

EXHIBIT 5 SCOPE OF WORK

Relocation of Bay County Fire Station # 8 from 2115 County Road 2321 to 2120 Ball Park Road, Southport, FL 32409.

Bay County is providing a copy of the As-builts to use as reference to how the Sprung Unit, Concrete Slab and ATCO units must be laid out. Bay County has provided Civil drawings to show location of slab and approved elevation. The parking lot and curbing is not a part of bid.

Demolition of existing Baseball fields has been completed by Bay County

Construction permit, impact fees and trade permits will be pulled and paid for by each specialized trade. For example, Electrical, Plumbing, Mechanical and etc. Bay County will pull building permit.

Water is provided onsite. There is no electrical onsite all subcontractors will have to provide electrical if necessary until permanent electrical is provided by Electrical Contractor.

The Contractors must properly staff project to complete project, when it's time to execute construction services.

The awarded Subcontractors must have a lead onsite whenever there is work being performed.

All bidders shall review the construction documents (Drawings), including visiting the existing site and existing site. If any questions, errors, omissions or conflicts bidder shall bring it to the County's attention in writing therefore it can be addressed in a written addendum.

Subcontractors is responsible for properly storing and protecting all construction materials until installed and accepted by Bay County.

Bay will provide Owner testing if determined to be necessary. Contractor cannot use the owner testing firm to avoid a conflict of interest.

Division 01

New Concrete Slab

New Concrete slab will be constructed to 69'-10" x 62'-11" to outside of slab. Slab is 6" inches thick. Scope of work for slab includes forming footers and slab according to provided Architectural drawings and Foundation detail Sheet A-1.1. Furnish and install all rebar as shown. Termite spray the soil before installing visqueen and pouring slab. Compact soil for footers and slab as per Geotechnical Report. Concrete contractor is responsible for providing the saw cuts as shown on drawings.

Concrete (4") pad are a part of concrete work. Include concrete construction of apron/drive at the front of building.

Bay County Roads and Bridges will provide the necessary fill for slab but concrete contractor will do the final grade to meet approved elevation.

Concrete Contractor must provide a proposal to Bay County for all necessary rebar and concrete. Bay County will issue a purchase order directly to the vendor selected by Contractor. Direct Purchasing will be used for Concrete, rebar, and wire mesh.

Concrete work must include concrete pads at the doors of Sprung unit and the small curbs/slabs for interior equipment that will be relocated.

Bay County is requesting four new floor drains be installed in the Apparatus bay slab by plumber. With that stated the slab must be sloped towards drains.

Division 02

Moving of Existing Sprung Unit

According to Sprung they have a caster system to relocate building. The building can be disconnected and moved with a large crane. Since that's getting into the means and methods Bay County will leave that determination up the contractor.

Contractor/Subcontractor must disconnect all connections currently to existing slab and reinstall at new location slab to meet Sprung Standards set forth in Structural Calculations.

Sprung Contact: Cas Masiak, Business Development Manager
Cas.Masiak@sprung.com
800 528 9899 Toll Free
770 933 1950 Office

Division 04

Mechanical

Mechanical scope of work will be disconnecting the existing equipment (Truck Exhaust Unit) as necessary and reconnecting it at new location.

View plans and visit site to ensure that all Mechanical Systems are included in bid.

Division 05

Electrical

Bay County will have existing electrical service removed from current site.

Electrical scope work will be disconnecting the existing equipment as necessary and reconnecting it a new location. Work will include installing new electrical services to the

building at new location and getting service disconnected at existing location. Coordination of a new permanent electrical services.

If there is any conduits, sleeves or additional work necessary in slab then electrical subcontractor must include in their scope of work.

Electrical services to be as per electrical drawings.

Division 06

Plumbing

The plumbing scope includes all slab rough-in pertaining to plumbing. Disconnection of existing hot water, Washer drain box and other plumbing equipment in existing building then reconnecting all equipment back up at new location. The 4" Sewer in drawings are shown going to a Lift Station. Bay County is requiring that the new sewer tie into Bay County Force Main located on Ball Park Roadway.

4" Force main pressure is 45psi

Water system for plumbing with two (2) lines as reflected on drawings including 2" BFP and 1-1/2" BFP Water exist onsite at Baseball field. Plumbers will need to tie into existing meters

Plumbing Fixtures Equipment will be removed and reused at new location except for Hose Bibs: Plumbing equipment listed below.

- EWH-1 - Electrical Water Heater 85 Gallon, 240 Volt/1 phase, 4.5 KW Element
- WM-1 - Washing Machine Box
- IM-1 - Ice Maker Box
- MS-1 - Mop Sink – Floor Mounted

Bay County is requesting the four (4) floor drains be added to the Sprung slab and tie to sewer.

Note: All new water and sewer will be hooked up to Bay County utilities located on Ball Park Road.

Division 08

Construction of Wooden Deck between Sprung and ATCO buildings.

There is an elevated walkway that needs to be reconstructed accordingly. Furnish and install wooden deck with stairs as reflected at existing facilities.

Appendix 1 – Plans

A: Site Scheme Page 59

B: Civil Plans Pages 60-63

C: As Built Pages 64-87

D: Utility Detail Page 88

E: Assembly Drawings Pages 89-94

F: Sprung Structural Calculations 95-194

Appendix 2 – Equipment Information

G: Ready Rack Manual Pages 195-209

H: ATCO Unit Manual Pages 210-253

I Speaker Manual Pages 254-257

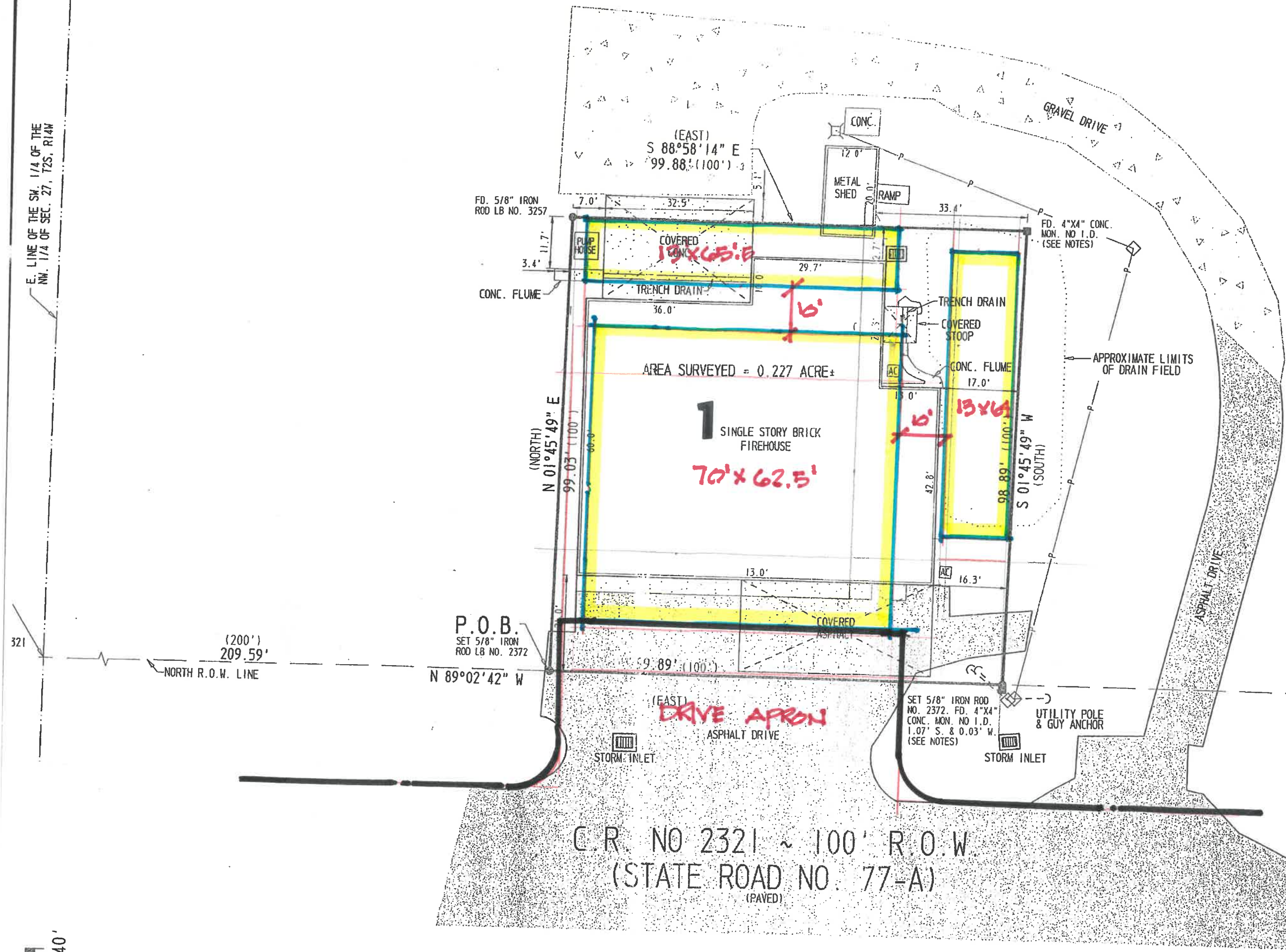
J Spring Operated Exhaust Tube Manual 255-264

K Truck Exhaust Equipment 265 - 270

L Unit Heater in Bays Manual 271-288

E. LINE OF THE SW 1/4 OF THE
NW 1/4 OF SEC. 27, T2S, R14W

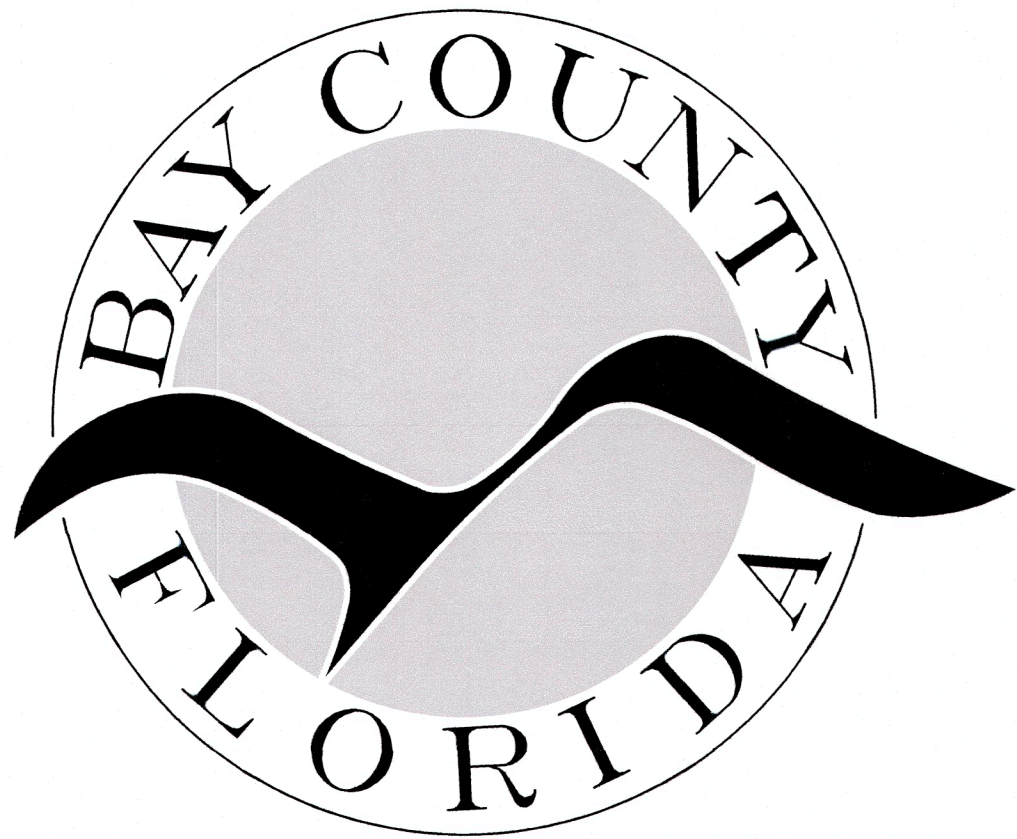
WHERE THE NORTH RIGHT-OF-WAY LINE
INTERSECTS WITH THE EAST LINE OF
NORTHWEST QUARTER (SW1/4NW1/4) (SOUTH,
RANGE 14 WEST; THENCE NORTH
LINE; THENCE EAST 100 FEET PARALLEL
LINE; THENCE SOUTH 100 FEET TO
THENCE WEST 100 FEET WITH SAID
POINT OF BEGINNING.



SYMBOLS AND ABBREVIATION:

P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
N	NORTH
E	EAST
S	SOUTH
W	WEST
SEC.	SECTION
T	TOWNSHIP OR T
R	RANGE
°	DEGREES
'	MINUTES OR FEET
"	SECONDS OR INCH
FD.	FOUND
LB.	LAND SURVEYOR
NO.	NUMBER
I.D.	IDENTIFICATION
CONC.	CONCRETE
MON.	MONUMENT
R.O.W.	RIGHT OF WAY
C.R.	COUNTY ROAD
±	MORE OR LESS
-P-	AERIAL UTILITY
AC	AIR CONDITIONER

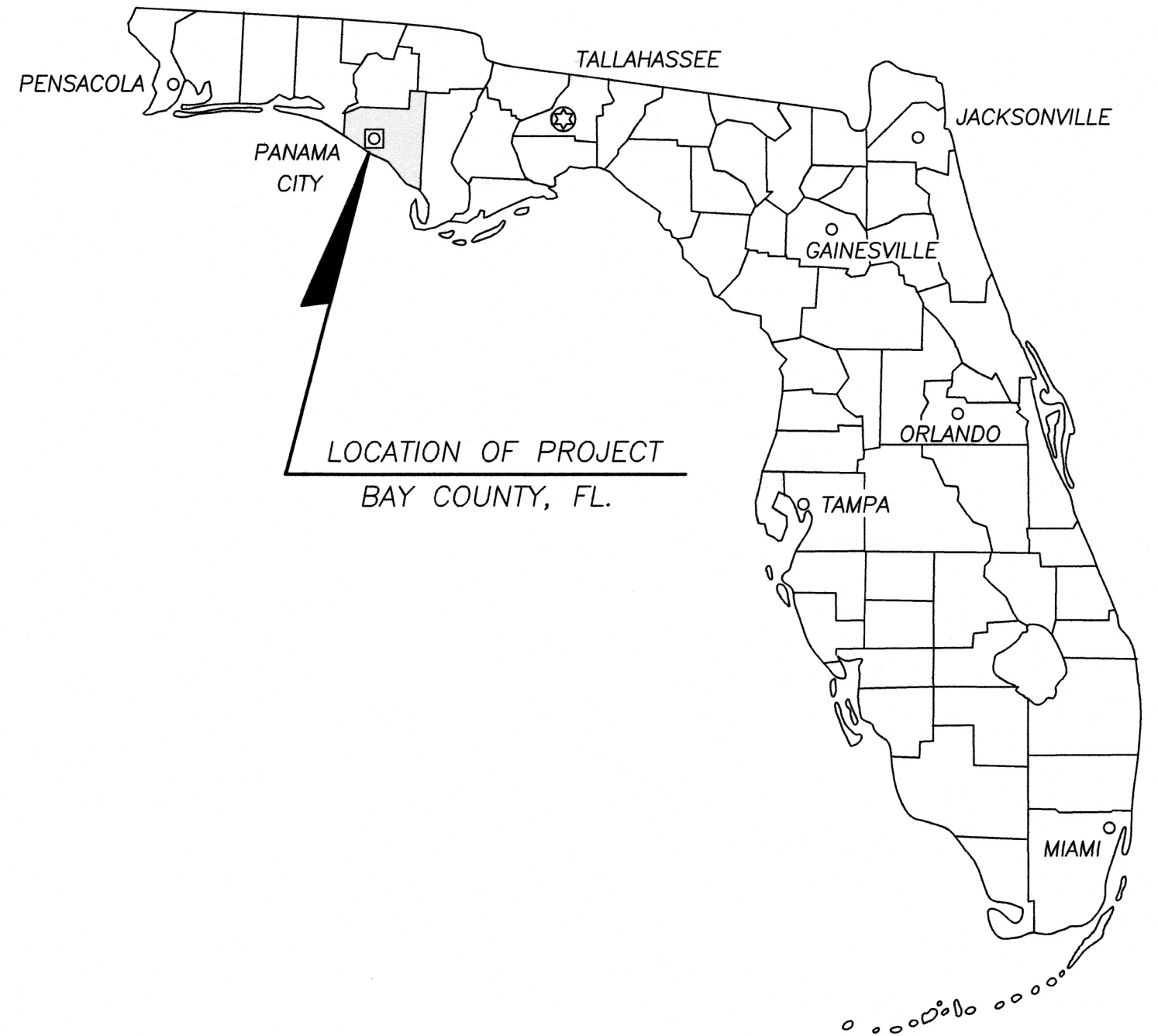
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BAY COUNTY PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION

CONTRACT PLANS

SOUTHPORT FIRE STATION RELOCATION



INDEX OF PLANS

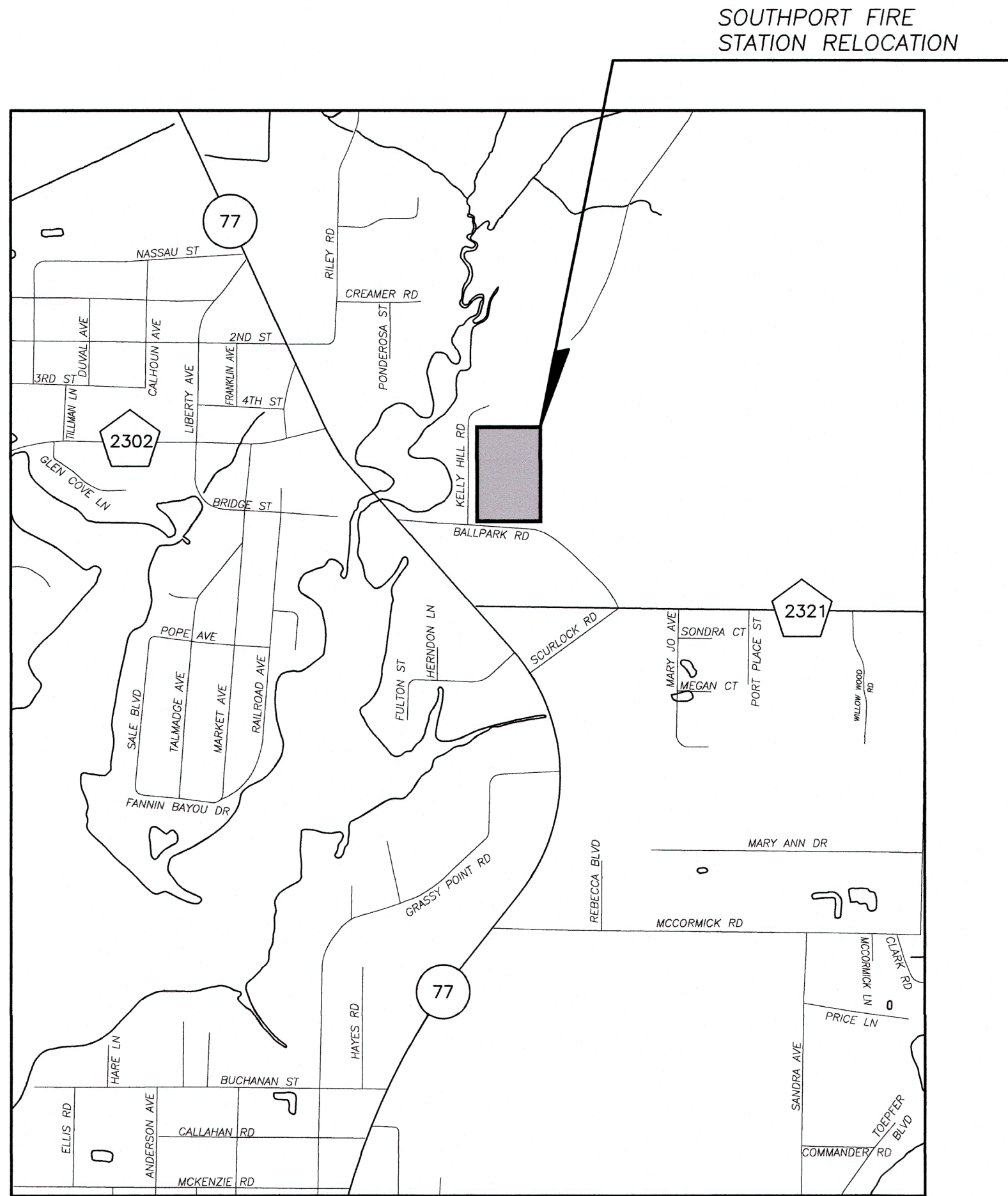
SHEET NO.	SHEET DESCRIPTION
01	KEY SHEET
02	DEMOLITION PLAN AND EROSION CONTROL PLAN
03	SITE SITE GRADING PLAN AND EROSION CONTROL PLAN
04	SITE LAYOUT

GOVERNING STANDARD PLANS:
FLORIDA DEPARTMENT OF TRANSPORTATION, FY 2024-2025 STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION AND APPLICABLE INTERIM REVISIONS (IRs). STANDARD PLANS FOR ROAD CONSTRUCTION AND ASSOCIATED IRs ARE AVAILABLE AT THE FOLLOWING WEBSITE:
<http://www.fdot.gov/design/standardplans>

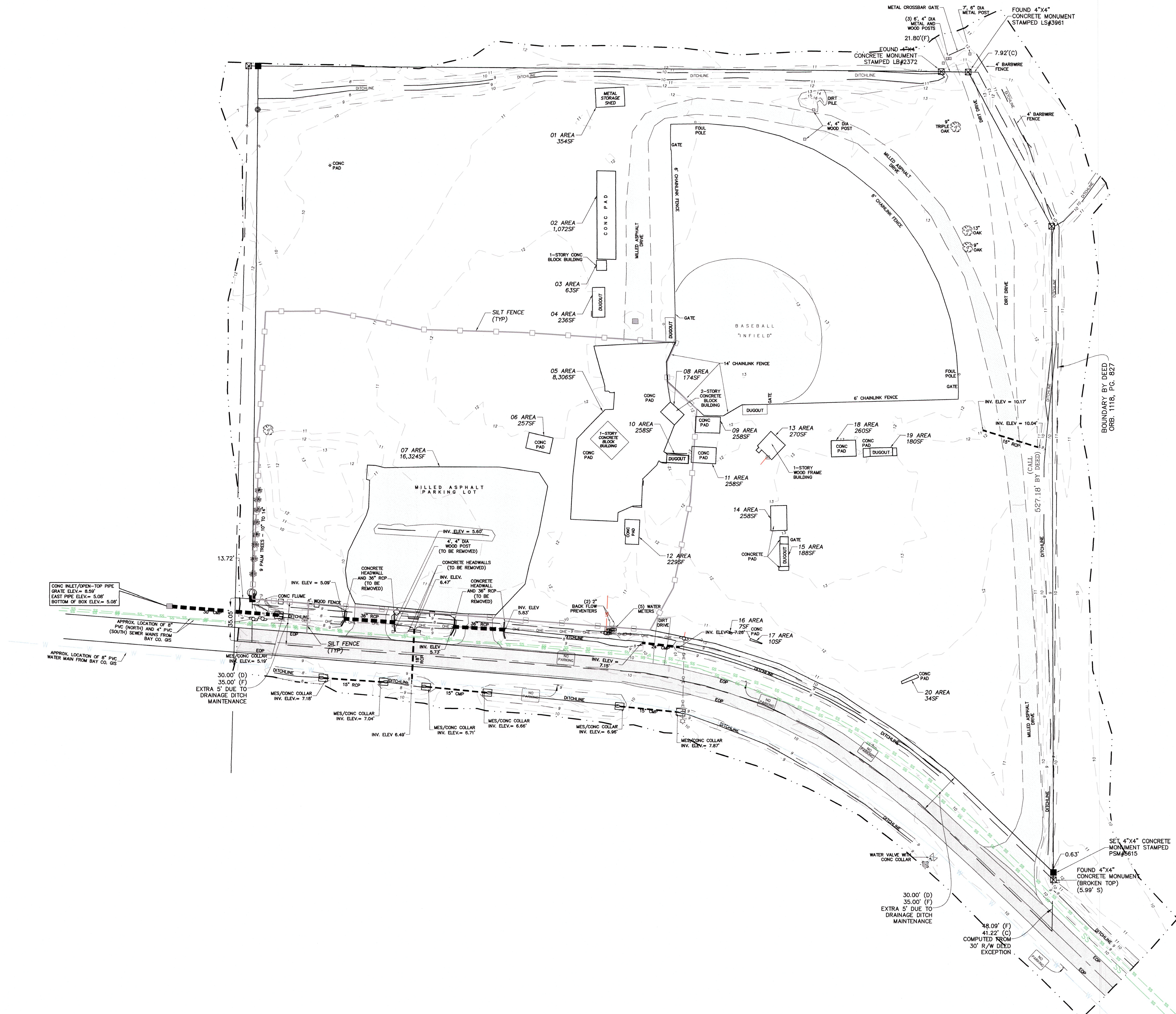
GOVERNING STANDARD SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION, FY 2024-2025 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION CAN BE FOUND AT THE FOLLOWING WEBSITE:
<http://www.fdot.gov/programmanagement/implemented/specbooks>

GOVERNING DESIGN STANDARDS:
MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE FOR STREETS AND HIGHWAYS (COMMONLY REFERRED TO AS THE "FLORIDA GREEN BOOK" CAN BE FOUND AT THE FOLLOWING WEBSITE:
<http://www.fdot.gov/roadway/floridagreenbook/fgb.shtm>

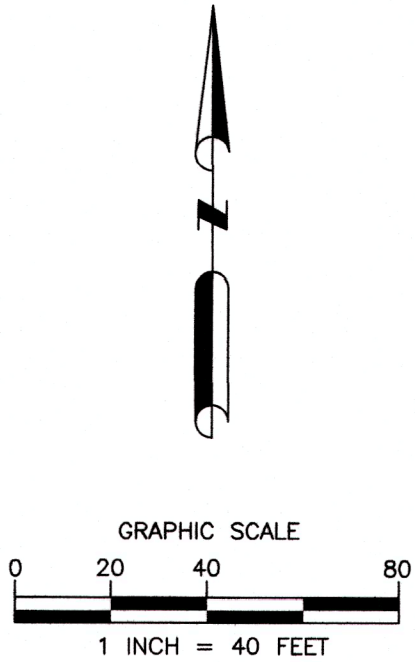
AS AMENDED BY CONTRACT DOCUMENTS, PAY ITEM NOTES PRESENT MODIFICATIONS TO FDOT SPECIFICATIONS.



