper application techniques.	X	
5. Inspection for maintenance of specified curing temperature and techniques.		X
6. Inspect formwork for shape, location, and dimensions of the concrete member being formed.		X
STRUCTURAL STEEL Table 1705.2, AISC 360	**C***	**P***
1. Material verification of structural steel: a. Identification markings to conform to ASTM standards specified in the approved construction documents. b. Manufacturer's mill test reports.	–– ––	–– ––
AISC, Tables N5.4, 1–3 – Steel: Welding Structural Steel		
1. Material verification of weld filler materials: a. Identification markings to conform to AWS designation listed in the WPS. b. Manufacturer's certificate of compliance required.	–– ––	–– ––
2. Inspection of welding: a. Complete and partial penetration groove welds. b. Multi–pass fillet welds c. Single–pass fillet welds > 5/16" d. Single–pass fillet welds < 5/16" e. Floor and Roof deck welds	X 	 X

Note: Special Inspection is to be provided in addition to the inspections conducted by the Department of Building and Safety and shall not be construed to relieve the owner or his authorized agent from requesting the periodic and called inspections required by Chapter 17 of **2022 CBC**

NO STRUCTURAL OBSERVATION REQUIRED

NO SHOP DRAWING SUBMITTALS

NO DEFERRED SUBMITTALS

Approved for Commercial
Approved by: State of California
MH DAA #DM1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2024-02-23
Expiration Date: 2025-05-22
Without Foundation Approval
1748 33rd Street
Orlando, FL 32839

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SDS Structural Drafting Services
P.O. Box 15238
San Luis Obispo CA 93406
805-543-6311

REGISTERED PROFESSIONAL ENGINEER
THOMAS W. HUME JR.
No. 50647
CIVIL
STATE OF CALIFORNIA

JUPITER TRIPLE UNIT
JUP23AAD, JUP33AAD

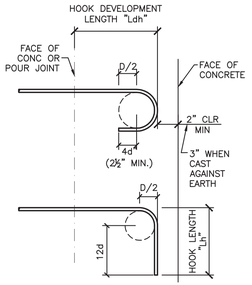
Engineer: T.N.
Drafter: A.V.

NO.	DATE :	ISSUED FOR :
	2022-03-28	PRELIM SET #01
	2022-06-07	STAMPED SET #01
	2023-08-25	STAMPED SET #02

SHEET NAME:
DETAILS

PROJECT: 20 020
DRAWN BY:
SHEET NO. RS0.1

O:\Jobs z Archive\2020 Jobs\20 020 Exeloo IHCD_Exeloo\20 020 20 Jupiter Triple 23AAD - HCD Packages\20 020 Dwg's Version 11.0\xref\20 020 D- DETAILS.dwg, 8/25/2023 9:26:01 AM, Brandon



STANDARD HOOK DEVELOPMENT LENGTH				
	"l_{dh}" = HOOK LENGTH			
	NORMAL WEIGHT CONC f'c			
BAR SIZE	"h"	2500 psi	3000 psi	4000 psi
#3	5"	7"	6"	5"
#4	8"	9"	8"	7"
#5	10"	11"	10"	9"
#6	12"	13"	12"	10"
#7	14"	15"	14"	12"
#8	16"	17"	16"	14"
#9	19½"	19"	18"	15"
#10	22"	21"	20"	17"
#11	24½"	24"	22"	19"

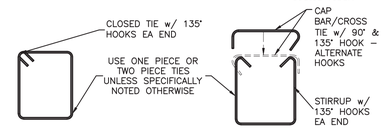
NOTES::
1. All hooked bars shall extend as far as possible with a 2" min end cover & with embedment not less than shown on the schedule. UNO on plans.
2. Side cover = 2½" min.

STANDARD HOOK DEVELOPMENT LENGTH

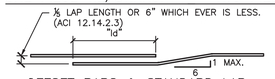
HORIZONTAL BAR LAP SPLICE SCHEDULE				
	"l_s" = LAP SPLICE LENGTH			
	CMU	CONCRETE		
BAR SIZE	f'm=1500	f'c=2500	f'c=3000	f'c=4000
#3	19"	31"	28"	25"
#4	34"	41"	38"	33"
#5	45"	51"	47"	41"
#6	54"	61"	56"	49"
#7	63"	89"	81"	71"
#8	72"	102"	93"	81"
#9	81"	115"	105"	91"
#10	NA	129"	118"	102"
#11	NA	143"	131"	114"

VERTICAL BAR LAP SPLICE SCHEDULE				
	"l_s" = LAP SPLICE LENGTH			
	CMU	CONCRETE		
BAR SIZE	f'm=1500	f'c=2500	f'c=3000	f'c=4000
#3	19"	24"	22"	19"
#4	34"	32"	29"	25"
#5	45"	39"	36"	31"
#6	54"	47"	43"	37"
#7	63"	69"	63"	54"
#8	72"	78"	72"	62"
#9	81"	88"	81"	70"
#10	NA	100"	91"	79"
#11	NA	110"	101"	87"

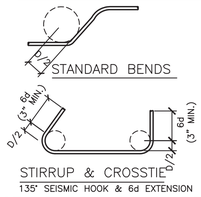
NOTES::
1. "D"=BEND DIAMETER
2. "d"=BAR DIAMETER
3. For horizontal reinforcing placed such that less than 12" of fresh concrete is placed below the bar use the Vertical Bar Lap Splice Schedule.
4. Lap splices in concrete shear walls shall be increased by 1.25 times the scheduled length.
5. All lengths shall be increased by 1.2 times the scheduled lengths for epoxy coated rebar.



ONE PIECE TIE/STIRRUP TWO PIECE TIE/STIRRUP

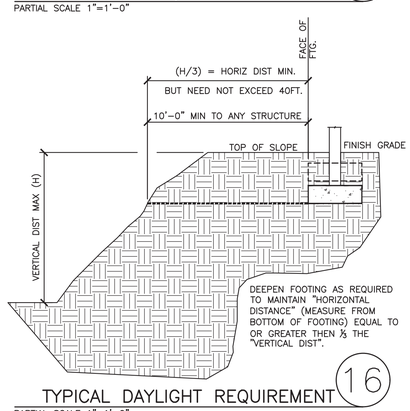


OFFSET BARS & STANDARD LAP

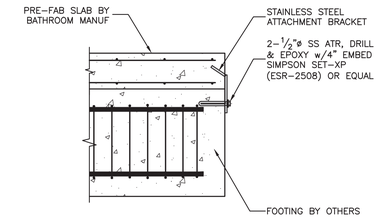


MIN. BEND DIAMETER STIRRUPS & TIES	
BAR SIZE	BEND DIAMETER
#3 THRU #5	D = 4d
MIN. BEND DIAMETER ALL OTHER BARS	
BAR SIZE	BEND DIAMETER
#3 THRU #8	D = 6d
#9 THRU #11	D = 8d

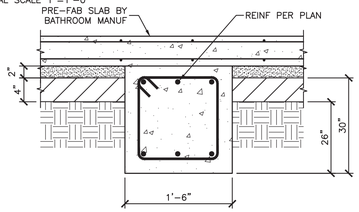
STANDARD HOOKS, BENDS & LAPS 15
PARTIAL SCALE 1"=1'-0"



TYPICAL DAYLIGHT REQUIREMENT 16
PARTIAL SCALE 1"=1'-0"

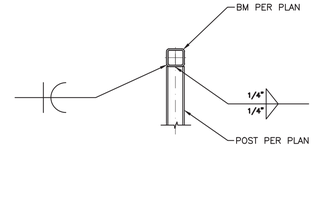


SLAB TO FTG TIE 9
PARTIAL SCALE 1"=1'-0"

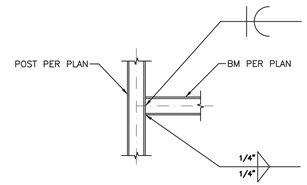


NOTE:
1. THE SUBGRADE (BELOW THE AGGREGATE BASE) SHOULD BE SCARIFIED TO A MINIMUM DEPTH OF 12 INCHES, MOISTURE CONDITIONED TO AT LEAST 3 PERCENT ABOVE OPTIMUM MOISTURE CONTENT, AND RE-COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION PER ASTM D-1557.
2. THE BOTTOM OF THE FOOTING EXCAVATION SHOULD BE COMPACTED WITH A JUMPING JACK COMPACTOR WITH AT LEAST 4 PASSES.
3. THE SLAB SHOULD BE UNDERLAIN BY 2 INCHES OF MASON SAND (ASTM C-144) COMPACTED WITH A VIBRATORY PLATE OVER A MINIMUM 4 INCHES OF CLASS 2 AGGREGATE BASE COMPACTED TO AT LEAST 95 PERCENT RELATIVE COMPACTION.

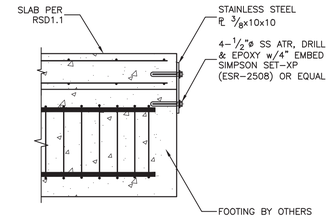
FOOTING @ SLAB 10
PARTIAL SCALE 1"=1'-0"



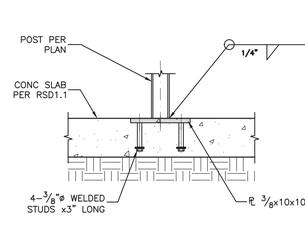
POST TO BM CONN 5
PARTIAL SCALE 1"=1'-0"



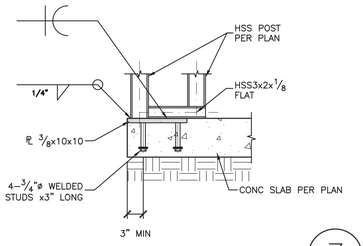
"T" CONNECTION 6
PARTIAL SCALE 1"=1'-0"



ALTERNATE SLAB TO FTG TIE 2
PARTIAL SCALE 1"=1'-0"



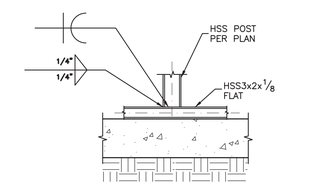
BASE PLATE CONN 7
PARTIAL SCALE 1"=1'-0"



Approved for Commercial
Approved by: State of California
MH DAA #0MH1
Intertek (Intertek)
Plan Approval: #R-21317
Approval Date: 2024-02-23
Expiration Date: 2025-05-22
Without Foundation Approval

1748 33rd Street
Orlando, FL 32839

BASE PLATE CONN 3
PARTIAL SCALE 1"=1'-0"



VERT HSS TO BASE HSS 8
PARTIAL SCALE 1"=1'-0"

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REGISTERED PROFESSIONAL ENGINEER
THOMAS W. HUME JR.
No. 50647
CIVIL
STATE OF CALIFORNIA

JUPITER TRIPLE UNIT
JUP23AAD, JUP33AAD

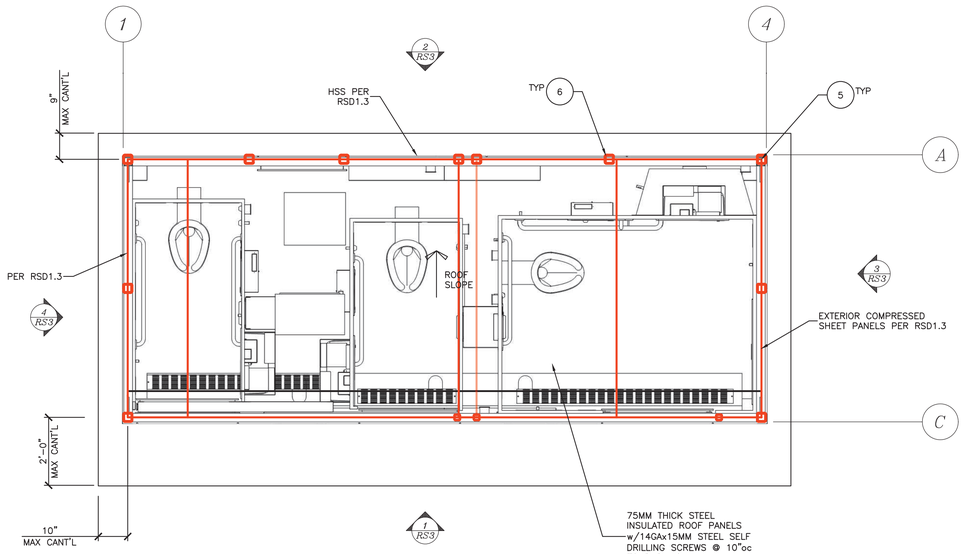
Engineer: T.N.
Drafter: A.V.

NO.	DATE:	ISSUED FOR:
	2022-03-28	PRELIM SET #01
	2022-06-07	STAMPED SET #01
	2023-08-25	STAMPED SET #02

SHEET NAME: DETAILS

PROJECT: 20 020
DRAWN BY:
SHEET NO. RS1.1

C:\Jobs z Archive\2020 Jobs\20 020 Exeloo HCD_Exeloo\20 20 Jupiter Triple 23AAD - HCD Package\20 020 Dwg's Version 11.0\vwt\20 020 D- DETAILS.dwg, 8/25/2023 9:26:05 AM, Brandon



ROOF FRAMING PLAN

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

DO NOT SCALE FROM DRAWING REFER TO NOTES, SCHEDULES AND DETAILS.

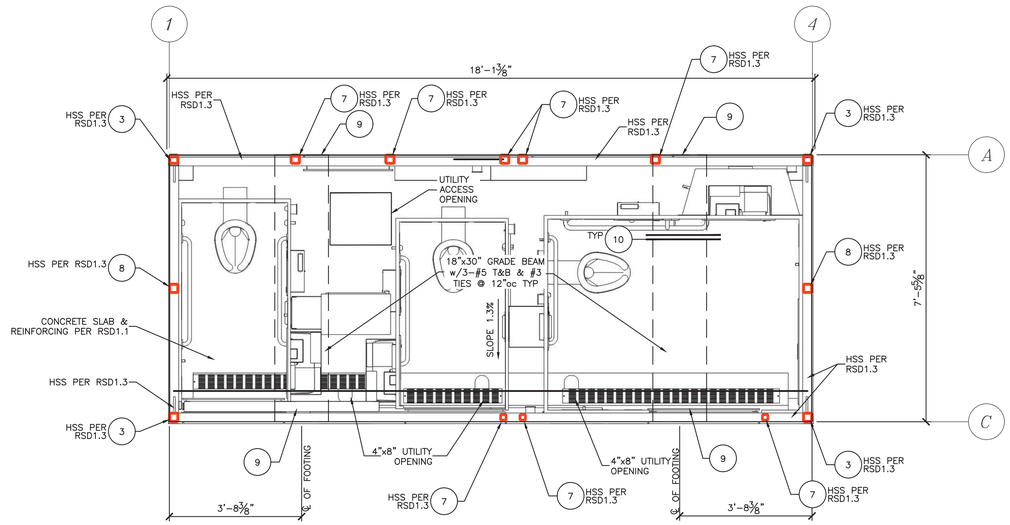
MATERIAL LOADS ROOF	(psf)
Total Dead Load	10
Total Live Load	20

THE MATERIAL SPECIFIED IS NOT NECESSARILY THE MATERIAL TO BE USED. ONLY TO VERIFY THE MAXIMUM LOAD THE STRUCTURE IS DESIGNED FOR. REFER TO ARCHITECTURAL OR THE STRUCTURAL PLANS FOR THE EXACT MATERIAL CALLED FOR.
CONTRACTOR SHALL VERIFY THE DEAD LOAD WEIGHTS AS NOTED ON SHEET S0.1

NOTE:
Snow loading not considered in this design

DETAIL & NOTES SHEET SCHEDULE

SPECIAL INSPECTION NOTES	RS0.1
1 TO 20 REFER TO SHEET	RS1.1
101 TO 120 REFER TO SHEET	RSD1.1
121 TO 140 REFER TO SHEET	RSD1.2
141 TO 160 REFER TO SHEET	RSD1.3



FOUNDATION PLAN

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

DO NOT SCALE FROM DRAWING REFER TO NOTES, SCHEDULES AND DETAILS.

1. SOILS INFORMATION:

A. No soils report provided. The following is an assumed value:
   1. Design Soil Bearing Capacity = 1500 psf.
   2. The foundation is designed per IBC minimum standards.
B. Without a soils report Thorn Hume Consulting Engineers cannot be responsible for foundation settlements or movements.
C. Maintain bottom of footing such that the horizontal distance to daylight is 40'-0" and per Sec 1808.7.2 of current CBC edition.

2. FOUNDATION INFORMATION:

A. Concrete:
   A.A. Minimum 28-day strength of 3,000 psi
   A.B. Maximum water to cement ratio of 0.57
   A.C. Maximum aggregate size of 1"
   A.D. Slump of 4" ±1"
   A.E. NO Special inspection required
B. Reinforcing
   B.A. All reinforcing shall be ASTM A-615 Grade 60
   B.B. Clear cover to all rebar shall be 3"
   B.C.

0000 CODES AND REFERENCES

All general structural notes and specifications reflect the providsions of the
2022 CBC(California Building Code)
ASCE 7-16 (Minimum Design Loads)
ACI 318-14 (Concrete)
AISC 360-16/AISC 341-16/AISC 358-16 (Steel)

SEISMIC:	
Design Procedure:	
Equivalent Lateral Force Analysis	
Importance	:1
Risk Category	:2
Occupancy Category	:II
Ss	:2.72
S1	:1.0
Sds	:2.00
Sd1	:1.1
Site Class	:D
Seismic Design Cat.	:E
Seismic Force Sys	:OMF
Base Shear	:3.75k
Cs	:0.571
R	:3.5
Analysis Procedure	:LIN. STATIC

WIND:	
Basic Wind Speed:	115 mph
Wind Exposure:	C
Internal Presure Coefficient:	±0.18
Risk Category	II

Approved for Commercial
Approved by: State of California
MH DAA #DM15074O8
Intertek (Intertek-ATI)
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P.O. Box 15238
San Luis Obispo CA 93406
805-543-6311

REGISTERED PROFESSIONAL ENGINEER
TRACY W. HUME
No. 50647
CIVIL
STATE OF CALIFORNIA

JUPITER TRIPLE UNIT
JUP23AAD, JUP33AAD

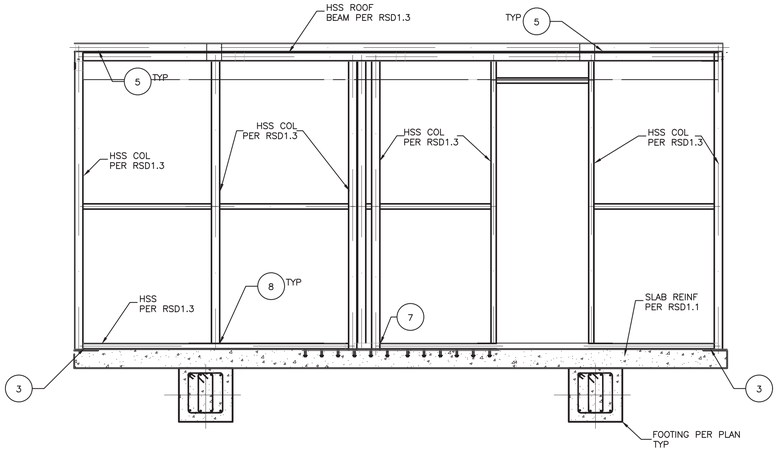
Engineer: T.N.
Drafter: A.V.

NO.	DATE:	ISSUED FOR:
	2022-03-28	PRELIM SET #01
	2022-06-07	STAMPED SET #01
	2023-08-25	STAMPED SET #02

SHEET NAME:
FOUNDATION & ROOF PLAN

PROJECT: 20 020
DRAWN BY:
SHEET NO. RS2

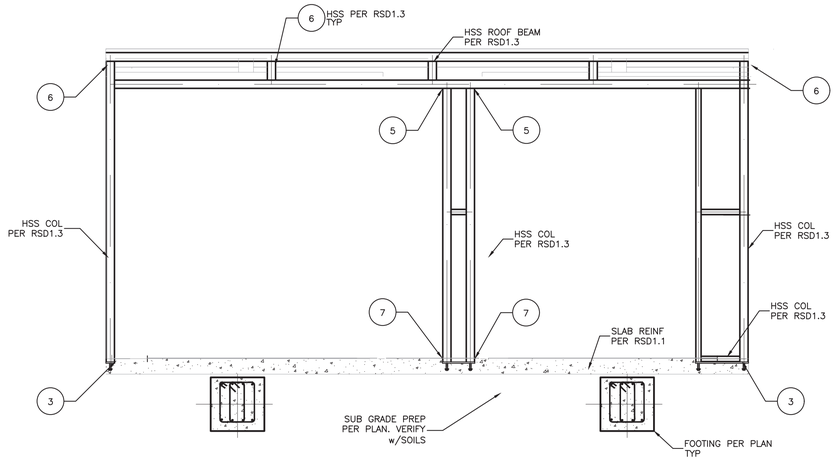
O:\Jobs z Archive\2020 Jobs\20 020 Exeloo HCD_Exeloo\20 20 Jupiter Triple 23AAD - HCD Package\20 020 Dwg's Version 11.0\20 020 S2 FOUNDATION & ROOF PLAN.dwg, 8/25/2023 9:26:23 AM, Brandon



2

REAR ELEVATION

SCALE: 1/2"=1'-0"
DO NOT SCALE FROM DRAWING REFER TO NOTES, SCHEDULES AND DETAILS.



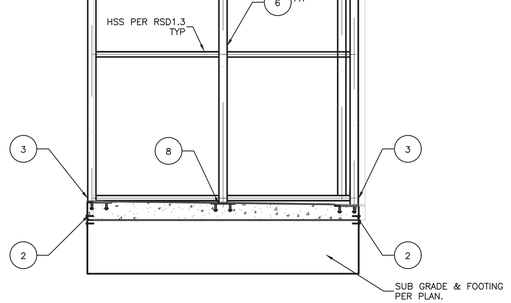
1

FRONT ELEVATION

SCALE: 1/2"=1'-0"
DO NOT SCALE FROM DRAWING REFER TO NOTES, SCHEDULES AND DETAILS.

DETAIL & NOTES SHEET SCHEDULE

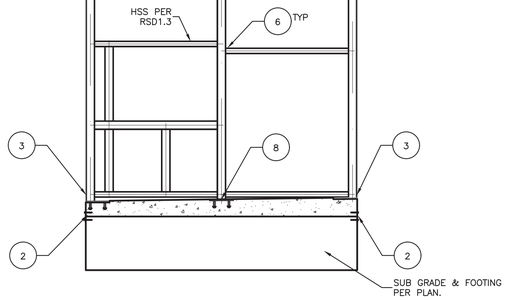
SPECIAL INSPECTION NOTES	RS0.1
1 TO 20 REFER TO SHEET	RS1.1
101 TO 120 REFER TO SHEET	RSD1.1
121 TO 140 REFER TO SHEET	RSD1.2
141 TO 160 REFER TO SHEET	RSD1.3



4

LEFT ELEVATION

SCALE: 1/2"=1'-0"
DO NOT SCALE FROM DRAWING REFER TO NOTES, SCHEDULES AND DETAILS.



3

RIGHT ELEVATION

SCALE: 1/2"=1'-0"
DO NOT SCALE FROM DRAWING REFER TO NOTES, SCHEDULES AND DETAILS.

Approved for Commercial
Approved by: State of California
MH DAA #DMS507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
Approval Date: 2021-05-13
Expiration Date: 2023-05-12
Refined Foundation Approval
1748 34th Street
Orlando, FL 32839

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REGISTERED PROFESSIONAL ENGINEER
THOMAS W. HUME JR.
No. 50647
CIVIL
STATE OF CALIFORNIA

JUPITER TRIPLE UNIT
JUP23AAD, JUP33AAD

Engineer: T.N.
Drafter: A.V.

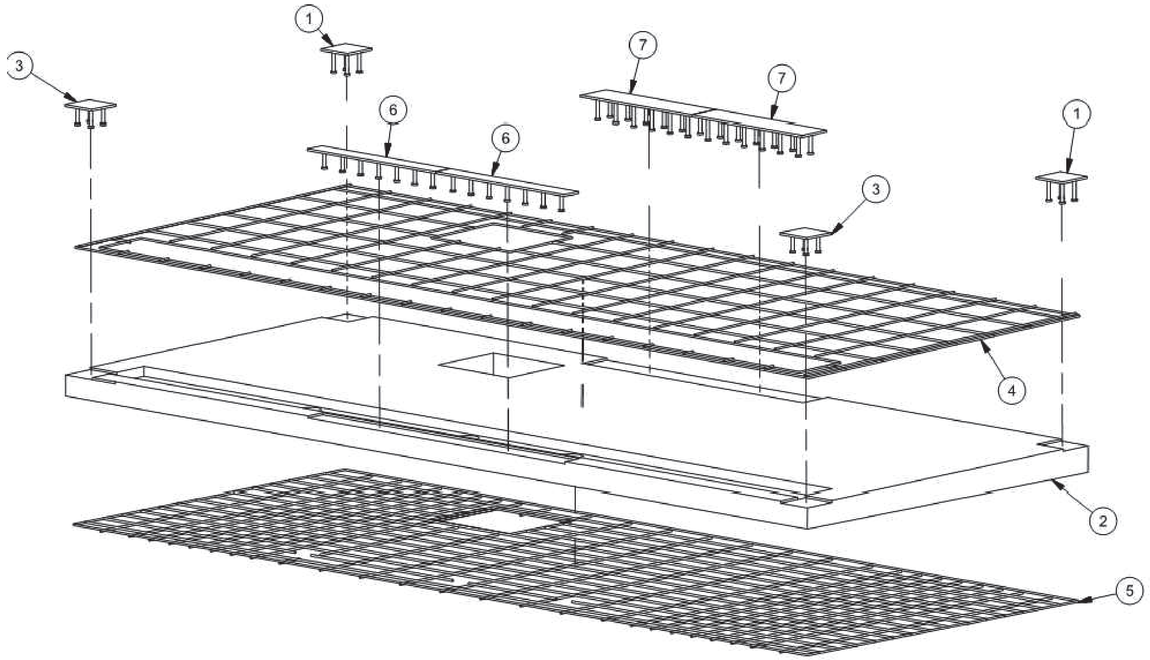
NO.	DATE:	ISSUED FOR:
	2022-03-28	PRELIM SET #01
	2022-06-07	STAMPED SET #01
	2023-08-25	STAMPED SET #02

SHEET NAME:
ELEVATION PLAN

PROJECT: 20 020
DRAWN BY:
SHEET NO. RS3

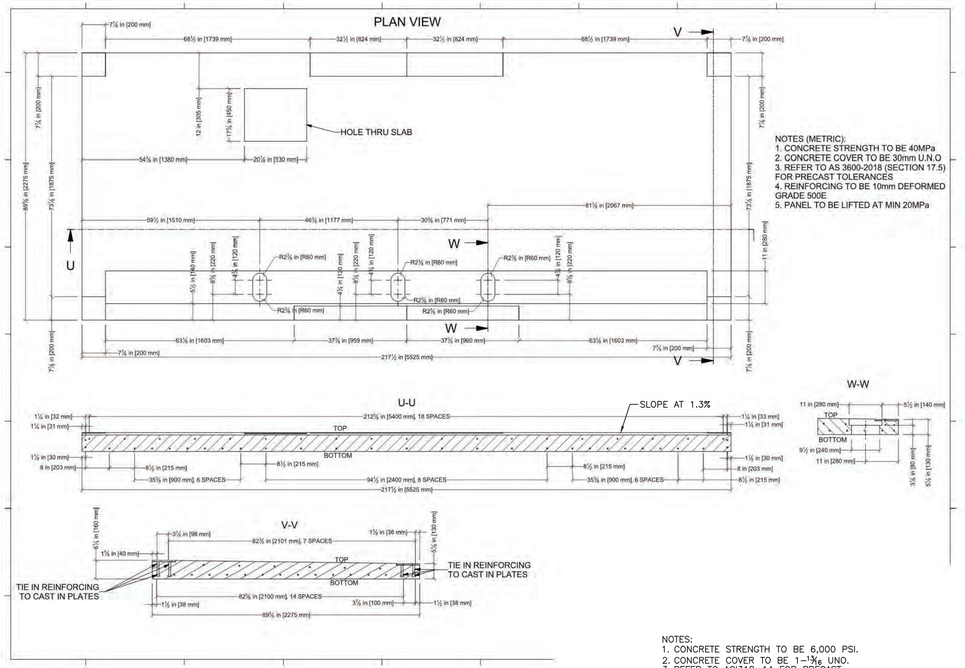
O:\Jobs z Archivo\2020 Jobs\20 020 Exeloo HCD_Exeloo\20 20 Jupiter Triple 23AAD - HCD Package\20 020 Dwg's Version 11.0\20 020 S3 ELEVATION PLAN.dwg, 8/25/2023 9:26:56 AM, Brandon

EXPLODED PERSPECTIVE VIEW



PERSPECTIVE VIEW 114

APPROX SCALE 1/2"=1'-0"



NOTES (METRIC):
1. CONCRETE STRENGTH TO BE 40MPa
2. CONCRETE COVER TO BE 30mm U.N.O
3. REFER TO AS 3600-2018 (SECTION 17.5) FOR PRECAST TOLERANCES
4. REINFORCING TO BE 10mm DEFORMED GRADE 500E
5. PANEL TO BE LIFTED AT MIN 20MPa

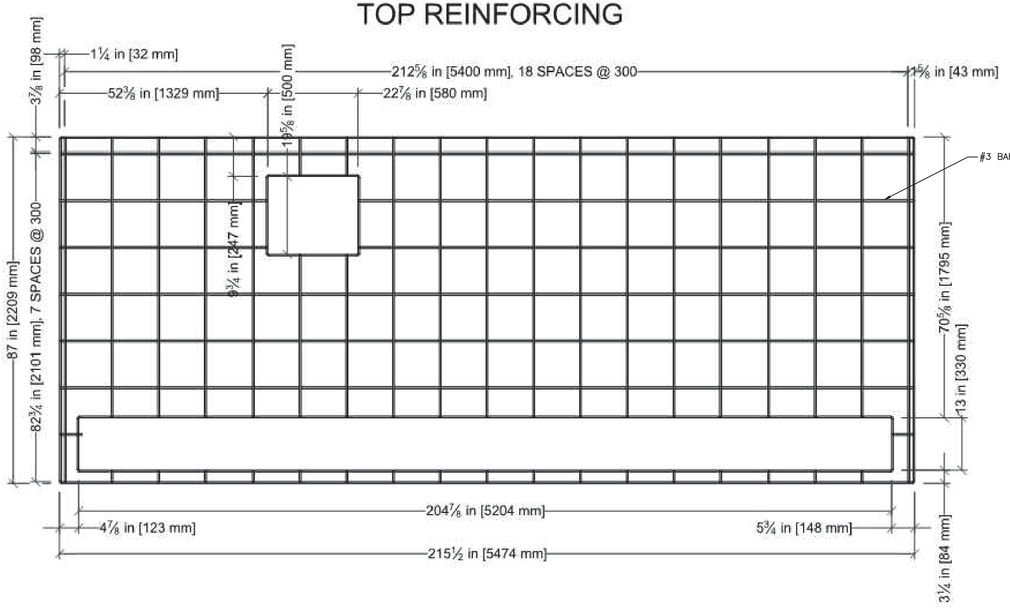
NOTES:
1. CONCRETE STRENGTH TO BE 6,000 PSI.
2. CONCRETE COVER TO BE 1–$^{3}/_{16}$ UNO.
3. REFER TO ACI318–14 FOR PRECAST TOLERANCES.
4. PRODUCT CODE – WX
5. REINFORCING TO BE GRADE 430 AND HD10

FOUNDATION PLAN 102

APPROX SCALE 1/2"=1'-0"

TOP REINFORCING

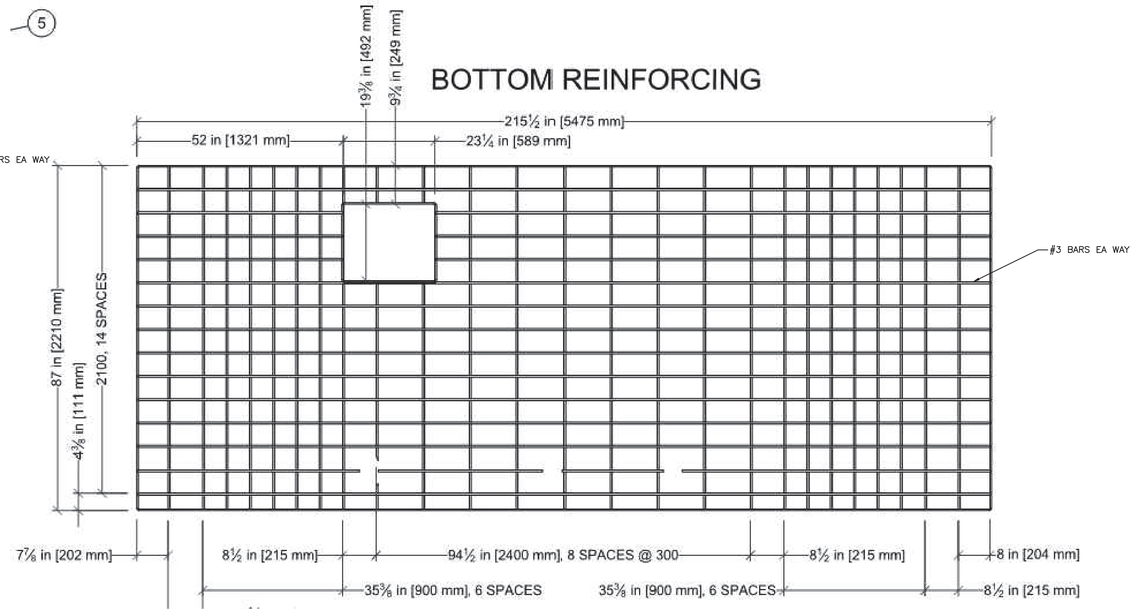
5



TOP REINFORCING 116

APPROX SCALE 1/2"=1'-0"

BOTTOM REINFORCING



BOTTOM REINFORCING 108

APPROX SCALE 1/2"=1'-0"

Approved for Commercial
Approved by: State of California
Approval Type: Factory
Intertek Intertek-ACC
Plan Approval #R-21317
Approval Date: 2024-02-23
Expiration Date: 2025-05-22
Without Foundation Approval

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JUPITER TRIPLE UNIT
JUP23AAD, JUP33AAD

Engineer: T.N.
Drafter: A.V.

NO.	DATE:	ISSUED FOR:
	2022-03-28	PRELIM SET #01
	2022-06-07	STAMPED SET #01
	2023-08-25	STAMPED SET #02

SHEET NAME: DETAILS

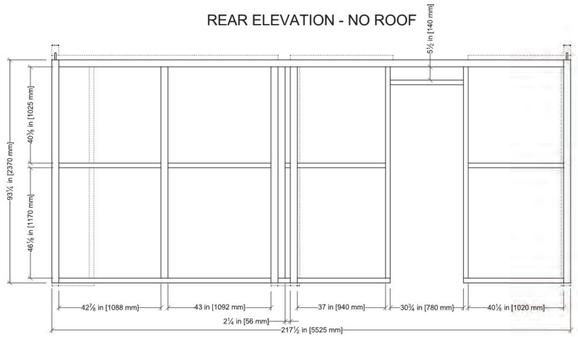
PROJECT: 20 020

DRAWN BY:

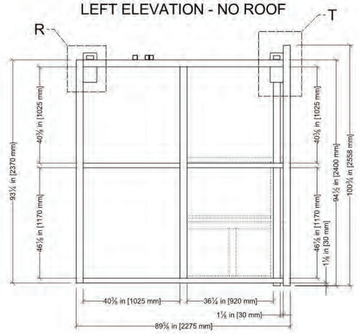
SHEET NO. RSD1.1

O:\Jobs z Archive\2020 Jobs\20 020 Exeloo HCD_Exeloo\20 20 Jupiter Triple 23AAD - HCD Package\20 020 Dwg's Version 11.0\xref\20 020 D- DETAILS.dwg, 8/25/2023 9:26:07 AM, Brandon

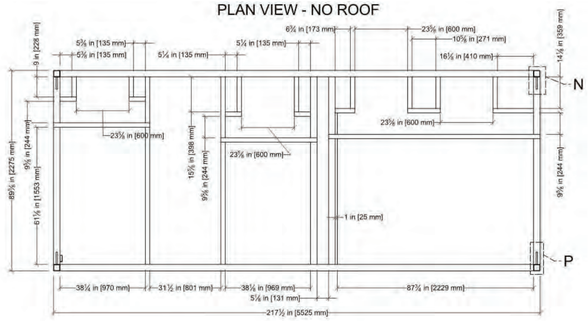
REAR ELEVATION - NO ROOF



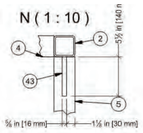
LEFT ELEVATION - NO ROOF



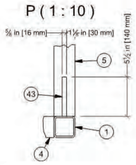
PLAN VIEW - NO ROOF



N (1 : 10)



P (1 : 10)



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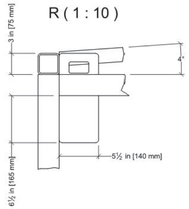

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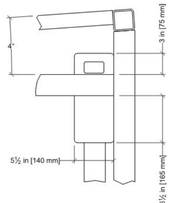
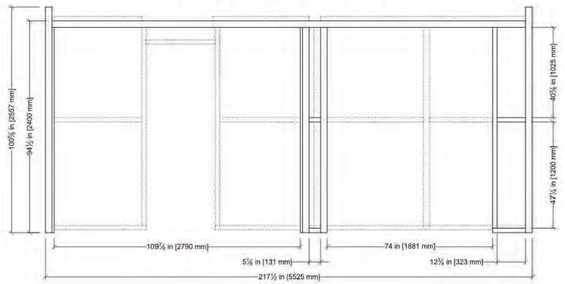
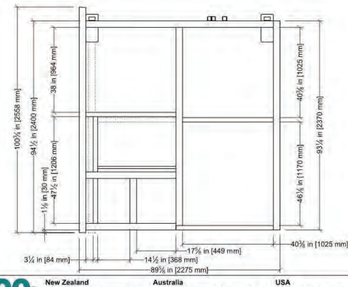


FRONT ELEVATION - NO ROOF



RIGHT ELEVATION - NO ROOF



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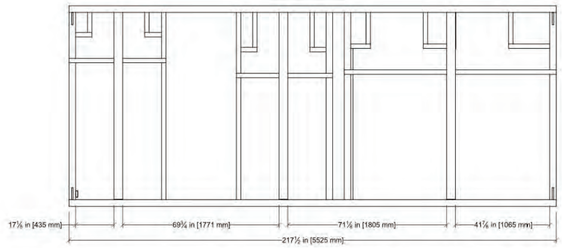
Description: JUPITER TRIPLE AAD TWIN AMBULANT & ACCESSIBLE STEEL FRAME USA	Proj:	Units: / Rev: 1-A / Rev Date: 3/02/2022
Material: / Finish:	Drawn by: JG / Creation Date: 2/02/2022 / Sheet No: S 25	Drawing No: JUP23AAD-US-TF

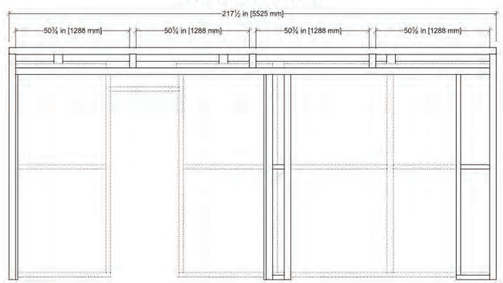
DO NOT SCALE - IF IN DOUBT ASK - SPECIFICATION SUBJECT TO CHANGE WITH

2022-03-16

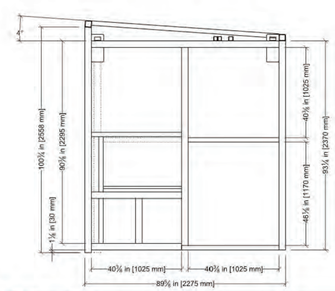
PLAN VIEW



FRONT ELEVATION



RIGHT ELEVATION



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Description: JUPITER TRIPLE AAD TWIN AMBULANT & ACCESSIBLE STEEL FRAME USA	Proj:	Units: / Rev: 1-A / Rev Date: 3/02/2022
Material: / Finish:	Drawn by: JG / Creation Date: 2/02/2022 / Sheet No: S 26	Drawing No: JUP23AAD-US-TF1001

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Description: JUPITER TRIPLE AAD TWIN AMBULANT & ACCESSIBLE STEEL FRAME USA	Proj:	Units: / Rev: 1-A / Rev Date: 3/02/2022
Material: / Finish:	Drawn by: JG / Creation Date: 2/02/2022 / Sheet No: S 24	Drawing No: JUP23AAD-US-TF1001

DO NOT SCALE - IF IN DOUBT ASK - SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE

Approved for Commercial
Approved by Intertek California
NH-Doc# 40NC027400
Intertek (Intertek ATI)
Plan Approval: #R-21317
Approval Date: 2024-02-23
Effective Date: 2024-02-23
Method of Installation (MOI) 0-00-22

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JUPITER TRIPLE UNIT
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Engineer: T.N.
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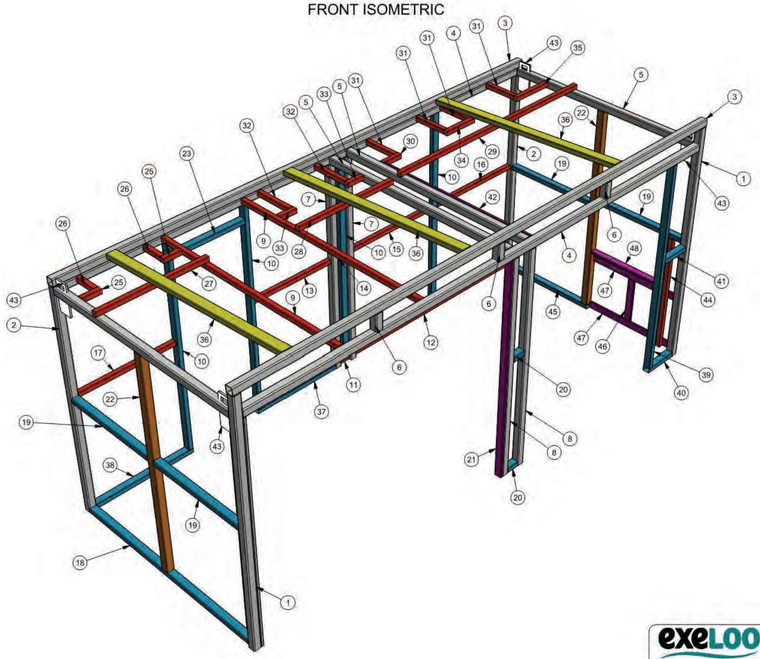
	2022-06-07	STAMPED SET #01
	2023-08-25	STAMPED SET #02

SHEET NAME:
DETAILS

PROJECT: 20 020
DRAWN BY:
SHEET NO. RSD1.2

O:\Jobs z Archive\2020 Jobs\20 020 Exeloo HCD_Exeloo\20 20 Jupiter Triple 23AAD - HCD Package\20 020 Dwg's Version 11.0\vref\20 020 D- DETAILS.dwg, 8/25/2023 9:26:09 AM, Brandon

FRONT ISOMETRIC



ITEM	PART NUMBER	ITEM QTY	UNIT QTY	QTY
1	AS 1163 - C350L0 75x75x5.0 SHS - 2558	2	2558.000 mm	5116.000 mm
2	AS 1163 - C350L0 75x75x5.0 SHS - 2370	2	2370.000 mm	4740.000 mm
3	AS 1163 - C350L0 75x75x5.0 SHS - 5525	2	5525.000 mm	11050.000 mm
4	AS 1163 - C350L0 75x75x5.0 SHS - 5375	2	5375.000 mm	10750.000 mm
5	AS 1163 - C350L0 75x75x5.0 SHS - 2125	4	2125.000 mm	8500.000 mm
6	AS 1163 - C350L0 75x75x5.0 SHS - 158	3	158.000 mm	474.000 mm
7	AS 1163 - C350L0 75x76x5.0 SHS - 2295	2	2295.000 mm	4590.000 mm
8	AS 1163 - C350L0 75x75x5.0 SHS - 2325	2	2325.000 mm	4650.000 mm
9	AS 1163 - C350L0 50x50x3.0 SHS - 2125	2	2125.000 mm	4250.000 mm
10	AS 1163 - C350L0 75x50x3.0 RHS - 2245	4	2245.000 mm	8980.000 mm
11	AS 1163 - C350L0 50x50x3.0 SHS - 131	1	131.000 mm	131.000 mm
12	AS 1163 - C350L0 50x50x3.0 SHS - 2254	1	2254.000 mm	2254.000 mm
13	AS 1163 - C350L0 50x50x3.0 SHS - 940	1	940.000 mm	940.000 mm
14	AS 1163 - C350L0 50x50x3.0 SHS - 56	1	56.000 mm	56.000 mm
15	AS 1163 - C350L0 50x50x3.0 SHS - 1091.5	1	1091.500 mm	1091.500 mm
16	AS 1163 - C350L0 50x50x3.0 SHS - 1087.5	1	1087.500 mm	1087.500 mm
17	AS 1163 - C350L0 50x50x3.0 SHS - 1020	1	1020.000 mm	1020.000 mm
18	AS 1163 - C350L0 75x50x3.0 RHS - 2125	1	2125.000 mm	2125.000 mm
19	AS 1163 - C350L0 75x50x3.0 RHS - 1025	4	1025.000 mm	4100.000 mm
20	AS 1163 - C350L0 75x50x3.0 RHS - 131	2	131.000 mm	262.000 mm
21	AS 1163 - C350L0 75x25x2.5 RHS - 2325	2	2325.000 mm	4650.000 mm
22	AS 1163 - C350L0 75x75x3.0 SHS - 2245	2	2245.000 mm	4490.000 mm
23	AS 1163 - C350L0 75x50x3.0 RHS - 760	1	760.000 mm	760.000 mm
24	AS 1163 - C350L0 75x25x2.5 RHS - 2400	1	2400.000 mm	2400.000 mm
25	AS 1163 - C350L0 50x50x3.0 SHS - 185	2	185.000 mm	370.000 mm
26	AS 1163 - C350L0 50x50x3.0 SHS - 228	2	228.000 mm	456.000 mm
27	AS 1163 - C350L0 50x50x3.0 SHS - 1095	1	1095.000 mm	1095.000 mm
28	AS 1163 - C350L0 50x50x3.0 SHS - 1094	1	1094.000 mm	1094.000 mm
29	AS 1163 - C350L0 50x50x3.0 SHS - 2404	1	2404.000 mm	2404.000 mm
30	AS 1163 - C350L0 50x50x3.0 SHS - 223	1	223.000 mm	223.000 mm
31	AS 1163 - C350L0 50x50x3.0 SHS - 359	4	359.000 mm	1436.000 mm
32	AS 1163 - C350L0 50x50x3.0 SHS - 398	2	398.000 mm	796.000 mm
33	AS 1163 - C350L0 50x50x3.0 SHS - 184.5	2	184.500 mm	369.000 mm
34	AS 1163 - C350L0 50x50x3.0 SHS - 371	1	371.000 mm	371.000 mm
35	AS 1163 - C350L0 50x50x3.0 SHS - 460	1	460.000 mm	460.000 mm
36	AS 1163 - C350L0 100x50x3.0 RHS - 2128.551	3	2128.551 mm	6385.654 mm
37	AS 1163 - C350L0 75x50x3.0 RHS - 990	1	990.000 mm	990.000 mm
38	AS 1163 - C350L0 75x50x3.0 RHS - 1070	1	1070.000 mm	1070.000 mm
39	AS 1163 - C350L0 75x50x3.0 RHS - 2275	1	2275.000 mm	2275.000 mm
40	AS 1163 - C350L0 75x50x3.0 RHS - 373	1	373.000 mm	373.000 mm
41	AS 1163 - C350L0 75x50x3.0 RHS - 323	1	323.000 mm	323.000 mm
42	AS 1163 - C350L0 75x25x2.5 RHS - 1716	1	1716.000 mm	1716.000 mm
43	55254235	4	1	4
44	AS 1163 - C350L0 50x50x3.0 SHS - 1281	1	1281.000 mm	1281.000 mm
45	AS 1163 - C350L0 75x50x3.0 RHS - 1100	1	1100.000 mm	1100.000 mm
46	AS 1163 - C350L0 75x25x2.5 RHS - 503	1	503.000 mm	503.000 mm
47	AS 1163 - C350L0 75x25x2.5 RHS - 1025	2	1025.000 mm	2050.000 mm
48	AS 1163 - C350L0 75x25x2.5 RHS - 891	1	891.000 mm	891.000 mm

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New Zealand
26 Paramount Dve Hendersonn 0610
PO Box 33-256 Takapuna, *Auckland*
T: +64-9-838-8912 F: +64-9-838-8913

Australia
Unit 19, 62-66 Newton Rd Wetherill Park
PO Box 12 Liverpool NSW 1871
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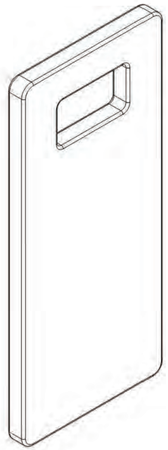
USA
954 Toro St San Luis Obispo CA 93401
PO Box 13310 San Luis Obispo CA 93406
T: (800) 676-5290 or 1-800-303-3506

Description: JUPITER TRIPLE AAD TWIN AMBULANT & ACCESSIBLE STEEL FRAME USA		Proj.	Units:	Rev: 1-A — Rev Date: 3/02/2022
		Tolerance:	Scale:	Checked by: — Approved by:
Material:	Finish:	Drawn by: JJG	Creation Date: 2/02/2022	Sheet No: S 22 — Drawing No: JUP23AAD-US-TF1001

DO NOT SCALE – IF IN DOUBT ASK — SPECIFICATION SUBJECT TO CHANGE WITHOUT NOTICE



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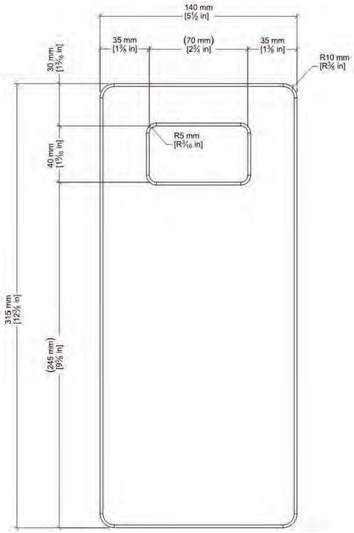

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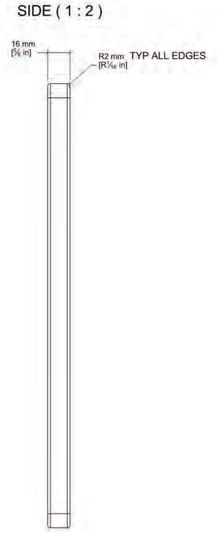

REV:	DESCRIPTION:	DATE:
1-B	Update to 16mm Plate, Issued for Manufacture	26-04-17

exeLOO

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26 Paramount Dve Hendersonn 0610
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USA
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PO Box 13310 San Luis Obispo CA 93406
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Description: JUPITER BELOW BONDOR LIFTING BRACKET		Proj.	Units: mm	Rev: 1-B — Rev Date: 27/04/2017
		Tolerance: +/-0.5	Scale: N.T.S.	Checked by: — Approved by:
Material: 16mm MS PLATE	Finish: REF	Drawn by: DAB	Creation Date: 29/06/2011	Sheet No: 1 / 1 — Drawing No: 55254235

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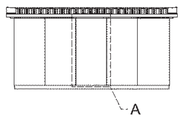
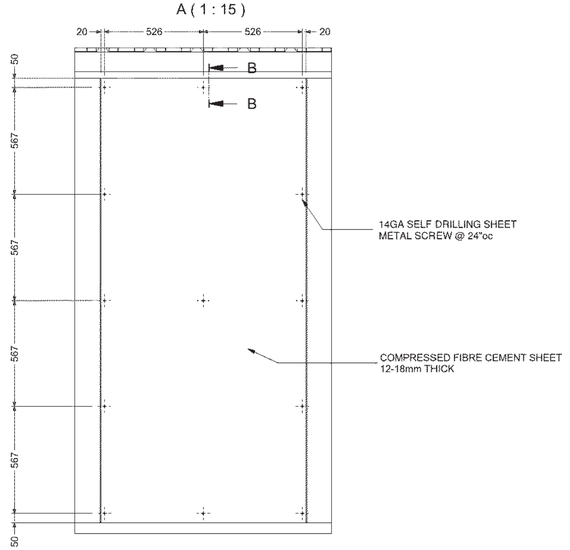
REAR ELEVATION



A (1 : 15)



COMPRESSED FIBRE SHEET ATTACHMENT

Approved for Commercial
Approved by: State of California
Michael Johnson, PE
License No. 50647
Plan Approval: #R-22317
Approval Date: 2024-02-23
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P.O. Box 15238
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805-543-6311

REGISTERED PROFESSIONAL ENGINEER
THOMAS W. HUME JR.
No. 50647
CIVIL
STATE OF CALIFORNIA

JUPITER TRIPLE UNIT
JUP23AAD, AS

Engineer: T.N.
Drafter: A.V.