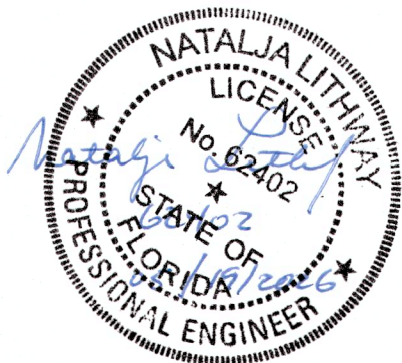
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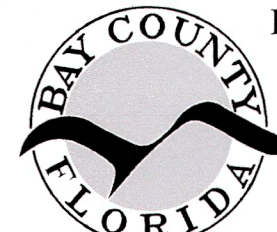


EXISTING IMPERVIOUS AREAS TO BE REMOVED	
01 AREA	354 SF
02 AREA	1,072 SF
03 AREA	63 SF
04 AREA	236 SF
05 AREA	8,306 SF
06 AREA	257 SF
07 AREA	16,324 SF
08 AREA	174 SF
09 AREA	258 SF
10 AREA	120 SF
11 AREA	258 SF
12 AREA	229 SF
13 AREA	270 SF
14 AREA	258 SF
15 AREA	188 SF
16 AREA	7 SF
17 AREA	10 SF
18 AREA	260 SF
19 AREA	180 SF
20 AREA	34 SF
TOTAL AREA	28,858 SF



NOTES:
*DEMOLITION AREAS 1 THROUGH 6
AND 8 THROUGH 20 WILL BE
STABILIZED WITH SOD.
*INSTALL AND MAINTAIN SILT FENCE
AROUND DEMOLITION AREAS 6 & 7



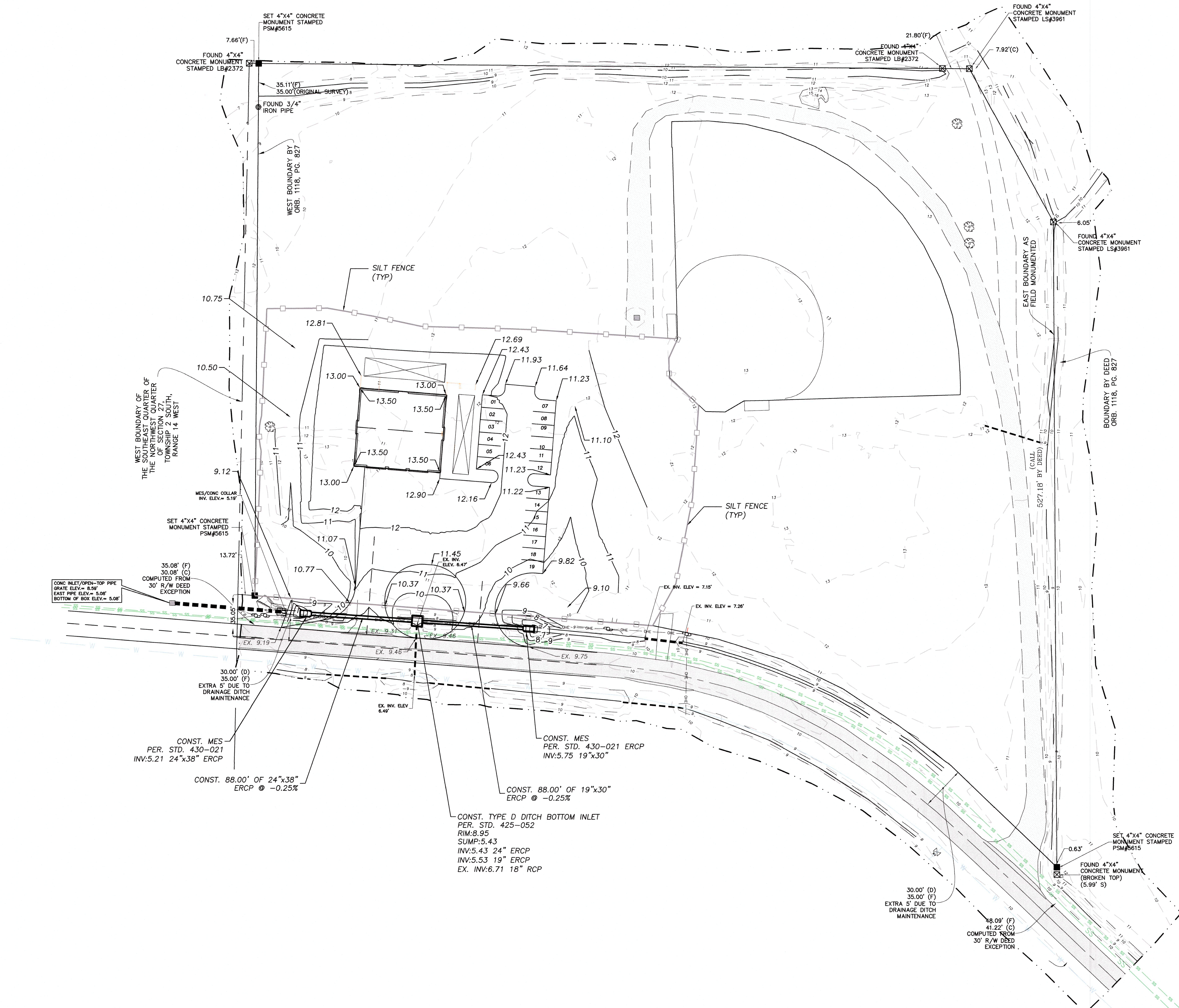


BAY COUNTY PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
BAY COUNTY GOVERNMENT CENTER
840 W. 11th STREET
PANAMA CITY, FL 32401
PHONE: (850) 248-8301

SOUTHPORT FIRE STATION RELOCATION
BAY COUTNY
FLORIDA

DEMOLITION PLAN AND EROSION CONTROL PLAN				
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FIELD BOOK NA	CHECKED BY MM	DATE DRAWN 5/20/25	OF 04	PAGE # N/A

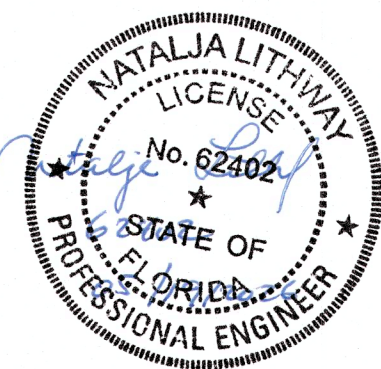
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EXISTING IMPERVIOUS AREAS TO BE REMOVED		
01 AREA	354 SF	
02 AREA	1,072 SF	
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16 AREA	7 SF	
17 AREA	10 SF	
18 AREA	260 SF	
19 AREA	180 SF	
20 AREA	34 SF	
TOTAL AREA	28,858 SF	

IMPERVIOUS AREAS TO BE CONSTRUCTED		
01 CONST.	1,582 SF	
02 CONST.	4,389 SF	
03 CONST.	13,126 SF	
04 CONST.	4,116 SF	
TOTAL AREA	23,213 SF	

- NOTES:
1. INSTALL AND MAINTAIN SILT FENCE AS SHOWN ON THE GRADING PLAN.
 2. STABILIZE ALL DISTURBED AREAS WITH SOD.
 3. REMOVE SILT FENCE AFTER ALL DISTURBED AREAS ARE STABILIZED.



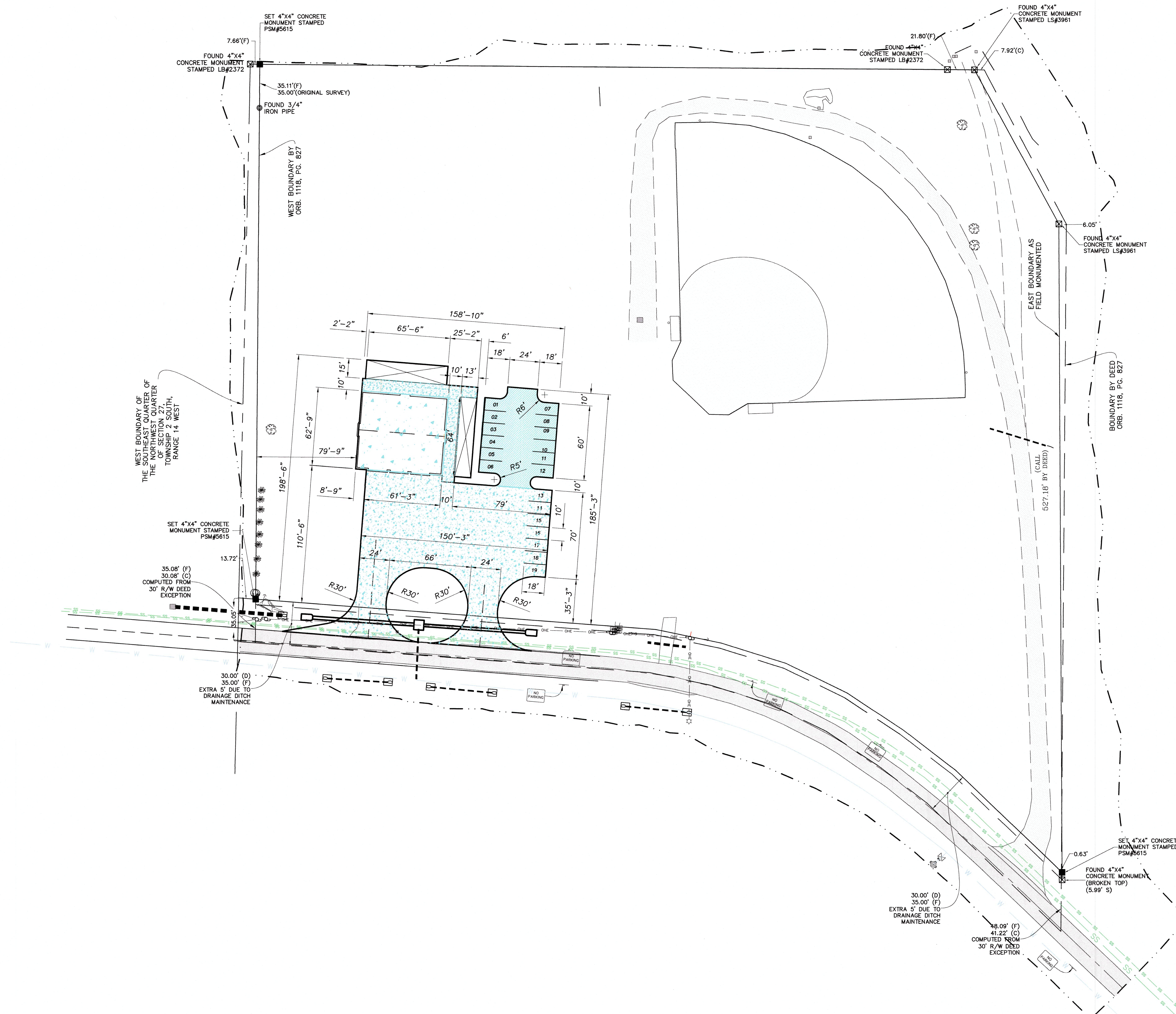


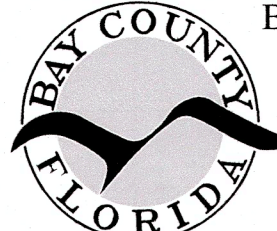
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SITE GRADING PLAN AND EROSION CONTROL PLAN				
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FIELD BOOK NA	CHECKED BY MM	DATE DRAWN 5/20/25	OF 04	PAGE # N/A

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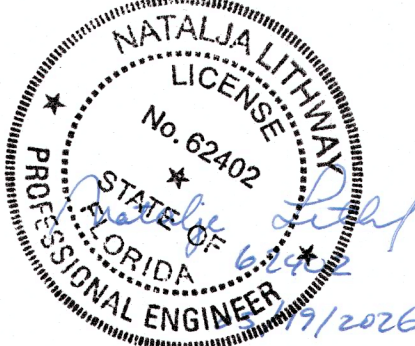


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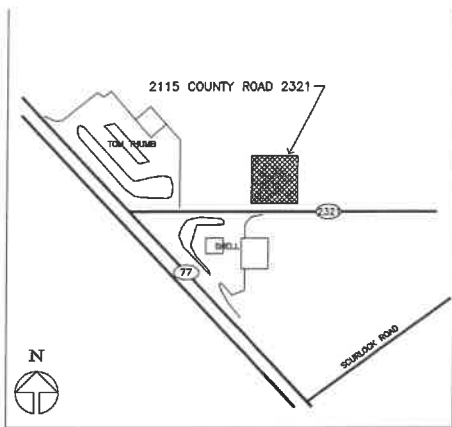
SOUTHPORT FIRE STATION RELOCATION
BAY COUTNY
FLORIDA

SITE LAYOUT				
SCALE AS SHOWN	DESIGNED BY MM	DRAWN BY WT	SHEET NO. 04	PROJECT # N/A
FIELD BOOK NA	CHECKED BY MM	DATE DRAWN 5/20/25	OF 04	PAGE # N/A

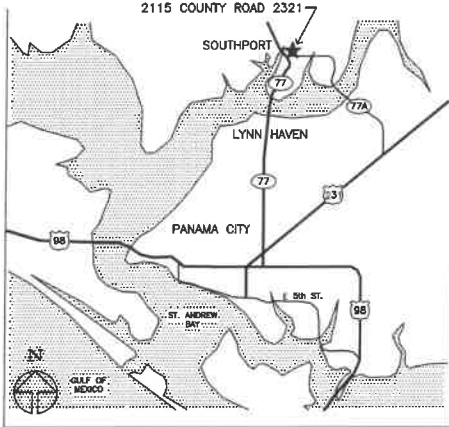
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KEY PLAN



VICINITY MAP



PROJECT NAME

MODULAR FIRE RESCUE STATION SOUTHPORT 70x62.5 SPRUNG BUILDING

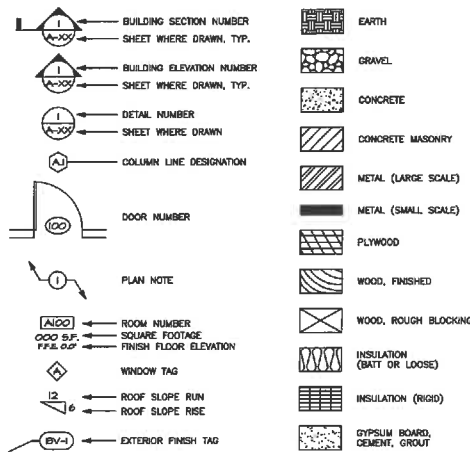
2115 HWY 2321
BAY COUNTY
PANAMA CITY, FLORIDA 32401

AS-BUILT

ABBREVIATIONS

A.B. ANCHOR BOLT	EXT. EXTERIOR	OC ON CENTER
ACJ. ACJUNCTION	F.D. FLOOR DRAIN	OD OUTSIDE DIAMETER
A.F.F. ABOVE FINISH FLOOR	F/O FACE OF	OPG. OPENING
ALT. ALTERNATE	F.N. FINISH	OPP. OPPOSITE
ALUM. ALUMINUM	F.L. FLOOR	P. PAINT
APPROX. APPROXIMATELY	FON. FOUNDATION	PC. PIECE
ARCH. ARCHITECTURAL	F.S. FLOOR SINK	PL. PLATE
BD. BOARD	FTG. FOOTING	PLAS. PLASTER, PLASTIC
BLDG. BUILDING	G.C. GENERAL CONTRACTOR	PLYMG. PLYWOOD
BLK. BLOCK	GA. GAUGE, GYPSUM ASSOC.	PID. PINTED
BLKG. BLOCKING	GL. GLASS/CLAZING: GLUE	QUAN. QUANTITY
BM. BOM	GLV. GALVANIZED	R. RADIUS, RISER
B.O.S. BOTTOM OF STEEL	GEN. GENERAL	R.D. ROOF DRAIN
BS. BOTH SIDES	Q.L. GLASS/CLAZING: GLUE	REIN. REINFORCING
BTM. BOTTOM	QYP. BB. GYPSUM BOARD	REQD. REQUIRED
B.U.R. BUILT UP ROOF	H. HIGH	REV. REVISION, REVERSE
C.I. CAST IRON	H.B. HOSE BIBB	RM. ROOM
C.J. CONTROL JOINT	HC. HANDICAPPED	R.O. ROUGH OPENING
C.T. CERAMIC TILE	H.M. HOLLOW METAL	ROUITS. REQUIREMENTS
CAB. CABINET	H.O.R. HORIZONTAL	RTU. ROOF TOP UNIT
CEM. CEMENT(MORTAR)	H.P. HIGH POINT	R.W. RAIN WATER LEADER
CG. CORNER GUARD	HT. HEIGHT	SCHD. SCHEDULE
CL. CLASH	H.V.A.C. HEATING VENTILATING & AIR CONDITIONING	SF. SQUARE FEET, STOREFRONT
C.L.G. CEILING	ID. INSIDE DIAMETER	SH. SHEET
CMU. CONCRETE MASONRY UNIT	INCL. INSULATION	SM. SIMILAR
CO. CLEAN OUT	INT. INTERIOR, INTERMEDIATE	S.M.S. SHEET METAL SCREW
COL. COLUMN	J.V. JOB VERIFY	SPECS. SPECIFICATIONS
CONC. CONCRETE	JT. JOINT	SO. SQUARE
CONST. CONSTRUCTION	LA. LAMINATED	STD. STANDARD
CONT. CONTINUOUS	L.F. LINEAR FEET	STL. STEEL
CONTR. CONTRACTOR	L.G. LONG LARGE	STOR. STORAGE
CR. CATHRAL, CHAIRMAN	L.L. LONG LEG HORIZONTAL	STRUCT. STRUCTURAL
CSK. COUNTERSINK	LLV. LONG LEG VERTICAL	SUSP. SUSPENDED
D. DEPTH: DEEP	LOC. LOCATION	T. TRUSS
DBL. DOUBLE	L.P. LOW POINT	T/B TOP & BOTTOM
DEMO. DEMOLITION	DET. DETAIL	MAS. MASONRY
DET. DETAIL	DI. DIAMETER	MATL. MATERIAL
DN. DOWN	DN. DOWN	MAX. MAXIMUM
DM. DIMENSION	MECH. MECHANICAL	MD. MEDIUM
D.O. DOOR OPENING	D.S. DOWN SPOUT	MFR. MANUFACTURER
DWG. DRAWING	E. EAST	MIN. MINIMUM
E.A. EACH	E.B. EXPANSION BOLT	MISO. MISCELLANEOUS
E.F. EXPANSION JOINT	ENC. EXTERIOR INSULATION	N.L.R.G.B. MOISTURE RESISTANT
EPS. EXTERIOR INSULATION	FINISH SYSTEM	GYPSUM BOARD
EQ. EQUIPMENT	E.J. EXPANSION JOINT	MTD. MOUNTED
E/W EACH WAY	BL. ELEVATION (FLOOR)	MTL. METAL
ENC. EXTERIOR INSULATION	ELEV. ELEVATION	N. NORTH
EXIST. EXISTING	ELEC. ELECTRICAL	N.C. NOT IN CONTRACT
EXP. EXPOSED (CONSTRUCTION)	EQ. EQUIPMENT	NO. # NUMBER
	E/W EACH WAY	NTS. NOT TO SCALE
	ENC. EXTERIOR INSULATION	O/A OVERALL
	EXIST. EXISTING	O.F.D. OVERFLOW DRAIN
	EXP. EXPOSED (CONSTRUCTION)	O/H OVERHEAD
		O/Y OUT TO OUT

SYMBOLS



PROJECT MANAGER

ADDRESS: CONTACT:
RICK NELSON
PH. (912) 312-6301

ARCHITECT

W. ARCHITECT, P.A.
4100 LEGENDARY DRIVE, SUITE 240
DESTIN, FLORIDA 32541
EMAIL: wpope@warchitect.com

BUILDING DEPARTMENT

ADDRESS: CONTACT:
PH. (850) 872-7230

FIRE DEPARTMENT - BAY COUNTY

ADDRESS: CONTACT:
PH. (850) 872-3055

GENERAL CONTRACTOR

ADDRESS: CONTACT:
PANHANDLE POWER
CAGEN WILLIAMS
PH. (850) 420-2245

ELECTRIC SERVICE

ADDRESS: CONTACT:
GULF POWER CO.
PH. (800) 225-5797

ENGINEER OF RECORD

ADDRESS: CONTACT:
JOSEE CYR
PH. (850) 248-8301

BAY COUNTY PUBLIC WORKS

ADDRESS: CONTACT:
FRED BROWN
PH. (850) 248-8132
PH. (850) 872-3070

PRINTS AND MEDIA

W. ARCHITECT, P.A.
4100 LEGENDARY DRIVE, SUITE 240
DESTIN, FLORIDA 32541
EMAIL: wpope@warchitect.com

FLORIDA PRODUCT APPROVAL CHECKLIST- [FBC 2017]

GENERAL NOTES

- The contractor shall examine and become familiar with all contract documents in the entirety. Survey the project and become familiar with the existing condition and scope of work. All costs submitted shall be based on thorough knowledge of all work and materials required. Any discrepancy and / or uncertainty as to what material or product is to be used shall be verified by the owner or architect.
- All site work and landscaping shall be established and designed by others (than the architect).
- The contractors shall be solely responsible for construction means, methods, techniques, sequences, and procedures required for safe execution and completion of work, and for initiating maintaining and supervising all safety precautions in connection with the work.
- All dimensions shall be verified on site and any discrepancies shall be reported by the contractor to the architect prior to ordering material and proceeding with the work. Any inconsistencies on these drawings or any variations or ambiguities between these drawings and actual site and construction conditions and/or requirements shall be brought to the attention of the architect in writing and resolved and documented in writing before continuing with the work in question.
- In the event a discrepancy is found in the contract documents the owner and architect shall be notified immediately.
- Contractor shall verify all dimensions in the field and notify the architect of any discrepancy from to construction.
- Contractor shall verify all measurements at site and be responsible for the accuracy and correctness of the same.
- Contractor shall coordinate his/her work with all other trades. Notify owner and architect of any discrepancies prior to construction.
- All work and equipment to be fully guaranteed for one (1) year from the date of Certificate of Occupancy and acceptance from all subcontractors and material suppliers.
- Store materials in spaces designated by owner.
- Remove rubbish from premises as often as necessary or as directed.
- All work and equipment shall be cleaned to the satisfaction of the owner before turning over to owner.
- Shop drawings shall be submitted to the architect and/or owner for approval prior to ordering and installation of any equipment.
- The general building permit(s) shall be obtained and paid for by the owner. Impact fees shall also be paid for by the owner. The general contractor shall secure general permit(s) for the owner prior to construction. The contractor shall comply with all laws, ordinances, rules and regulations of all authorities having jurisdiction.
- There shall be no deviations from specifications and/or drawings without the written approval of the owner, architect and/or engineer.
- The owner shall employ, as required by governing authorities on approved testing laboratory to make all tests for concrete, soil compaction and welding to ensure compliance with plans, standards and code. The testing costs shall be included in the contract.
- Gypsum board installation shall be in conformance with the Gypsum Association recommended processes for thickness, nailing, taping, and stud spacing.
- All framing to be in conformance with the National Forest Product "Manuals for house framing" and all applicable building codes.
- All lumber shall be grade marked.
- Refer to electrical and landscape drawing for exterior building lighting.
- Refer to civil drawings for location of sidewalks and details.
- Refer to civil and landscape drawings for all details.
- Refer to civil drawings for dimensional plan and grading.
- Refer to civil drawings for fire hydrant location.
- Refer to electrical and landscape drawings for transformer locations (to be verified with local utilities service).
- Refer to civil drawings for curb cuts.
- All material finish and color selections shall be approved by the owner prior to installation.
- The contractor(s) shall verify the site location openings and characteristic of all work and equipment to be furnished by the owner or others with the manufacturer or supplier before starting any construction related to said work and equipment.
- Errors and omissions in any schedule or drawing do not relieve the contractor(s) from executing work in the drawing or as described in the specifications.
- Verify all site dimensions on civil drawings, conditions, existing construction grades and utilities on the project and contract documents at project site prior to beginning construction. Any discrepancies are to be reported to owner and architect for clarification.
- All existing work or landscaping not shown to be altered or removed shall be protected from damage during construction. The contractor shall bear the total expense for and shall repair to existing conditions.
- The contractor(s) shall bear the total expenses for and shall repair to the existing condition any damage to existing underground utilities, piping, conduit or equipment.
- All materials shall be new and shall be installed in strict conformance with manufacturing instructions and/or recommendations, unless noted otherwise in the drawings.
- All exterior exposed work shall be installed in a weathertight manner, caulk and provide weather barrier materials as required for the weathertight conditions. All occupied spaces shall receive an insulation and vapor barrier that is continuous at wall, ceiling and floor surfaces exposed to non-tempered areas.
- Firestopping shall be provided to form effective fire barriers between stories and between a story and roof space where firestops are wood, they shall not be less than a normal two (2) inches in thickness. Firestops shall be located in exterior and interior walls, partitions at ceiling and floor levels.
- Structural and fire resistant integrity is to be maintained at penetrations for electrical, mechanical and plumbing conduits in accordance with the requirements of governing codes and authorities.
- All existing trees as noted on civil plans shall be protected from damage during construction by boxing or other owner approved means.
- Provide galvanized metal anchor for wood posts bearing a concrete slab.