NO.	DATE:	ISSUED FOR:
	2022-03-28	PRELIM SET #01
	2022-06-07	STAMPED SET #01
	2023-08-25	STAMPED SET #02

SHEET NAME: DETAILS

PROJECT: 20 020
DRAWN BY:
SHEET NO. RSD1.3

O:\Jobs z Archive\2020 Jobs\20 020 Exeloo HCD_Exeloo\20 20 Jupiter Triple 23AAD - HCD Package\20 020 Dwg's Version 11.0\vwf\20 020 D- DETAILS.dwg, 8/25/2023 9:26:11 AM, Brandon

HUME
ENGINEERS
P.O. Box 15238 San Luis Obispo CA 93406
Phone: (805) 543-6311 - E-mail: mail@thengineers.com

Friday, August 25, 2023

STRUCTURAL CALCULATIONS FOR:

Building Department 2nd Submittal

Job #: 20020.24

Exeloo:20020 HCD:24 Jupiter Triple

,

Client:

Exeloo

954 Toro Street

San Luis Obispo,CA

The signing engineer is only responsible for building systems reviewed by him. The structure has been designed only for the loads within these calculations. Any changes, additions of discrepancy shall be brought to the engineer's attention prior to any further work being done.

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MH DAA #DMS1507408
Intertek (Intertek-ATI)
Plan Approval: #R-21317
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3745 23rd Street
Orlando, FL 32839

HUME ENGINEERS

CLIENT Exeloo
JOB #
ENGINEER
CHECK
DATE 8/25/2023

STRUCTURAL CALCULATIONS: TABLE OF CONTENTS PAGE #

APPENDIX

Engineering Calculations by ACH Consulting Engineers
(for reference only)

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Load Take-off

Roof Dead	10	psf
Wall	14	psf
Roof Live	20	psf

Distributed Load to Roof Beams

	DL	LLR	
Trib	10	20	psf
3.75 ft	37.5	75	plf

Lateral Analysis: Short-Direction

Wind Load (1.0W)

Pressure	52	psf	
p1	780 lbs	390	lbs at each node @ outer frames (2 nodes)
p2	1092 lbs	546	lbs at each node @ interior frames (2 nodes)

Seismic Load (1.0E)

Wall	112	plf	
Roof	75	plf	
	187	plf	
Sds	2.1		
R	3.5		
Cs	0.600		
p1	421 lbs	210	lbs at each node @ outer frames (2 nodes)
p2	589 lbs	295	lbs at each node @ interior frames (2 nodes)

Wind governs in short-direction

Lateral Analysis: Long-Direction

Wind Load (1.0W)

Pressure	52	psf	
p1	829	207	lbs at each node (4 nodes)

Seismic Load (1.0E)

Wall	112	plf	
Roof	180	plf	
	292	plf	
Sds	2.1		
R	3.5		
Cs	0.600		
Long	657	lbs	
30% Short	303	lbs	
Total	960 lbs	240	lbs at each node (4 nodes)

Seismic governs in long-direction

See attached calculations by ACH Consulting Engineers for reference. Our calculations are in agreement that the design of the frame is governed by wind loading in the short direction.

Comparison of design wind pressure:

Per ACH Consulting Engineers
P = 1.44kPa (windward) + 1.03kPa (leeward)
= 2.47kPa = 52psf

Per our office determined wind loading:
P = 30.83 psf >> Use 52 psf in Calculations

This indicates that the frame design loads are conservative and satisfy minimum wind design loads per 2022 CBC

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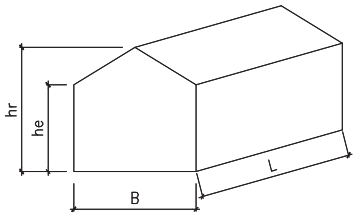
PROJECT :
CLIENT : Exeloo
JOB NO. :
DATE : 11/16/18
PAGE :
DESIGN BY :
REVIEW BY :

Wind Analysis for Low-rise Building, Based on ASCE 7-22 MWFRS Envelope Procedure

INPUT DATA

Roof Slope:		0	:12
Exposure category (B, C or D) (ASCE Sec. 26.7.3)		D	
Basic Wind Speed (ASCE FIGURE 26.5-1A)	V =	115	mph
Topographic factor (ASCE Sec.26.8.2, pg 252 & 254)	K_{zt} =	1	Flat
Building height to eave	h_e =	8	ft
Building height to ridge	h_r =	8	ft
Building length	L =	18	ft
Building width	B =	7.5	ft
Effective area of components	A =	10	ft^2



DESIGN SUMMARY

Pressure at face of wall =	**30.83 psf (at wall end zones)**
Max horizontal force normal to building length, L, face =	1.72 kips
Max horizontal force normal to building length, B, face =	1.73 kips
Max total horizontal torsional load =	1.31 ft-kips
Max total upward force =	3.71 kips

ANALYSIS

Velocity pressure

$q_z = 0.00256\, K_h\, K_{zt}\, K_d\, V^2$ = **29.64** psf

where: q_z = velocity pressure at mean roof height, h. (Eq. 28.3-1 pg. 260)

K_h = velocity pressure exposure coefficient evaluated at height, h, (Tab. 28.3-1) = **1.03**

K_d = wind directionality factor. (Tab. 26.6-1, for building, page 250) = **0.85**

K_{zt} = topographic factor (Fig. 26.8-1) = **1.00**

h = mean roof height = **8.00** ft

< 60 ft, [Building Height Satisfactory]

Design pressures for MWFRS

$p = q_h\, [(G\, C_{pf}) - (G\, C_{pi})]$

where: p = pressure in appropriate zone. (Eq. 28.4-1, page 298).

$G\, C_{pf}$ = product of gust effect factor and external pressure coefficient, see table below. (Fig. 28.4-1, page 300 & 301)

$G\, C_{pi}$ = product of gust effect factor and internal pressure coefficient.(Table 26.11-1, Enclosed Building, page 258)

= **0.18** or **-0.18**

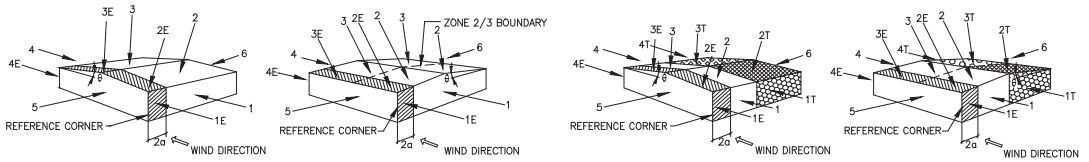
a = width of edge strips, Fig 28.4-1, note 9, page 301, MAX[MIN(0.1(MIN(B,L), 0.4h), 0.04(MIN(B,L),3] = **3.00 ft**

Net Pressures (psf), Basic Load Cases

Surface	Roof angle θ = 0.00			Roof angle θ = 0.00		
	GC_{pf}	Net Pressure (psf) with		GC_{pf}	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$		$(+GC_{pi})$	$(-GC_{pi})$
1	0.40	6.52	17.19	0.40	6.52	17.19
2	-0.69	-25.79	-15.12	-0.69	-25.79	-15.12
3	-0.37	-16.30	-5.63	-0.37	-16.30	-5.63
4	-0.29	-13.93	-3.26	-0.29	-13.93	-3.26
1E	0.61	12.75	23.42	0.61	12.75	23.42
2E	-1.07	-37.05	-26.38	-1.07	-37.05	-26.38
3E	-0.53	-21.05	-10.37	-0.53	-21.05	-10.37
4E	-0.43	-18.08	-7.41	-0.43	-18.08	-7.41
5E	0.61	12.75	23.42	0.61	12.75	23.42
6E	-0.43	-18.08	-7.41	-0.43	-18.08	-7.41

Net Pressures (psf), Torsional Load Cases

Surface	Roof angle θ = 0.00		
	GC_{pf}	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$
1T	0.40	1.63	4.30
2T	-0.69	-6.45	-3.78
3T	-0.37	-4.08	-1.41
4T	-0.29	-3.48	-0.82
Surface	Roof angle θ = 0.00		
	GC_{pf}	Net Pressure with	
		$(+GC_{pi})$	$(-GC_{pi})$
1T	0.40	1.63	4.30
2T	-0.69	-6.45	-3.78
3T	-0.37	-4.08	-1.41
4T	-0.29	-3.48	-0.82



Transverse Direction | Longitudinal Direction | Transverse Direction | Longitudinal Direction

Basic Load Cases | Torsional Load Cases

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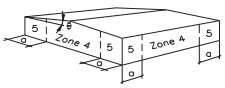
Design pressures for components and cladding

$p = q_h[(G C_p) - (G C_{pi})]$

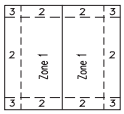
where: p = pressure on component. (Eq. 30.4-1, pg 318)

p_{min} = 16 psf (Sec. 30.2.2 pg 316)

GC_p = external pressure coefficient.
see table below. (Fig. 30.4-1, page 335~338)



Walls



Roof $\theta \leq 7°$

Roof $\theta > 7°$

	Effective Area (ft^2)	Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
		GC_P	$-GC_P$	GC_P	$-GC_P$	GC_P	$-GC_P$	GC_P	$-GC_P$	GC_P	$-GC_P$
Comp.	10	0.30	-1.00	0.30	-1.80	0.30	-2.80	0.90	-0.99	0.90	-1.26

(Walls reduced 10 %, Fig. 6-11A note 5.)

Comp. & Cladding Pressure (psf)	Zone 1		Zone 2		Zone 3		Zone 4		Zone 5	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
	16.00	-34.98	16.00	-58.69	16.00	-88.33	32.01	-34.68	32.01	-42.68

Overhang		Overhang Zone 1 & 2	Overhang Zone 3
	GC_p	-1.70	-2.80
	psf	-50.39	-82.99
	Min. Gov.	Min. Gov.	Min. Gov.

For hip roofs with $\theta \leq 25°$, Zone 3 shall be treated as Zone 2.

These loads are at 1.0 - Multiply by 0.6 for ASD

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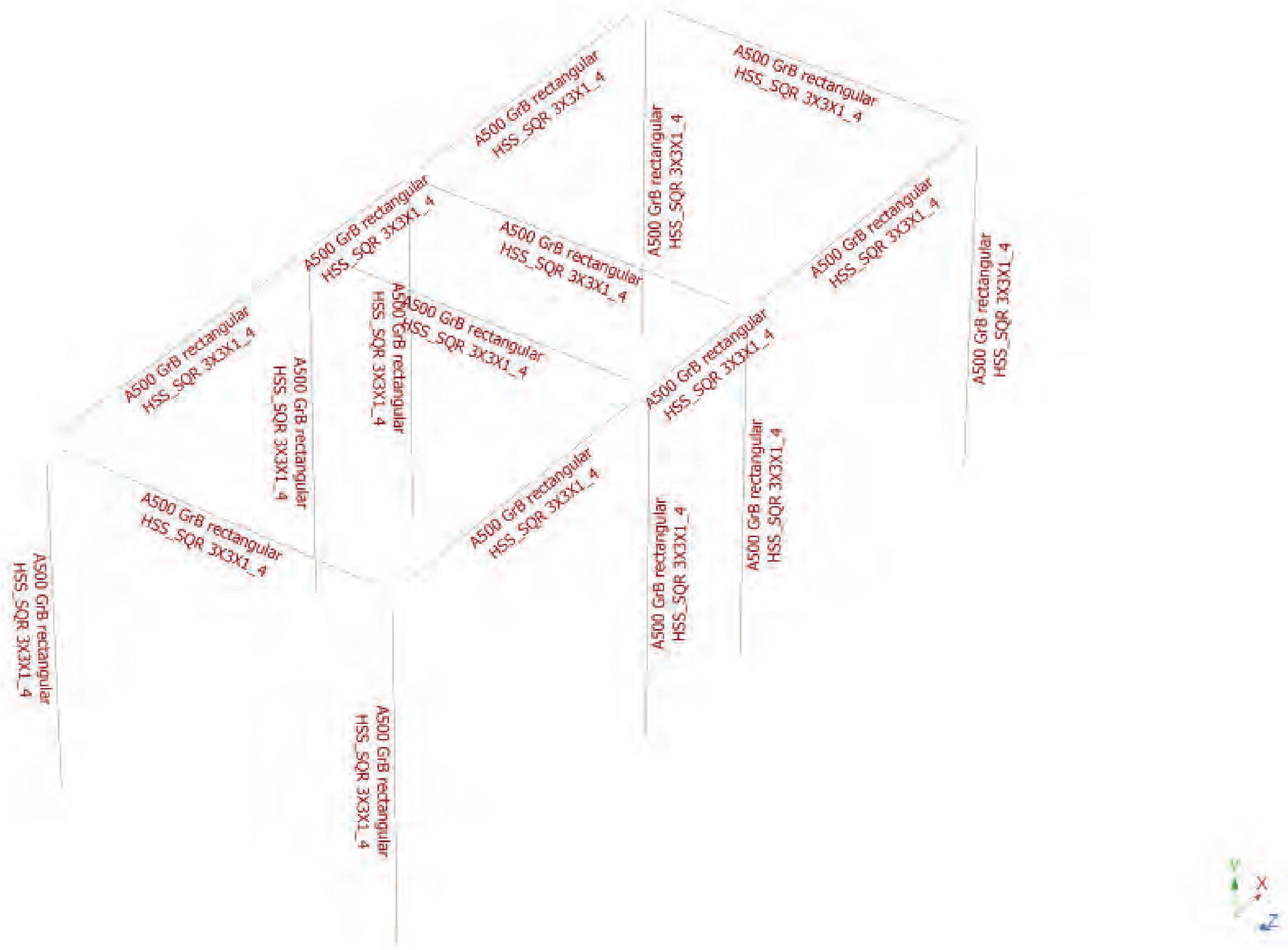

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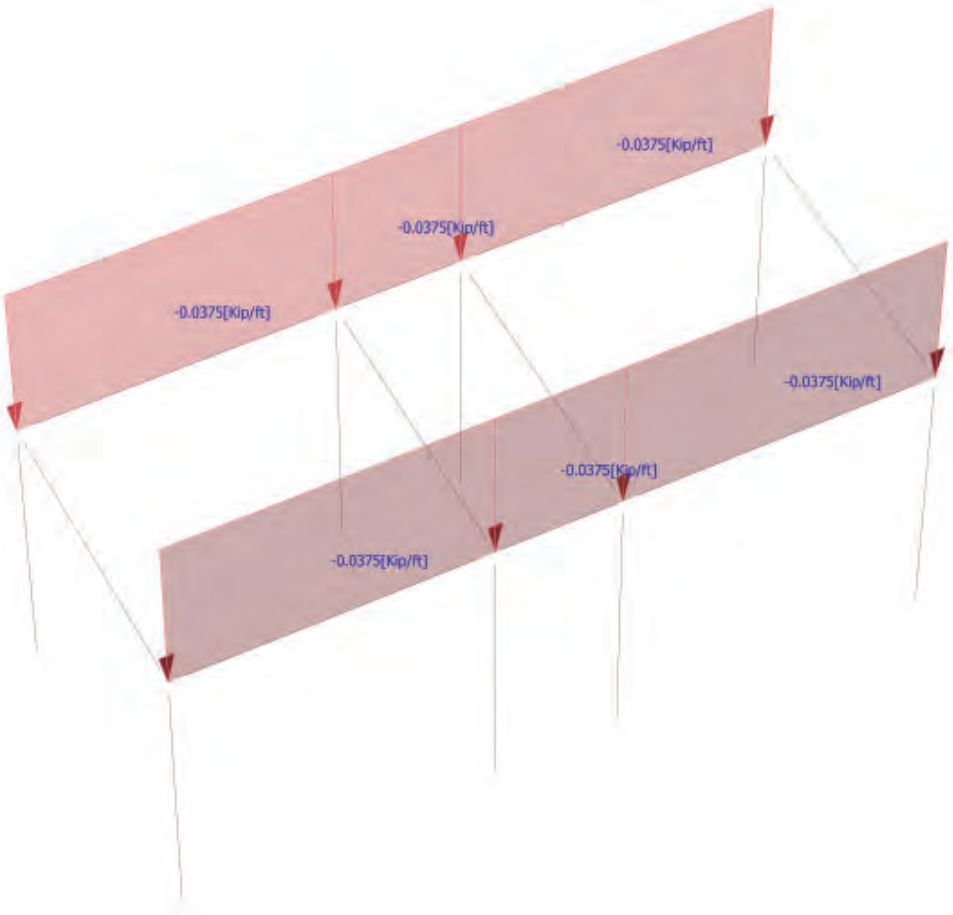
Units system: English

Load condition: DL=Dead Load



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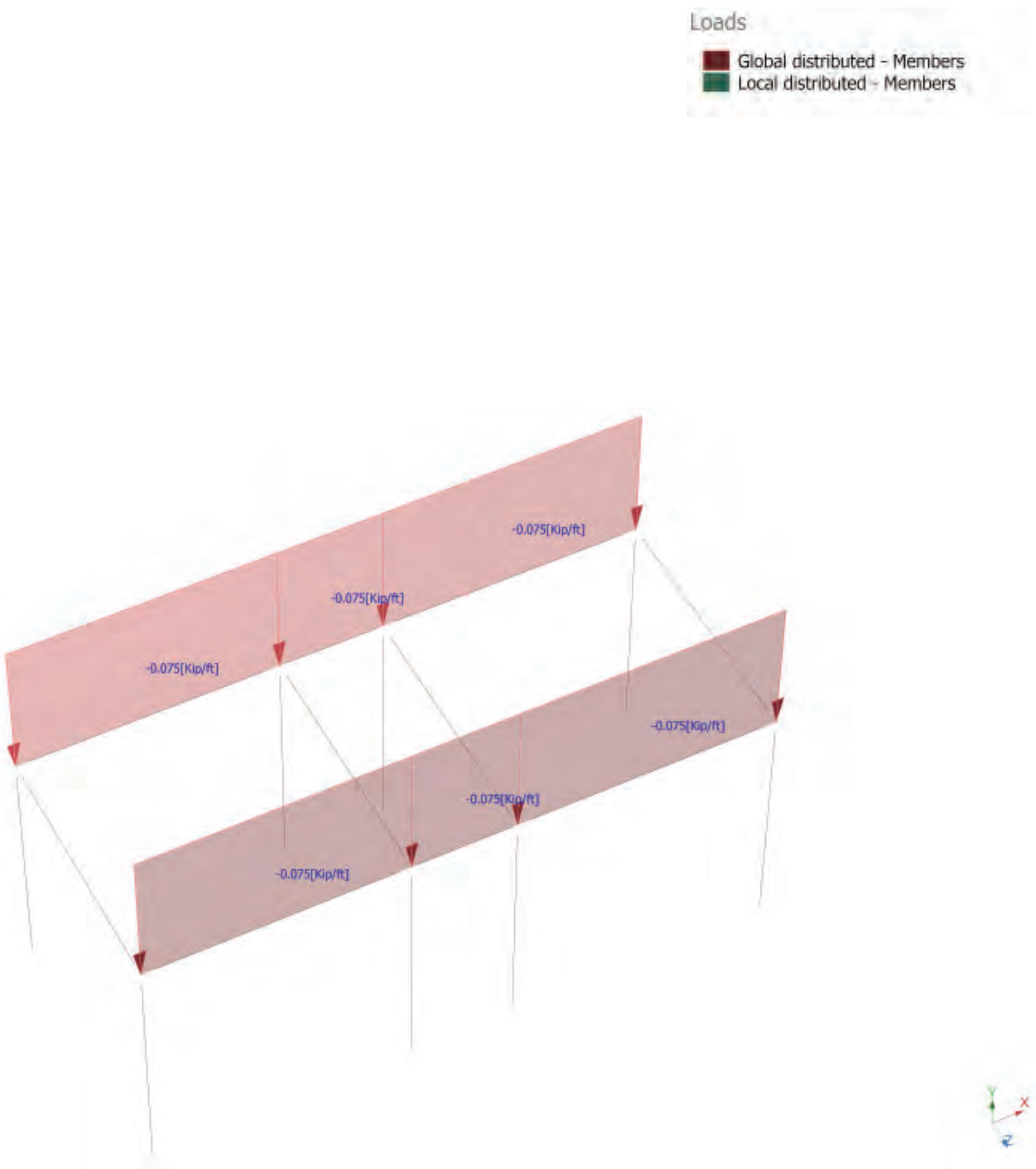
Units system: English

Load condition: LLr=Roof Live



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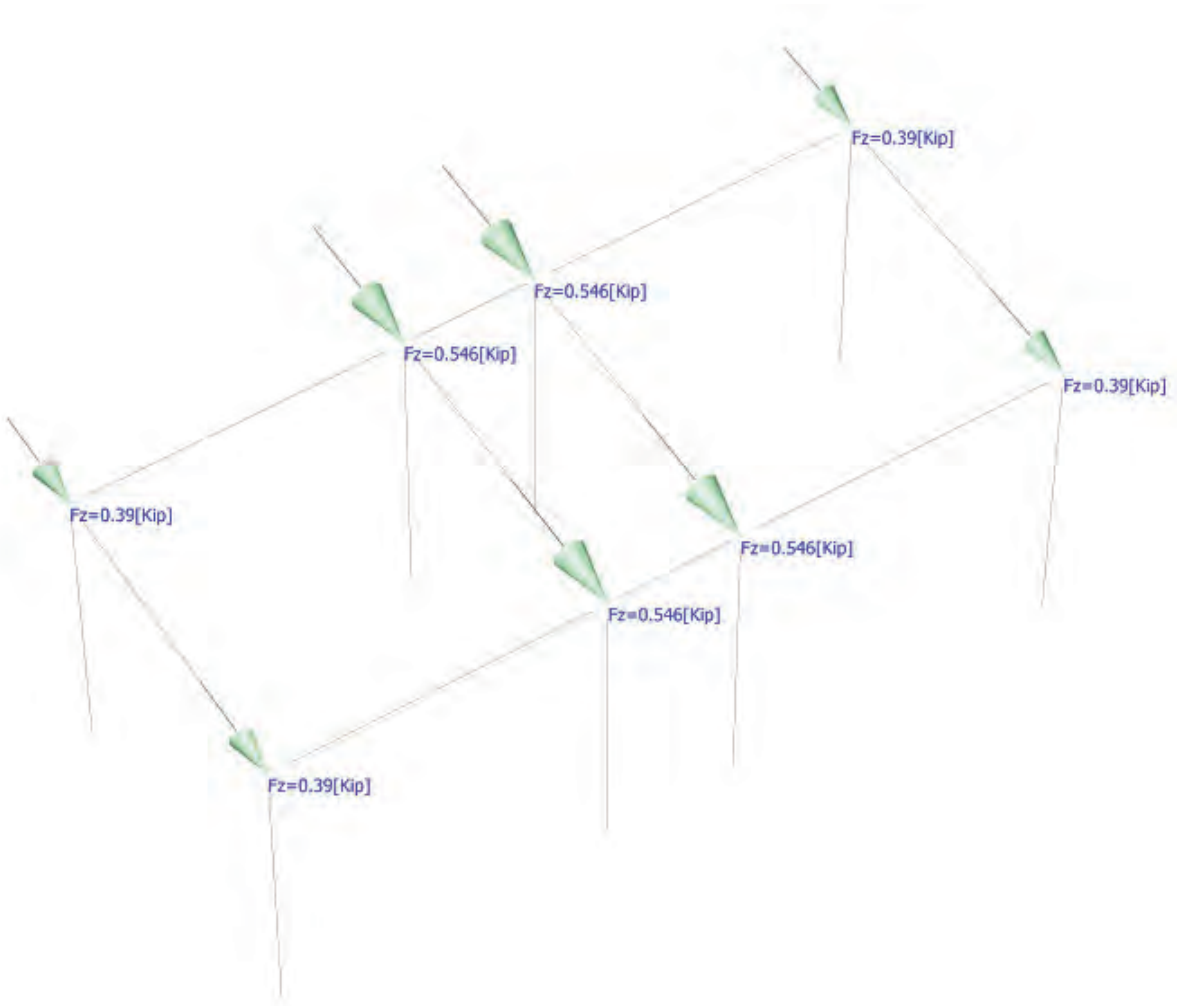
Units system: English