W. ARCHITECT, P.A.

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WILLIAM A. POPE
FLORIDA LICENSE 7681

PROJECT

MODULAR
FIRE RESCUE STATION
SOUTHPORT
70x62.5 SPRUNG BLDG.

2115 HWY 2321
BAY COUNTY
PANAMA CITY, FL 32401

ISSUED FOR :

- ☐ SCHEMATICS
- ☐ DESIGN DEVELOPMENT
- ☐ 60% REVIEW
- ☐ 100% CONTRACT DOCUMENTS
- ☐ DEVELOPMENT ORDER
- ☐ PRICING
- ☐ BIDDING
- ☒ PERMIT
- ☐ CONSTRUCTION

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SHEET TITLE

TITLE SHEET
& GENERAL NOTES

AS-BUILT

DATE

JAN
23
2020

REVISIONS

DATE	REMARKS

NOTIFICATION OF CHANGES

THE FOLLOWING STATEMENT IS MADE IN REGARDS TO THE "PROJECT" AS DEFINED BY THIS SET OF CONSTRUCTION DOCUMENTS AND ANY INCLUDED SPECIFICATIONS. "THE CONTRACTOR IS TO NOTIFY THE ARCHITECT OF ANY CHANGES OR DEVIATIONS WITHIN THE PROJECT IN WRITING FOR APPROVAL BEFORE ANY CHANGES ARE IMPLEMENTED."

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APPLICABLE CODES

BUILDING	2017 FLORIDA BUILDING CODE
ELECTRICAL	2017 NATIONAL ELECTRICAL CODE
MECHANICAL	2017 FLORIDA BUILDING CODE - MECHANICAL
PLUMBING	2017 FLORIDA BUILDING CODE - PLUMBING
FIRE / LIFE SAFETY	2017 FLORIDA FIRE PREVENTION CODE- 5th EDITION
ACCESSIBILITY	2017 FLORIDA ACCESSIBILITY CODE
FUEL/GAS	2017 FLORIDA BUILDING CODE - FUEL/GAS
NFPA101	FLORIDA 2012 EDITION
NFPA10	FIRE EXTINGUISHERS
NFPA138	SPRINKLER SYSTEMS
NFPA1500	2018- FIRE DEPARTMENTS

WIND SPEED

SEE SHEET A-1.1

SEISMIC ZONE

N/A

SF & OCCUPANCY CALCULATIONS

ROOM NAME	SQ. FOOTAGE	LOAD FACTOR	LOAD SUMMARY
SPRUNG BUILDING	4,375 S.F.	100	44
13x64 MODULAR	832 S.F.	100	9
13x65 MODULAR	845 S.F.	100	9
TOTAL	6,052 S.F.		62 OCCUPANTS

EGRESS WIDTH

EXIT DOORS- SPRINKLED BUILDING		
REQUIRED	31 X 0.2"	7 INCHES
SUPPLIED	4 @ 36"	144 INCHES
50% - EXITS	72 INCHES / EXIT (50%)	SUPPLIED (2) 36" EA

BUILDING DATA - SPRUNG BUILDING

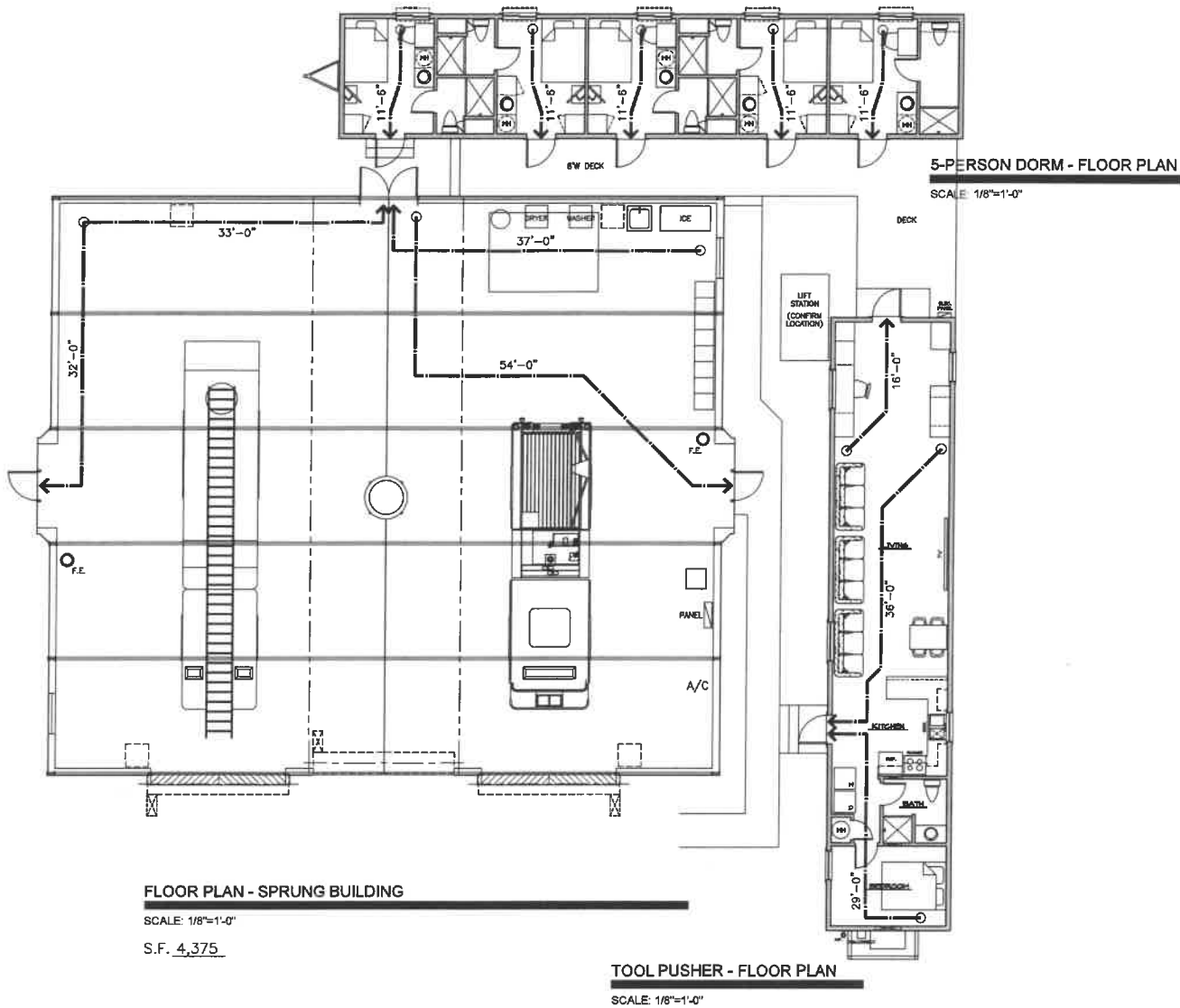
REQUIREMENTS	
CATEGORY	STATUS / REQUIREMENTS
OCCUPANCY GROUP	MANUFACTURED BUILDINGS
OCCUPANT LOAD	100 S.F. PER PERSON
CONSTRUCTION TYPE	TYPE V-A (UNSPRINKLED)
HEIGHT LIMITATION TABLE	TABLE 503 F.B.C.
AREA LIMITATION	9,500 S.F. / FLOOR
EXTERIOR WALLS / BEARING	STRUCTURAL FRAME
FIRE / PARTY WALLS	SINGLE TENANT
FIRE SEPARATION ASSEMBLY	EXISTING BUILDING, 2 HOUR
EXIT CORRIDORS	1 HOUR SEALED TO DECK
TENANT SEPARATION	N/A
FIRE SPRINKLER SYSTEM	NONE
EGRESS WIDTH (DOOR)	32" MIN. CLEAR
EGRESS WIDTH (STAIRWAYS)	44" MIN. CLEAR
MAX. EXIT ACCESS	75' - UNSPRINKLED
MIN. AISLE WIDTH	56" & 44" MIN. CLEAR
ALARM	PER F.B.C. CHAPTER
STAIR WIDTH	0.2" OCCUPANCY, F.B.C. 1005.3.1
SCOPE OF WORK: CONSTRUCTION OF MODULAR BUILDINGS	

BUILDING DATA - MODULAR UNITS

REQUIREMENTS	
CATEGORY	STATUS / REQUIREMENTS
OCCUPANCY GROUP	MANUFACTURED BUILDINGS -B
OCCUPANT LOAD	100 S.F. PER PERSON / RESIDENTIAL/OFFICE 300 S.F. PER PERSON / KITCHEN, STORAGE, TOILET RM.
CONSTRUCTION TYPE	TYPE V-A (SPRINKLERED)
HEIGHT LIMITATION TABLE	TABLE 503 F.B.C.
AREA LIMITATION	23,000 S.F. / FLOOR
EXTERIOR WALLS / BEARING	STRUCTURAL FRAME
FIRE / PARTY WALLS	SINGLE TENANT
FIRE SEPARATION ASSEMBLY	EXISTING BUILDING, 2 HOUR
EXIT CORRIDORS	1 HOUR SEALED TO DECK
TENANT SEPARATION	N/A
FIRE SPRINKLER SYSTEM	AUTOMATIC
EGRESS WIDTH (DOOR)	32" MIN. CLEAR
EGRESS WIDTH (STAIRWAYS)	44" MIN. CLEAR
MAX. EXIT ACCESS	75' - SINGLE EXIT
MIN. AISLE WIDTH	56" & 44" MIN. CLEAR
ALARM	PER F.B.C. CHAPTER
STAIR WIDTH	0.2" OCCUPANCY, F.B.C. 1005.3.1
SCOPE OF WORK: CONSTRUCTION OF MODULAR BUILDINGS	

LEGEND

TRAVEL (X.X')



FLOOR PLAN - SPRUNG BUILDING

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

S.F. 4,375

TOOL PUSHER - FLOOR PLAN

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

EGRESS PLAN & LIFE SAFETY PLAN

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

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WILLIAM A. POPE
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CODE REVIEW
& GENERAL NOTES

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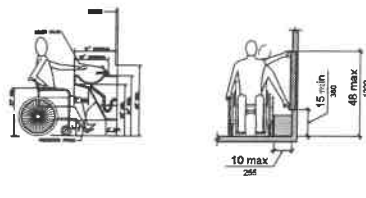
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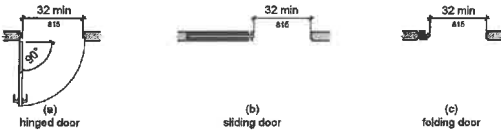
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T-2
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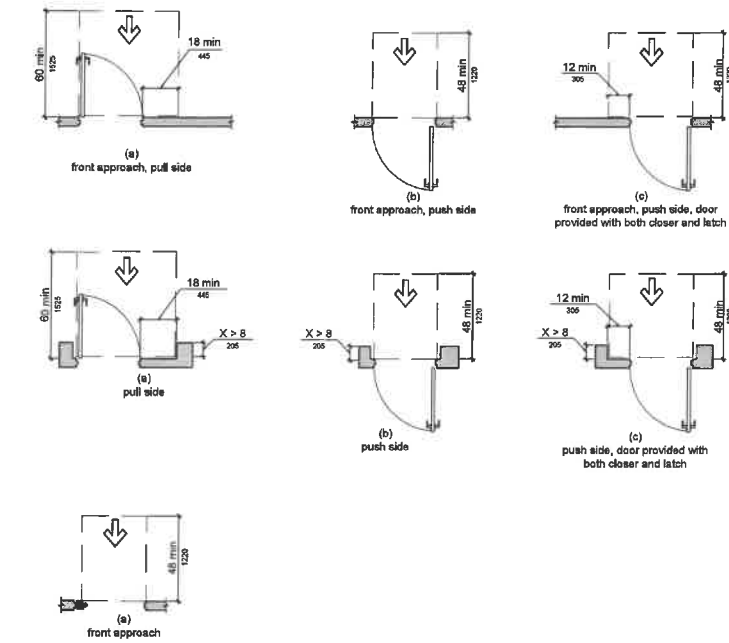
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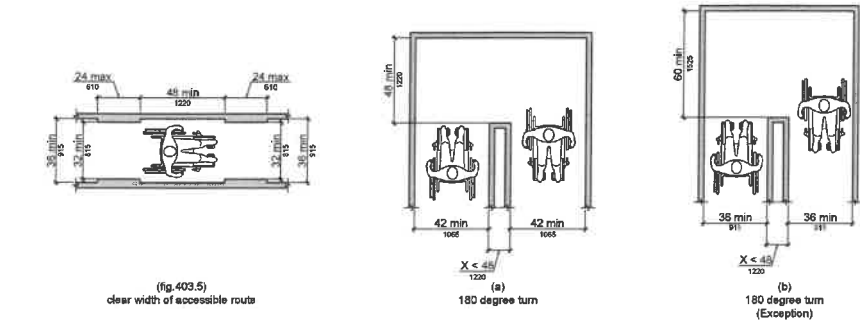
REACH RANGES
SCALE: 1/4"=1'-0"



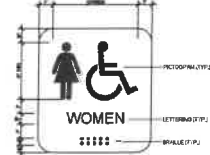
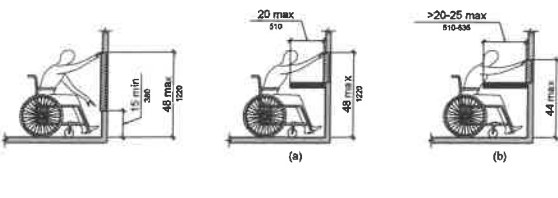
DOORWAY CLEAR WIDTHS
SCALE: 1/4"=1'-0"



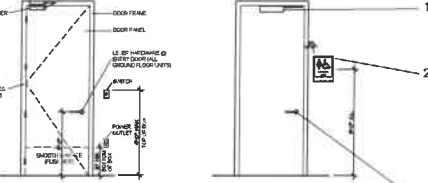
MANEUVERING CLEARANCES AT OPENINGS - FRONT APPROACH
SCALE: 1/4"=1'-0"



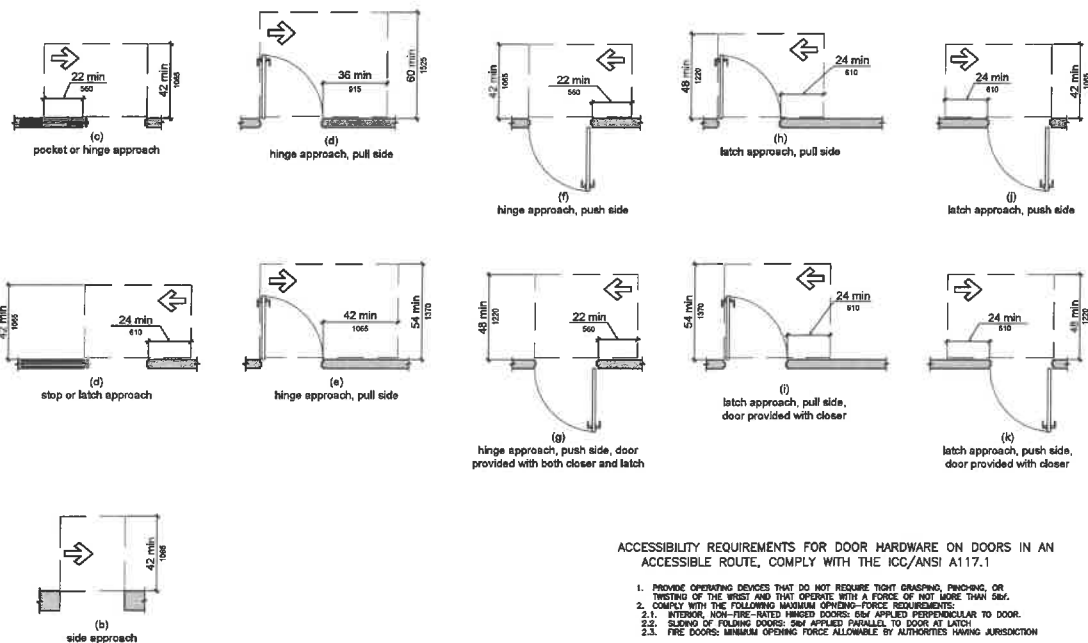
CLEAR SPACE OF AN ACCESSIBLE ROUTE
SCALE: 1/4"=1'-0"



ACCESSIBILITY SIGNAGE
NO SCALE

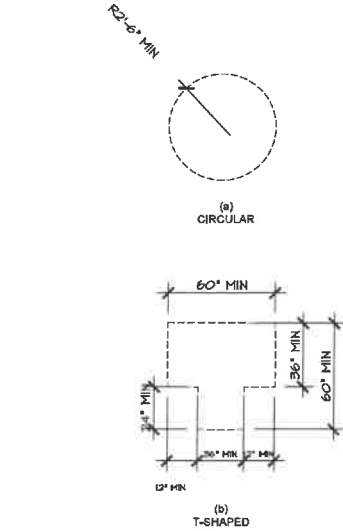


TYPICAL MOUNTING HEIGHTS
SCALE: 1/4"=1'-0"

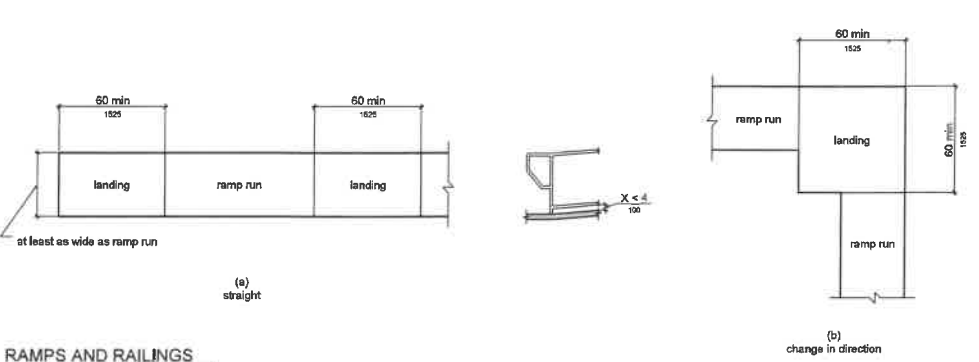


MANEUVERING CLEARANCES AT OPENINGS - SIDE APPROACH
SCALE: 1/4"=1'-0"

- ACCESSIBILITY REQUIREMENTS FOR DOOR HARDWARE ON DOORS IN AN ACCESSIBLE ROUTE, COMPLY WITH THE ICC/ANSI A117.1
1. PROVIDE OPERATING DEVICES THAT DO NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST AND THAT OPERATE WITH A FORCE OF NOT MORE THAN 5 LB.
 2. COMPLY WITH THE FOLLOWING MINIMUM OPERATING-FORCE REQUIREMENTS:
 - 2.1. INTERIOR, NON-FIRE-RATED HINGED DOORS: 5 LB APPLIED PERPENDICULAR TO DOOR.
 - 2.2. SLIDING OR FOLDING DOORS: 5 LB APPLIED PARALLEL TO DOOR AT LATCH.
 - 2.3. FIRE DOORS: MINIMUM OPERATING FORCE ALLOWABLE BY AUTHORITIES HAVING JURISDICTION.
 3. BEVEL, RAISED THRESHOLDS WITH A SLOPE OF NOT MORE THAN 1:2. PROVIDE THRESHOLDS NOT MORE THAN 1/2 INCH HIGH.
 4. ADJUST DOOR CLOSER SWEEP PERIODS SO THAT, FROM AN OPEN POSITION OF 70 DEGREES, THE DOOR WILL TAKE 1.5 TO 2 SECONDS TO MOVE TO A POINT 3 INCHES FROM THE LATCH, MEASURED TO THE LEADING EDGE OF THE DOOR.
 5. ALL DOORS WITHIN THE HOTEL UNITS SHALL COMPLY WITH THE FAIR HOUSING CT PART B
 - 5.1. MINIMUM WIDTH = 34"
 - 5.2. MAXIMUM CHANGE IN LEVEL HEIGHTS: 1/4"-1/2"



SIZE OF TURNING SPACE
SCALE: 1/4"=1'-0"



RAMPS AND RAILINGS
SCALE: 1/4"=1'-0"

GENERAL NOTES

1. SIGNS ARE DEFERRED SUBMITTAL TO BE PREPARED BY OTHERS AND REVIEWED BY THE ARCHITECT AND SHALL INCLUDE LOCATIONS PLANS AND SIGN SCHEDULE AND REPRESENTATIVE ELEVATIONS AS REQUIRED. SEE SPECIFICATIONS.
2. ALL SIGNS TO COMPLY WITH SECTION 10 OF THE FBC AND SECTION 703 OF FAC.
3. LOCATIONS AS REQUIRED PER CODE AND INCLUDING, BUT NOT LIMITED TO EXIT DOORS, RESTROOMS, BUILDING SIGNS, DIRECTIONAL AND WAY FINDING. SEE SPECIFICATIONS.

REFERENCE USED:
2010 ADA STANDARDS FOR ACCESSIBLE DESIGN SEPTEMBER 15,2010.
DEPARTMENT OF JUSTICE #800.873.6397

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A.D.A. ACCESSIBLE
DETAILS

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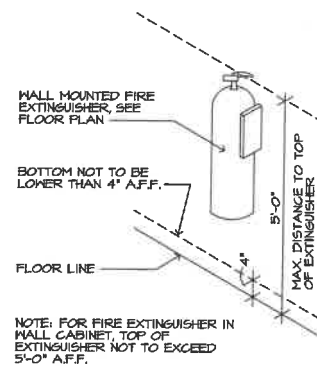
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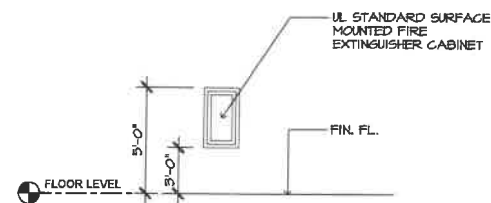
DATE	REMARKS

T-3
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SHEET NO.