Load condition: W=Wind



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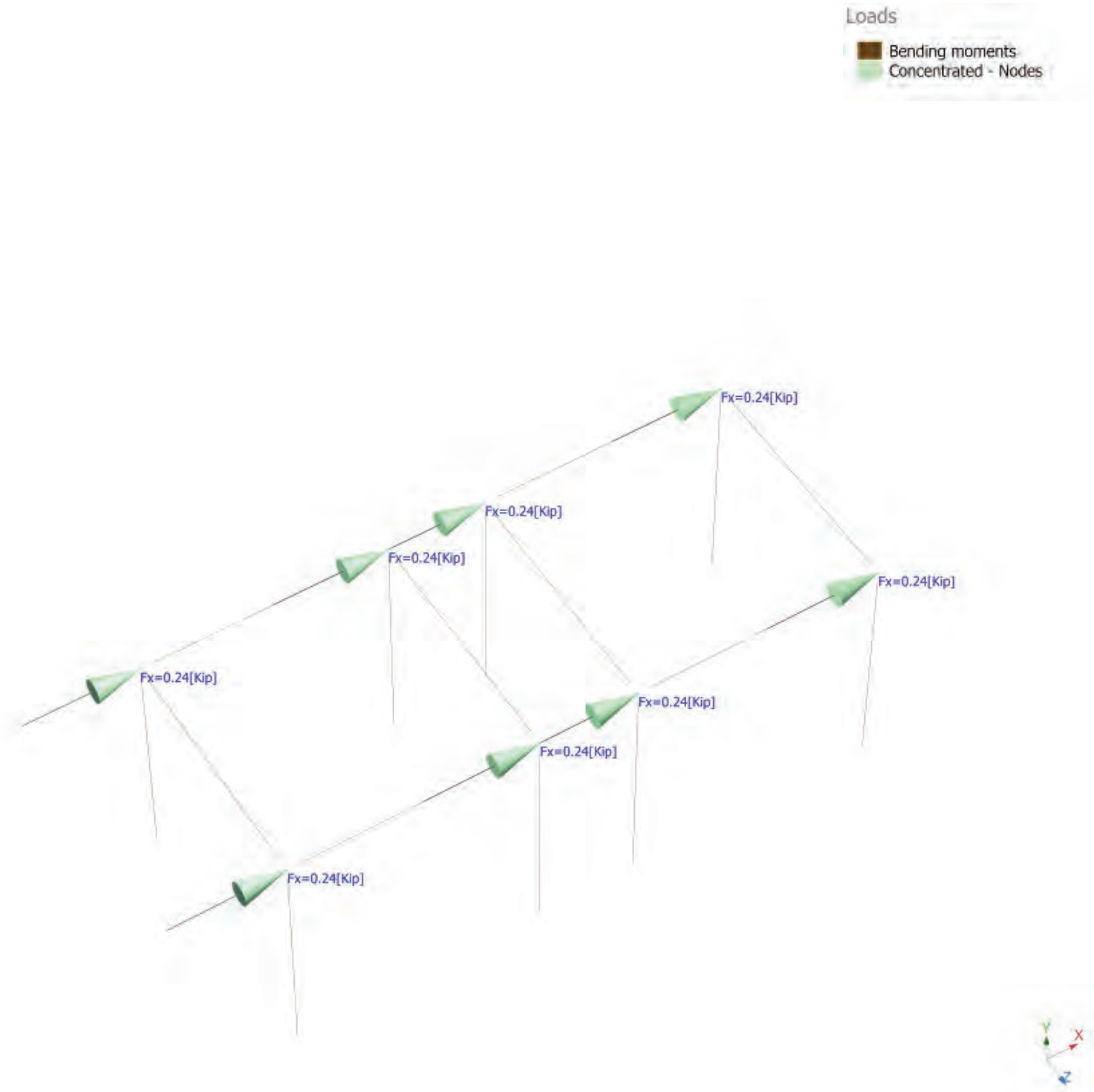
Orlando, FL 32805

Units system: English

Load condition: EQ=Seismic



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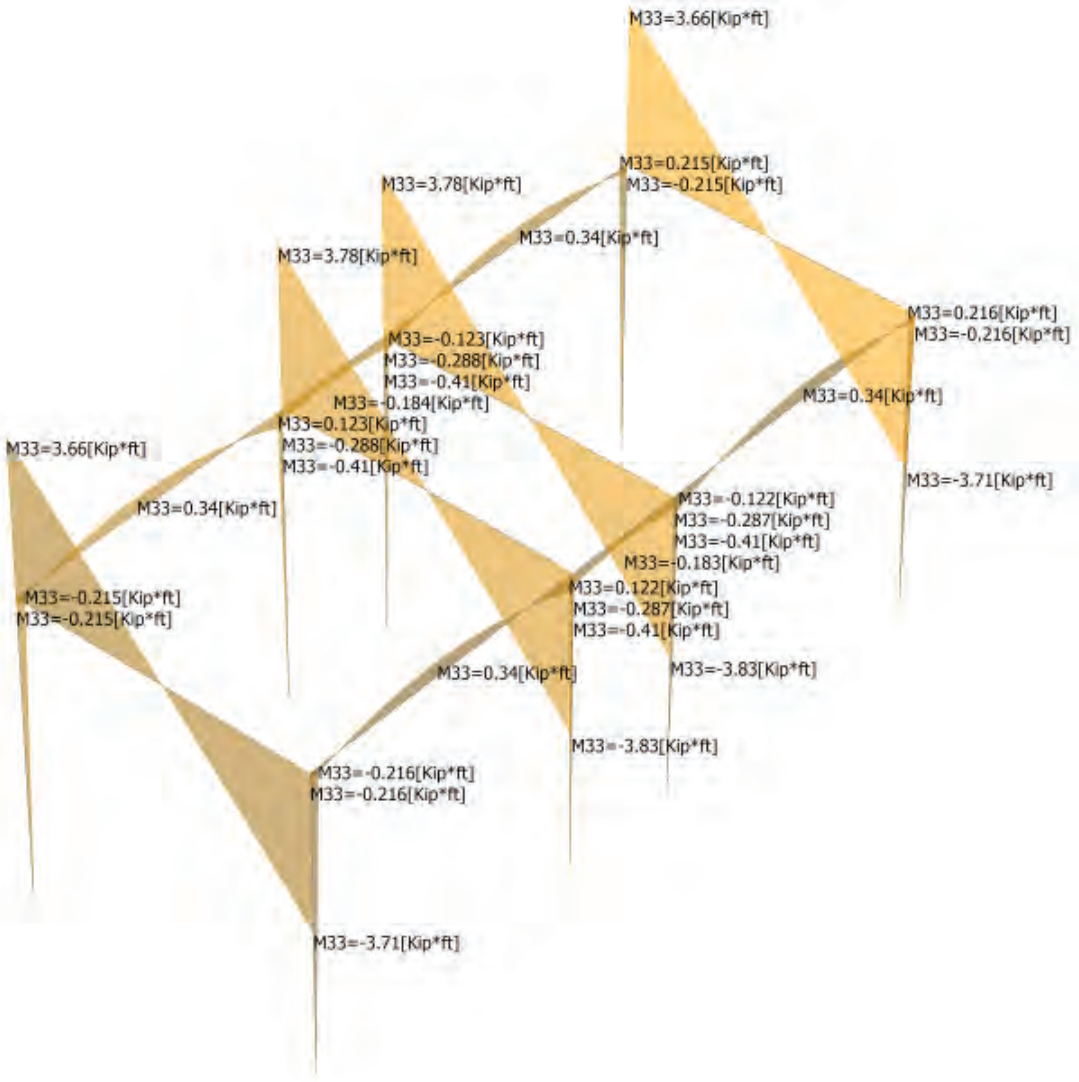
Units system: English

Load condition: D7=1.2DL+W+0.5LLr



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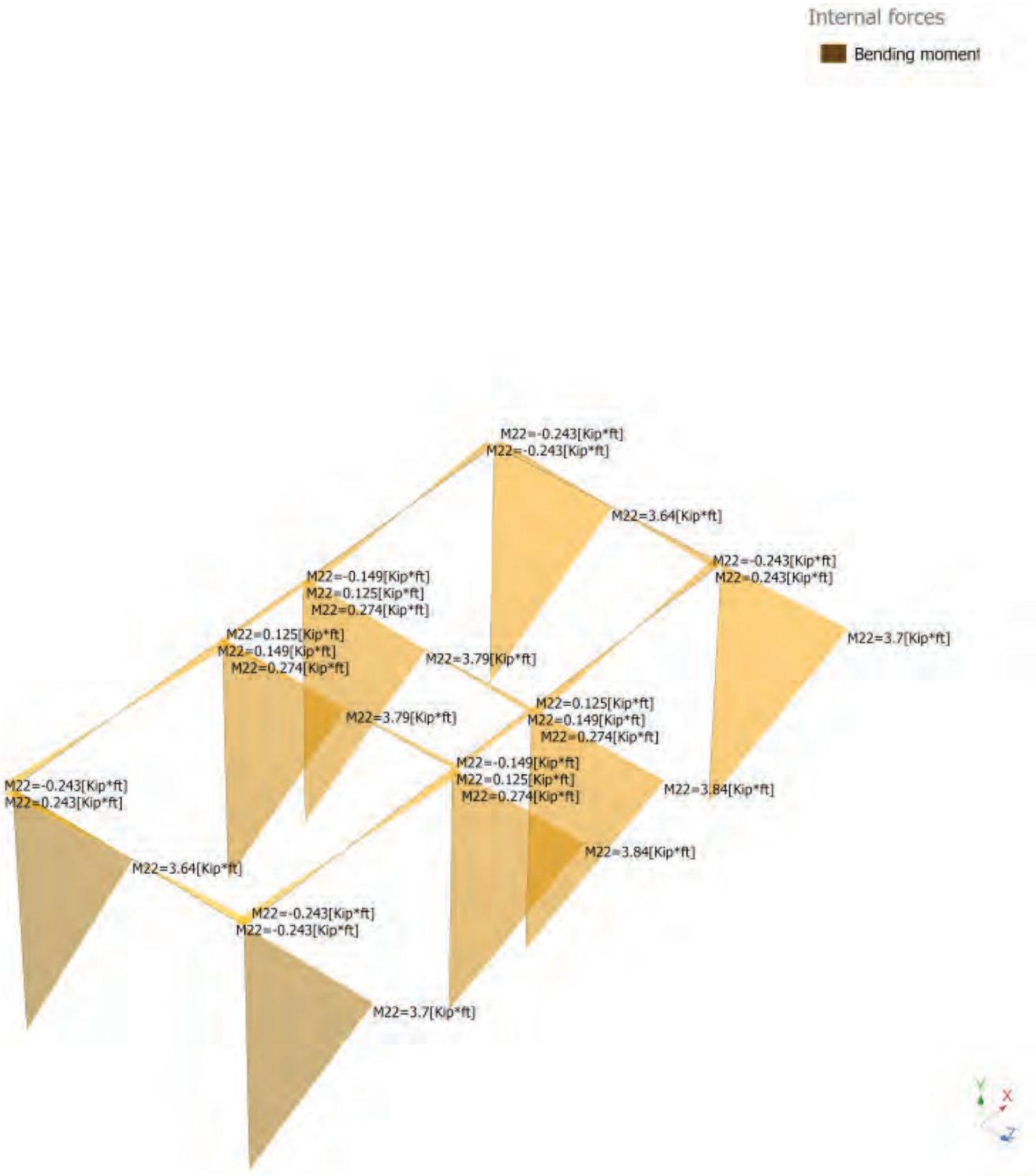
1745 23rd Street
Orlando, FL 32805

Units system: English

Load condition: D7=1.2DL+W+0.5LLr



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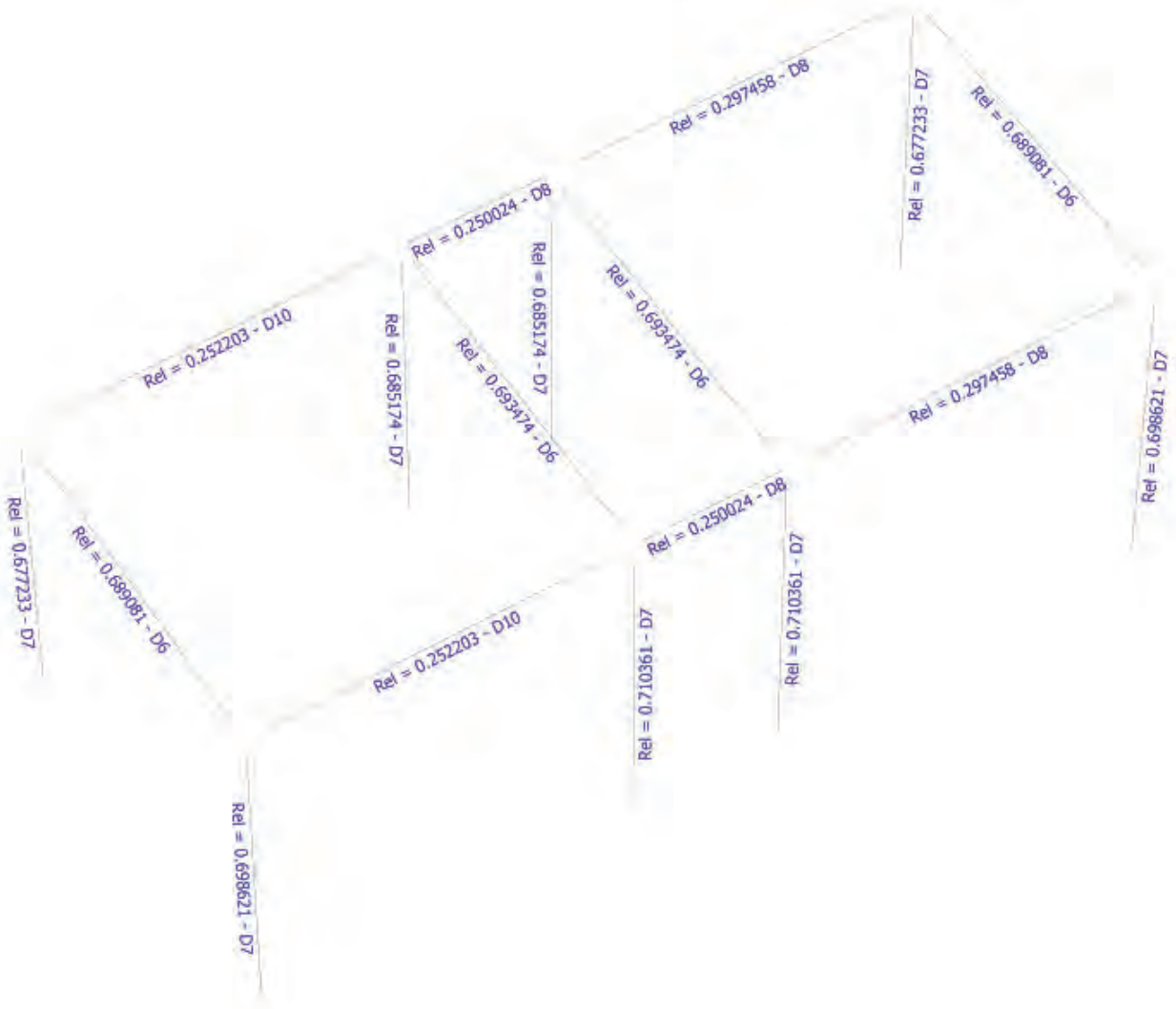

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SIMPSON Strong-Tie

Anchor Designer™ Software
Version 2.6.6682.1

Company:	THE	Date:	
Engineer:	RS	Page:	1/5
Project:			
Address:			
Phone:			
E-mail:			

1.Project information

Customer company:
Customer contact name:
Customer e-mail:
Comment:

Project description: Edge Condition
Location:
Fastening description:

2. Input Data & Anchor Parameters

General
Design method:ACI 318-19
Units: Imperial units

Anchor Information:
Anchor type: Cast-in-place
Material: AWS Type A
Diameter (inch): 0.500
Effective Embedment depth, h_{ef} (inch): 3.000
Anchor category: -
Anchor ductility: Yes
h_{min} (inch): 4.25
C_{min} (inch): 1.25
S_{min} (inch): 2.00

Base Material
Concrete: Normal-weight
Concrete thickness, h (inch): 5.00
State: Cracked
Compressive strength, f'_c (psi): 6000
$\Psi_{c,V}$: 1.0
Reinforcement condition: A tension, B shear
Supplemental reinforcement: Not applicable
Reinforcement provided at corners: No
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: No
Ignore 6do requirement: Yes
Build-up grout pad: No

Base Plate
Length x Width x Thickness (inch): 10.00 x 10.00 x 0.38

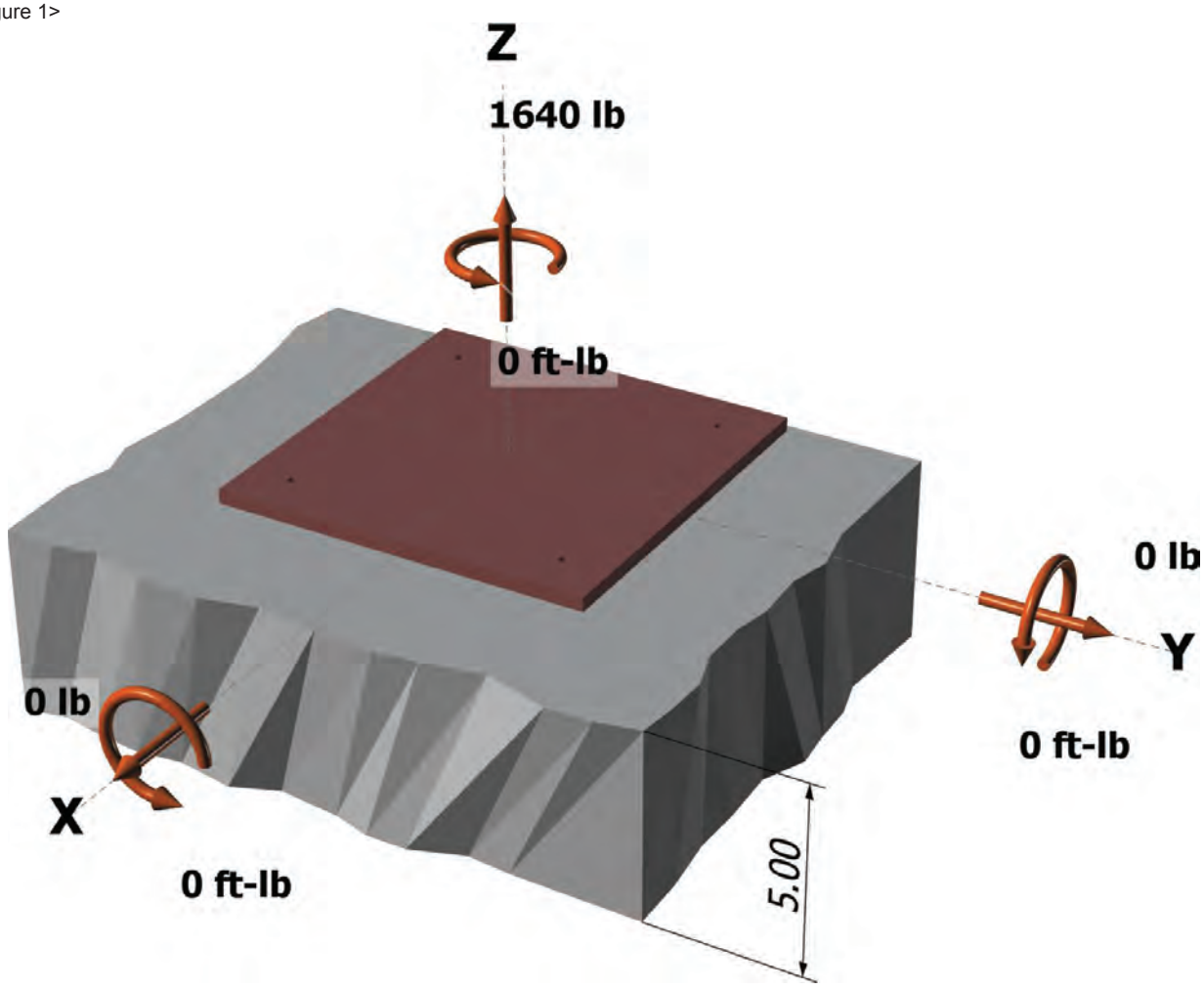
Recommended Anchor
Anchor Name: Headed Stud - 1/2"Ø AWS Type A Headed Stud

Load and Geometry
Load factor source: ACI 318 Section 5.3
Load combination: not set
Seismic design: Yes
Anchors subjected to sustained tension: Not applicable
Ductility section for tension: 17.2.3.4.3 (b) is satisfied
Ductility section for shear: 17.2.3.5.3 (b) is satisfied
Ω_0 factor: not set
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: Yes

Strength level loads:

N_{ua} [lb]: 1640
V_{uax} [lb]: 0
V_{uay} [lb]: 0
M_{ux} [ft-lb]: 0
M_{uy} [ft-lb]: 0
M_{uz} [ft-lb]: 0

<Figure 1>



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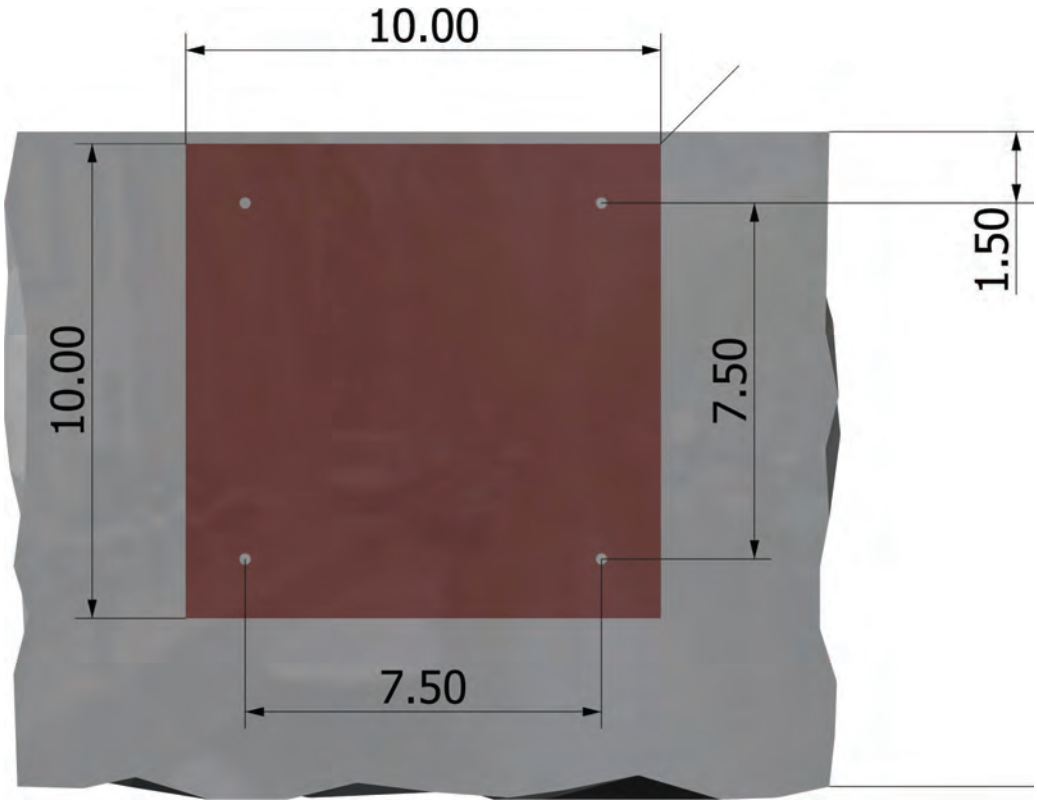
<Figure 2>



SIMPSON Strong-Tie

Anchor Designer™ Software
Version 2.6.6682.1

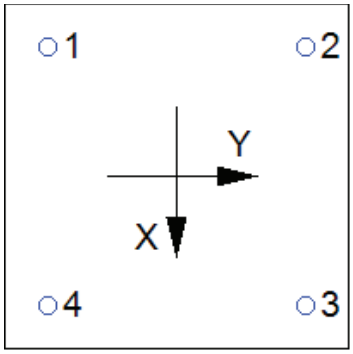
Company:	THE	Date:	
Engineer:	RS	Page:	4/5
Project:			
Address:			
Phone:			
E-mail:			

3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb)
1	410.0	0.0	0.0	0.0
2	410.0	0.0	0.0	0.0
3	410.0	0.0	0.0	0.0
4	410.0	0.0	0.0	0.0
Sum	1640.0	0.0	0.0	0.0

Maximum concrete compression strain (‰): 0.00
Maximum concrete compression stress (psi): 0
Resultant tension force (lb): 1640
Resultant compression force (lb): 0
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00
Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.00

<Figure 3>



4. Steel Strength of Anchor in Tension (Sec. 17.4.1)

N_{sa} (lb)	ϕ	ϕN_{sa} (lb)
11975	0.75	8981

5. Concrete Breakout Strength of Anchor in Tension (Sec. 17.4.2)

$N_b = k_c \lambda_a \sqrt{f'_c} h_{ef}^{1.5}$ (Eq. 17.4.2.2a)

k_c	λ_a	f'_c (psi)	h_{ef} (in)	N_b (lb)
24.0	1.00	6000	3.000	9660

$0.75\phi N_{cbg} = 0.75\phi (A_{Nc} / A_{Nco}) \Psi_{ec,N} \Psi_{ed,N} \Psi_{c,N} \Psi_{cp,N} N_b$ (Sec. 17.3.1 & Eq. 17.4.2.1b)

A_{Nc} (in^2)	A_{Nco} (in^2)	$c_{a,min}$ (in)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	$0.75\phi N_{cbg}$ (lb)
222.75	81.00	1.50	1.000	0.800	1.00	1.000	9660	0.75	11954

6. Pullout Strength of Anchor in Tension (Sec. 17.4.3)

$0.75\phi N_{pn} = 0.75\phi \Psi_{c,P} N_p = 0.75\phi \Psi_{c,P} 8 A_{brg} f'_c$ (Sec. 17.3.1, Eq. 17.4.3.1 & 17.4.3.4)

$\Psi_{c,P}$	A_{brg} (in^2)	f'_c (psi)	ϕ	$0.75\phi N_{pn}$ (lb)
1.0	0.59	6000	0.70	14843

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11. Results

11. Interaction of Tensile and Shear Forces (Sec. D.7)?

Tension	Factored Load, N_{ua} (lb)	Design Strength, ϕN_n (lb)	Ratio	Status
Steel	410	8981	0.05	Pass
Concrete breakout	**1640**	**11954**	**0.14**	**Pass (Governs)**
Pullout	410	14843	0.03	Pass

1/2"Ø AWS Type A Headed Stud with hef = 3.000 inch meets the selected design criteria.

12. Warnings

- Minimum spacing and edge distance requirement of 6da per ACI 318 Sections 17.7.1 and 17.7.2 for torqued cast-in-place anchor is waived per designer option.

- Per designer input, ductility requirements for tension have been determined to be satisfied – designer to verify.

- Per designer input, ductility requirements for shear have been determined to be satisfied – designer to verify.

- Designer must exercise own judgement to determine if this design is suitable.

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Anchor Designer™ Software
Version 2.6.6682.1

Company:	THE	Date:	
Engineer:	RS	Page:	1/5
Project:			
Address:			
Phone:			
E-mail:			

1.Project information

Customer company:
Customer contact name:
Customer e-mail:
Comment:

Project description: Corner Condition
Location:
Fastening description:

2. Input Data & Anchor Parameters

General
Design method:ACI 318-19
Units: Imperial units

Anchor Information:
Anchor type: Cast-in-place
Material: AWS Type A
Diameter (inch): 0.500
Effective Embedment depth, h_{ef} (inch): 3.000
Anchor category: -
Anchor ductility: Yes
h_{min} (inch): 4.25
C_{min} (inch): 1.25
S_{min} (inch): 2.00

Base Material
Concrete: Normal-weight
Concrete thickness, h (inch): 5.00
State: Cracked
Compressive strength, f'_c (psi): 6000
$\Psi_{c,V}$: 1.0
Reinforcement condition: A tension, B shear
Supplemental reinforcement: Not applicable
Reinforcement provided at corners: No
Ignore concrete breakout in tension: No
Ignore concrete breakout in shear: No
Ignore 6do requirement: Yes
Build-up grout pad: No

Base Plate
Length x Width x Thickness (inch): 10.00 x 10.00 x 0.38

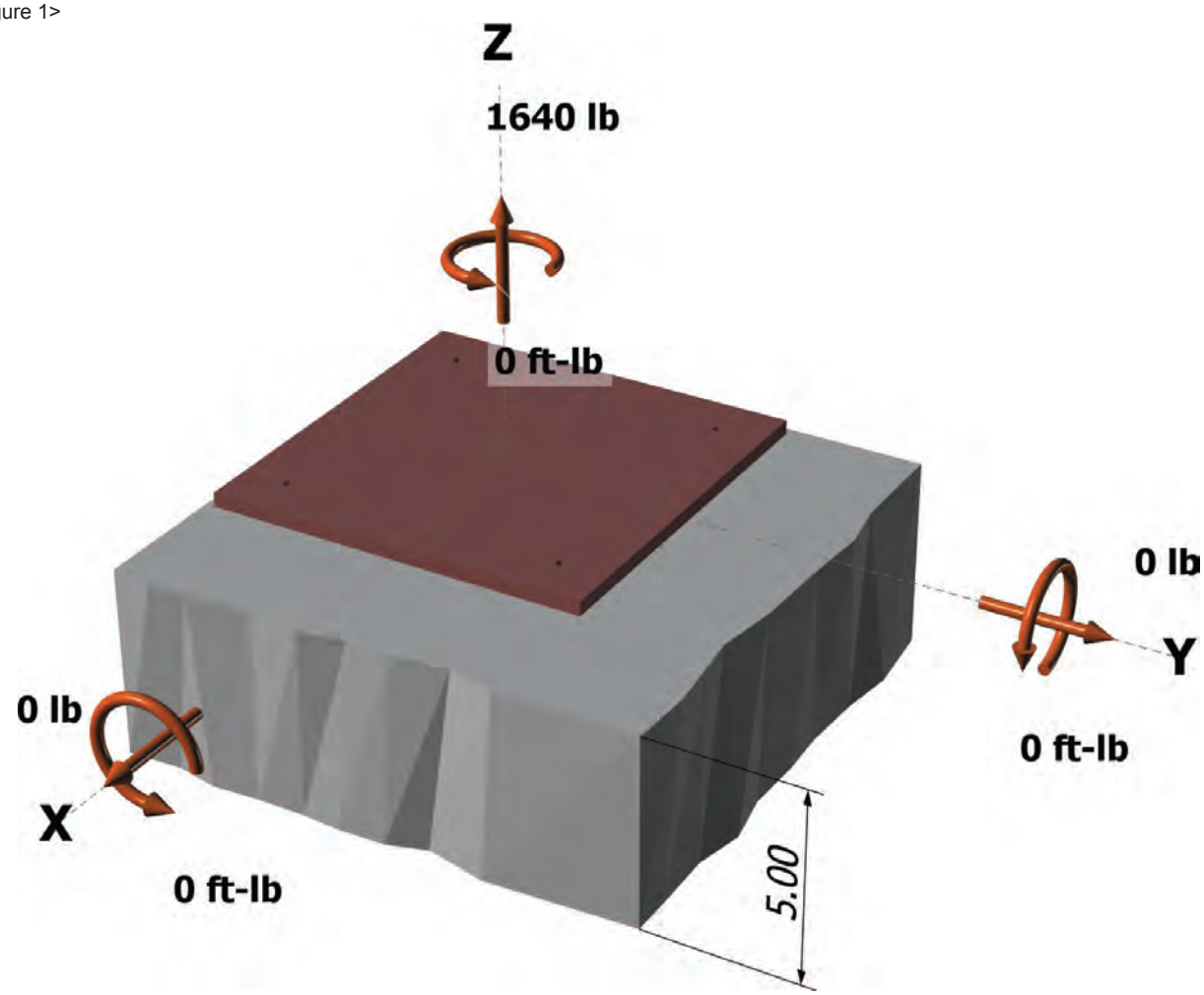
Recommended Anchor
Anchor Name: Headed Stud - 1/2"Ø AWS Type A Headed Stud

Load and Geometry
Load factor source: ACI 318 Section 5.3
Load combination: not set
Seismic design: Yes
Anchors subjected to sustained tension: Not applicable
Ductility section for tension: 17.2.3.4.3 (b) is satisfied
Ductility section for shear: 17.2.3.5.3 (b) is satisfied
Ω_0 factor: not set
Apply entire shear load at front row: No
Anchors only resisting wind and/or seismic loads: Yes

Strength level loads:

N_{ua} [lb]: 1640
V_{uax} [lb]: 0
V_{uay} [lb]: 0
M_{ux} [ft-lb]: 0
M_{uy} [ft-lb]: 0
M_{uz} [ft-lb]: 0

<Figure 1>



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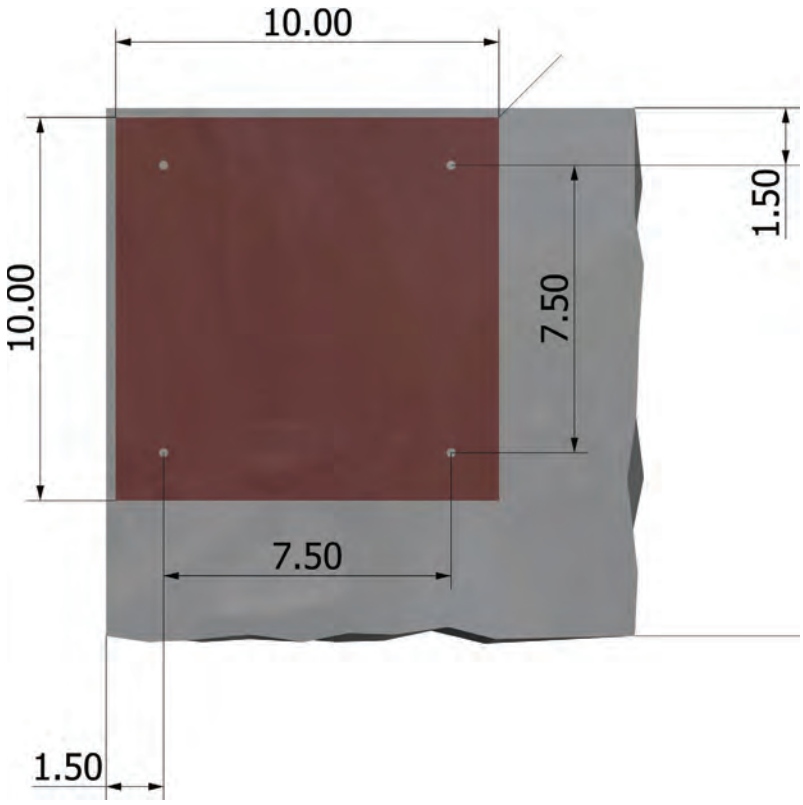
<Figure 2>



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Company:	THE	Date:	
Engineer:	RS	Page:	4/5
Project:			
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3. Resulting Anchor Forces

Anchor	Tension load, N_{ua} (lb)	Shear load x, V_{uax} (lb)	Shear load y, V_{uay} (lb)	Shear load combined, $\sqrt{(V_{uax})^2+(V_{uay})^2}$ (lb)
1	410.0	0.0	0.0	0.0
2	410.0	0.0	0.0	0.0
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Sum	1640.0	0.0	0.0	0.0

Maximum concrete compression strain (‰): 0.00
Maximum concrete compression stress (psi): 0
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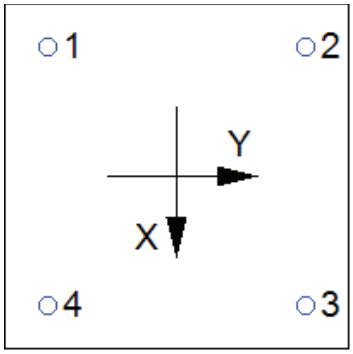
Resultant compression force (lb): 0
Eccentricity of resultant tension forces in x-axis, e'_{Nx} (inch): 0.00
Eccentricity of resultant tension forces in y-axis, e'_{Ny} (inch): 0.00

<Figure 3>



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N_{sa} (lb)	ϕ	ϕN_{sa} (lb)
11975	0.75	8981

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$N_b = k_c \lambda_a \sqrt{f'_c} h_{ef}^{1.5}$ (Eq. 17.4.2.2a)

k_c	λ_a	f'_c (psi)	h_{ef} (in)	N_b (lb)
24.0	1.00	6000	3.000	9660

$0.75\phi N_{cbg} = 0.75\phi (A_{Nc} / A_{Nco}) \Psi_{ec,N} \Psi_{ed,N} \Psi_{c,N} \Psi_{cp,N} N_b$ (Sec. 17.3.1 & Eq. 17.4.2.1b)

A_{Nc} (in^2)	A_{Nco} (in^2)	$c_{a,min}$ (in)	$\Psi_{ec,N}$	$\Psi_{ed,N}$	$\Psi_{c,N}$	$\Psi_{cp,N}$	N_b (lb)	ϕ	$0.75\phi N_{cbg}$ (lb)
182.25	81.00	1.50	1.000	0.800	1.00	1.000	9660	0.75	9781

6. Pullout Strength of Anchor in Tension (Sec. 17.4.3)

$0.75\phi N_{pn} = 0.75\phi \Psi_{c,P} N_p = 0.75\phi \Psi_{c,P} 8 A_{brg} f'_c$ (Sec. 17.3.1, Eq. 17.4.3.1 & 17.4.3.4)

$\Psi_{c,P}$	A_{brg} (in^2)	f'_c (psi)	ϕ	$0.75\phi N_{pn}$ (lb)
1.0	0.59	6000	0.70	14843

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11. Results

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Tension	Factored Load, N_{ua} (lb)	Design Strength, ϕN_n (lb)	Ratio	Status
Steel	410	8981	0.05	Pass
Concrete breakout	**1640**	**9781**	**0.17**	**Pass (Governs)**
Pullout	410	14843	0.03	Pass

1/2"Ø AWS Type A Headed Stud with hef = 3.000 inch meets the selected design criteria.

12. Warnings

- Minimum spacing and edge distance requirement of 6da per ACI 318 Sections 17.7.1 and 17.7.2 for torqued cast-in-place anchor is waived per designer option.

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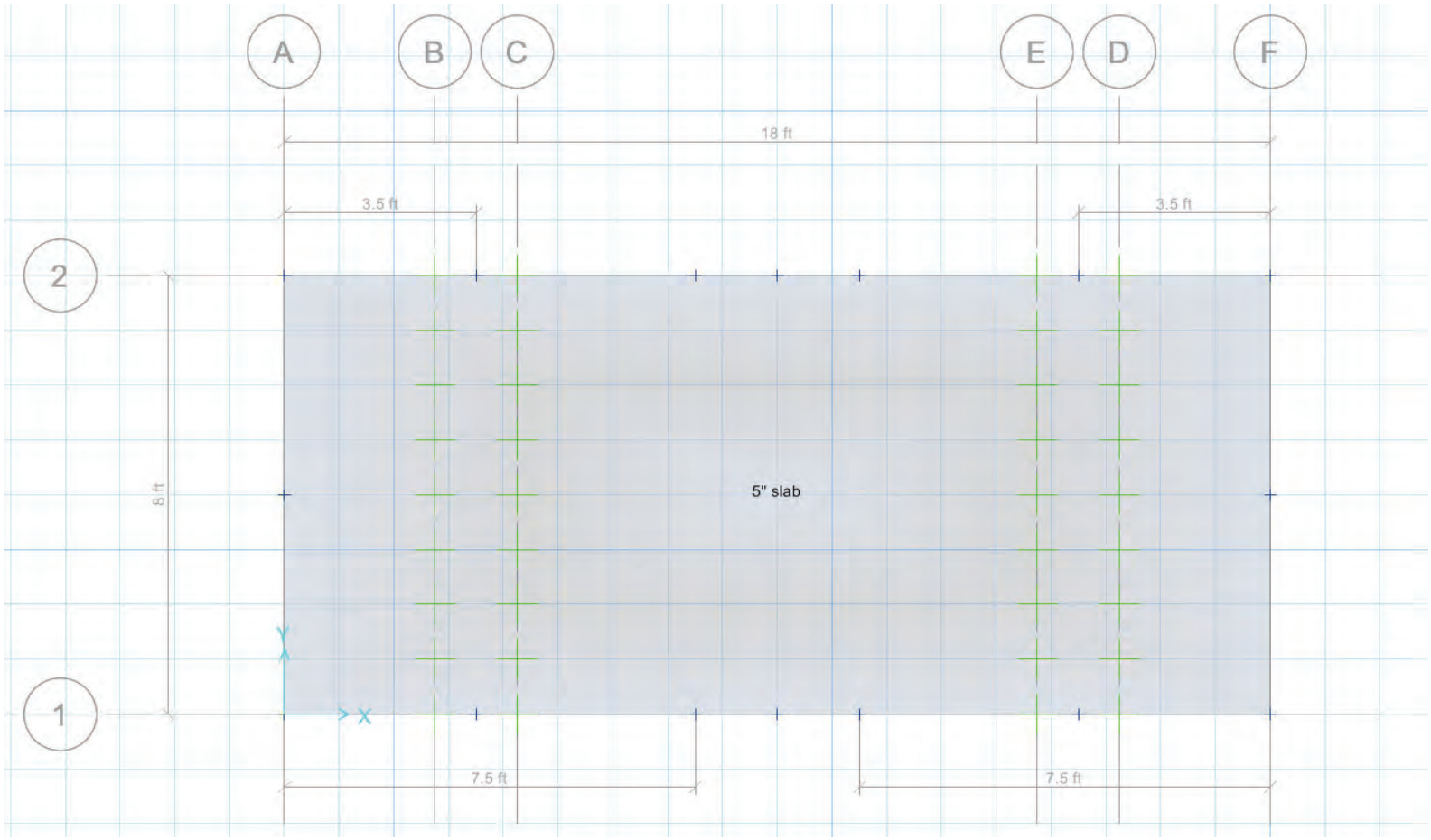
- Per designer input, ductility requirements for shear have been determined to be satisfied – designer to verify.

- Designer must exercise own judgement to determine if this design is suitable.

SAFE MODEL CALCULATIONS



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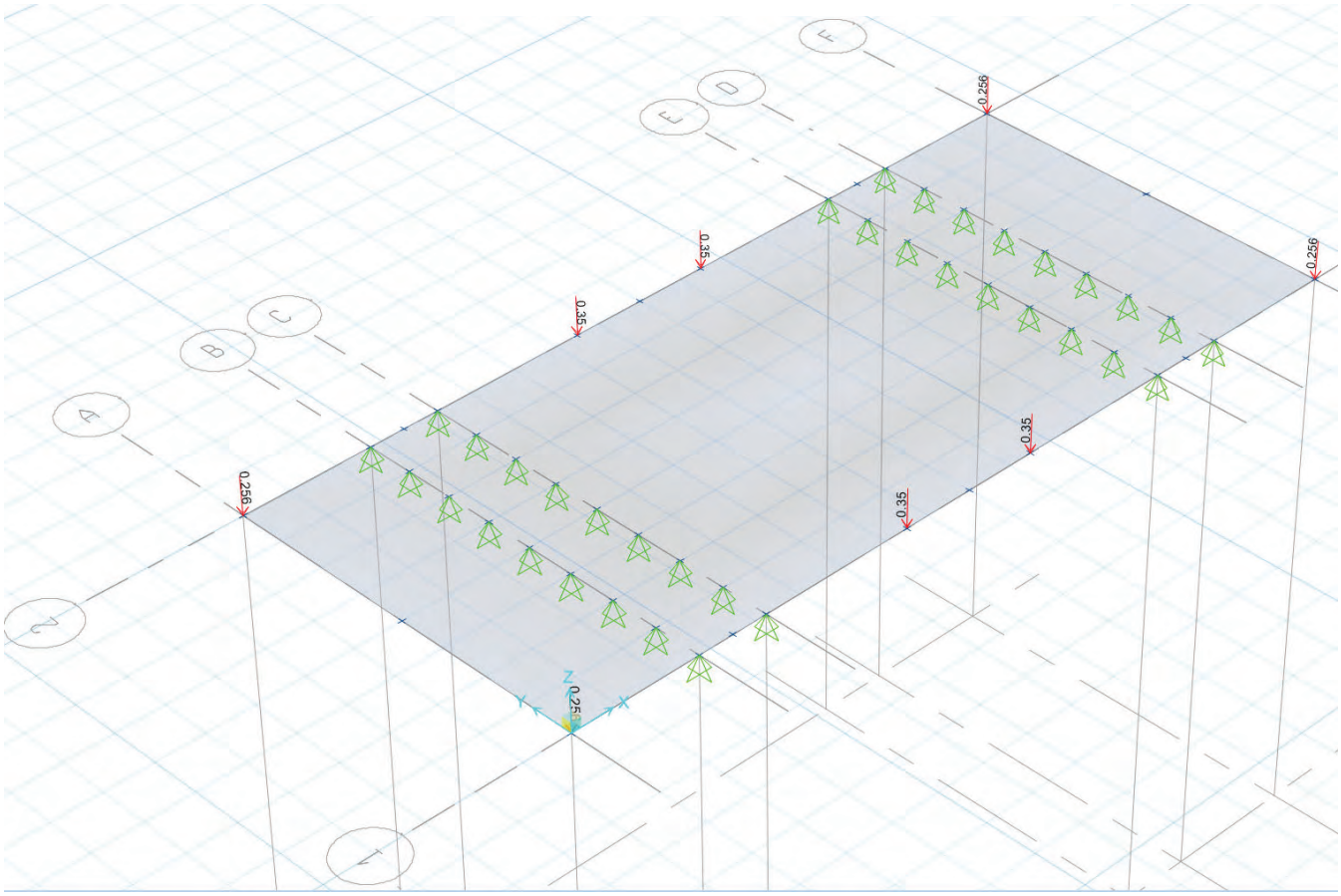
Loading Diagrams

Dead Load



Additional Surface Dead Load of 10psf not shown

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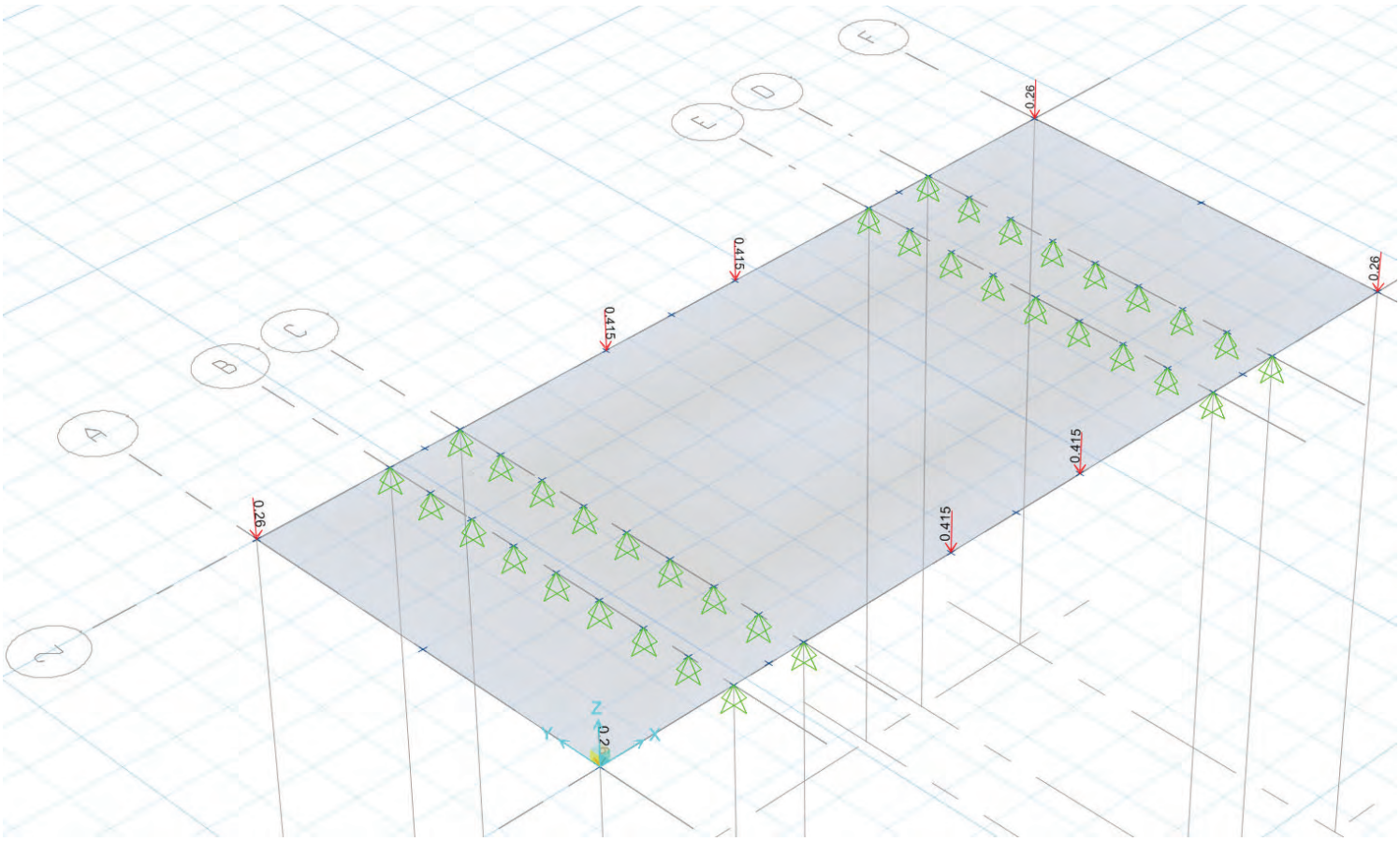
Live Load