(3) REQUIRED. SEE PLAN FOR LOCATIONS.
FIRE EXTINGUISHER DETAIL (F.E.)
 SCALE: NONE



FIRE EXTINGUISHER CABINET ELEVATION
 SCALE: NONE

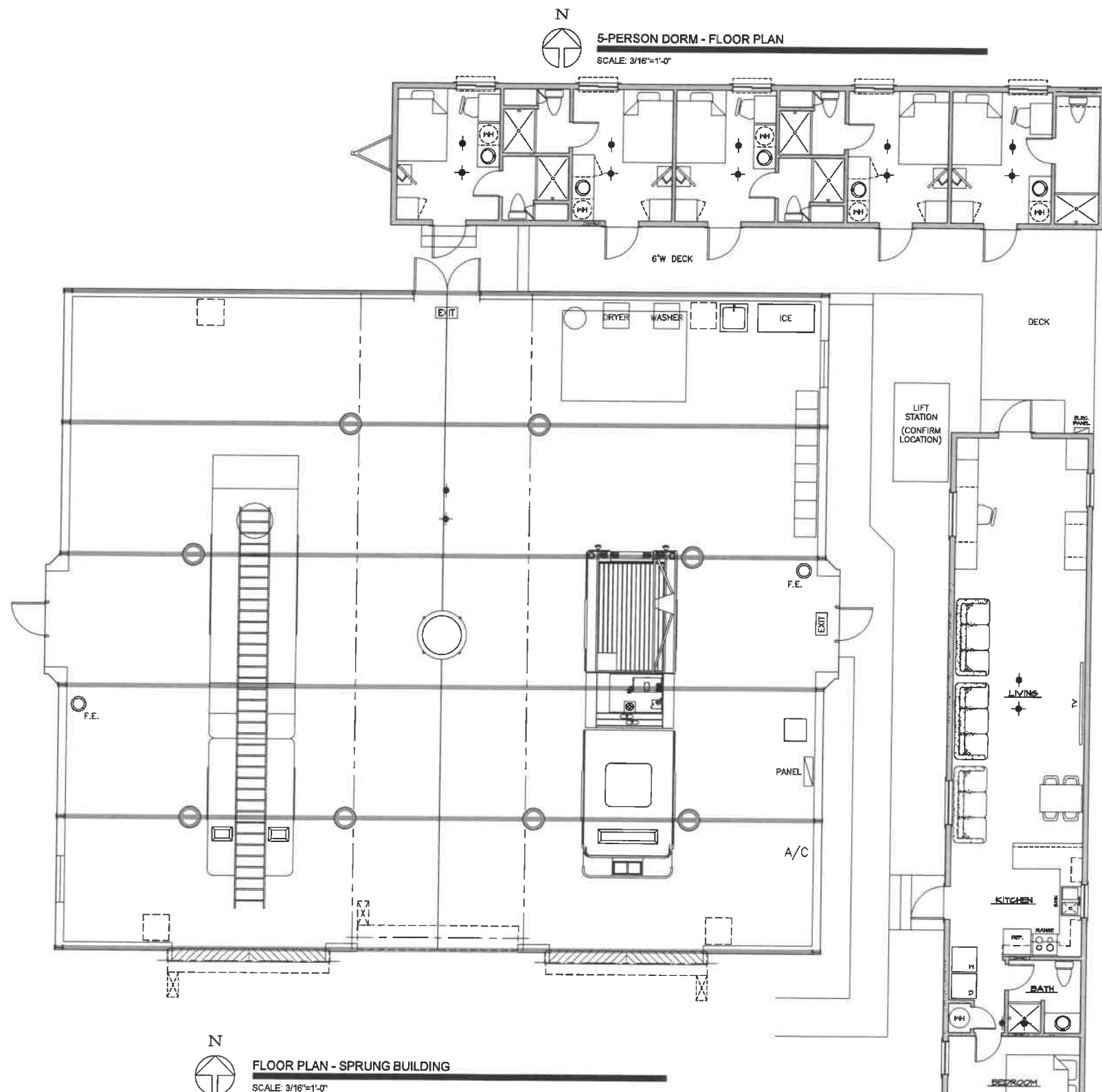
LEGEND:

- 1 - HR. CORRIDOR WALL
UL DESIGN NO. U 305
- 1 - HR. DWELLING UNIT SEPARATION WALL
UL DESIGN NO. U 341
FEC SEE TABLE BELOW FOR SIZE AND RATINGS
- [F.E.C.] FIRE EXTINGUISHER CABINET (F.E.C.)
- [F.E.] FIRE EXTINGUISHER, WALL MOUNTED
- [LED] EMERGENCY LIGHT, LED
- [LED EXIT] LED EXIT FIXTURE W/ EMERGENCY BATTERY BACKUP (TYP.)
- [F.E.C.] FIRE EXTINGUISHER
VERIFY EXACT LOCATIONS AND TYPES WITH LOCAL FIRE OFFICIALS
- [EXIT] LIGHTED EXIT SIGN
- [20 MIN] 20 MIN DOOR
- [45 MIN] 45 MIN DOOR
- [60 MIN] 60 MIN DOOR
- [40 MIN] 40 MIN DOOR
- [OCCUPANCY] OCCUPANCY SYMBOL
- [CD] CARBON MONOXIDE DETECTOR
- [SD] SMOKE DETECTOR

FE CALCULATION TABLE:

BUILDING NOS.	AREA/FL	EXTINGUISHER TYPE
SPRUNG BLDG. 60x60	3,600 SF	4 - 2A:5B
MODULAR 13x48	624 SF	2 - 2A:5B
MODULAR 13x36	754 SF	2 - 2A:5B

CRITERIA PER NFPA 10 - TABLE 5.2.1
 ALL FIRE EXTINGUISHERS TO BE MOUNTED WITH THE BOTTOM @ 36" AFF. TYPICAL



N
TOOL PUSHER - FLOOR PLAN
 SCALE: 3/16"=1'-0"

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**F.E. FLOOR PLAN,
 F.E. CALCULATION
 TABLE**

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SITE PLAN

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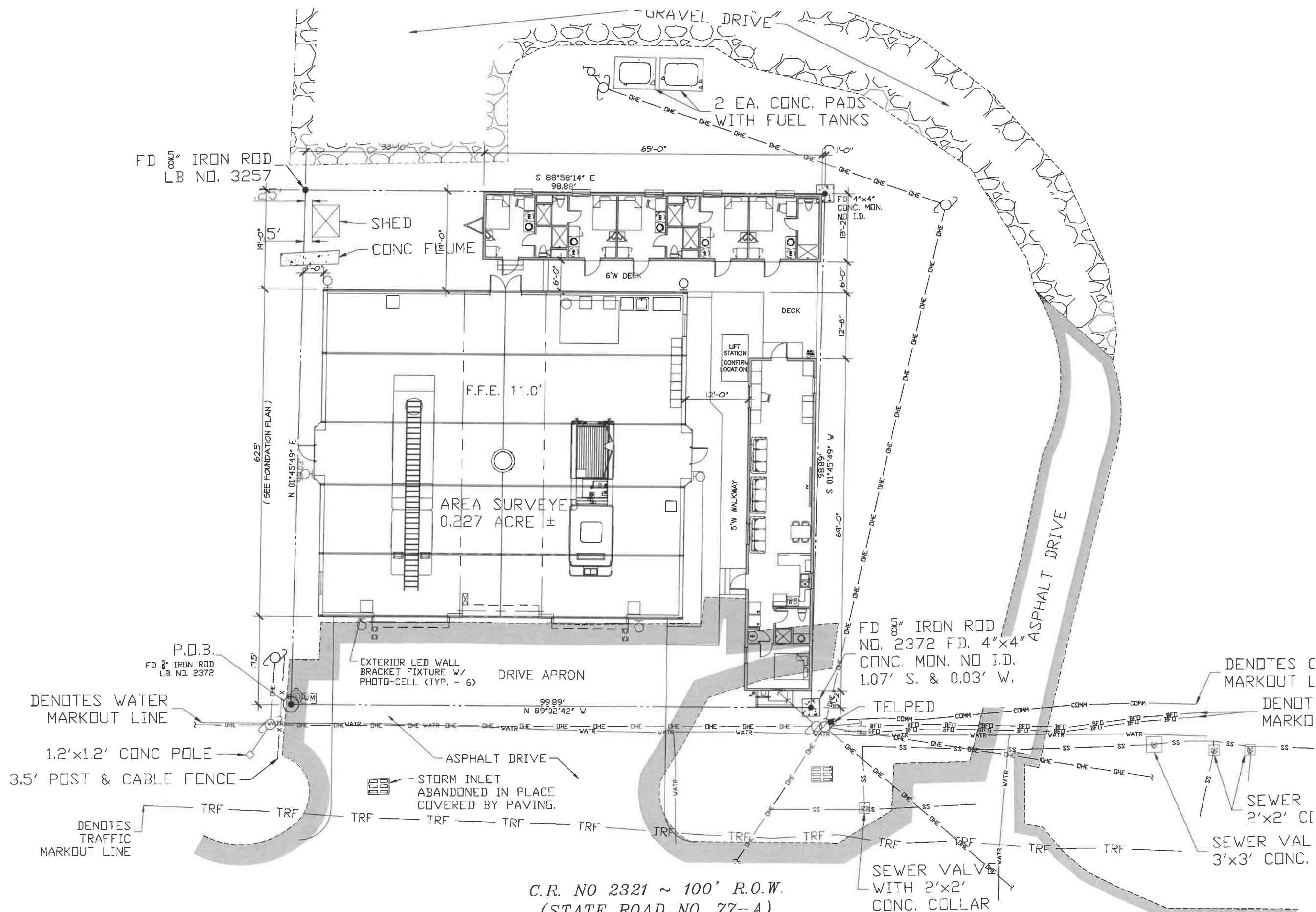
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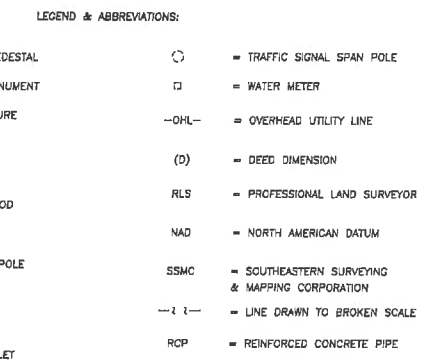
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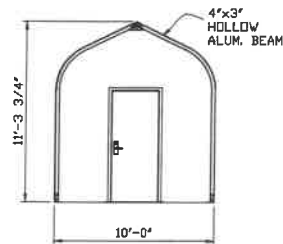
ITB 26-52 Southport Fire Station #8 Relocation

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

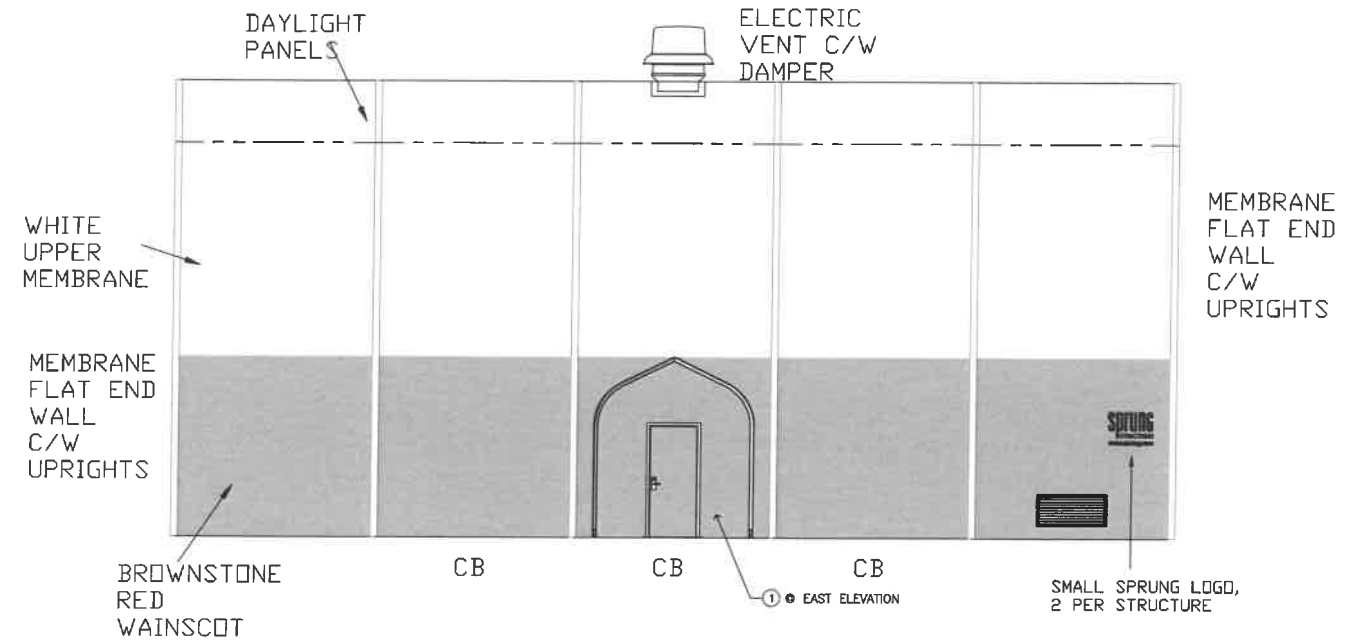


NOTICE OF LIABILITY:

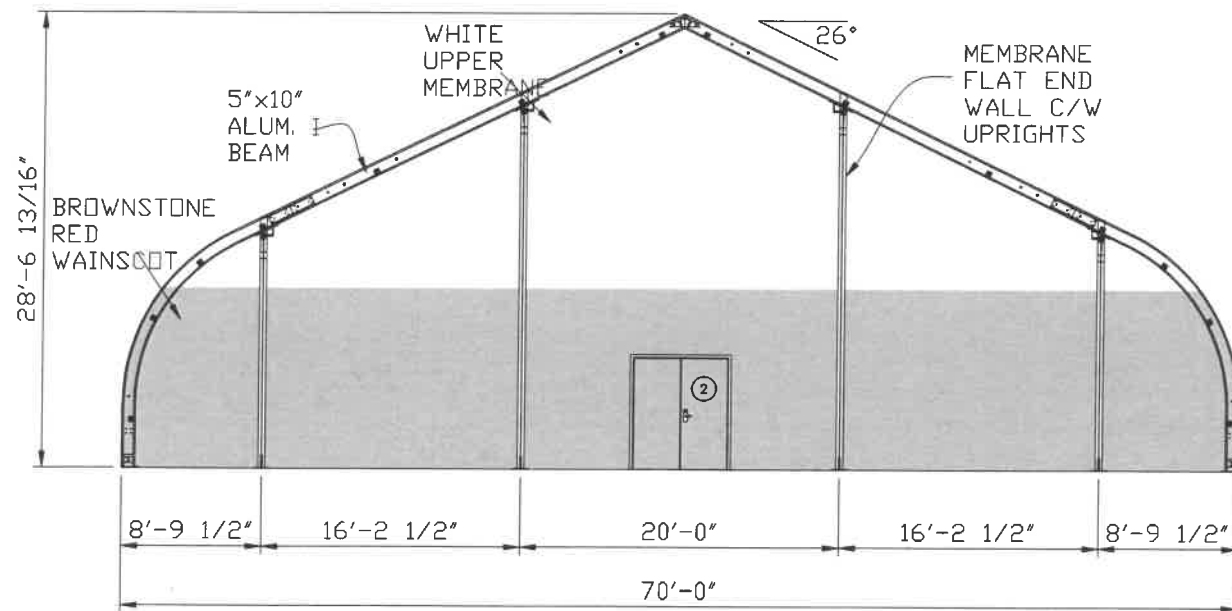
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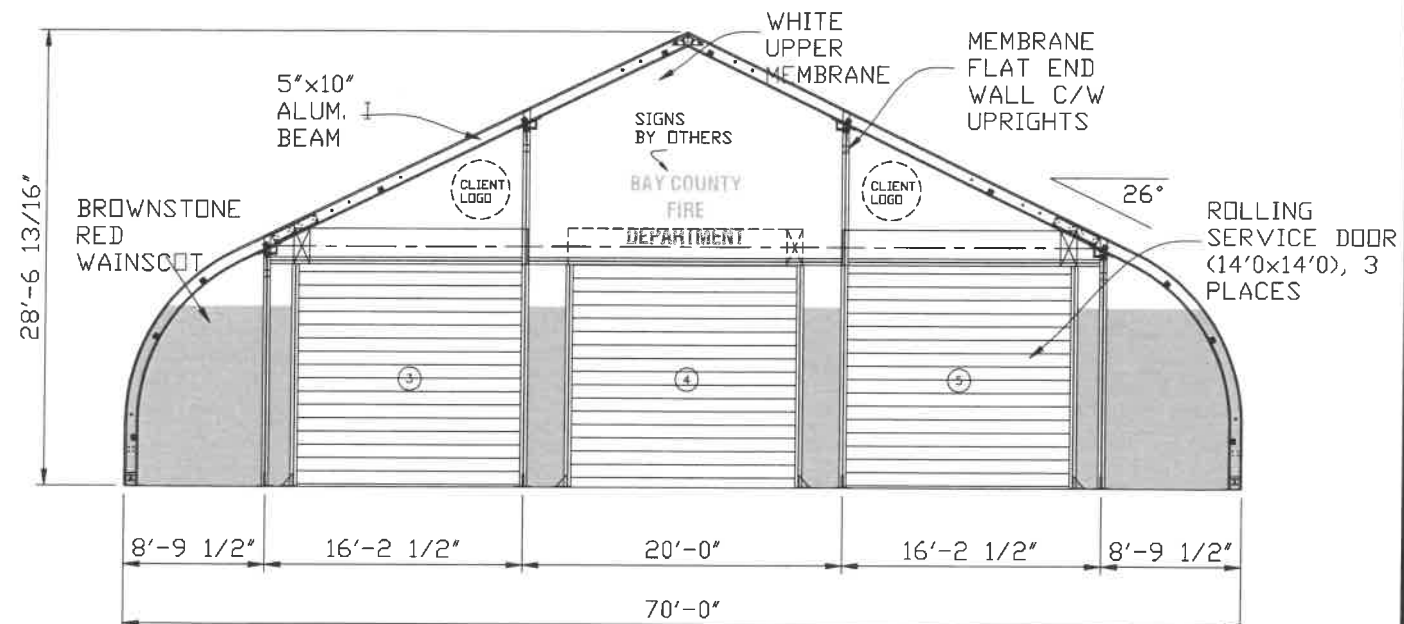
④ SECTION 10'-0" HOOD
SCALE: 3/16"=1'-0"



② WEST & EAST ELEVATION
SCALE: 3/16"=1'-0"



③ NORTH ELEVATION
SCALE: 3/16"=1'-0"



① SOUTH ELEVATION
SCALE: 3/16"=1'-0"

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ELEVATIONS

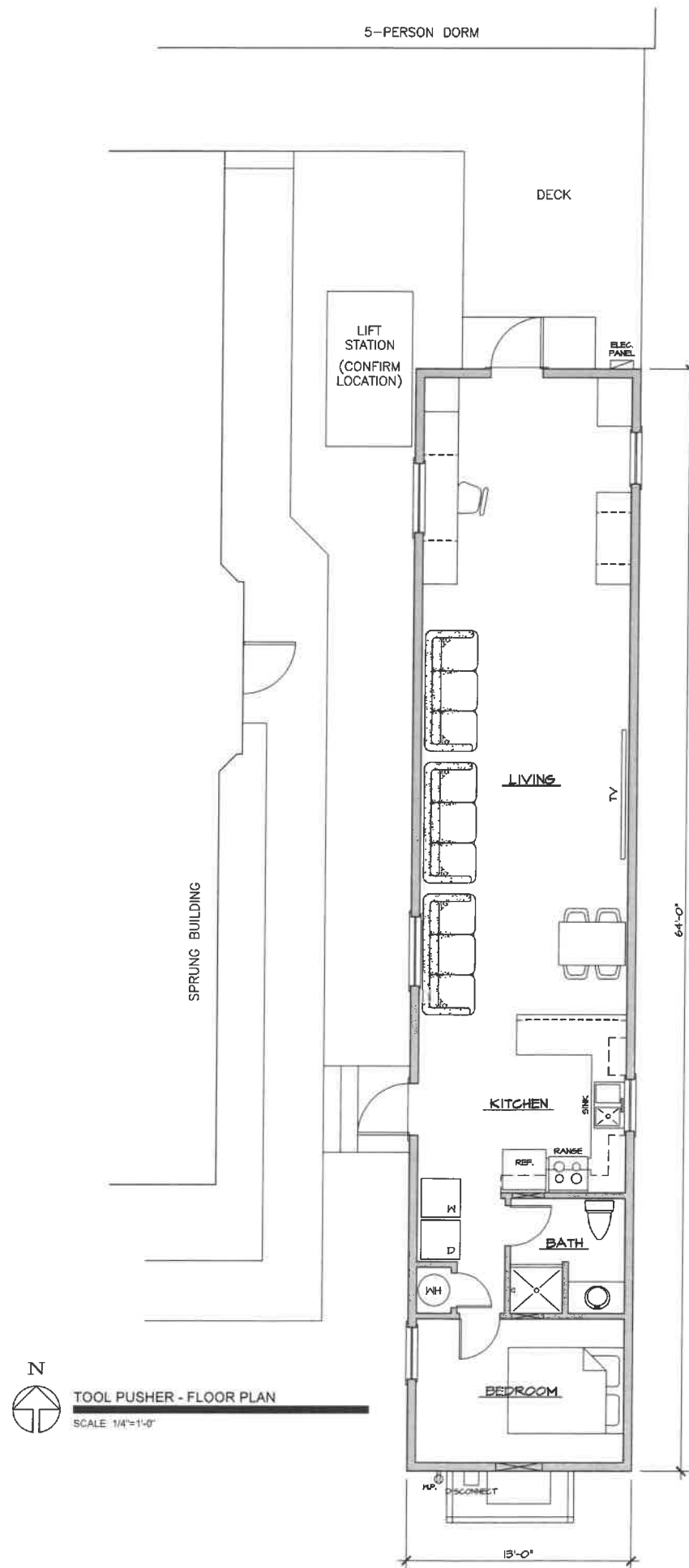
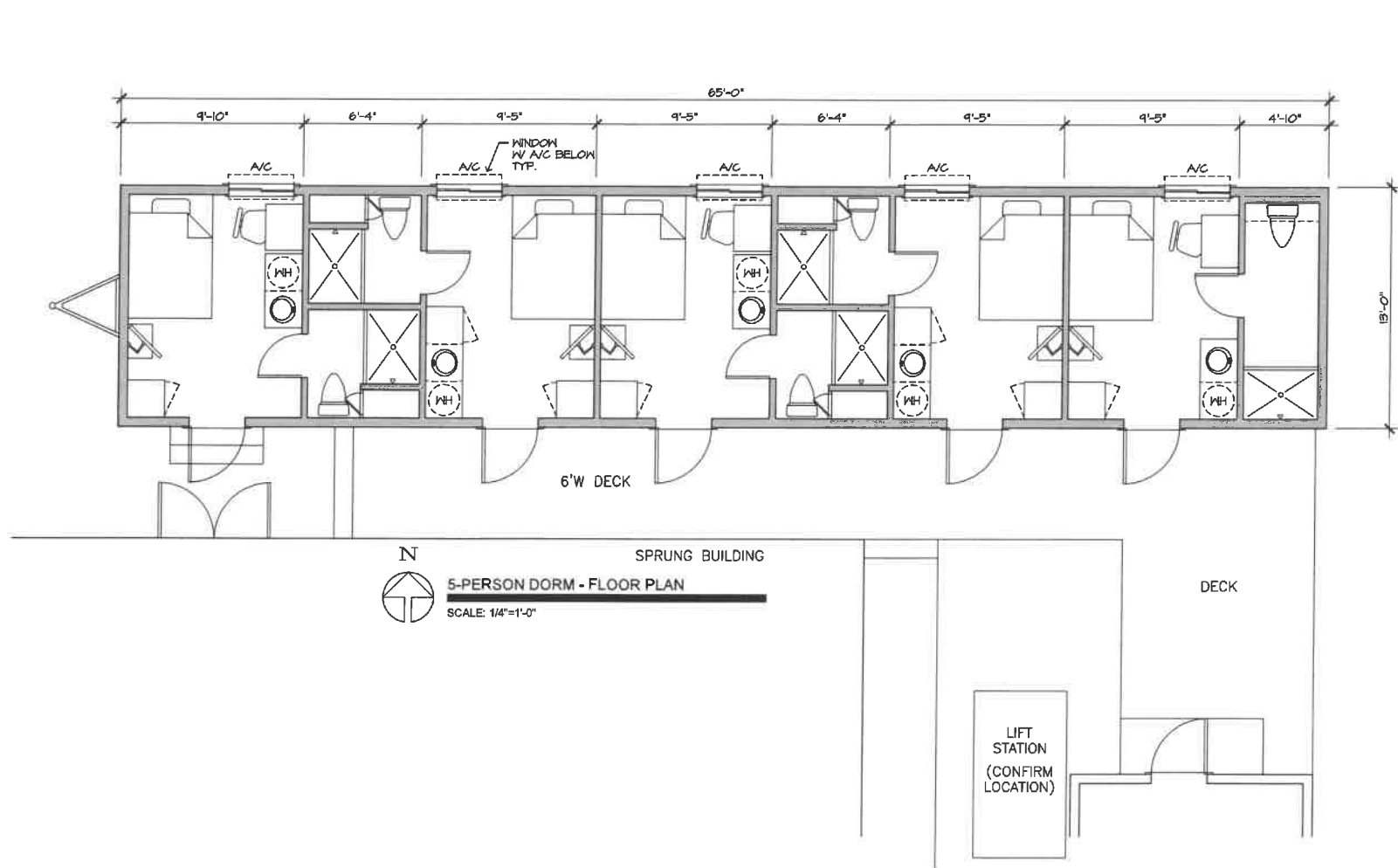
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PANAMA CITY, FL 32401

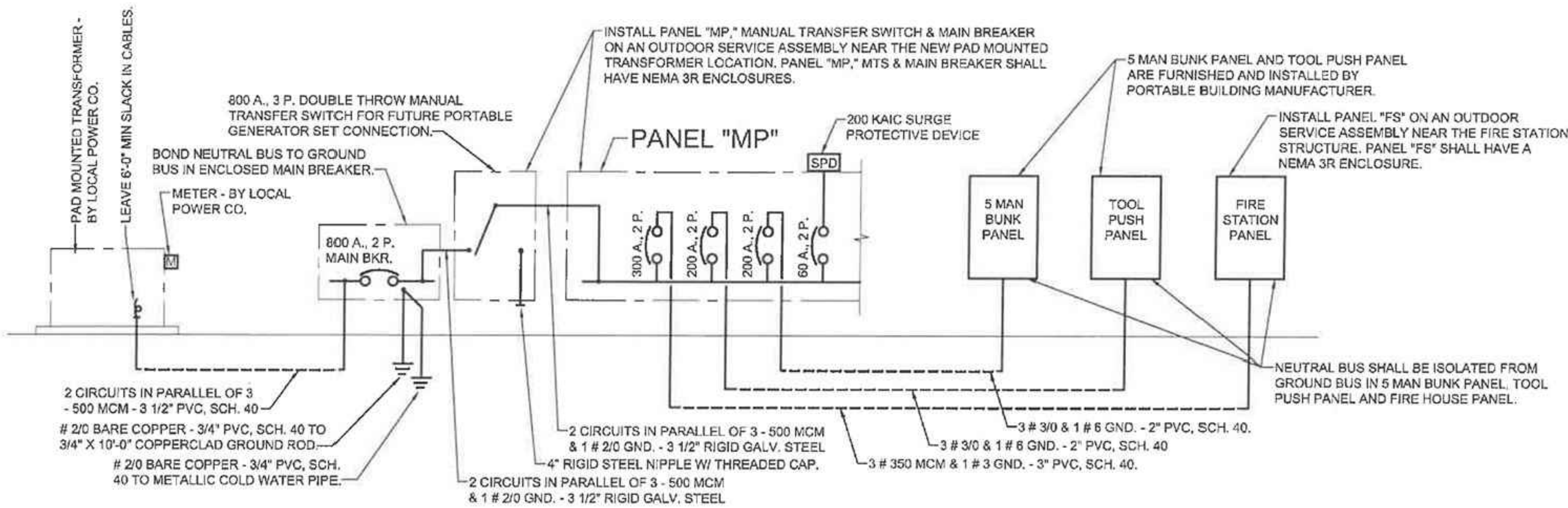
- ISSUED FOR :
- ☐ SCHEMATICS
 - ☐ DESIGN DEVELOPMENT
 - ☐ 60% REVIEW
 - ☐ 100% CONTRACT DOCUMENTS
 - ☐ DEVELOPMENT ORDER
 - ☐ PRICING
 - ☐ BIDDING
 - ☒ PERMIT
 - ☐ CONSTRUCTION
- DATE:
NO. OF PAGES:

SHEET TITLE
**MODULAR BUILDING
FLOOR PLANS**

DATE
**JAN
23
2020**

REVISIONS

DATE	REMARKS



SINGLE LINE DIAGRAM - SOUTHPORT FIRE RESCUE STATION
NO SCALE

PANEL "FS"		120/240 V., 1 Ø, 3 W. 300 A., 2 P. MAIN BREAKER				SURFACE MTD. PANEL W/ GROUND BUS ISOLATED FROM NEUTRAL BUS. FURNISH PANEL W/ NEMA 3R ENCLOSURE.			
CKT.#	LOAD SERVED	BREAKER		KVA		BREAKER		LOAD SERVED	CKT.#
		AMP	POLE			AMP	POLE		
1	LIGHTING	20	1	1.192	0.250	20	1	EXTERIOR LIGHTING	2
3	LIGHTING	20	1	1.192	1.200	20	1	ICE MACHINE	4
5	SINGLE RECEPTACLE	20	1	1.500	0.900	20	1	RECEPTACLES	6
7	SINGLE RECEPTACLE	30	1	2.900	0.900	20	1	RECEPTACLES (PUMP HOUSE)	8
9	GEAR DRYER	30	1	2.900	6.720	60	2	AIR COMPRESSOR	10
11	WASHER	20	1						12
13	OHD OPENNER	20	1		4.500	30	2	WATER HEATER	14
15	OHD OPENNER	20	1						16
17	EXHAUST FAN/LOUVER	20	1		5.000	30	2	UNIT HEATER	18
19	UNIT HEATER	30	2	5.000					20
21					5.000	30	2	UNIT HEATER	22
23	UNIT HEATER	30	2	5.000					24
25									26
27	OHD OPENNER	20	1			30	2	VEHICLE EXHAUST	28
29	SPACE ONLY		1				1	SPACE ONLY	30
31	SPACE ONLY		1				1	SPACE ONLY	32
33	SPACE ONLY		1				1	SPACE ONLY	34
35	SPACE ONLY		1				1	SPACE ONLY	36
37	SPACE ONLY		1				1	SPACE ONLY	38
39	SPACE ONLY		1				1	SPACE ONLY	40
41	SPACE ONLY		1				1	SPACE ONLY	42

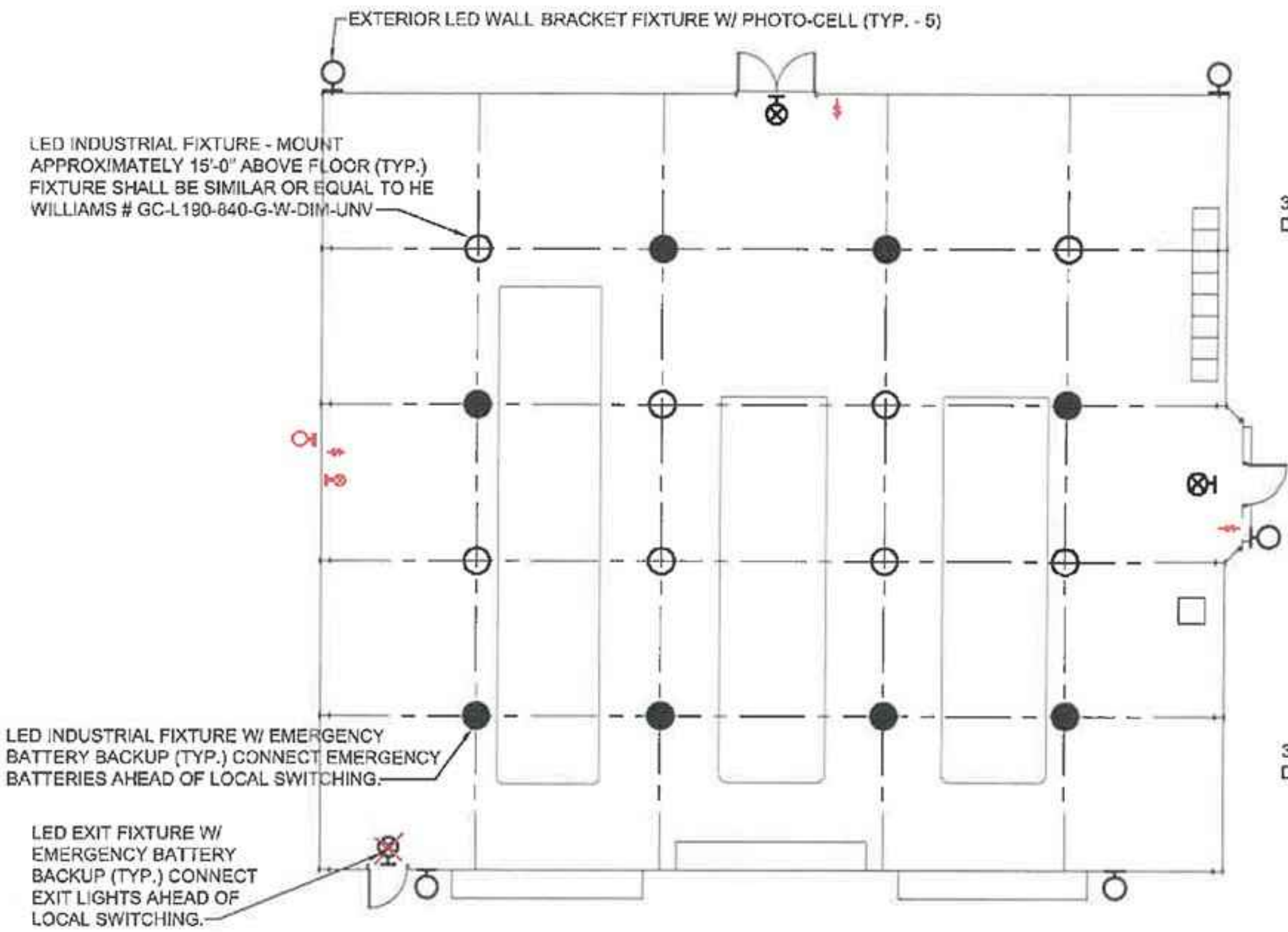
TOTAL CONNECTED LOAD: 56.458 KVA.

PANEL "MP"		120/240 V., 1 Ø, 3 W. 800 A. MAIN LUGS ONLY				SURFACE MTD. PANEL W/ GROUND BUS ISOLATED FROM NEUTRAL BUS. FURNISH PANEL W/ NEMA 3R ENCLOSURE.			
CKT.#	LOAD SERVED	BREAKER		KVA		BREAKER		LOAD SERVED	CKT.#
		AMP	POLE			AMP	POLE		
1	FIRE STATION PANEL	300	2			200	2	TOOL PUSH PANEL	2
3									4
5	5 MAN BUNK PANEL	200	2			60	2	SURGE PROTECTIVE DEVICE	6
7									8
9	FUTURE LIFT STATION	50	2			2		SPACE ONLY	10
11									12

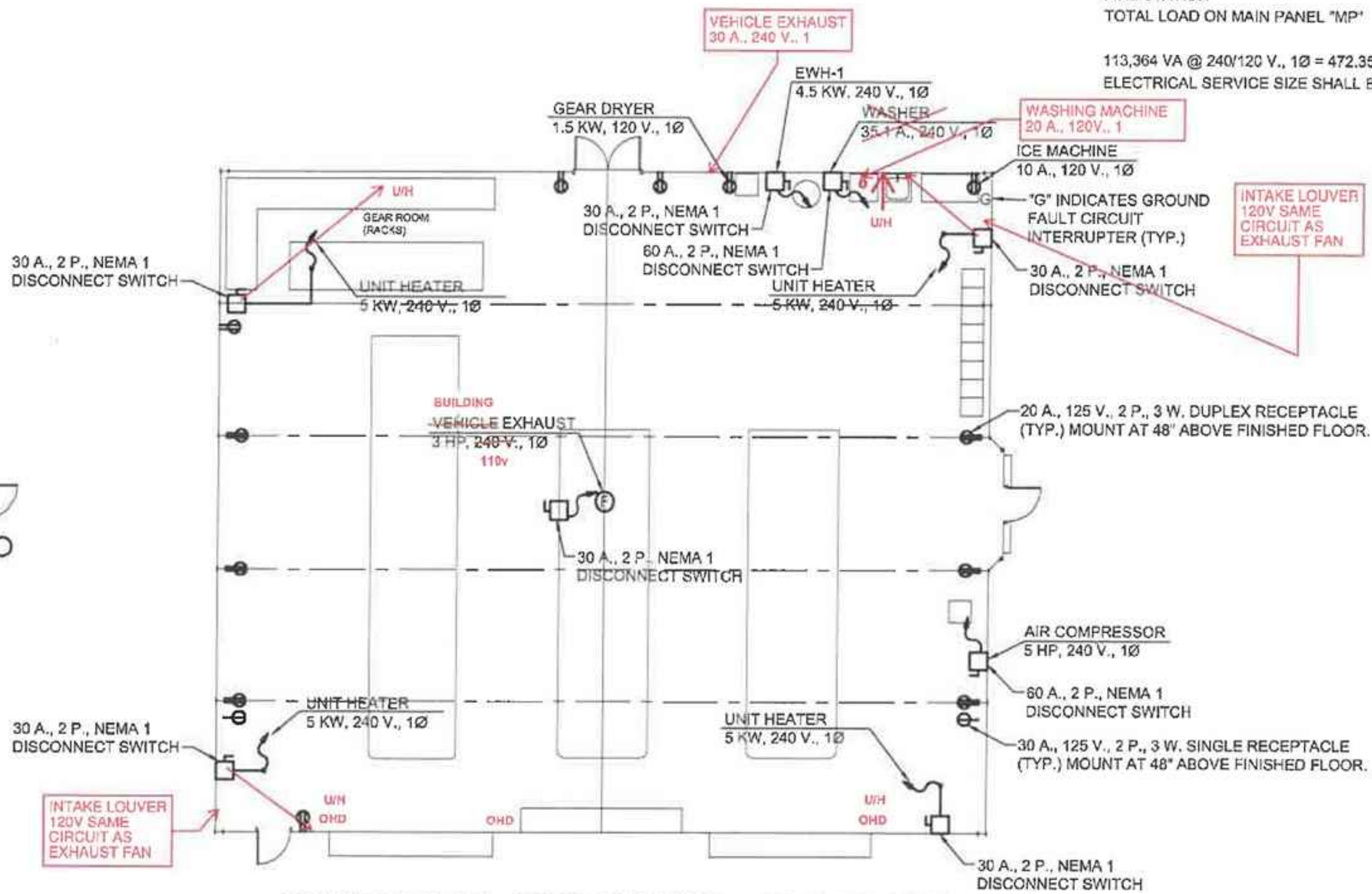
SERVICE CALCULATION:

5 MAN BUNK (PER ATCO DRAWINGS) 34,285 VA
TOOL PUSH (PER ATCO DRAWINGS) 22,621 VA
FIRE STATION 56,458 VA
TOTAL LOAD ON MAIN PANEL "MP" 113,364 VA

113,364 VA @ 240/120 V., 1Ø = 472.35 AMPS
ELECTRICAL SERVICE SIZE SHALL BE 800 AMPS.



LIGHTING PLAN - FIRE STATION - SOUTHPORT
SCALE: 1/8" = 1'-0"



POWER PLAN - FIRE STATION - SOUTHPORT
SCALE: 1/8" = 1'-0"

AS-BUILT

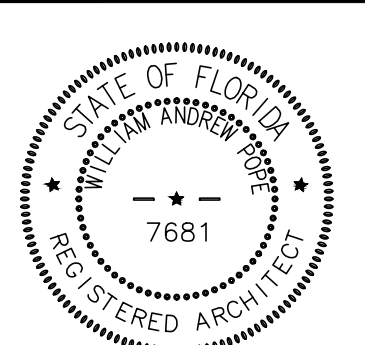


W. ARCHITECT, P.A.

4100 LEGENDARY DRIVE, SUITE 240
DESTIN, FLORIDA 32541
850.865.0470
Member of American Institute of Architects
DBPR NBR AA 2600-1732

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WILLIAM A. POPE
FLORIDA LICENSE 7681

PROJECT

MODULAR
FIRE RESCUE STATION
SOUTHPORT
70x62.5 SPRUNG BLDG.

2115 HWY 232I
BAY COUNTY
PANAMA CITY, FL 32401

ISSUED FOR :

- ☐ SCHEMATICS
- ☐ DESIGN DEVELOPMENT
- ☐ 60% REVIEW
- ☐ 100% CONTRACT DOCUMENTS
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- ☐ PRICING
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DATE:
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SHEET TITLE

ELECTRICAL PLANS,
SCHEDULES
& RISER DIAGRAM

DATE

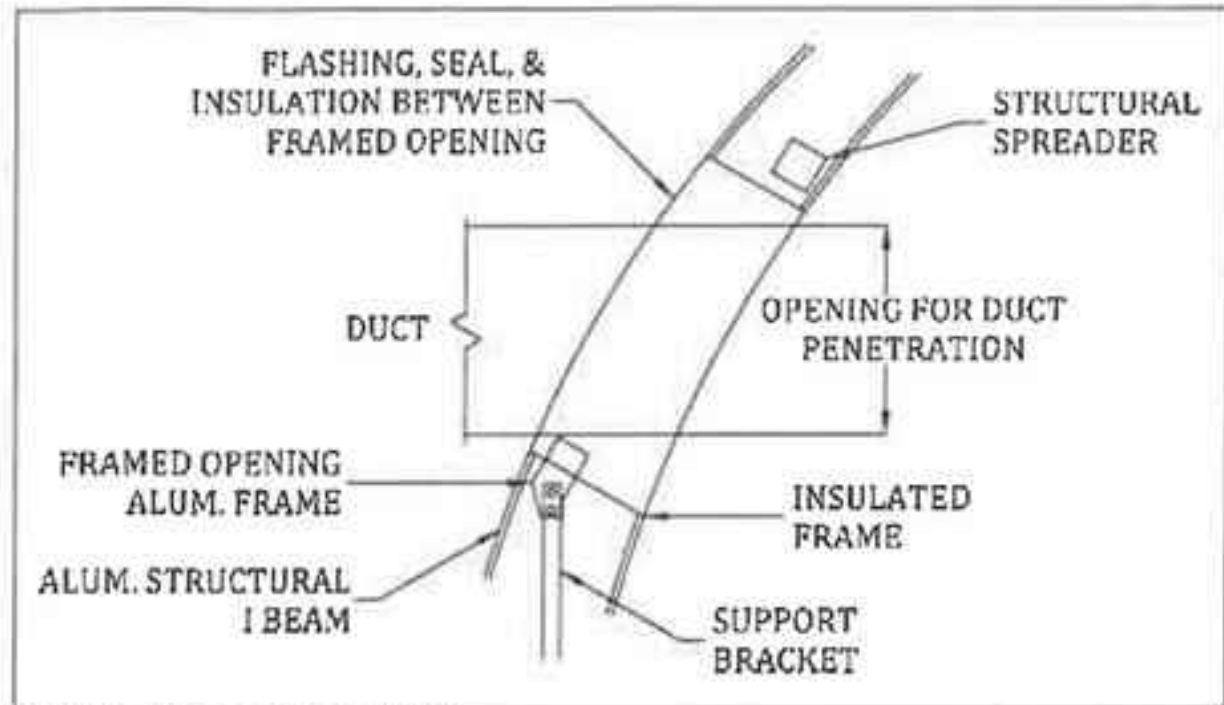
JAN
23
2020

REVISIONS

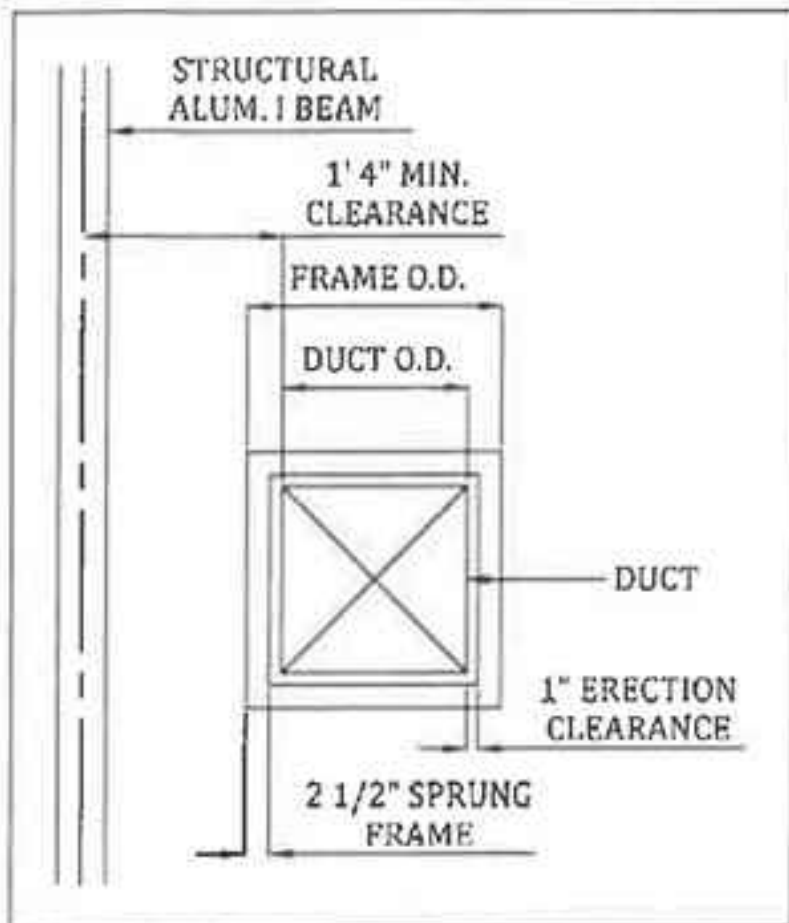
DATE	REMARKS

E-1
AS-BUILT

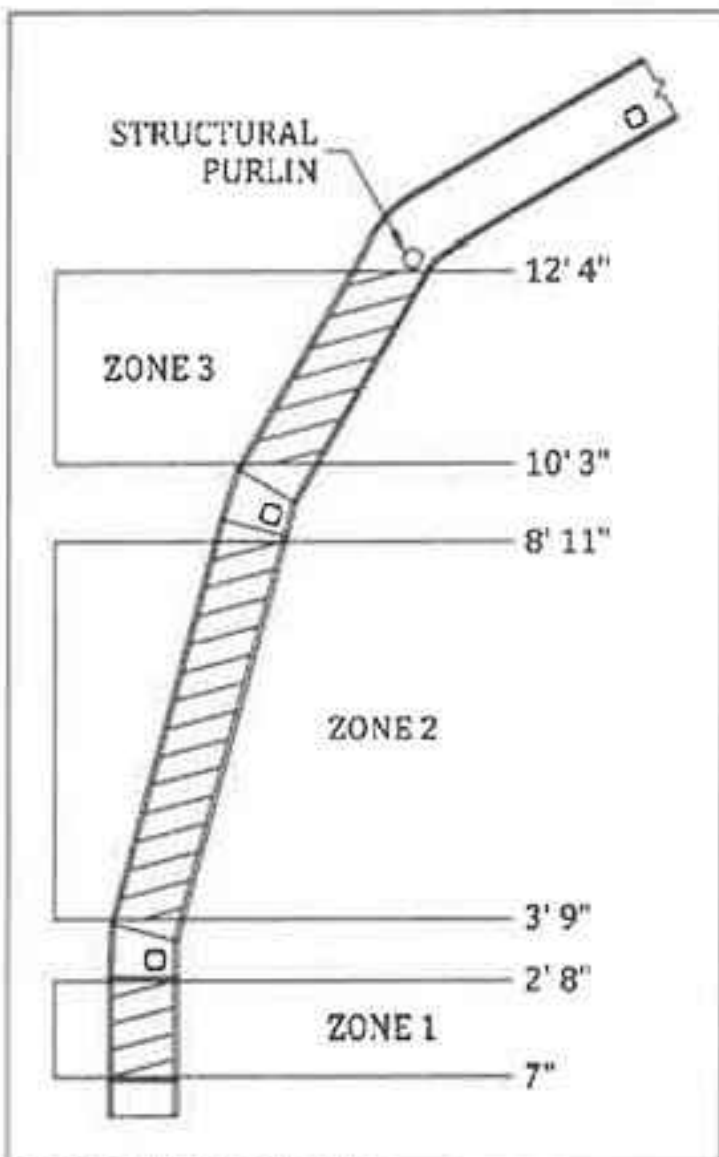
SHEET NO.