Additional Surface Live Load of 40psf not shown

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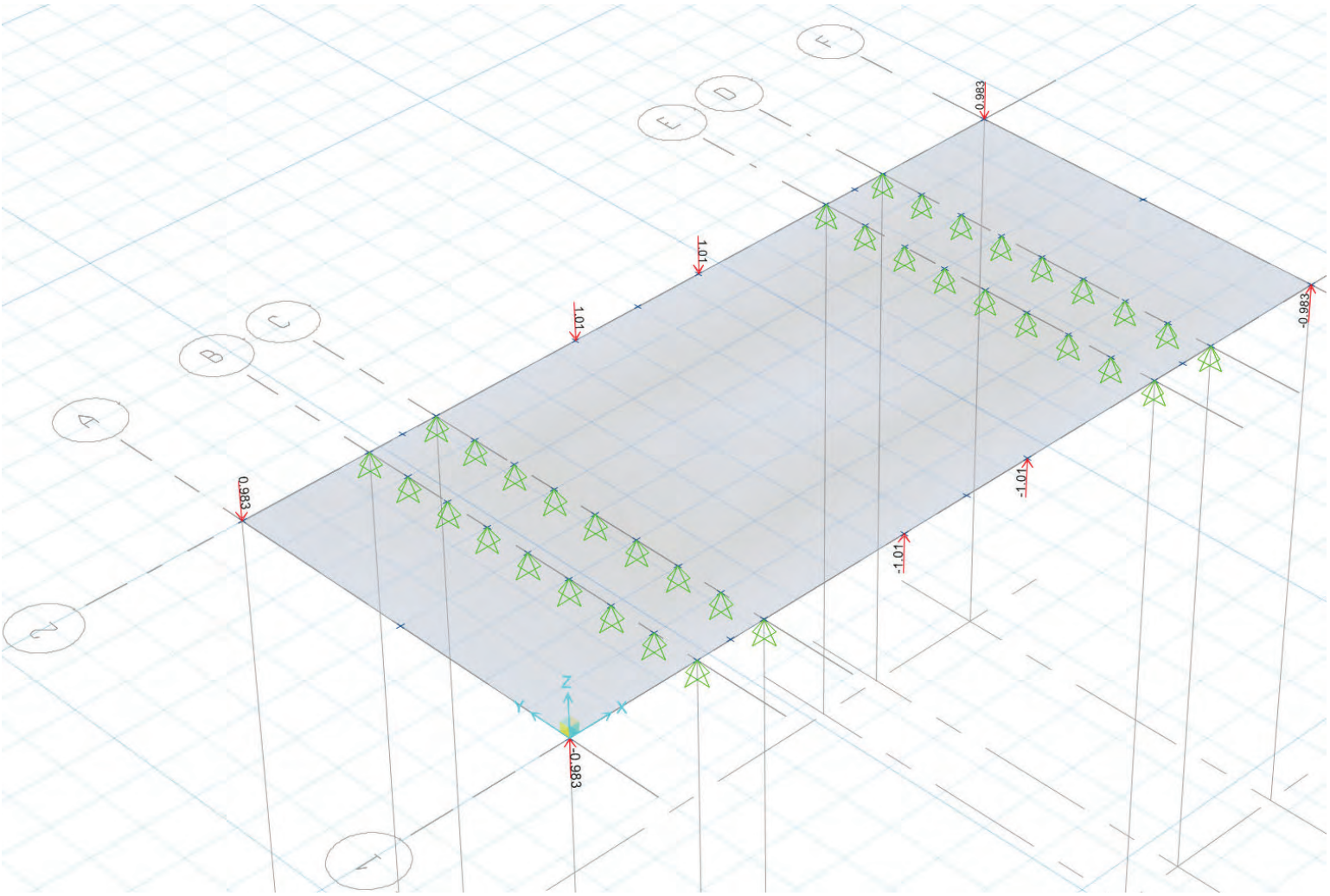
Wind Load



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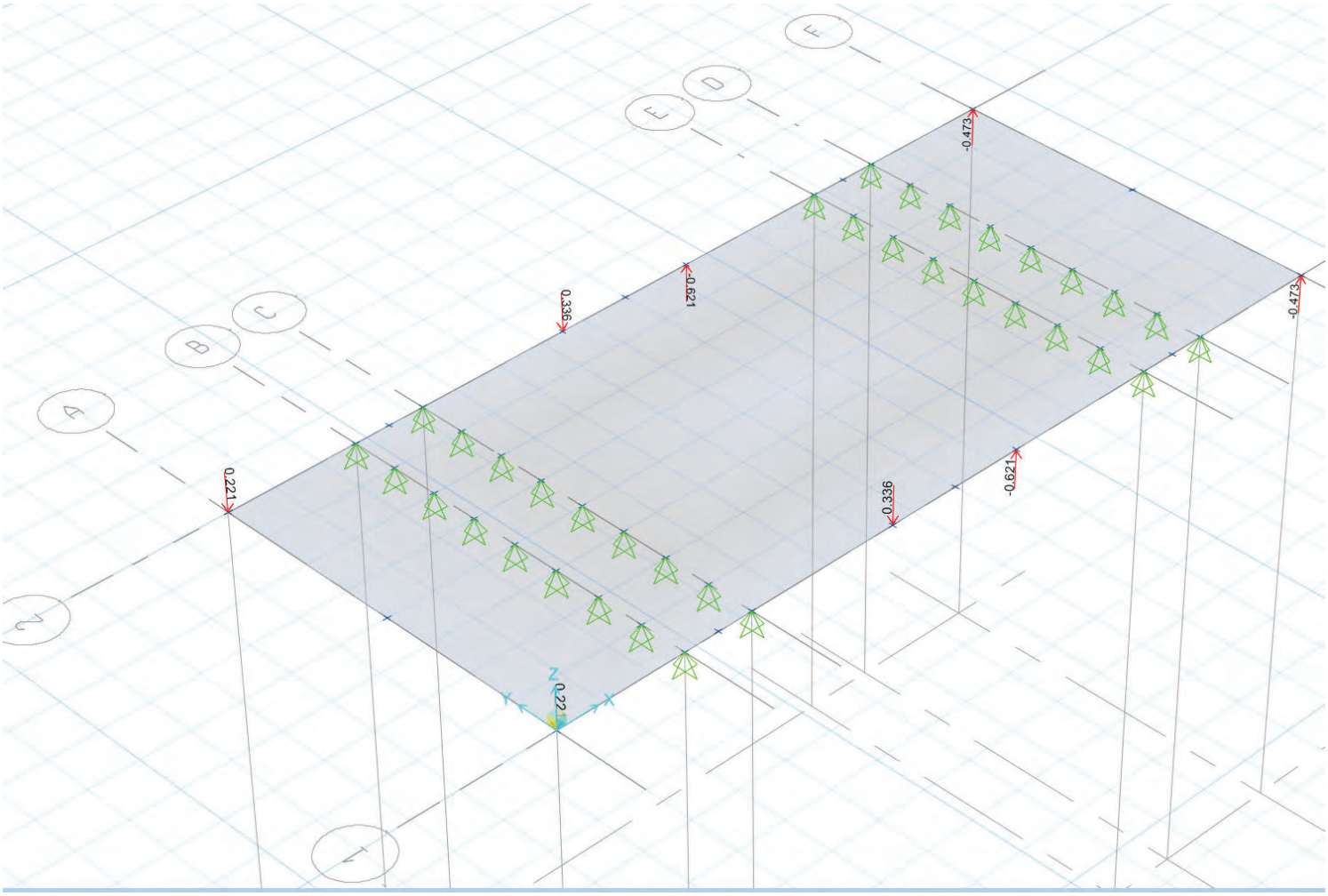
Seismic Load



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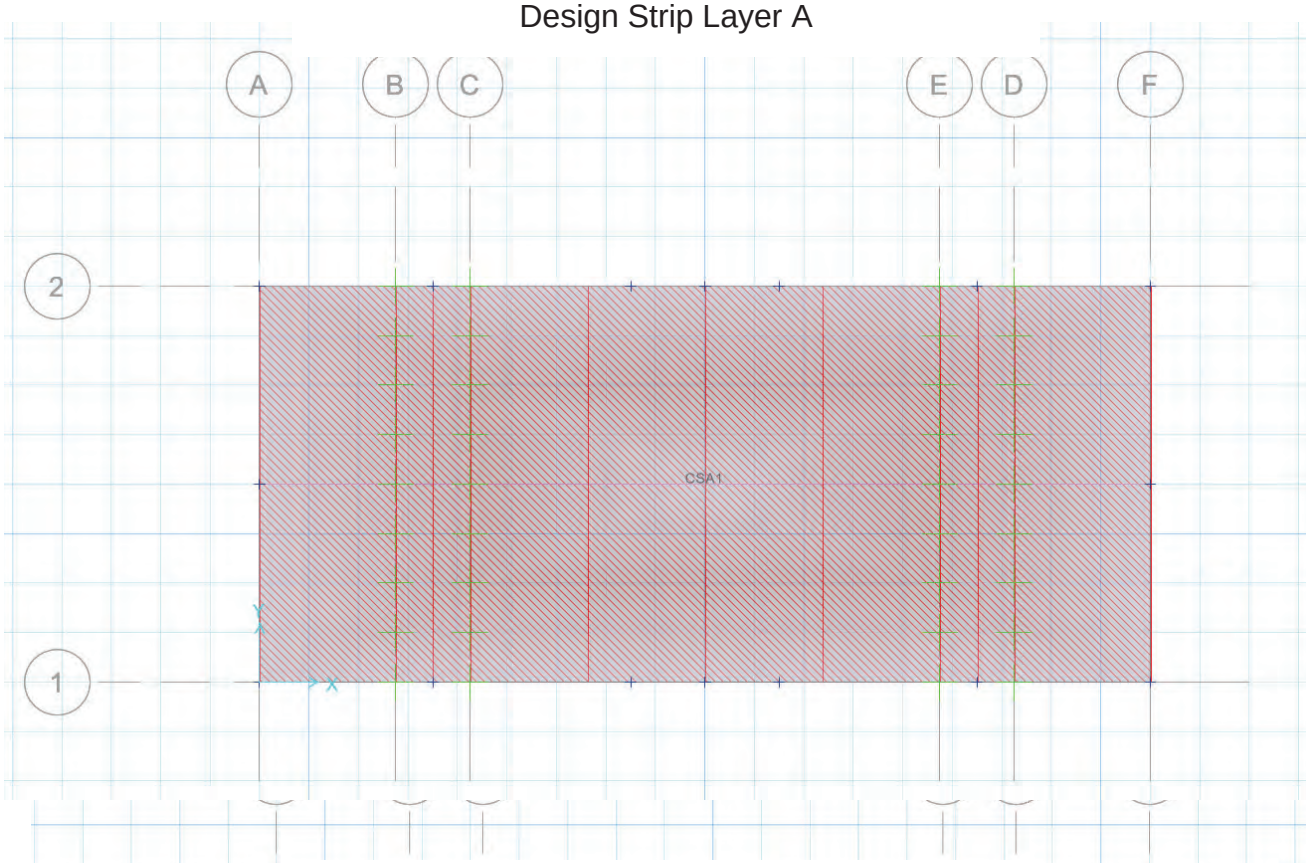
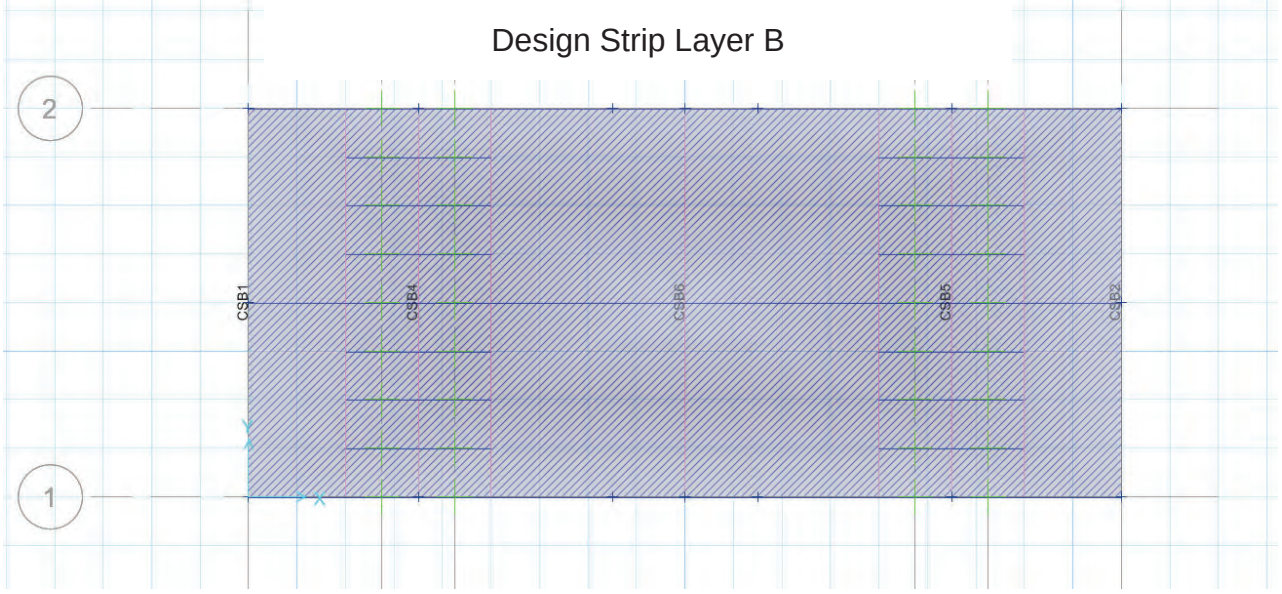
Design Strips

Design Strip Layer A



Design Strip Layer B



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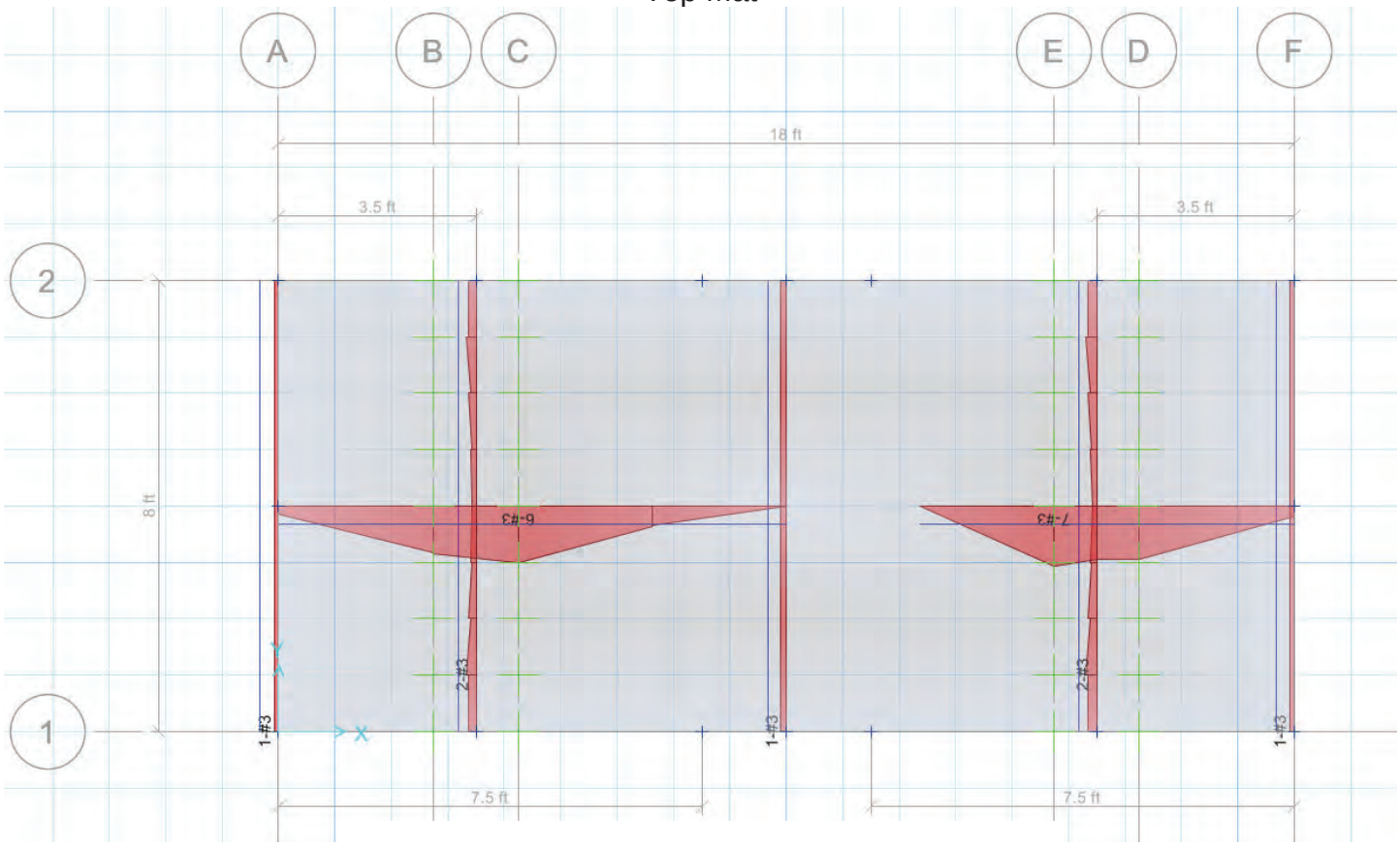
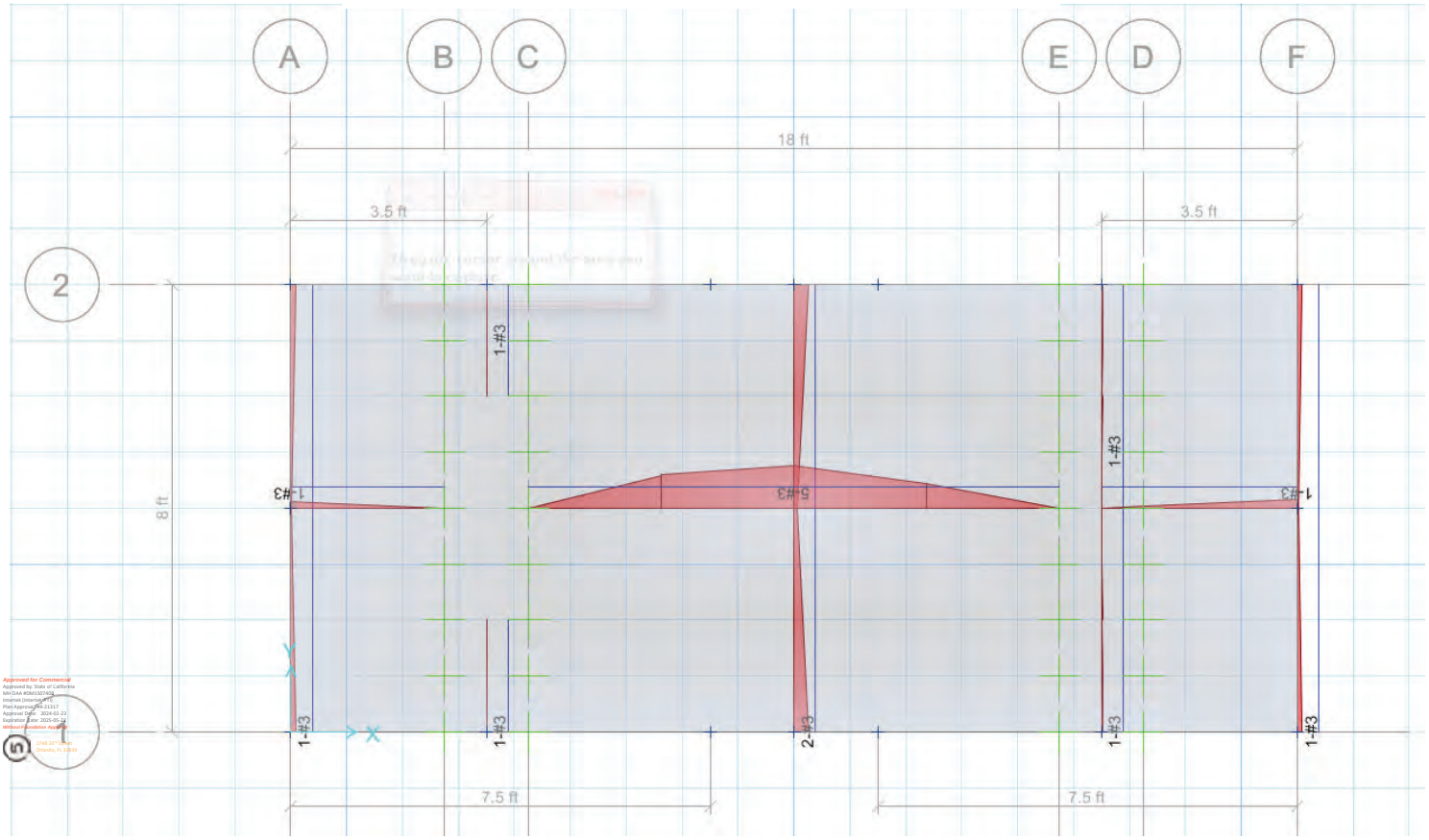
Required Reinforcement

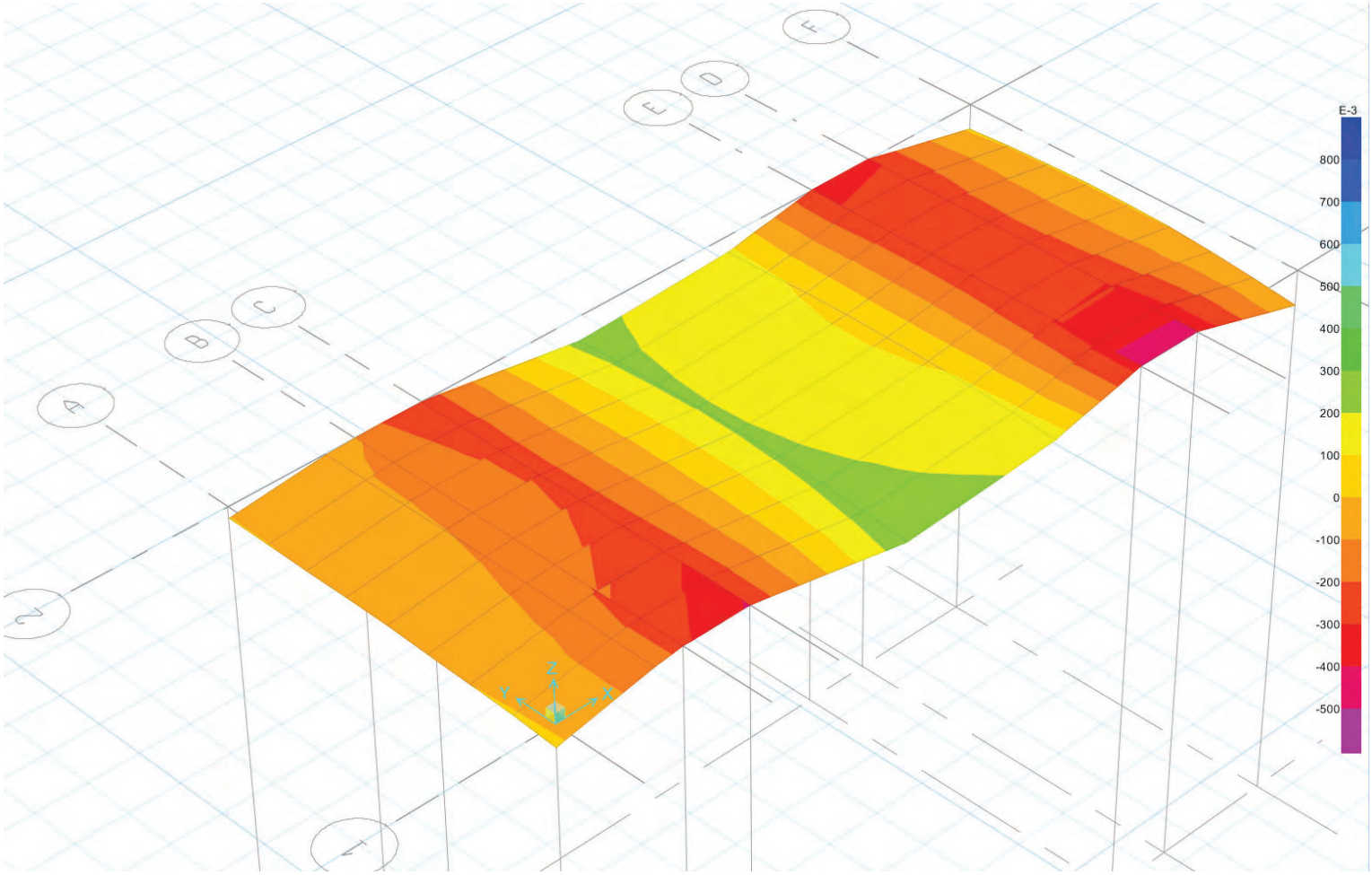
Top Mat



Bottom Mat



Controlling Stress Diagram



Load Combination: 1.2D+1.0L+EQx+0.3Wy

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ORDINARY MOMENT FRAME CONNECTIONS.