INSULATED FRAME SECTION
NTS



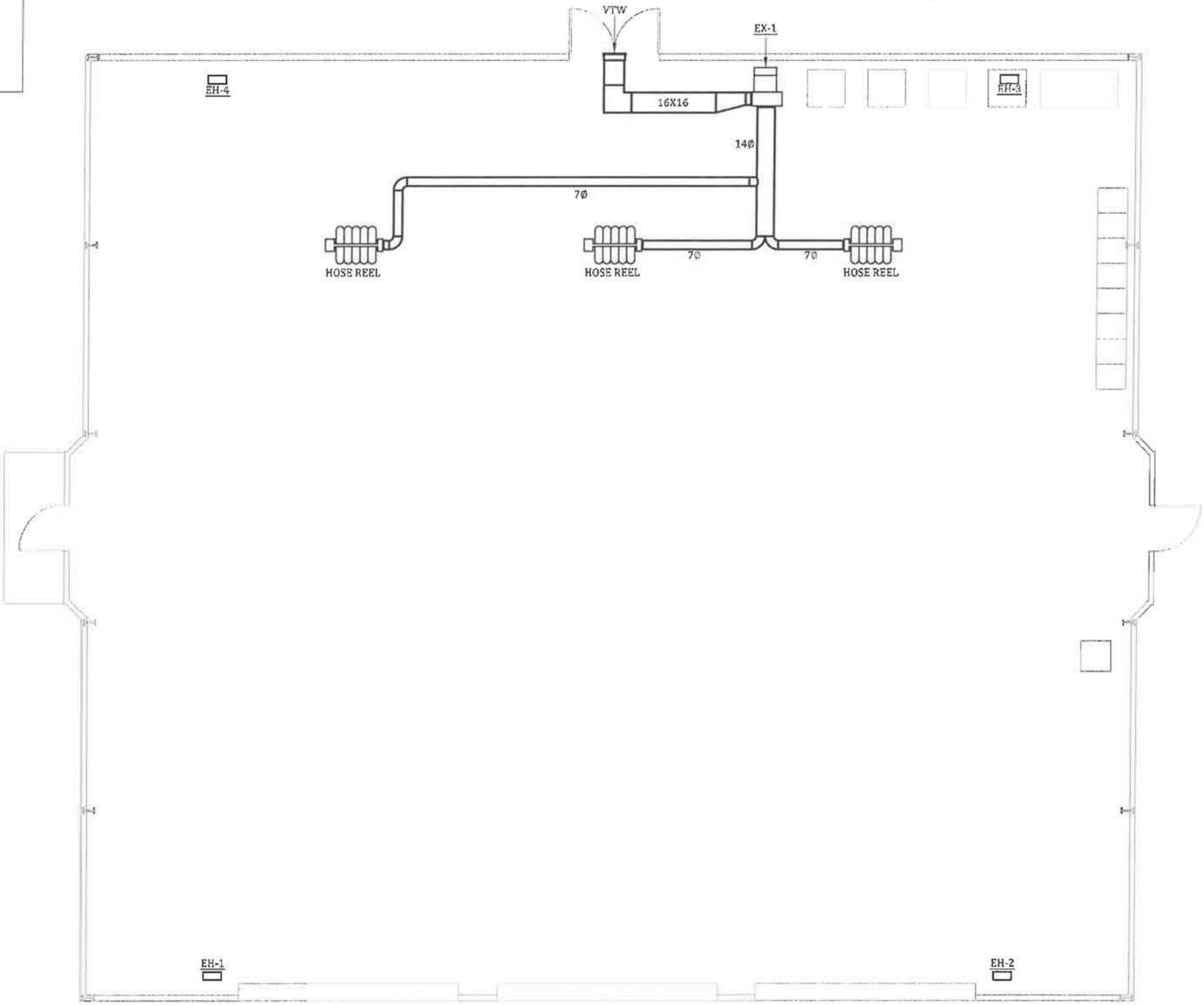
FRAME ELEVATION
NTS



DUCT ELEVATION ZONES
NTS

EXHAUST FAN SCHEDULE								
TAG	CFM	S.P.	H.P.	ELECTRICAL			AMPS	MODEL/ MANUFACTURER
				V	Φ	HZ		
EX-1	2100	5"	3	208/230	1	60	20.9	EQUAL TO CAR-MON CMB-20

ELECTRIC HEATER SCHEDULE							
TAG	TYPE	POWER (MAX)	ELECTRICAL			AMPS	MODEL/ MANUFACTURER
			V	φ	HZ		
EH-1	UNIT	5kw	240	1	60	20.9	EQUAL TO MARKEL H1B5105N
EH-2	UNIT	5kw	240	1	60	20.9	EQUAL TO MARKEL H1B5105N
EH-3	UNIT	5kw	240	1	60	20.9	EQUAL TO MARKEL H1B5105N
EH-4	UNIT	5kw	240	1	60	20.9	EQUAL TO MARKEL H1B5105N



SHEET INDEX:

M2.1 HVAC - NEW WORK PLAN

DESIGN CONDITIONS:

LOCATION:
USA, FLORIDA, PENSACOLA
COOLING:
INDOOR NA
OUTDOOR 93/78°F
HEATING:
INDOOR 55°F
OUTDOOR 28°F

CODES & STANDARDS:

BUILDING CODES:
2017 FLORIDA PLUMBING CODE
2017 FLORIDA MECHANICAL CODE
2017 FLORIDA FUEL GAS CODE
2017 NATIONAL ELECTRICAL CODE
2017 INTERNATIONAL ENERGY CONSERVATION CODE
NFPA CODES:
2015 INTERNATIONAL FIRE CODE

HVAC SYMBOLS

- BDD BACKDRAFT DAMPER
- BP BYPASS
- CD CEILING DIFFUSER
- DG DOOR GRILLE
- DVTW DRYER VENT THRU WALL
- EG EXHAUST GRILLE
- EX EXHAUST
- EXL EXHAUST LOUVER
- FD FIRE DAMPER
- FG FLOOR GRILLE
- MUA MAKEUP AIR
- OAL OUTSIDE AIR LOUVER
- RG RETURN GRILLE
- SWD SIDEWALL DIFFUSER (SUPPLY)
- SWG SIDEWALL GRILLE (RETURN)
- TG TRANSFER GRILLE
- VTR VENT THRU ROOF
- VTW VENT THRU WALL
- (x) EXISTING
- ☒ SUPPLY DIFFUSER
- ☒ RETURN GRILLE
- ☒ EXHAUST GRILLE/FAN
- ┌ MANUAL VOL. DAMPER
- Ⓜ MOTORIZED VOL. DAMPER
- ▲ FIRE DAMPER
- Ⓢ THERMOSTAT
- Ⓢ DUCT-MNT SMOKE DET.
- CONNECT TO EXISTING (x)
- REMOVE TO HERE
- CD8 2424 135 CEILING DIFFUSER ; 8Φ NECK 24X24 FACE 135 CFM
- RG 2424 400 RETURN GRILLE 24X24 FACE, BOOT BOX CONFIG. 400 CFM



REVISION DESCRIPTION

NO. DATE

DRAWN BY: NC

CHECKED BY:

APPROVED BY:

DATE: 6.18.20

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FIRE STATION SOUTHPORT
PANAMA CITY, FL

SHEET 1 OF 1

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

M2.1

SHEET REFERENCE NUMBER

AS-BUILT

TAG	PLUMBING FIXTURE DESCRIPTION	FAUCET/ FLUSH VALVE	DRAIN SIZE	COLD SIZE	HOT SIZE	ACCESSORIES	EQUAL TO:
EWB-1	Electric Water Heater, 85-Gallon, 240-Volt/1Ph, 4.5KW Element	NA	NA	3/4"	3/4"	Drain Pan, Expansion Tank, T&P Relief Valve	Rheem Marathon 85-Gallon, Single 4500 Watt Element
WM-1	Washing Machine Box	NA	2"	1/2"	1/2"	TBD	TBD
IM-1	Ice Maker Box	NA	2"	1/2"	NA	TBD	TBD
HB-1	Hose Bib	NA	NA	3/4"	NA	Vacuum Breaker, Ball Valve	TBD
MS-1	Mop Sink - Floor Mounted	Faucet	3"	3/4"	3/4"	NA	Mustee 24x24x10 Mop Sink / Delta 28T9 Faucet

GENERAL PLUMBING NOTES

1. ALL SANITARY DRAIN, WASTE & VENT PIPING TO BE SCH 40 PVC DWV.
2. MODULAR BUILDING DOMESTIC WATER PIPING TO BE CPVC OR PEX.
3. STATION BUILDING DOMESTIC WATER PIPING TO BE COPPER.
3. ALL COMPRESSED AIR PIPING TO BE GALVANIZED.
4. INSULATE ALL DOMESTIC HOT WATER PIPING. w/ ½" WALL FIBERGLASS AND ALL DOMESTIC COLD WATER PIPING SUBJECT TO FREEZING.
5. SLOPE ALL DRAINAGE PIPE @ ¼" PER FT².
6. RUN ALL PIPING TRUE AND SQUARE TO BUILDING FOOTPRINT.
7. INSTALL PLUMBING PER 2017 FLORIDA PLUMBING CODE.

FLOOR DRAIN & CLEANOUT SCHEDULE

TAG	DESCRIPTION	MANUFACTURER/MODEL	NOTES
FD-1	BRONZE FLOOR DRAIN w/PLASTIC BODY	EQUAL TO SIOUX CHIEF/FINISH LINE	2, 3
FS-1	12" x 12" PLASTIC FLOOR SINK w/HALF GRATE	EQUAL TO PRO FLO	2, 3
FCO	BRONZE WALL CLEANOUT w/PLASTIC BODY	EQUAL TO SIOUX CHIEF/FINISH LINE	1, 3
GCO	BRONZE GROUND CLEANOUT w/PLASTIC BODY	EQUAL TO SIOUX CHIEF/FINISH LINE	1, 3

SCHEDULE NOTES:

1. PROVIDE SQUARE TOP w/NICKEL BRONZE FINISH
2. PROVIDE w/TRAP GUARD OR TRAP PRIMER
3. COORDINATE FINISHED ELEVATION w/RESPECTIVE FINISHES

SHEET INDEX:

- P-0.1 PLUMBING - SCHEDULES, NOTES, LEGENDS
- P-2.1 PLUMBING - SANITARY & DOMESTIC WATER PLAN
- P-3.1 PLUMBING - ISOMETRICS

CODES & STANDARDS:

BUILDING CODES:
2017 FLORIDA PLUMBING CODE
2017 FLORIDA FUEL GAS CODE
2017 NATIONAL ELECTRICAL CODE
2017 FLORIDA ENERGY CONSERVATION CODE
NFPA CODES:
2006 NFPA 96A & B

PLUMBING LEGEND

- SANITARY SEWER (S)
- SANITARY VENT (V)
- DOMESTIC COLD WATER (CW)
- DOMESTIC HOT WATER (HW)
- GAS (GAS)
- BALL VALVE (BV)
- B/G

BELOW GRADE
- A/C

ABOVE CEILING
- B/F

BELOW FLOOR
- ½" HOSE BIBB (HB)



REVISION DESCRIPTION

DATE

NO.

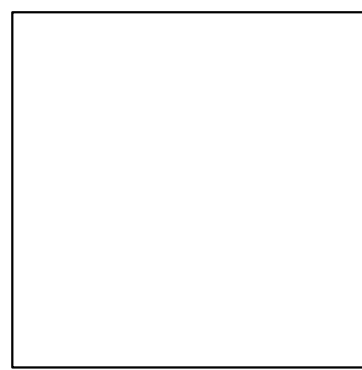
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FIRE STATION SOUTHPORT
PANAMA CITY, FL



SHEET 1 OF 3
SCALE: NO SCALE

P0.1

SHEET REFERENCE NUMBER

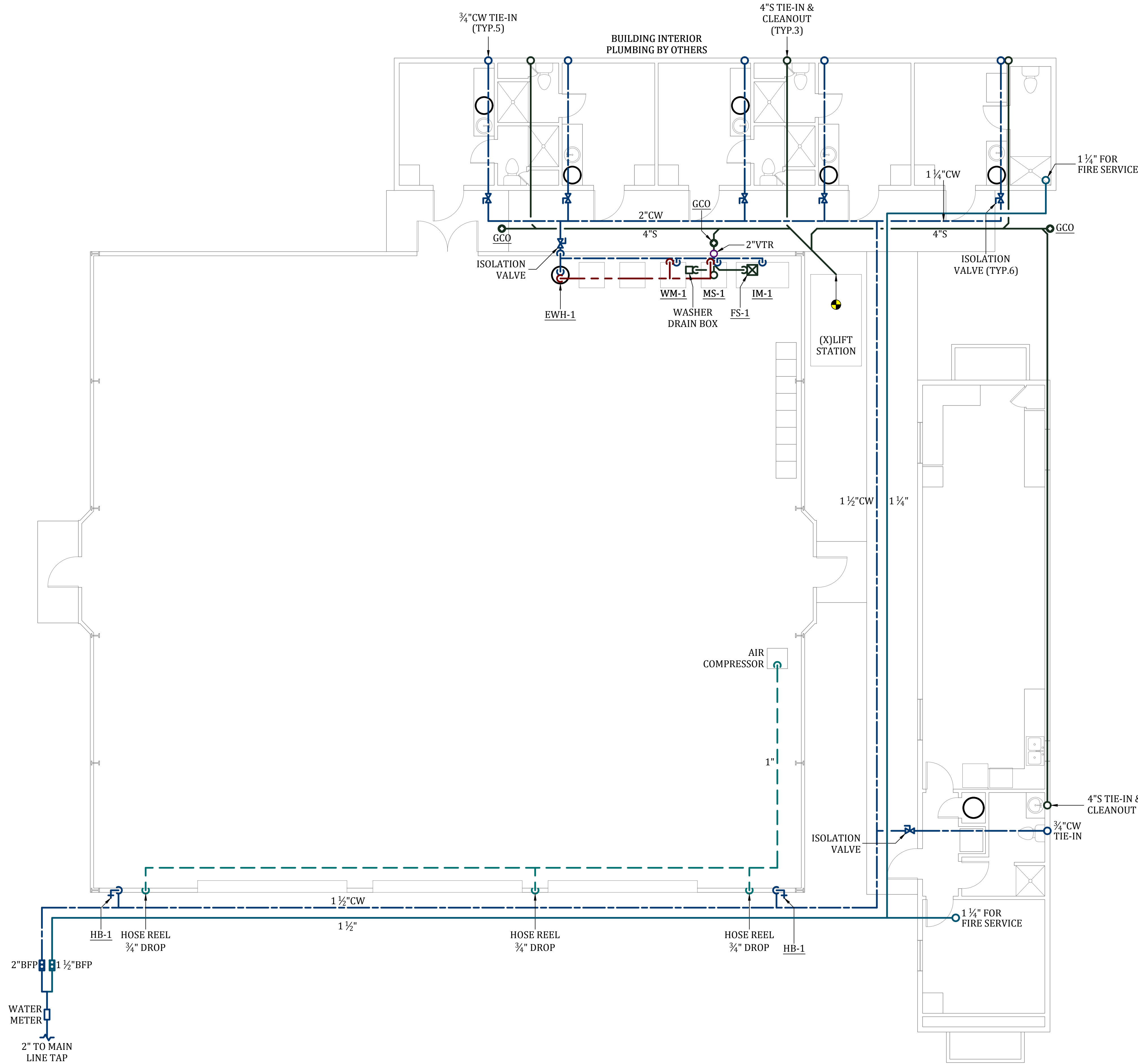
AS-BUILT



PLUMBING - SANITARY & DOMESTIC WATER PLAN

SCALE: 3/16" = 1'-0"

STD-20-52 Southport Fire Station #0 Relocation



AS-BUILT

SYSTEM SERVICE &
ENGINEERING, INC.



205 MOSLEY DR.
LYNN HAVEN FL 32444
phone 850.443.3438 | mobile 850.630.4387
COC 1349918 | CFC 1677461 | EC 13066389 | COA 29974

REVISION DESCRIPTION

NO. DATE

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FIRE STATION SOUTHPORT
PANAMA CITY, FL

SHEET 2 OF 3

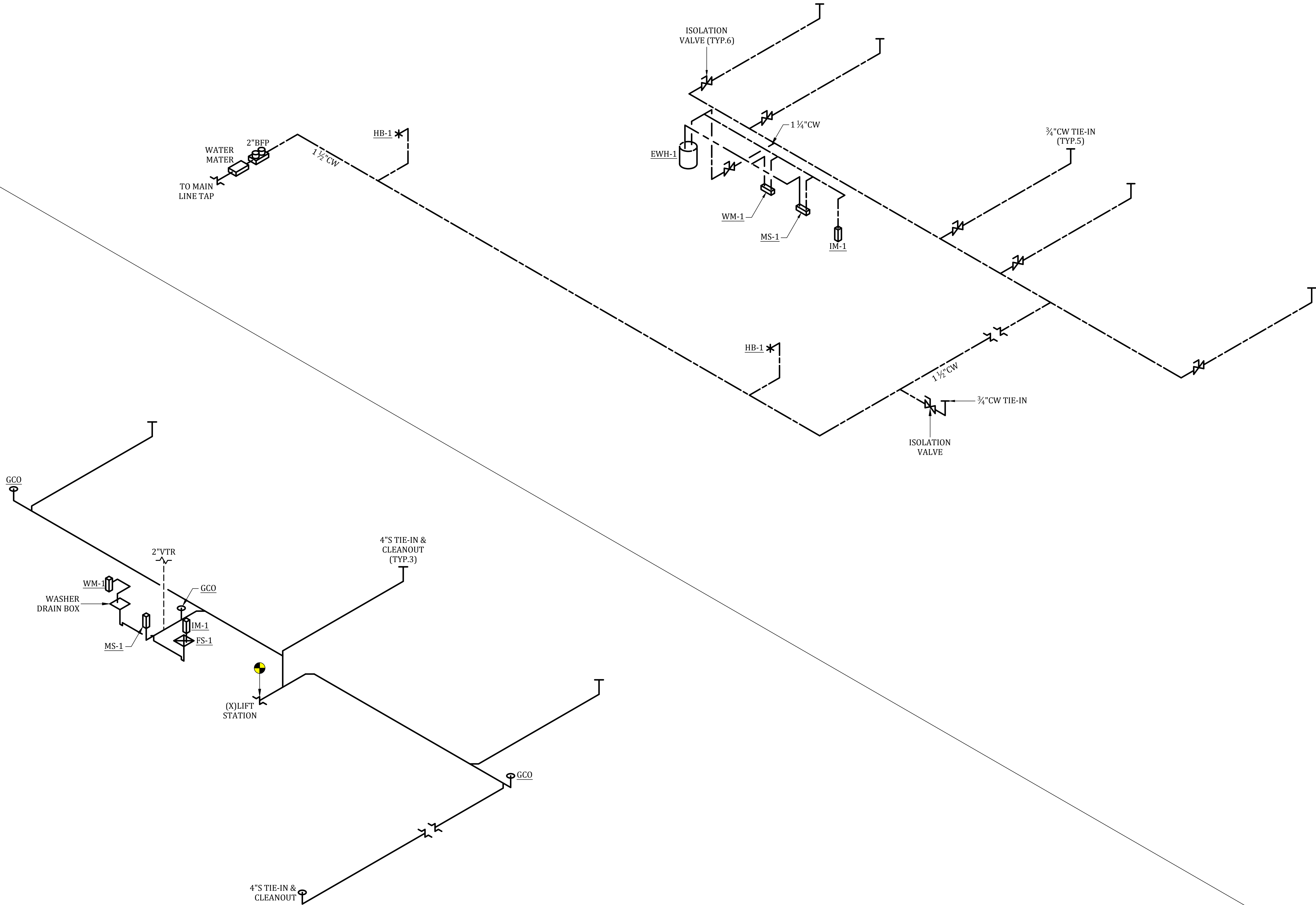
SCALE: 3/16" = 1'-0"

P2.1

SHEET REFERENCE NUMBER

DOMESTIC
WATER

SANITARY



REVISION DESCRIPTION

NO. DATE

DRAWN BY: NC

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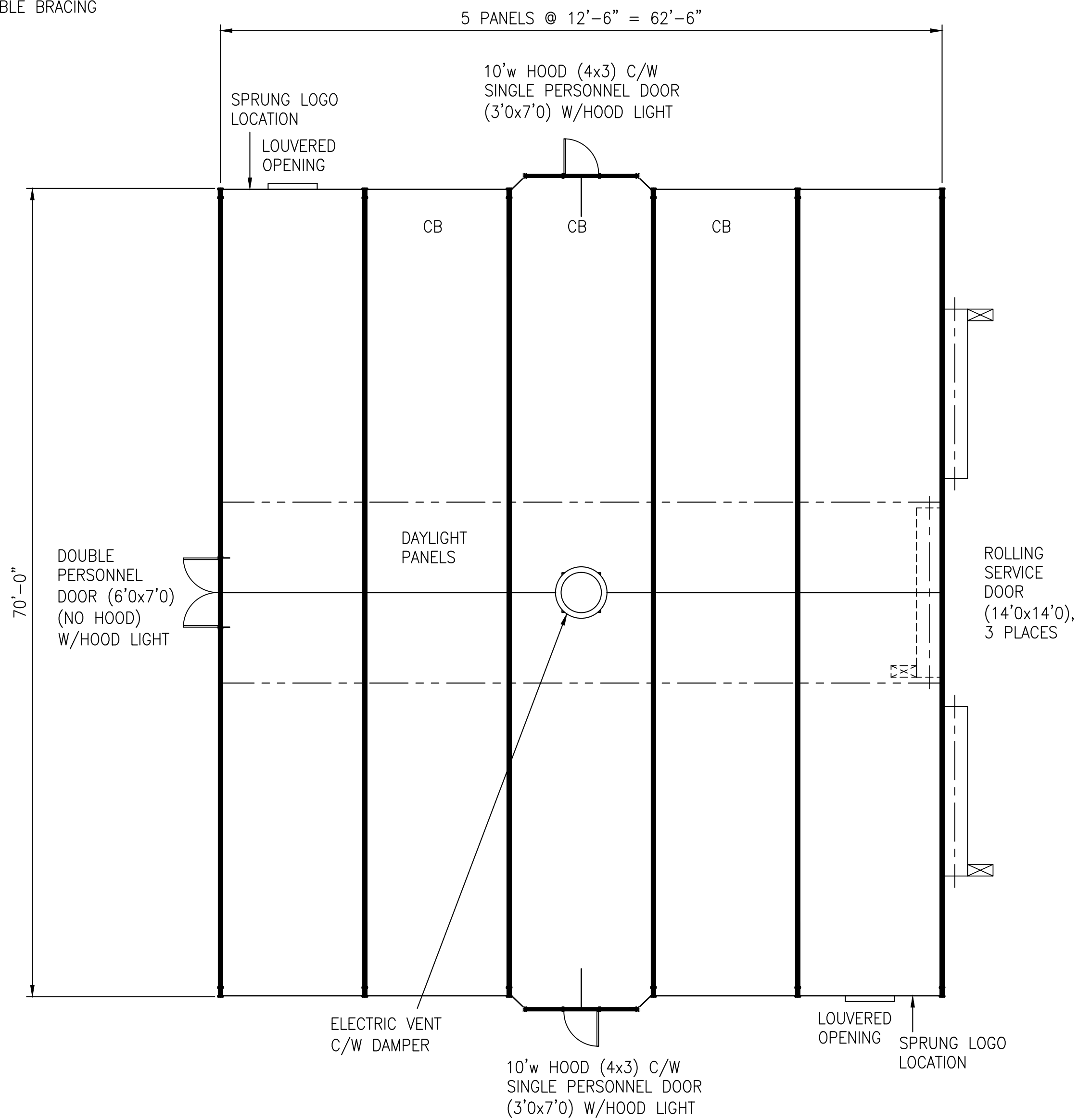
APPROVED BY:

DATE: 6.17.20

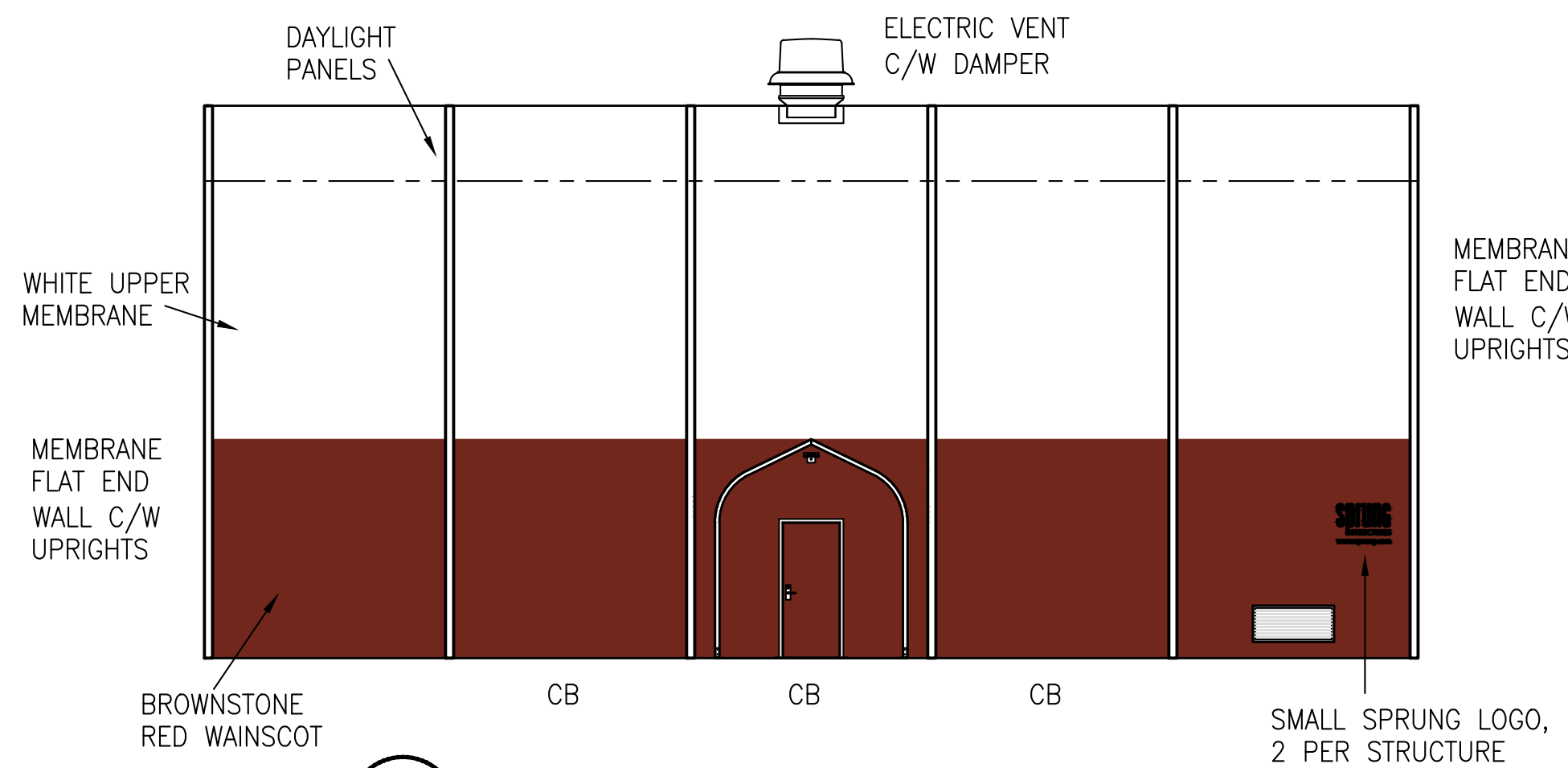
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FIRE STATION SOUTHPORT
PANAMA CITY, FL

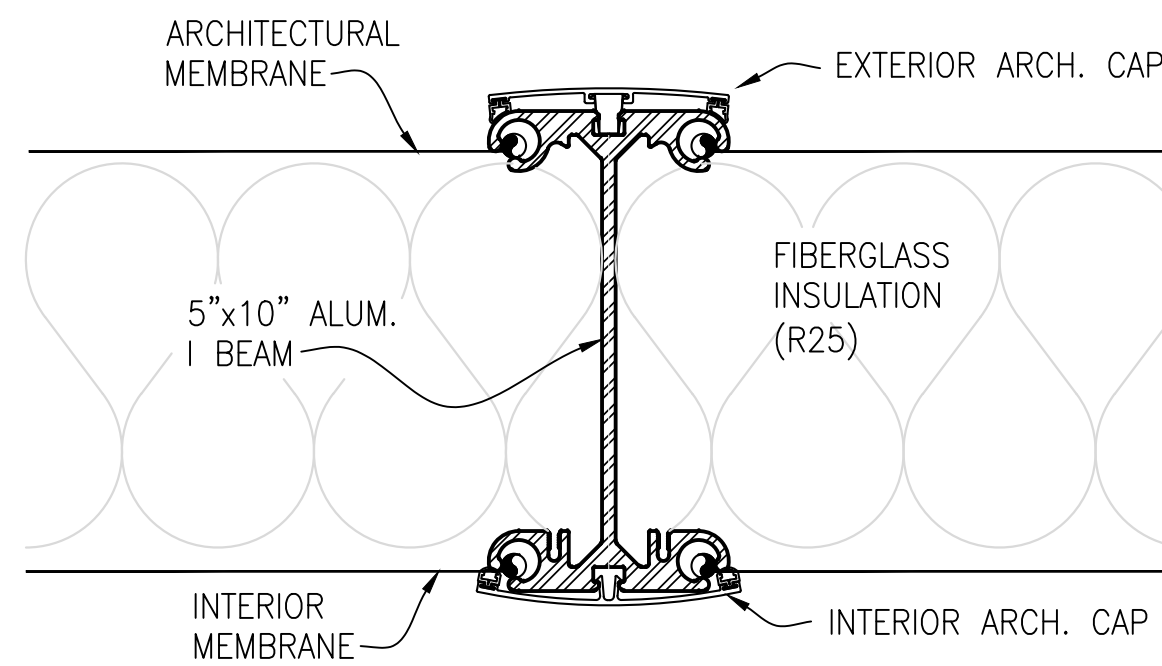
CB = CABLE BRACING



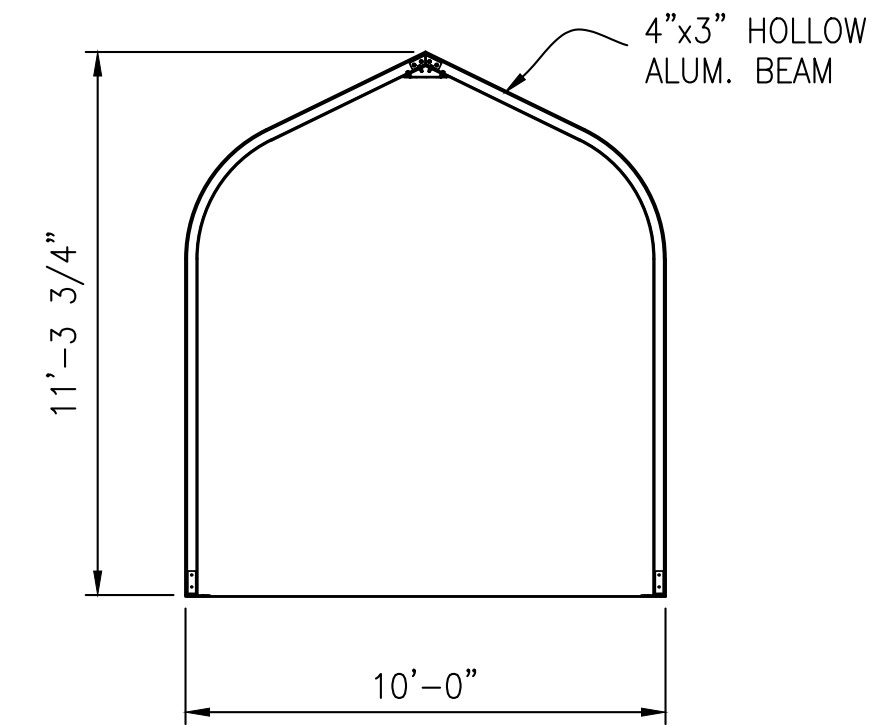
1 PLAN VIEW
1336.0 1/8"=1'-0"



2 ELEVATION
1336.0 1/8"=1'-0"

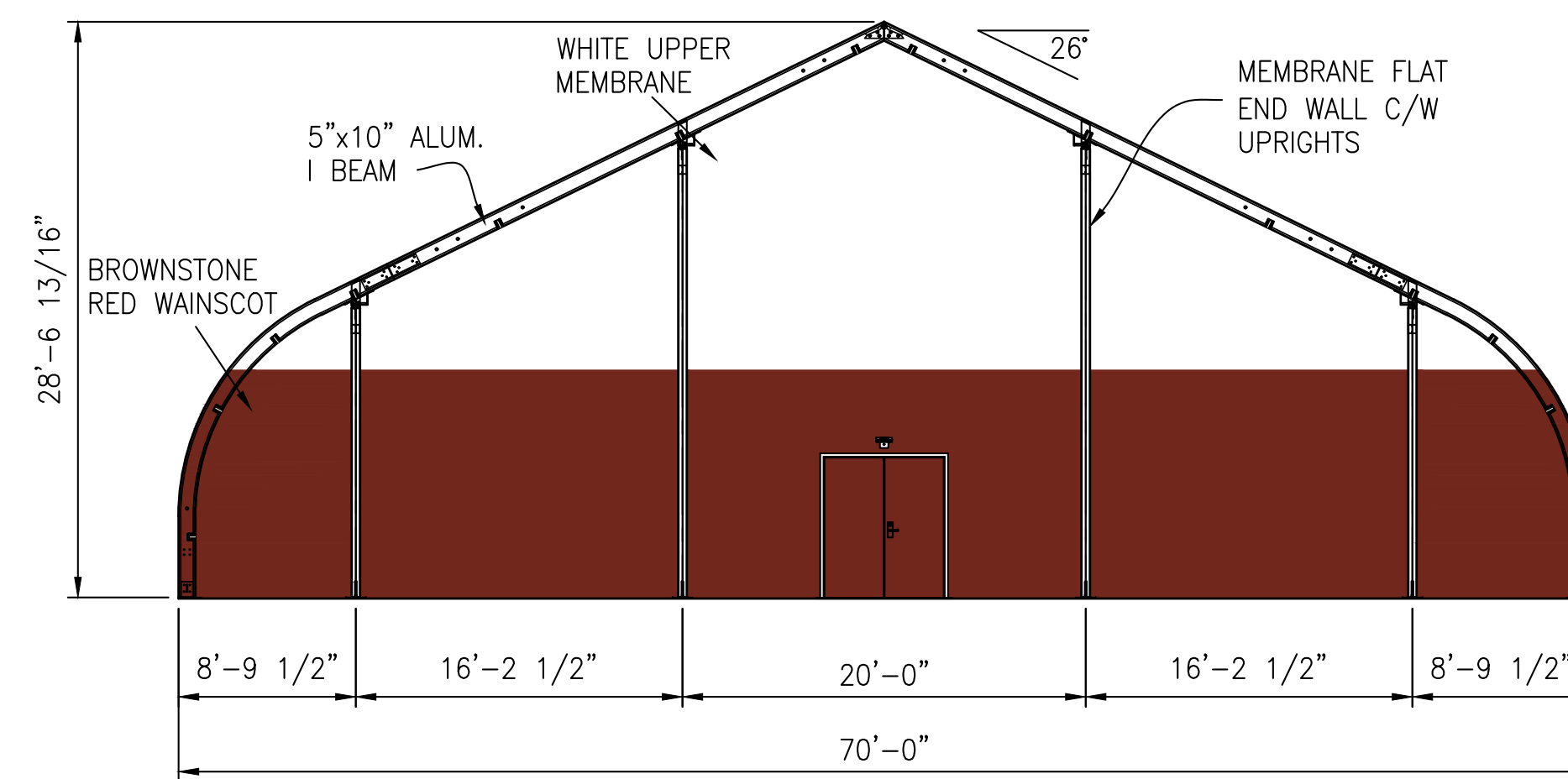


3 5"x10" INSULATED BEAM SECTION
1336.0 3/4"=1'-0"



4 SECTION 10'-0" HOOD
1336.0 1/4"=1'-0"

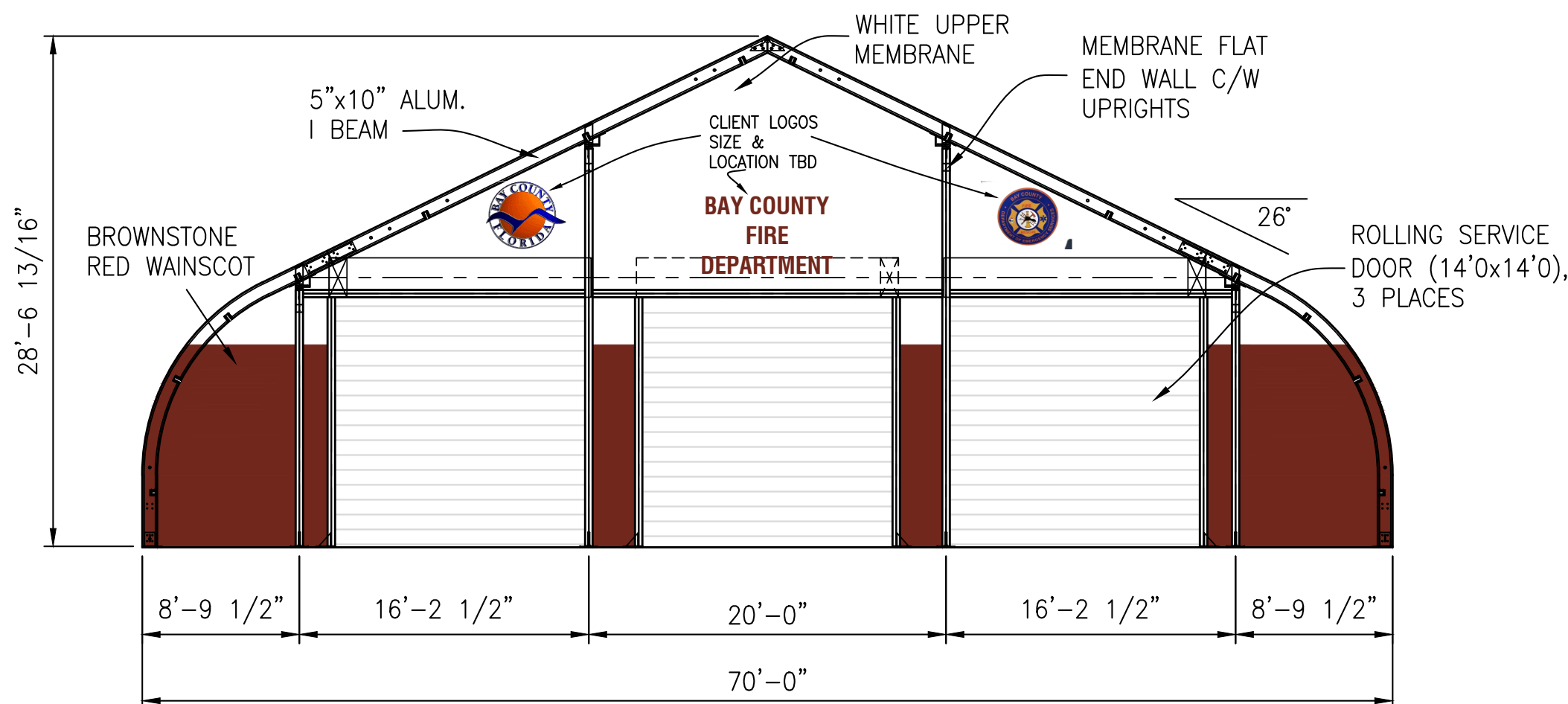
REFER TO DRAWING S-1 FOR SPECIAL INSPECTION & ADDITIONAL MATERIAL NOTES.



5 FLAT END 70'-0" INSULATED STRUCTURE (LEFT END)
1336.0 1/8"=1'-0"

REFER TO DWG P19-1336.1 (COLUMN BASE LAYOUT) FOR CONCRETE PAD DIMENSIONS

COLORS ON THESE ELEVATIONS MAY VARY SIGNIFICANTLY DEPENDING ON PRINTER OR MONITOR. PLEASE REFER TO MEMBRANE SAMPLES FOR ACTUAL COLORS.



6 FLAT END 70'-0" INSULATED STRUCTURE (RIGHT END)
1336.0 1/8"=1'-0"

AS-BUILT



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or (403) 601-2292 www.sprung.com

GENERAL NOTES:

1. ALL PERSONNEL DOORS C/W PANIC HARDWARE & HOODS.
2. STRUCTURE TO BE INSULATED WITH FIBERGLASS BATT INSULATION C/W INNER LINER, TO DAYLIGHT PANEL LEVEL ONLY.
3. INNER & OUTER MEMBRANE TO BE FINISHED TO CONCRETE USING ALUM. FLAT BAR
4. STRUCTURE MEMBRANE MEETS: NFPA 701, CALIFORNIA STATE FIRE MARSHAL, ASTM E84, CAN/ULC-S-109 & CAN/ULC-S-102 SPECIFICATIONS.
5. THIS STRUCTURE IS DESIGNED TO SHED/RELEASE SNOW. THE PERIMETER OF THE STRUCTURE SHALL BE KEPT CLEAR.
6. WHEN DESIGNING A HEATING, VENTILATION OR AIR CONDITIONING SYSTEM FOR ANY TYPE OF BUILDING, IT IS IMPORTANT TO ENSURE THAT THIS SYSTEM INTAKES MORE AIR THAN IS BEING EXHAUSTED AT ANY GIVEN TIME. THIS PROCESS WILL RESULT IN A POSITIVE PRESSURE BEING MAINTAINED. CONVERSELY, IF NEGATIVE PRESSURE EXISTS WITHIN THE STRUCTURE, IT WILL BE DIFFICULT TO OPEN DOORS AND MOISTURE WILL BE DRAWN INTO THE STRUCTURE.
7. ALL INTERIOR WALLS & PARTITIONS (IF APPLICABLE) TO BE FREE STANDING & INDEPENDENT OF SPRUNG STRUCTURE.

DESIGN LOADS

STRUCTURE LOCATION: PANAMA CITY, FL
BUILDING CODE: FBC 2012, 6TH ED.
WIND SPEED: 146 MPH 3 SEC GUST
RISK CATEGORY: IV EXPOSURE C
GROUND SNOW LOAD: NA
(SEE SNOW SHED REPORT)