CODES: AISC 341-22, § E1
AISC 360, PARTS 1 & 2

PR MOMENT CONNECTION [AISC 341, §E1.6.c]

$$M_{N,PR} = (.5)M_{p,col}$$

$$= (.5)F_y Z = (.5)(46^{ksi})(1.97_{in^3}) = \underline{45.31^{K\text{-}in}}$$

WHERE:

$F_y = 46^{ksi}$ [AISC 360, §2-4]

$Z = 1.97_{in^3}$ [AISC 360, § 1-12]

$$E_{MH} = 2[1.1 R_y M_p] / L_{cf} = 2(1.1)(1.4)(45.31^{K\text{-}in})/(84^{in}) = \underline{1.66^{K}}$$ [AISC 341, §E1.6b(a)]

WHERE:

$R_y = 1.4$ [AISC 341, § A3.1]

$M_p = M_{NPR} = 45.31^{K\text{-}in}$

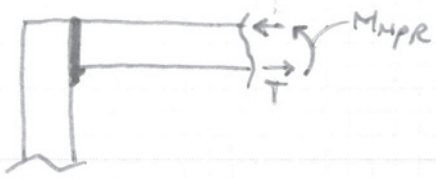
L_{cf} = CLEAR BEAM SPAN (IN) = 84_{in}

$E = E_{MH} + E_V = 1.66^{K} + (0.2)S_{DS}D$

$V_u = 1.2D + 1.0E + 1.0L$

* BY OBSERVATION: V_u NO GREATER THAN $\underline{10^{K}}$.

$$T = \frac{M_{NPR}}{3''} = \frac{45.31^{K\text{-}in}}{3''} = \underline{15.10^{K}}$$



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DETERMINE WELD CAPACITY (USING FILLET CAPACITIES)

$$R_N = F_{NW} A_{WE} = 42^{ksi}(0.442_{in^2}) = 18.6^{k} \text{ PER WELD} \quad [\text{AISC 360, § J2.5}]$$

WHERE:

$$A_{WE} = 2.5"\left(\tfrac{1}{4}"\right)(0.707) = 0.442_{in^2}$$

$$F_{NW} = 0.6\,F_{E70} = 0.6(70^{ksi}) = 42_{ksi}$$

$$\therefore \phi R_N = 0.75(18.6^{k}) = 13.9^{k} \text{ PER WELD}$$

$2(\phi R_N) = 27.8^{k} > V_4$ ✓OK

$27.8^{k} > T$ ✓OK

} TWO, $2\tfrac{1}{2}" \times \tfrac{1}{4}"$ WELDS USED EACH CASE

USE $2\tfrac{1}{2}"$ L $\times \tfrac{1}{4}"$, E70 FILLET WELDS OR FLARED BEVEL WELDS WHERE OCCURS

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APPENDIX

The following Engineering Calculations were done by ACH Consulting Engineers and are for reference only.

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ACH

CONSULTING ENGINEERS

Engineering Calculations

FOR REFERENCE ONLY

FOR:

Exeloo Ltd

Standard Jupiter Unit

AT:

NZ Site Locations (General)

NZ Lee Zone Site Locations

AUS Site Locations (General)

AUS Cyclonic Site Locations

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Date: Oct-2016

Our Ref: 160395

CONSULTING ENGINEERS

PO Box 104201, Lincoln North 0654
< Drive, Henderson 0610
Ph: (09) 839 7050
Fax: (09) 838 6530
nfo@achconsulting.co.nz

For	Page
Exeloo	
At	
Paramount Drive	
Henderson	

Job no.	Date	By
160395	Sep-16	BP

Unit Type: Jupiter

Site Location: NZ **Town/City:**

Lee Zone: No **Cyclonic Zone:** No

Wind Zone: B,W,A B Design Case **Terrain Category (TC)** 1.5

Seismic Zone: Otira / Arthur's Pass

FOR REFERENCE ONLY

DESIGN SUMMARY

Roof Summary

Purlins: 50x25x2 RHS C350

Rafters: 50x5 SHS C350 (2.7m max spacing)

Wall Summary

Wall Studs: 75x25x2 RHS C350 (Strong axis) OR 75x50x3 RHS C350 (Weak axis)
At 1100 Max crs

Portal Frames

Across: 75x6 SHS C350 (3 x Frames)

Along: 75x6 SHS C350 (2 x Frames)

Footing

Dimensions: 2300x450x450 (25MPa) 2 x Strip Footings

Top Reo: 4 D12 bars, R6 stirrups at 300crs

Bottom Reo: 4 D12 bars, R6 stirrups at 300crs

Connection: 4 x Jupiter securing plates, each complete with 2 x M12 C8 Epcon anchors or 2 x M12 Trubolt Xtrem anchors, 100mm embedment and 75mm min edge distance.

Design Considerations

Building Importance Level: 2
Design Life: 50 years
Sub-soil class: C 300 KPa Ultimate Bearing Capacity

Note Specific Design to be confirmed with ACH, this design summary to be read in conjunction with calculation sheets. Refer footing connection details within calculation sheets.

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nfo@achconsulting.co.nz

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160395	Sep-16	BP

Unit Type: Jupiter

Site Location: NZ **Town/City:**

Lee Zone: Yes **Cyclonic Zone:** No

Wind Zone: W **Terrain Category (TC)** 1.5

Seismic Zone: Otira / Arthur's Pass

FOR REFERENCE ONLY

DESIGN SUMMARY

Roof Summary

Purlins: 50x25x2 RHS C350

Rafters: 75x5 SHS C350 (2.4m max spacing)

Wall Summary

Wall Studs: 75x25x3 RHS C350 (Strong axis) OR 75x50x3 RHS C350 (Weak axis)
At 1100 Max crs

Portal Frames

Across: 75x6 SHS C350 (4 x Frames)

Along: 75x6 SHS C350 (2 x Frames)

Footing

Dimensions: 2300x700x700 (25MPa) 2 x Strip Footings

Top Reo: 6 D12 bars, R6 stirrups at 300crs

Bottom Reo: 6 D12 bars, R6 stirrups at 300crs

Connection: 4 x Jupiter securing plates, each complete with 2 x M12 C8 Epcon anchors or 2 x M12 Trubolt Xtrem anchors, 100mm embedment and 75mm min edge distance.

Design Considerations

Building Importance Level: 2
Design Life: 50 years
Sub-soil class: C 300 KPa Ultimate Bearing Capacity

Note Specific Design to be confirmed with ACH, this design summary to be read in conjunction with calculation sheets. Refer footing connection details within calculation sheets.

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At
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Unit Type: Jupiter

Site Location: AUS **Town/City:**

Lee Zone: No **Cyclonic Zone:** No

Wind Zone: B,W,A B Design Case **Terrain Category (TC)** 1.5

Seismic Zone: Otira / Arthur's Pass

FOR REFERENCE ONLY

DESIGN SUMMARY

Roof Summary

Purlins: 50x25x2 RHS C350

Rafters: 50x5 SHS C350 (2.7m max spacing)

Wall Summary

Wall Studs: 75x25x2 RHS C350 (Strong axis) OR 75x50x3 RHS C350 (Weak axis) At 1100 Max crs

Portal Frames

Across: 75x6 SHS C350 (3 x Frames)

Along: 75x6 SHS C350 (2 x Frames)

Footing

Dimensions: 2300x450x450 (25MPa) 2 x Strip Footings

Top Reo: 4 D12 bars, R6 stirrups at 300crs

Bottom Reo: 4 D12 bars, R6 stirrups at 300crs

Connection: 4 x Jupiter securing plates, each complete with 2 x M12 C8 Epcon anchors or 2 x M12 Trubolt Xtrem anchors, 100mm embedment and 75mm min edge distance.

Design Considerations

Building Importance Level: 2
Design Life: 50 years
Sub-soil class: C 300 KPa Ultimate Bearing Capacity

Note Specific Design to be confirmed with ACH, this design summary to be read in conjunction with calculation sheets. Refer footing connection details within calculation sheets.

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160395	Sep-16	BP

Unit Type: Jupiter

Site Location: AUS **Town/City:**

Lee Zone: No **Cyclonic Zone:** Yes

Wind Zone: D **Terrain Category (TC)** 1.5

Seismic Zone: Otira / Arthur's Pass

FOR REFERENCE ONLY

DESIGN SUMMARY

Roof Summary

Purlins: 50x25x3 RHS C350

Rafters: 75x5 SHS C350 (2.4m max spacing)

Wall Summary

Wall Studs: 75x50x6 RHS C350 (Weak Axis)
At 1100 Max crs

Portal Frames

Across: 89x6 SHS C350 (4 x Frames)

Along: 89x6 SHS C350 (2 x Frames)

Footing

Dimensions: 2300x700x700 (25MPa) 3 x Strip Footings

Top Reo: 6 D12 bars, R6 stirrups at 300crs

Bottom Reo: 6 D12 bars, R6 stirrups at 300crs

Connection: 6 x Jupiter securing plates, each complete with 2 x M12 C8 Epcon anchors or 2 x M12 Trubolt Xtrem anchors, 100mm embedment and 75mm min edge distance.

Design Considerations

Building Importance Level: 2
Design Life: 50 years
Sub-soil class: C 300 KPa Ultimate Bearing Capacity

Note Specific Design to be confirmed with ACH, this design summary to be read in conjunction with calculation sheets. Refer footing connection details within calculation sheets.

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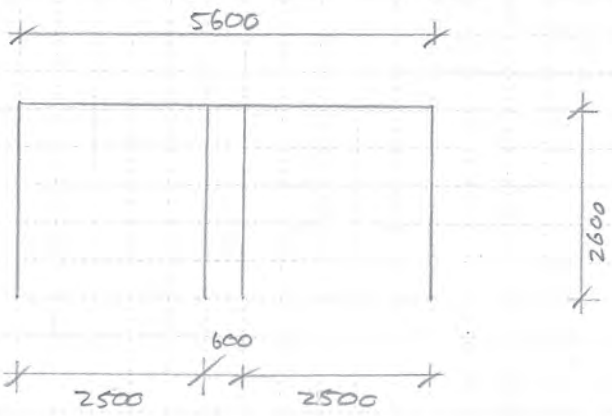
Jupiter Unit (General)

Geometry



Front View

* For Calculation purposes, dimensions are rounded to larger values.

FOR REFERENCE ONLY

Design Considerations

* NZ : Design is applicable to all areas, excluding (Lee zone)
  Aus : Design is applicable to all areas, excluding (cyclic areas)
* Importance level : 2
* Design life : 50 years

Wind Actions

$$V_{sit,\beta} = V_R \; M_d \; M_{z\,cat} \; M_s \; M_t$$

ULS : V_{500} = 45 m/s Region : A
51 m/s W
57 m/s B

SLS 1 : V_{25} = 37 m/s Region : A
43 m/s W
39 m/s B

→ M_d = 1.0 Any direction

→ $M_{z\,cat}$ = 0.95 TC 1.5 Critical

→ M_s = 1.0

→ M_t = 1.0

	ULS	SLS1	Region :
∴ $V_{sit\,\beta}$ =	42.75 m/s	35.15 m/s	A
	48.45 m/s	40.85 m/s	W
	54.15 m/s	37.05 m/s	B

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Design Wind Pressure

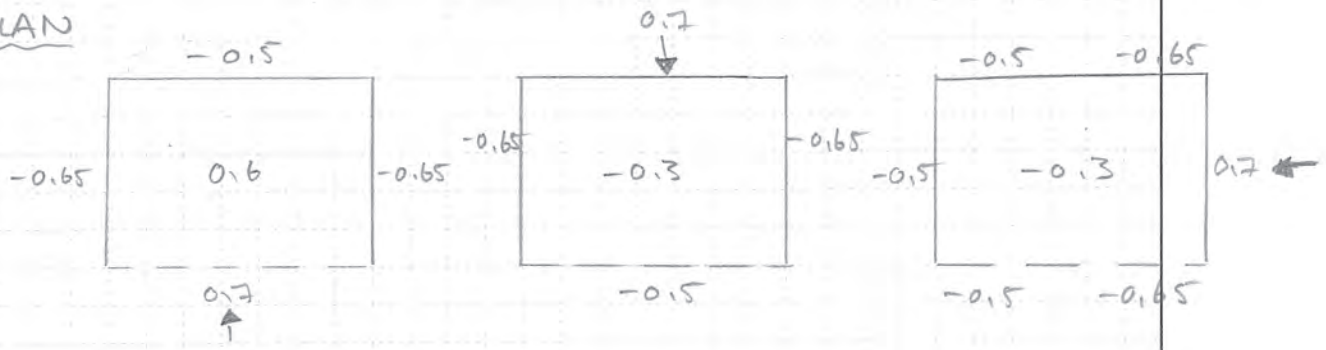
$$p = (0.5 \rho_{air})(V_{des\,\theta})^2 C_{fig} C_{dyn}$$

$C_{dyn} = 1.0$

			Region
P_{ULS} =	1.097	C_{fig}	A
	1.408	C_{fig}	W
	1.759	C_{fig}	B

1.002 C_{fig} SLS

PLAN



Wind Wall loading

Worst Case $(0.6 + 0.65) = C_{fig}$. ULS

$\therefore$ $P_{ULS} = (0.6 + 0.65)(1.759) = 2.199$ kPa Region B

Wall Stud spacing say = 1.1 m

$\therefore$ $M^* = \dfrac{(1.1 \times 2.199)(2.6)^2}{8} = 2.05$ kN.m

Left = 1.25m $\phi M_s = 2.62 > M^*$ Ok

Use : 75×25×2 RHS Strong axis bending

OR

Use : 25×50×3 RHS Weak axis bending Ok

$\phi M_y = 4.06$ kN.m $> M^*$ Ok

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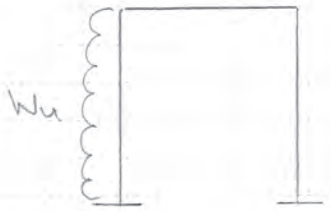
Portal Frame Wind loading

Short direction frames



$W_u = (0.7+0.5)(1.097) = 1.32$ kPa — Region A
$\quad\quad (1.408) = 1.69$ kPa — W
$\quad\quad (1.759) = 2.12$ kPa — B

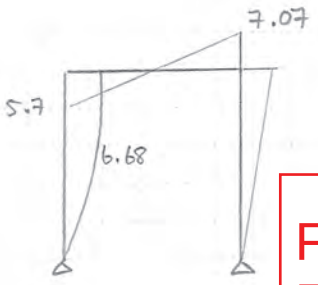
$R_A = \frac{2.8(2)}{2.6} = 2.16$ kN/m

$R_B = \frac{4.91(2)}{2.6} = 3.78$ kN/m ← critical Region B

$W_u = 3.78$ kN/m

$M^* = 7.07$ kN.m

$V^* = 7.11$ kN.



$\phi M_b = 12.09 > 7.07$ Ok

Use: 75×6 SHS Grade 350

FOR REFERENCE ONLY

Roof Wind loading

			Region
$P_{ULS} = (1.3+0.6) \times 1.097$	$=$	2.09 kPa	A
1.408	$=$	2.68 kPa	W
1.759	$=$	3.35 kPa	B

Rafter span = 2.7m
Tributary Width = 1.1 m

$E_d = 0.9(0.15) - (3.35)$
$= -3.215$ kPa Uplift

$M^* = 3.23$ kN.m

Rafter : 50×5 SHS

$\Delta =$ 12mm ok

$\phi M_{sx} = 3.59$ kN.m $> M^*$ ok

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Portal Frame

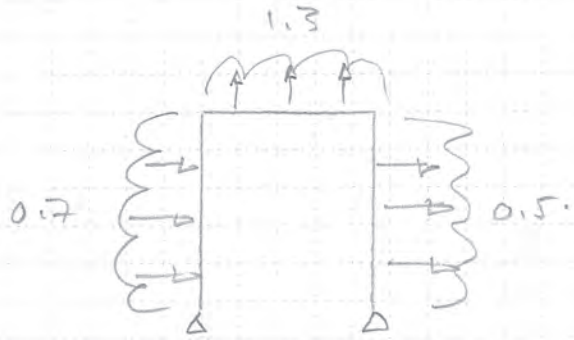
Wind Zone : B

NZ/AUS

(Three Frames)

Short Direction

Windward Wall



$W_u = (0.7)(1.76)(0.8)$

$= 0.99$ kPa

Roof

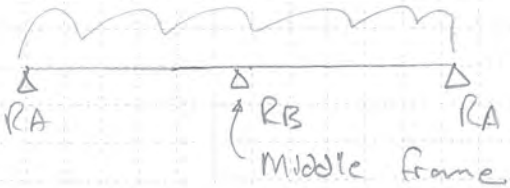
$W_u = (1.3)(1.76)(0.8)$

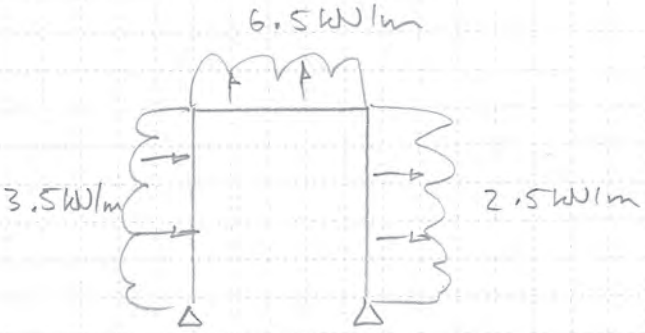
$= 1.84$ kPa

Leeward

$W_u = (0.5)(1.76)(0.8)$

$= 0.704$ kPa





$M^* = 11.59$ kN.m

$\phi M_b = 12.09$ kN.m ok

Use : 75x6 SHS Grade 350

Deflections

$\Delta = h/150 = 17.33$

$\Delta_{actual} = 14$mm ≤ 17 ok

$P_{SLS} = 1.002$ Cfg

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Purlins Wind loading

Spacing = 620 crs Span = 1.05m

$M^* = (3.215 \times 0.62)(1.05)^2/8 = 0.28$ kN.m

$\phi M_{sy} = 0.9(350)(1.67) = 0.526$ kN.m > M^* ok

Use Purlins : 50x25x2 RHS

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Gravity Design

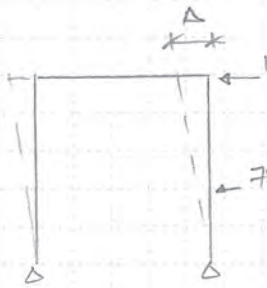
Roof : G = 0.15 kPa
Q = 0.25 kPa

Walls : G = 0.6 kPa (Includes tiles & cladding)

Slab : G = 3.48 kPa
SDL = 0.5 kPa
} 3.98 kPa

Q = 2 kPa

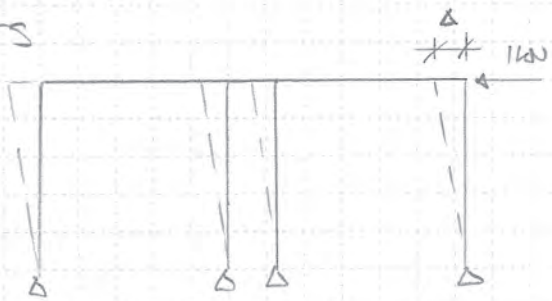
Short direction access



$\Delta = 0.02054$ m

$k = \frac{1000}{0.02054} = 48\,686$ N/m

Along



$\Delta = 0.01441$ m

$k = \frac{1000}{0.01441} = 69396$ N/m

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Seismic Mass

$$W_t = G + \psi_E Q_i$$

$$= (0.15 \times 6 \times 3.1) + (0.6 \times 2.6 \times (5.6 + 2.3)) + 0$$

$$= 15.114 \text{ kN}$$

Mass / frame

Short direction (across) = $m = \frac{15.114}{4} \times 100 = 378$ kg

Long direction (along) = $m = \frac{15.114}{2} \times 100 = 758$ kg

$$T = 2\pi \sqrt{\frac{m}{k}}$$

$$T_{across} = 2\pi \sqrt{\frac{378}{48\,686}} = 0.56 \text{ sec}$$

$$T_{along} = 2\pi \sqrt{\frac{756}{69\,396}} = 0.66 \text{ sec}$$

$C(t) = C_h(T) Z R N$ Assume Subsoil Class : D.

$C_h(0.56) = 2.904$ $C_h(0.66) = 2.654$

$(1/500)\ R_u = 1.0$ $N(T,D) = 1$

$\therefore T \leq 1.5 \therefore N = 1.0$

Z = 0.6 (Otira / Arthur's Pass)
0.4 (Wellington)
0.3 (Christchurch)
0.13 (Auckland).

$C(0.56) =$	$C(0.66) =$	
1.743	1.593	Otira
1.162	1.062	Wellington
0.872	0.797	Christchurch
0.378	0.346	Auckland.

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$\mu = 1.25$ $\quad S_p = 1.3 - 0.3\mu = 0.925$

$T_1 < 0.7$ s

$k_\mu = \dfrac{(1.25-1)(T_1)}{0.7} + 1 = 1.2 \quad T_1 = 0.56$

$1.236 \quad T_1 = 0.66$

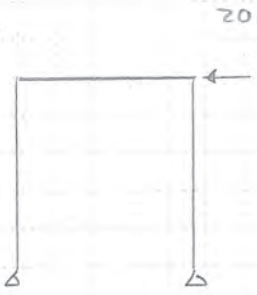
$C_d(0.56) = \dfrac{C(T_1)(0.925)}{1.2} = 1.344$ Otira
0.896 Wellington
0.673 Christchurch
0.29 Auckland < 0.3

$C_d(0.66) = \dfrac{C(T_1)(0.925)}{1.236} = 1.193$ Otira
0.795 Wellington
0.597 Christchurch
0.259 Auckland < 0.3

Lateral forces

	Across	Along	
$E_u = 15.114\,(C_d(T_1)) =$	20.32 kN	18.04 kN	Critical Otira
	13.55 kN	12.02 kN	Wellington
	10.18 kN	9.03 kN	Christchurch
	4.54 kN	4.54 kN	Auckland.

Across

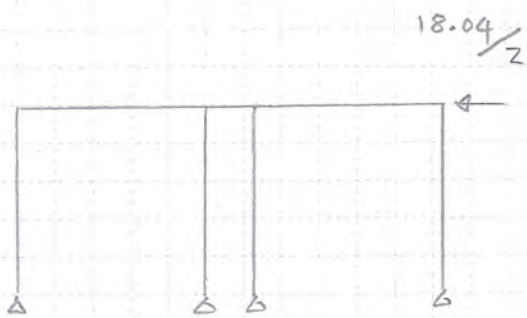


$M^* = 6.6$ kN.m < 10.6 kN.m ok

$V^* = 2.54$ kN

$N^* = 5.74$ kN

Along:



$M^* = 8.53$ kN.m < 10.6 kN.m ok

$V^* = 3.28$ kN

$N^* = 18.29$ kN

SHS : 75×5 ok $\quad \phi M_s = 10.6$ kN.m

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Footing

External Uplifting pressure : $k_c = 0.8$

$P_{ULS} = -1.3(1.097)(0.8) = -1.141$ kPa

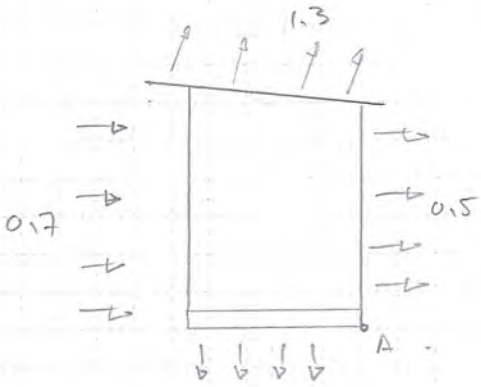
-1.465 kPa

-1.83 kPa

Region
A
W
B

Overturning Moment

* Do not rely on gravity self weights (Super structure)



$(+\circlearrowleft \Sigma M_A = 0)$

$M_A = 0.7(2.8)(1.4)(1.759) + (1.3)(3)(1.15)(1.759) + (0.5)(2.7)(1.35)(1.759)$

$= 15.9215$ kN.m /m

Self Wt Slab $= 0.9(2.3)\left(\frac{2.3}{2}\right)(3.98)$

$= -9.47$ kN.m

∴ Resultant Moment

$M_R = 15.9215 - 9.47 = 6.746$ kN.m /m.

Each footing resists $5.5/2 = 2.75$ m.

∴ Footing moment $= 2.75(6.46) = 17.76$ kN.m per

$17.76 - (1.15)(10.71) - (0.9 \times 0.6 \times 2.5 \times 5.6 \times 2.3) = -11.94$ kN.m

Ok.