SIGNATURE SERIES

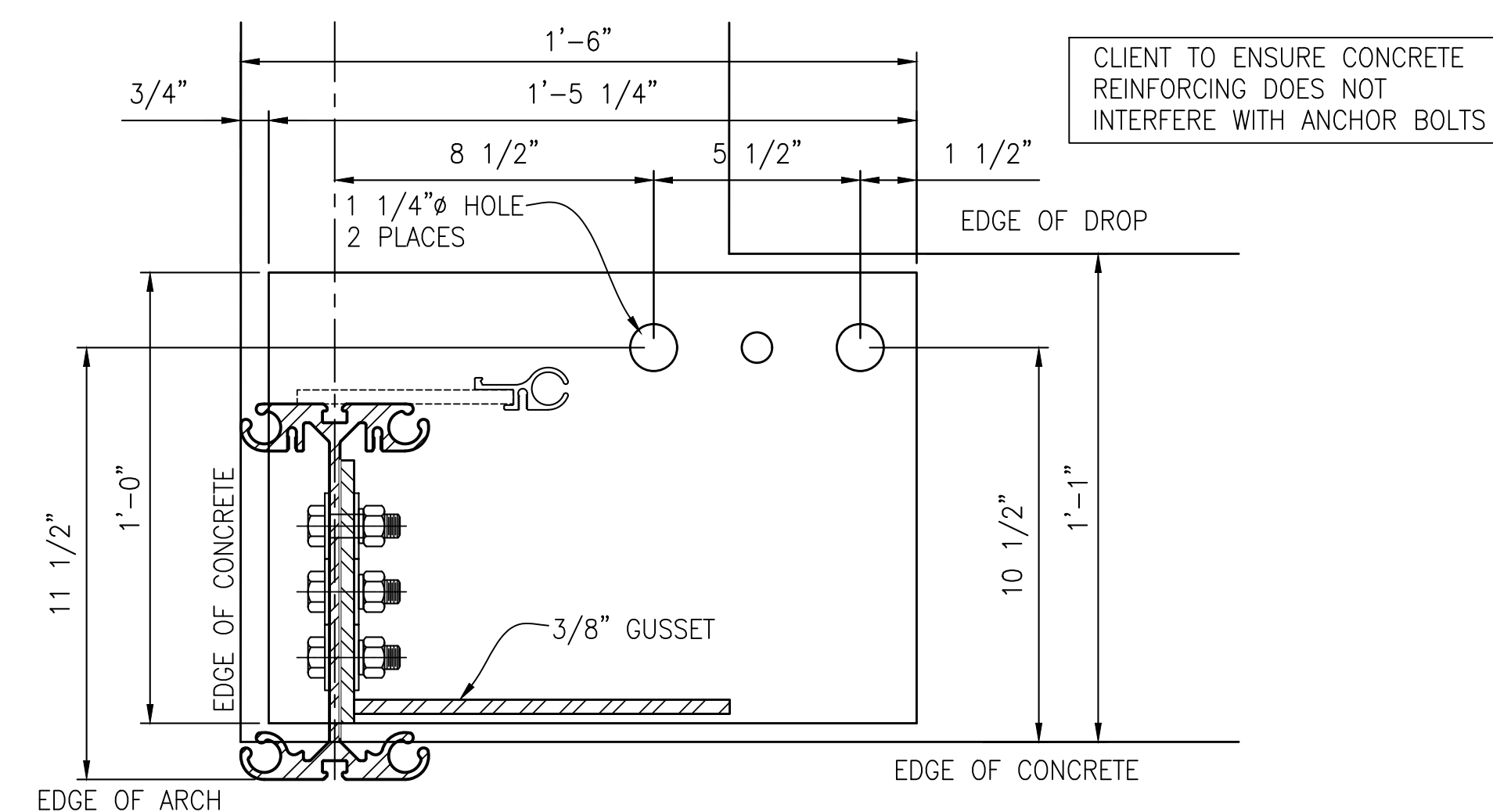
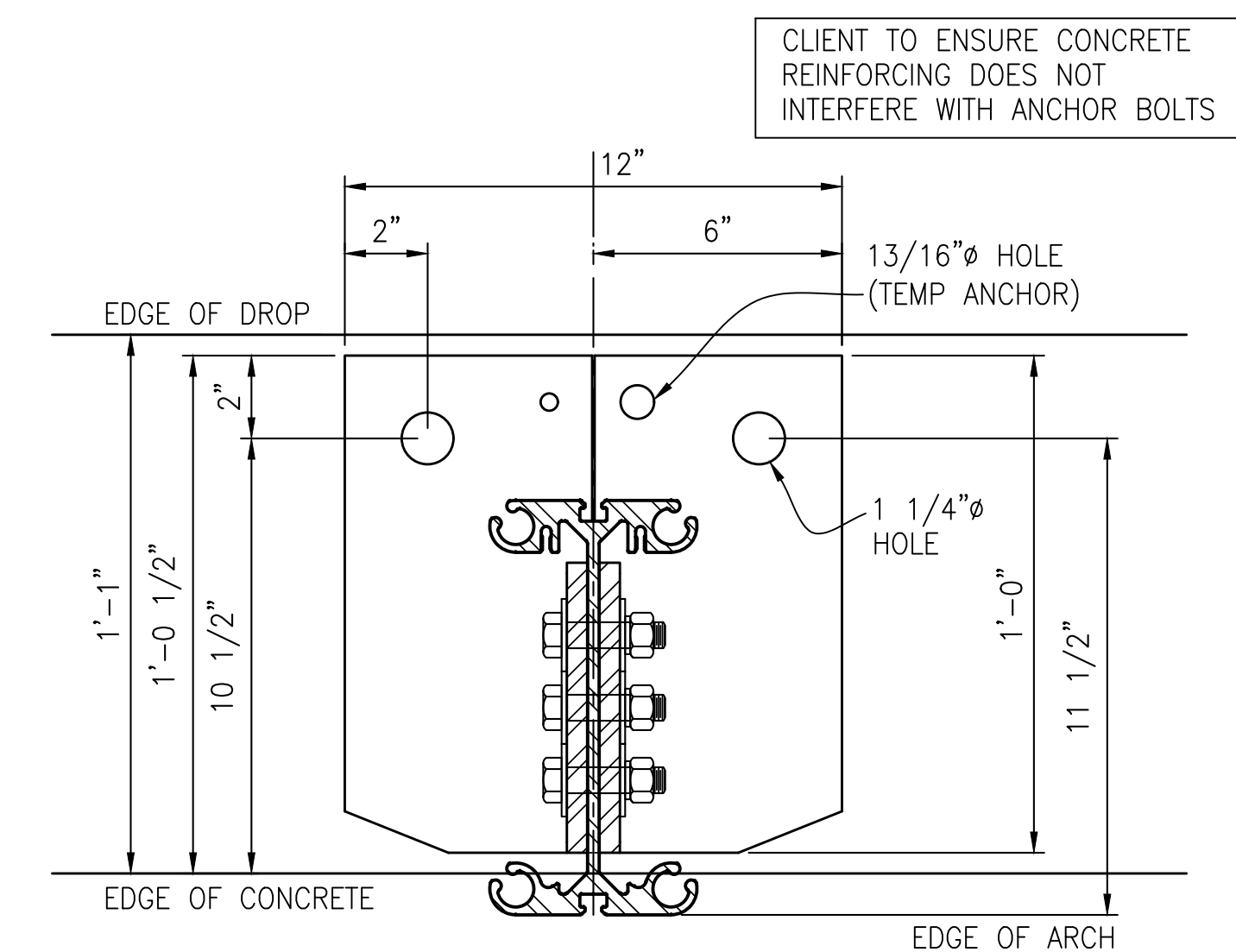
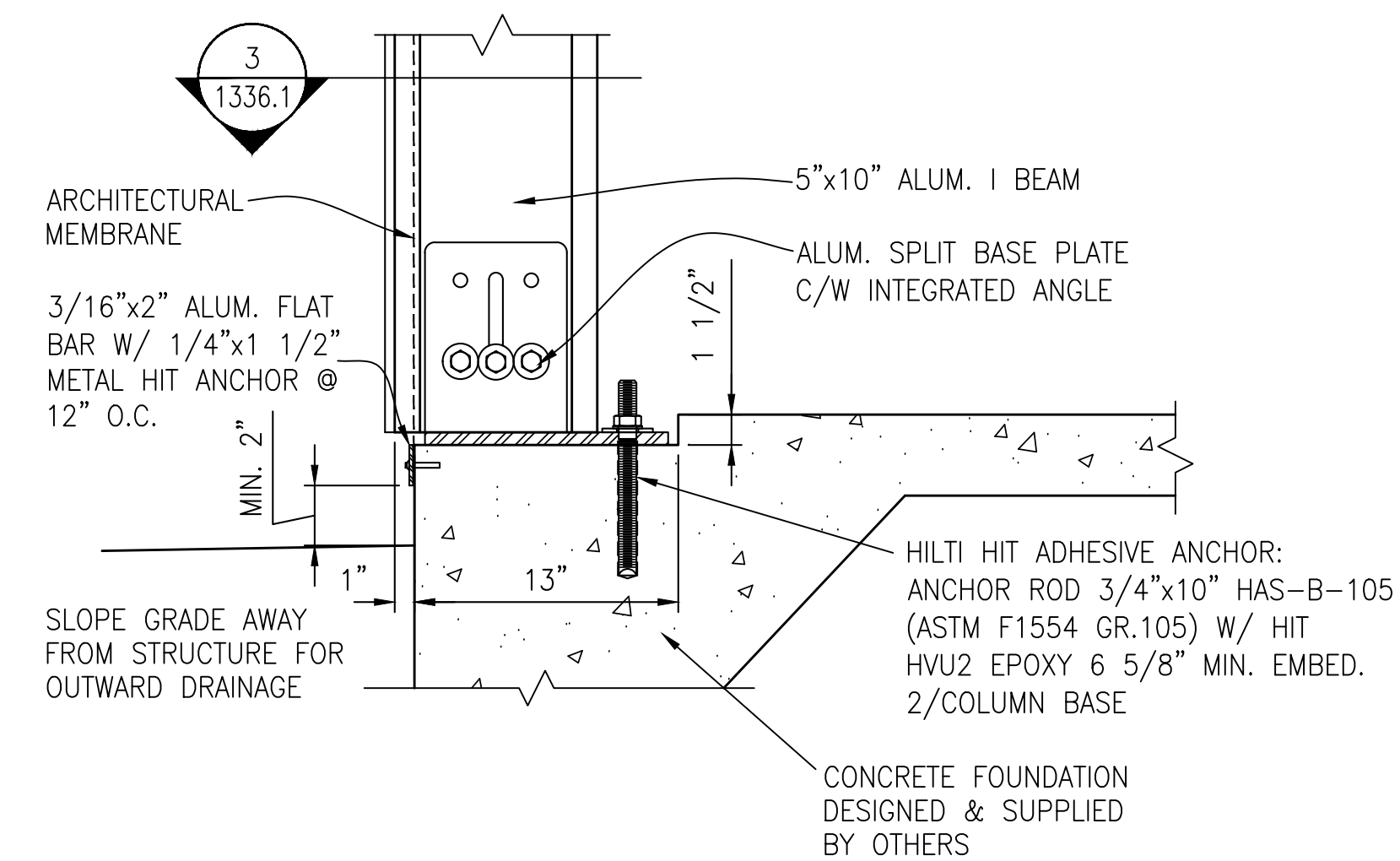
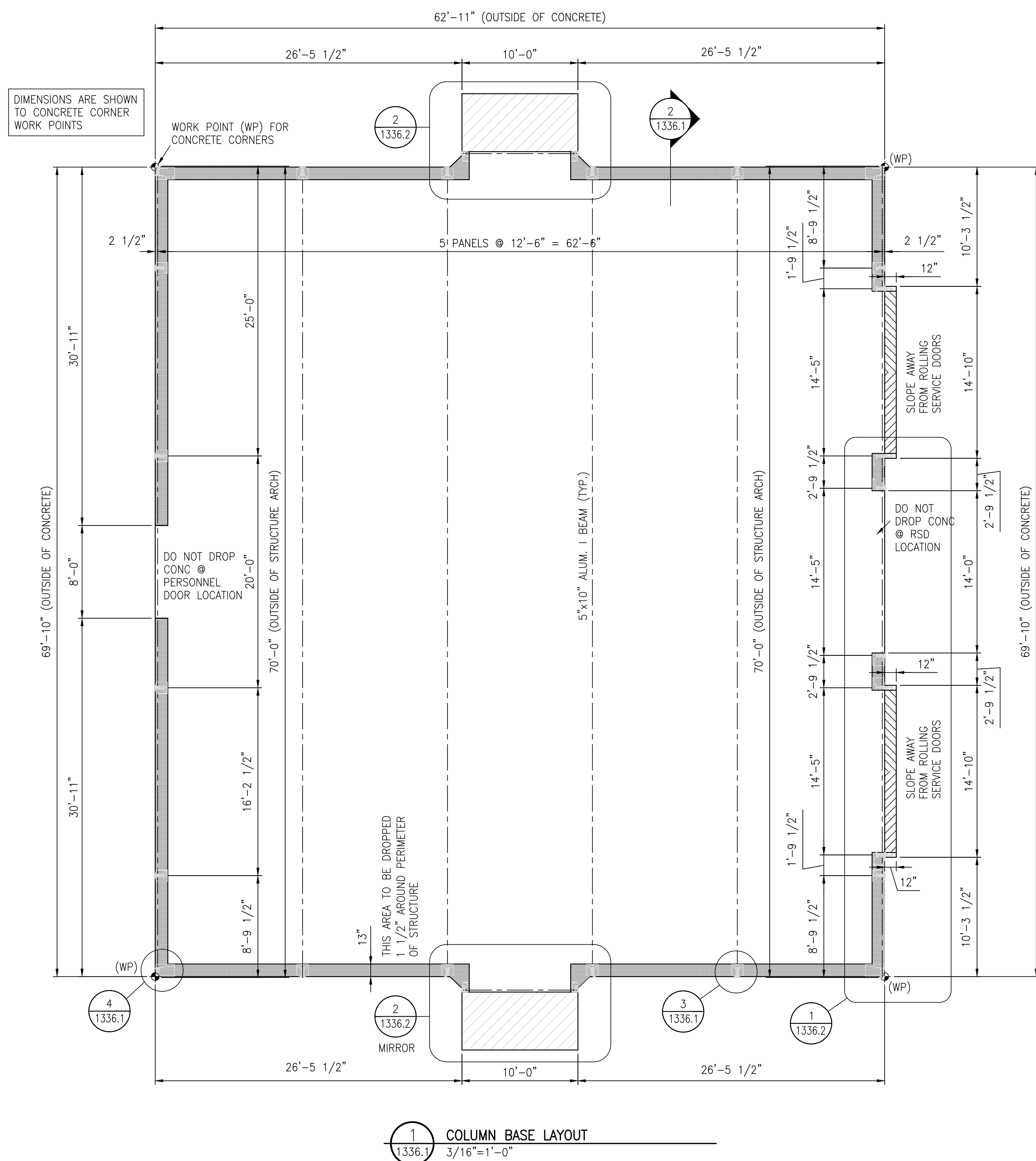
4	01/06/20	EH	ADD HOOD LIGHTS
3	12/17/19	EH	REVISE COMPANY NAME
2	11/16/19	PD	ADD LOGOS & CHANGE COLOR
REV	MM/DD/YY	BY	DESCRIPTION

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WCC SERVICES INC

70.0' x 62.5'
FIRE STATION

DRAWN BY P. DUMONT	DATE 11/06/2019
CHECKED BY	APP'D BY
SCALE AS NOTED	DRAWING #
CUST. APP'L	P19-1336.0



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innovation | versatility | reliability

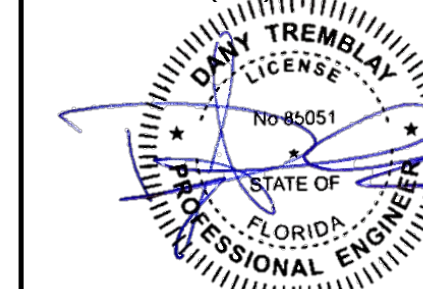
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GENERAL NOTES:

1. MIN. 4000psi CONCRETE.
2. OUTER MEMBRANE TO BE FINISHED TO CONCRETE USING ALUM. FLAT BAR
3. EXPOSED CONCRETE TO BE FINISHED ACCORDINGLY.
4. CLIENT TO ENSURE CONCRETE REINFORCING DOES NOT INTERFERE WITH ANCHOR BOLTS.
5. THIS DRAWING AND THE ASSOCIATED DETAILS ARE NOT A FOUNDATION DESIGN. THIS DRAWING IS PROVIDED AS A SERVICE TO THE OWNER AND THE OWNER'S FOUNDATION ENGINEER TO SHOW CONCRETE LIMITS AND DETAILS REQUIRED FOR THE ERECTION AND INSTALLATION OF THE SPRUNG STRUCTURE.
6. SEE ASSUMPTIONS USED IN THE DESIGN OF THE POST-INSTALLED ANCHORS.
7. ASSUMPTIONS USED IN THE DESIGN OF THE POST-INSTALLED ANCHORS DO NOT CONTROL OVER THE DESIGN BY THE FOUNDATION ENGINEER. IT IS CONTINGENT ON THE FOUNDATION ENGINEER TO DESIGN FOR DEVELOPMENT OF THE POST-INSTALLED ANCHORS TO CONFORM TO THE BUILDING CODE AND THE REQUIREMENTS OF THE SPRUNG STRUCTURE DESIGN.



940 E Elm Avenue
Salt Lake City, Utah 84106
Phone: (801) 486-6848



SIGNATURE SERIES

4	01/08/20	EH	ADD HOOD LIGHTS
3	12/17/19	EH	REVISE COMPANY NAME
2	11/18/19	PD	ADD LOGOS & CHANGE COLOR
REV	MM/DD/YY	BY	DESCRIPTION

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WCC SERVICES INC

70.0' x 62.5'
COLUMN BASE LAYOUT

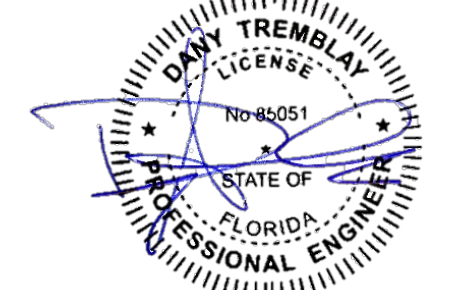
DRAWN BY E. HAMPTON	DATE 01/07/2020
CHECKED BY	APP'D BY
SCALE AS NOTED	DRAWING #
CUST. APP'L	P19-1336.1



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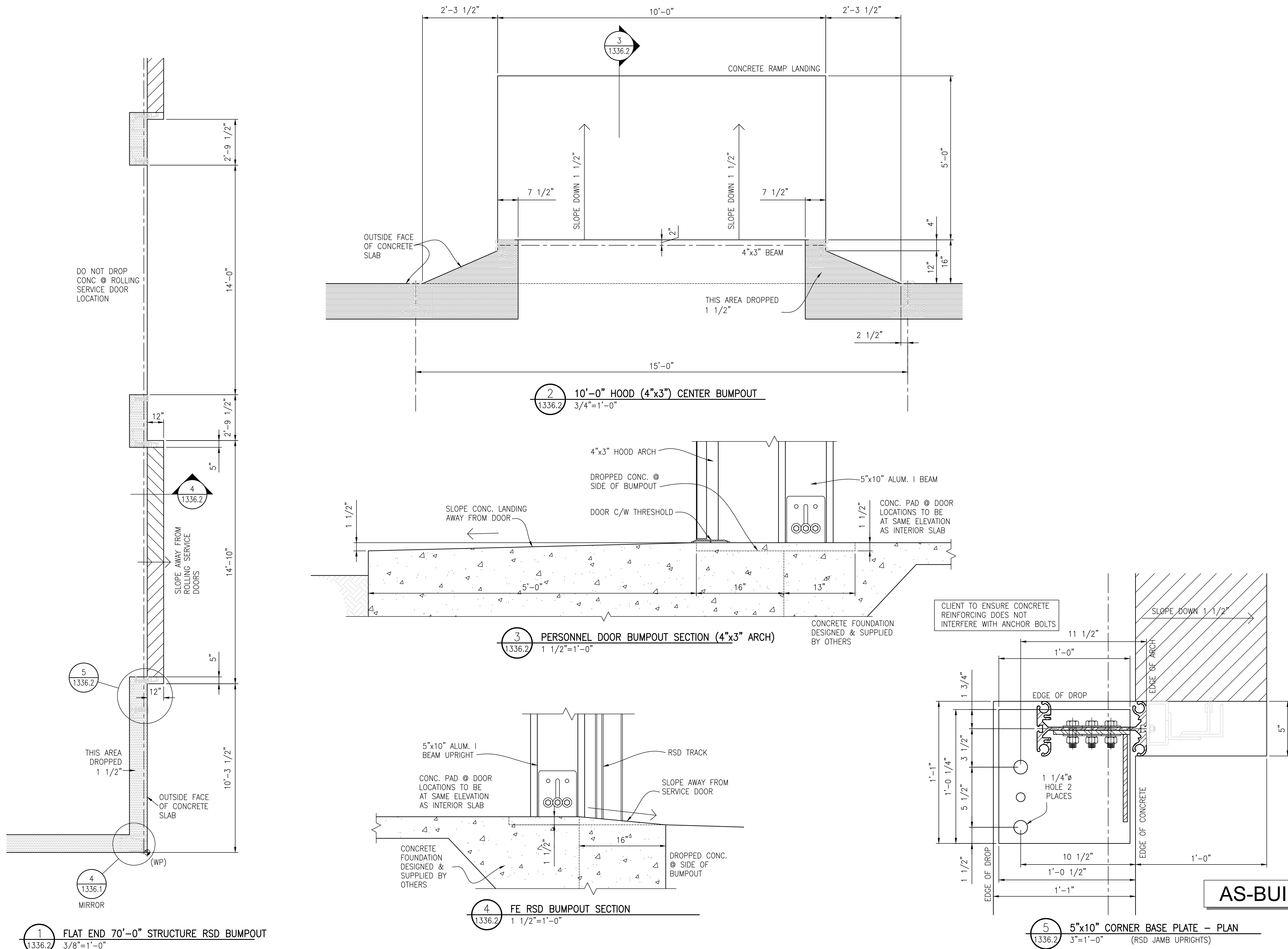
4 01/06/20 EH ADD HOOD LIGHTS
3 12/17/19 EH REVISE COMPANY NAME
2 11/16/19 PD ADD LOGOS & CHANGE COLOR
REV 11/16/19 BY DESCRIPTION

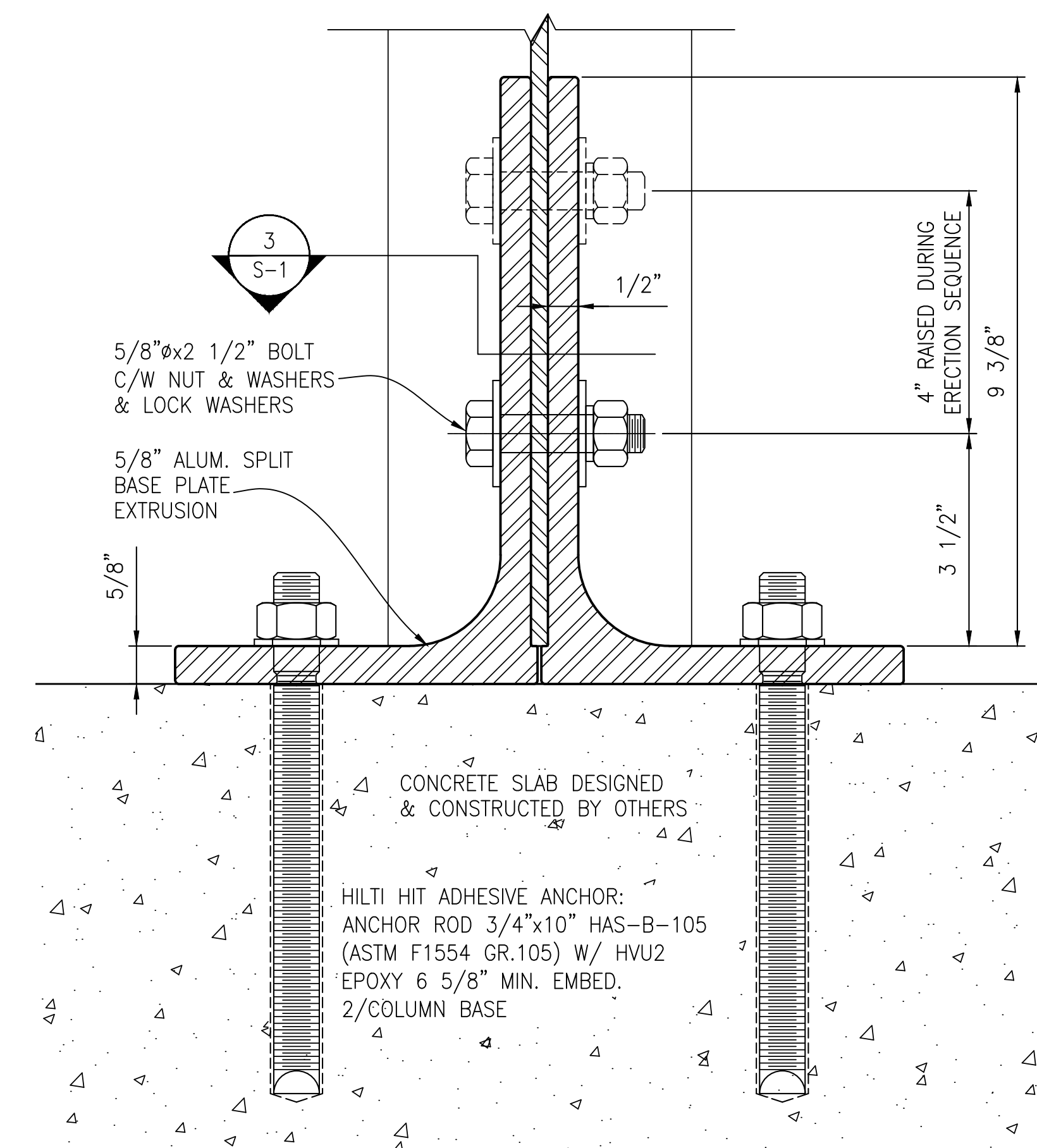
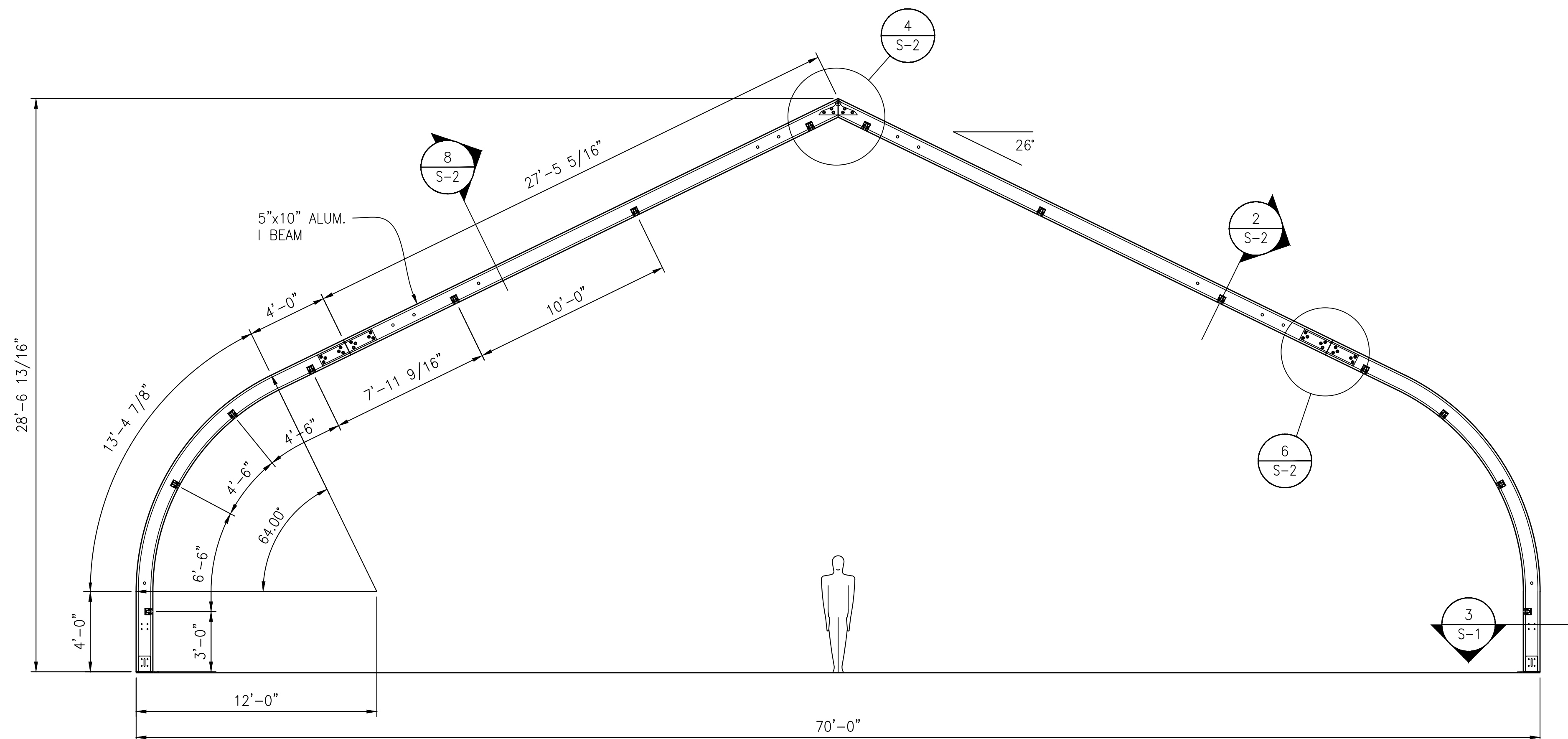
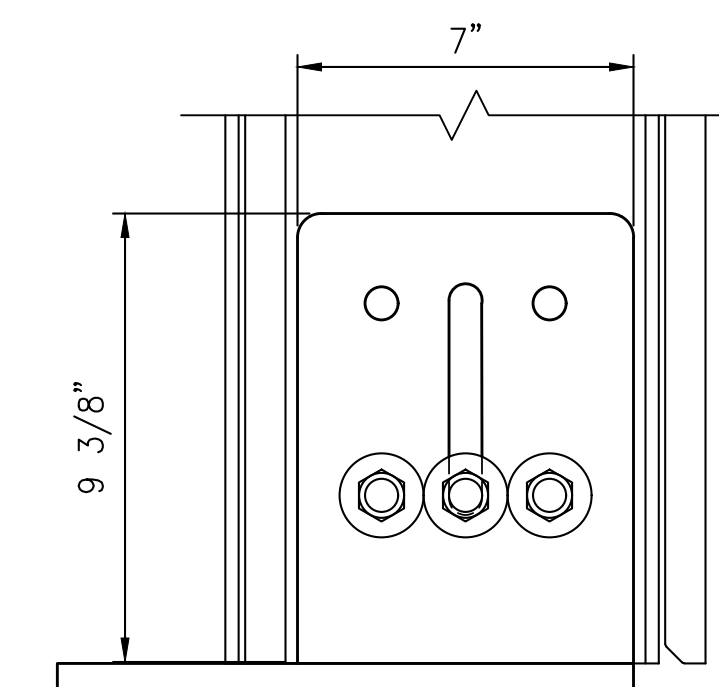