Try Footing 2

$0.9G + W_m = 0.9(0.15 \times 6 \times 2.75 + 3.98 \times 5.5 \times 2.3 + 0.6 \times 2.5 \times (2.3 + 5.5) + 0.45^2 \times 24 \times 0.3 \times 2)$

$- (1.141)(5.8 \times 2.75)$

$= 28.1902 - 18.19 = 60$ kN Region A

$= 54.83$ kN W

$= 49$ kN B

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Overturning Wind only

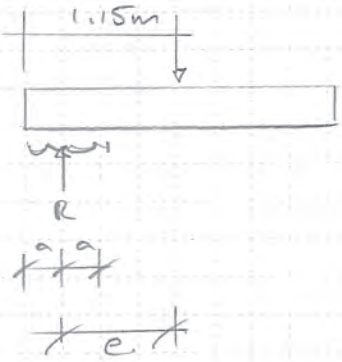
Region

$M_{o/t} = 1.2 \times 5.5 \times \frac{2.75^2}{2} \times 1.097 = 27.4$ kN.m A

35.14 kN.m W

43.9 kN.m B

Region B



$R = 49/2 = 24.5$ kN

$e = \frac{43.9}{2} / 24.5 = 0.896$ m

$a = \frac{2.3}{2} - 0.896 = 0.254$ m

$\frac{24.5}{0.9} = 2(0.254)(0.45)w$

$w = 119.08$ kPa < 150 ok

Region A

$R = 60/2 = 30$ kN

$e = 27.4/2 / 30$

$= 0.457$ m

$a = 1.15 - 0.457$

$= 0.6933$ m

$w = \frac{30}{0.9 \times 2 \times 0.6933 \times 0.45} = 53.43$ kPa < 150 ok

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Footing 2

450 x 450 x 2300 long with 4/D12 top & bottom, c/w R6 @ 300 crs

75 Bottom Cover

50 side & top cover ok

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Job no. 160395	Date 14/9/16 By BP

FOR REFERENCE ONLY

Hold down plate

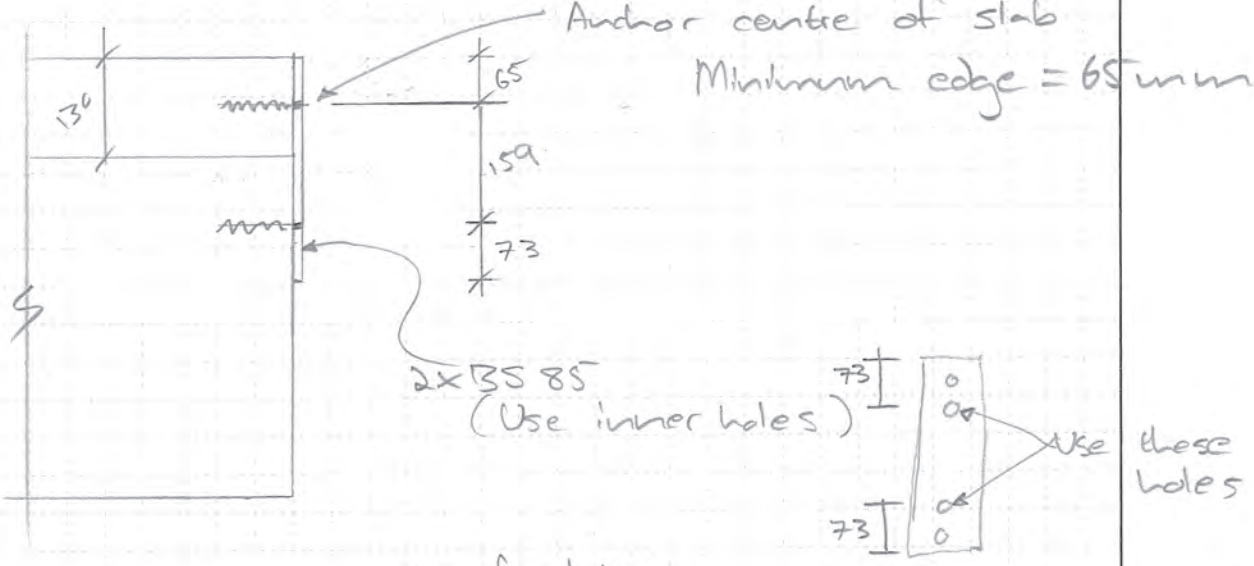
$N^* = 43.9 / 2.3 \times 2 = 9.55$ kN

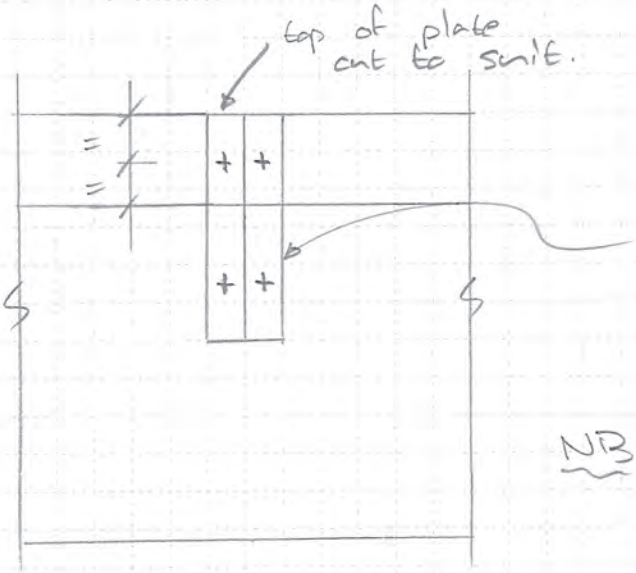
$\phi N_t = 0.9(300)(50-16)(6) = 55$ kN > 9.55 ok

Connection Capacity

$\phi V_{uv} = 7.2(0.79)(1) = 5.688$ kN < 9.55 NG

∴ Use 2/M12 C8 Epcon anchors. top & bottom





NB: Brush out holes + blow out.
↳ blow x 4, brush x3
↳ Repeat x3

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160395	14/9/16
By	
BP	

Consider Lee Zone (Jupiter Unit).

$V_{sit\beta} = V_R M_d M_{z\,cat} M_s M_t$.

			Region
ULS :	V_{500} =	45 m/s	A
		51 m/s	W
		57 m/s	B
SLS	V_{25} =	37 m/s	A
		43 m/s	W
		39 m/s	B

$M_d = 1.0$

$M_{z\,cat} = 0.95$ TC 1.5

$M_s = 1.0$

$M_t = M_{lee} = 1.35$ (A, W) & 1.0 (B)

∴ $V_{sit\beta}$ =

ULS		SLS		Region
57.72	m/s	47.46	m/s	A
65.41	m/s	55.15	m/s	W
54.15	m/s	37.05	m/s	B

No lee zone Australia

Design Wind Pressure

$p = (0.5 \times 1.2)(V_{des\theta})^2 C_{fig} C_{dyn}$

$C_{dyn} = 1.0$

			Region
P_{ULS} =	1.999	C_{fig}	A
	2.568	C_{fig}	W
	1.76	C_{fig}	B

Wind Wall loadings

$P_{ULS} = (0.6 + 0.65)(2.568) = 3.21$ kPa

lee Region W

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Wall Stud Spacing 1.1m max

$\therefore M^* = \frac{(1.1 \times 3.21)(2.6)^2}{8} = 2.99 \text{ kN.m}$

75x25x2 RHS Strong axis $\phi M_x = 2.62 < M^*$ NG

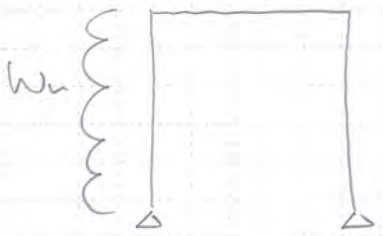
Use: 75x25x3 RHS Strong axis $\phi M_x = 3.68 > M^*$ ok

OR

Use: 75x50x3 RHS Weak axis $\phi M_y = 4.06 > M^*$ ok

FOR REFERENCE ONLY

Portal Frame Wind loading



Short direction frames

$W_u = (0.17 + 0.5)(2.568)$
$= 3.0816 \text{ kPa}$ ← lee Zone W.

$W_u = \frac{7.15(2)}{2.6} = 5.5 \text{ kN/m}$ ← ULS.

$M^* = 10.21 \text{ kN.m}$
$V^* = 10.6 \text{ kN}$

$\phi M_x = 12.09 > M^*$ ok

Use: 75x6 SHS G350

Roof Wind loading

			Region
$P_{uls} = (1.3 + 0.6) \times$	2.0	= 3.8 kPa	A
	2.568	= 4.88 kPa	W
	1.76	= 3.34 kPa	B

Rafter Span = 2.4 m
tributary Width = 1.1 m

$E_d = 0.9(0.15) - (4.88)$
$= -4.745 \text{ kPa}$ Uplift

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NH DAA #DH1507408
Internet Inverter #71
Plan Approval: 49-21317
Approval Date: 2014-12-23
Expiration Date: 2015-05-22
Without Foundation Approval
1760 23rd Street
Oroville, CA 95965

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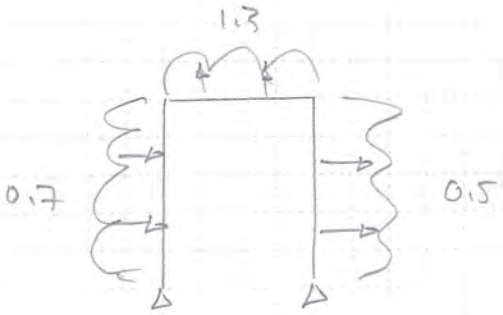
Portal Frame — Wind Zone (Lee Zone) W — (Four Frames) Short Direction



Windward Wall

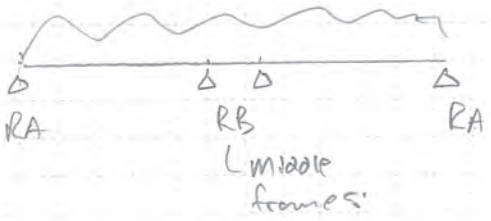
$W_u = (0.7)(0.8)(2.57) = 1.44$ kPa

Roof

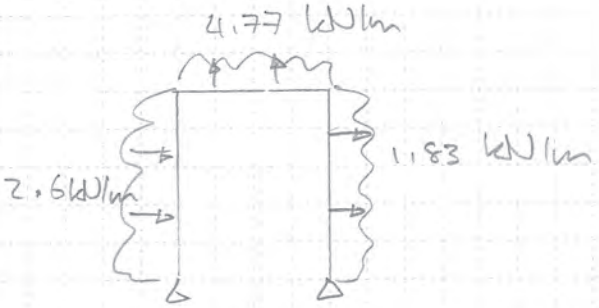
$W_u = (1.3)(0.8)(2.57) = 2.68$ kPa

Leeward

$W_u = 0.5(0.8)(2.57) = 1.03$ kPa



1.78



$M^* = 8.55$ kN.m

$\phi M_b = 12.09$ kN.m OK

Use: 75×6 SHS Grade 350

Deflections

$P_{SLS} = 1.83$ Cfig.

$\Delta = h/150 = 17$ mm

$\Delta_{actual} = 16.26$ mm OK

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Intertek [Intertek-ETL]
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Approve Date: 2015-02-20
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Roof Wind Loading Cont

$M^* = 3.76$ kN.m

$\phi M_{sx} = 3.59 < M^*$ NG 50x4 SHS

Use: 75x5 SHS G350 $\phi M_{sx} = 4.15 > 3.76$ ok

$\Delta = L/300 = 9$mm

$\Delta = 8$mm ok

Purlins Wind loading

Spacing = 620 crs
Span = 1.05 m

$M^* = \frac{(4.745 \times 0.62)(1.05)^2}{8} = 0.41$ kN.m

$\phi M_{sy} = 0.526 > M^*$ ok

Use: 50x25x2 RHS

FOR REFERENCE ONLY

Footings

			Region
Pull	$= -1.3(0.8)(2.0)$	$= 2.08$ kPa	A
	(2.57)	$= 2.68$ kPa	W
	(1.76)	$= 1.84$ kPa	B

Tag footings 700x700x2300

			Region
$0.9G + W_u =$	109.9	$-(5.8 \times 2.75)(2.08) = 76.72$ kN	A
		$(2.68) = 67.154$ kN	W
		$(1.84) = 80.552$ kN	B

Overturning

			Region
$M_{o/t} = 1.2 \times 5.5 \times \frac{2.75^2}{2} \times$	2.0	$= 49.91$ kN.m	A
	2.57	$= 64.14$ kN.m	W
	1.76	$= 43.93$ kN.m	B

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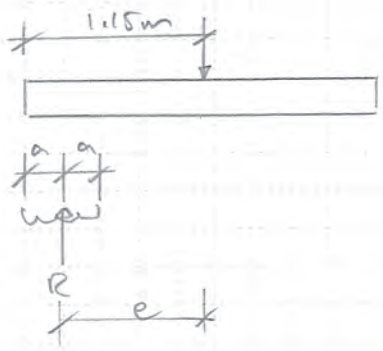
Region W



$R = \frac{67.154}{2} = 33.58$ kN

$e = \frac{64.14}{2 \times 33.58} = 0.955$ m

$a = 1.15 - 0.955 = 0.19$ m

$w = \frac{33.58}{0.9(2)(0.19)(0.7)}$

$= 140.26$ kPa < 150 Ok

Footing: 700 x 700 x 2300 long with 6/D12 top & bottom, c/w R6 @ 300 crs

75 Bottom Cover
50 Side & top Cover

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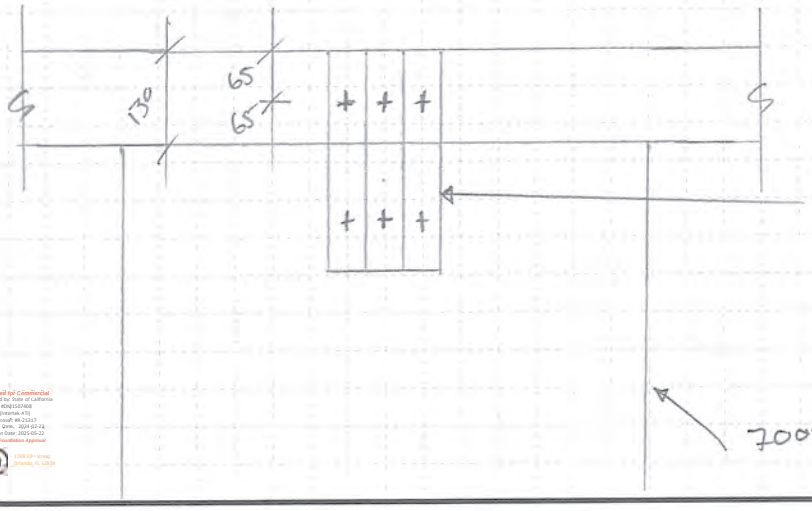
Hold down plate

$N^* = \frac{64.14}{2.3 \times 2} = 13.94$ kN

$\phi V_{ur} = 7.2(0.79)(3) = 17.064$ kN $> N^*$

Use 3/M12 C8 Epcon anchors top and bottom, 100mm embedment, Minimum edge dist 65mm c/w 3/BS85 per side



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Intertek Intertek-4.71
Plan Approval: #8-21317
Agentur Srtn. 2024-10-21
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Wind Actions Cyclic Zones IL = 2 Design life = 50 years

$V_{sit\beta} = V_R \; M_d \; M_{zcat} \; M_s \; M_t$

			Cyclonic	Zone
ULS :	V_{500}	= 66 Fc	= 66 (1.05) = 69.3	C
		80 FD	= 80 (1.1) = 88	D
SLS :	V_{25}	= 47 Fc	= 47 (1.05) = 49.35	C
		53 FD	= 53 (1.1) = 58.3	D

M_d = 1 All directions

M_{zcat} = 0.95 (TC 1.5)

M_s = 1

M_t = 1.

		Zone	
$V_{sit\beta}$ =	65.84 m/s	C	ULS
	83.6 m/s	D	ULS
	46.89 m/s	C	SLS
	55.4 m/s	D	SLS

FOR REFERENCE ONLY

Design Wind Pressure

$p = (0.5 \rho_{air})(V_{des\theta})^2 C_{fig} C_{dyn}$ $C_{dyn} = 1$

=	2.6	C_{fig}	ULS	(Zone C)
	4.194	C_{fig}	ULS	D
	1.32	C_{fig}	SLS	C
	1.84	C_{fig}	SLS	D

∴ p = 4.2 C_{fig} ULS } Zone D
1.84 C_{fig} SLS }

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Wind Wall Loadings — Cyclone

Worst Case (0.6 + 0.65) = CFS.

ULS = 1.25 (4.2) = 5.25 kPa
SLS = 1.25 (1.84) = 2.3 kPa
} Zone D

$M^* = \frac{(1.1 \times 5.25)(2.6)^2}{8} = 4.9$ kN.m

$L_{eff} = 1.25$ m $\phi M_b = 0.9(350)(16.9) = 5.3$ kN.m ok

Use : 75 x 50 x 6 RHS @ 1.1m crs — bending about weak axis.

$\frac{5(2530)(2.6)^4}{384(200\times10^9)(4.12\times10^{-7})} = 17$mm ok

$\Delta = H/150 = 17.33$mm

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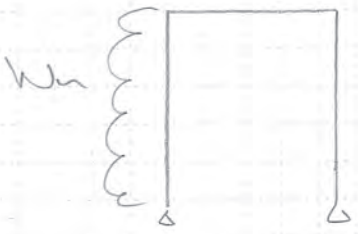
Portal Frame Wind loadings

Short Direction



Wn = (0.7 + 0.5)(4.2) = 5.04 kPa ULS
(1.84) = 2.21 kPa SLS

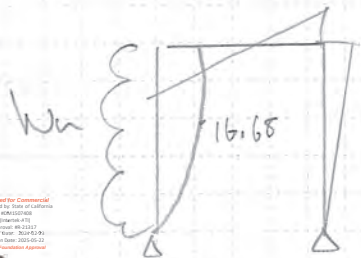
Wn = 8.99 kN/m ULS
3.94 kN/m SLS

M^* = 16.68 kN.m ϕM_b = 17.86 kN.m ok

V^* = 17.32 kN

$\Delta = L/150 = 17.33$

Δ = 19mm ok



Use : 89 X 6 SHS
Grade 350

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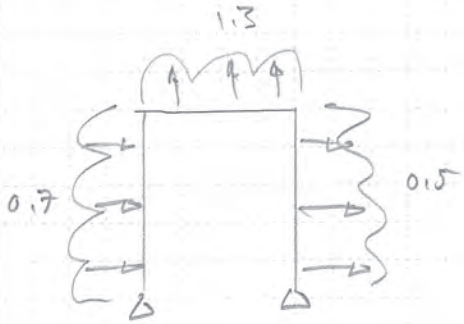
Portal Frame — Wind Zone : Cyclonic — Ans D

Four Frames Short Direction



Windward

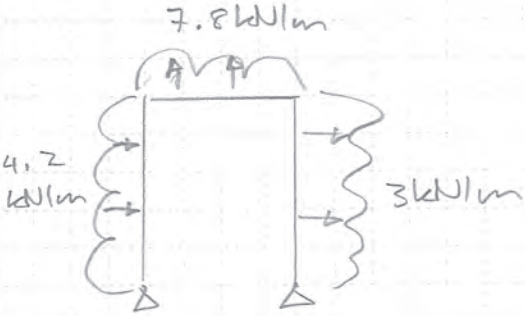
$W_u = 0.7(0.8)(4.2) = 2.36$ kPa

Roof

$W_u = 1.3(0.8)(4.2) = 4.37$ kPa

Leeward

$W_u = 0.5(0.8)(4.2) = 1.68$ kPa



$M^* = 13.91$ kN.m

$\phi M_{bx} = 17.86$ kN.m — OK

Use : 89 x 6 SHS G350

Deflections

$\Delta = L/150 = 17$ mm

$\Delta_{actual} = 9.2$ mm — OK

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Approve Date: 2014-02-21
Expiration Date: 2021-05-22
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Roof loading Cyclic

Zone D

$P = (1.3+0.6)(4.2) = 7.98$ kPa ULS
$(1.84) = 3.5$ kPa SLS

Max span = 2.4 m
Tributary Width = 1.1 m

$Ed = 0.9(0.15) - 7.98 = -7.845$ kPa ULS (Uplift)
$3.5 = -3.37$ kPa SLS

$M^* = \frac{(1.1 \times 7.845)(2.7)^2}{8} = 7.86$ kN.m $< \phi M_b = 10.5$ kN.m

$\Delta = \frac{2700}{300} = 9$mm $\quad \Delta = \frac{5(1.1 \times 3500)(2.4)^4}{384(200\times10^9)(1.03\times10^{-6})} = 8.1$mm Ok

Use: 75x5 SHS @ 2.4m span

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Purlins

Spacing = 620 crs
Span = 1.05 m

$M^* = \frac{(7.98 \times 0.62)(1.05)^2}{8} = 0.694$kN.m

$\phi M_{sy} = 1.1$ kN.m Ok Use: 50x25x3 RHS Ok

Footings

Use: 1000x1000x2300 footings

$M_A = (0.7(2.6)(1.3) + (1.3)(2.5)(1.25) + 0.5(2.6)(1.3))(4.2)(0.8)$
$= 27.28$ kN.m/m

Slab Wt = $(2.3)(1.15)(3.98) = -10.53$ kN.m/m
Walls Self = $0.5(2.3) = -1.15$ kN.m/m
Roof Self = $2.5(0.15)(1.25) = -0.468$ kN.m/m
$M_R = 15.132$ kN.m/m

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Approved by: State of California
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(Internal) (Internal-4.7)
Plan Approval: 49-21317
Approval Date: 2016-02-01
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MR x $5.5/3$ = 27.75 kN.m

27.75 = Wt (2.3)(1.15)

Wt = 10.49 kN = 24 kN/m^3 A

A = 0.437 m^2 ok

$\sqrt{0.437}$ = 0.66 m ∴ Use 700x700x3 ok

3x footings (2300x700x700)

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MH DAA #DM1507408
Intertek (Intertek-4.71)
Plan Approval: 69-21317
Approve Prior: 2006-02-24
Expiration Date: 2021-05-22
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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:	Jupiter Triple 23AAD,33AAD,43AAD	**Report Page:**	**(Page 1 of 8)**
Project Address:		**Date Prepared:**	2024-02-21T21:33:25-05:00

A. GENERAL INFORMATION

01	Project Location (city)	954 Toro St, San Luis Obispo, CA 93401	04	Total Conditioned Floor Area (ft^2)	0
02	Climate Zone	5	05	Total Unconditioned Floor Area (ft^2)	135
03	Occupancy Types Within Project (select all that apply):		06	# of Stories (Habitable Above Grade)	0

● All Other Occupancies

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	N/A	0	Complete Building Method	135
☐ New Lighting System - Parking Garage	N/A	0	N/A	0
Total Area of Work (ft^2)			135	

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
Project Name: Jupiter Triple 23AAD,33AAD,43AAD	**Report Page:**	**(Page 2 of 8)**
	Date Prepared:	2024-02-21T21:33:25-05:00

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	50				=	50	≥	50		=	50		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: Jupiter Triple 23AAD,33AAD,43AAD	**Report Page:**	**(Page 3 of 8)**
	Date Prepared:	2024-02-21T21:33:25-05:00

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
Interior LED Light	Battenpro-300-12V LED SMD2835	No	NA	10	Mfr. Spec	1	No	10	☐	☐
Interior LED Light	Battenpro-300-12V LED SMD2835	No	NA	10	Mfr. Spec	1	No	10	☐	☐
Interior LED Light	Battenpro-600-12V LED SMD2835	No	NA	20	Mfr. Spec	1	No	20	☐	☐
Service Bay Light	Battenpro-300-12V LED SMD2835	No	NA	10	Mfr. Spec	1	No	10	☐	☐
							Total Designed Watts: UNCONDITIONED SPACES	50		

[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.

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
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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	Whole Building Auto Time Switch	☐	☐

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/Sky lit 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
Cubicle 1	All Other Occupancies	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
Cubicle 2	All Other Occupancies	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
Cubicle 3	All Other Occupancies	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐
Service Bay	All Other Occupancies	Auth. Personnel	NA: Restrooms	Occupancy Sensor	NA: Not daylit zone	NA: Not daylit zone	No	☐	☐

13
Plan Sheet Showing Daylit Zones:

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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
Cubicle 1	All Other Occupancies	0.4	25	10	No	No
Cubicle 2	All Other Occupancies	0.4	25	10	No	No
Cubicle 3	All Other Occupancies	0.4	50	20	No	No
Service Bay	All Other Occupancies	0.4	25	10	No	No
		TOTALS:	125	50	See Tables J, or P for detail	

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.

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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.

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.

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
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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.	Cubicle 1; Cubicle 2; Cubicle 3; Service Bay

CERTIFICATE OF COMPLIANCE		**NRCC-LTI-E**
Project Name: Jupiter Triple 23AAD,33AAD,43AAD	**Report Page:**	**(Page 8 of 8)**
Project Address:	**Date Prepared:**	2024-02-21T21:33:25-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Eric MacKay	Documentation Author Signature: EMacKay
Company: Exeloo Ltd	Signature Date: 02/22/2024
Address: 20-22 Paramount Drive, Henderson	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Auckland, New Zealand 0610	Phone: (+64) 9 837 6961

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: Eric MacKay	Responsible Designer Signature:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

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: Jupiter Triple 23AAD,33AAD,43AAD	**Report Page:** **(Page 1 of 7)**
Project Address:	**Date Prepared:** 2024-02-21T22:04:27-05:00

A. GENERAL INFORMATION

01	Project Location (city)	954 Toro St, San Luis Obispo, CA 93401	04	Total Illuminated Hardscape Area (ft^2)	71
02	Climate Zone	5			

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

- All Other Occupancies

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**
Project Name: Jupiter Triple 23AAD,33AAD,43AAD	**Report Page:**	**(Page 2 of 7)**
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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**
255.09	+	---	+	---	+	---	+	---	OR	---	=	255.09	≥	20	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: Jupiter Triple 23AAD,33AAD,43AAD	**Report Page:**	**(Page 3 of 7)**
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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
Outside LED Light	Battenpro-300-12V LED SMD2835	☐ Linear	10	Mfr. Spec	2	New	☐	20	NA: < 6200 lumens	☐	☐
							Total Design Watts:	20			

* 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.

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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
Restroom Accessway: "Outside LED Light"	Other Control	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: Jupiter Triple 23AAD,33AAD,43AAD	**Report Page:**	**(Page 5 of 7)**
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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)	
Restroom Accessway	71	0.021	1.49	18	0.2	3.6	5.09
						Initial Wattage Allowance for Entire Site (Watts):	250
						Instances of Initial Wattage Allowance (LZ 0 only)[1]	
						Total General Hardscape Allowance (Watts):	255.09

J. LIGHTING ALLOWANCE: PER APPLICATION

This section does not apply to this project.

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.

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

O. DECLARATION OF REQUIRED CERTIFICATES OF INSTALLATION

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

P. DECLARATION OF REQUIRED CERTIFICATES OF ACCEPTANCE

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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.	Restroom Accessway: "Outside LED Light"

Outdoor Lighting

CERTIFICATE OF COMPLIANCE	NRCC-LTO-E
Project Name: Jupiter Triple 23AAD,33AAD,43AAD	
Project Address:	**Date Prepared:** 2024-02-21T22:04:27-05:00

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Documentation Author Name: Eric MacKay	Documentation Author Signature: EMacKay
Company: Exeloo Ltd	Signature Date: 02/22/2024
Address: 20-22 Paramount Drive, Henderson	CEA/ HERS Certification Identification (if applicable):
City/State/Zip: Auckland, New Zealand 0610	Phone: (+64) 9 837 6961

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: Eric MacKay	Responsible Designer Signature:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone: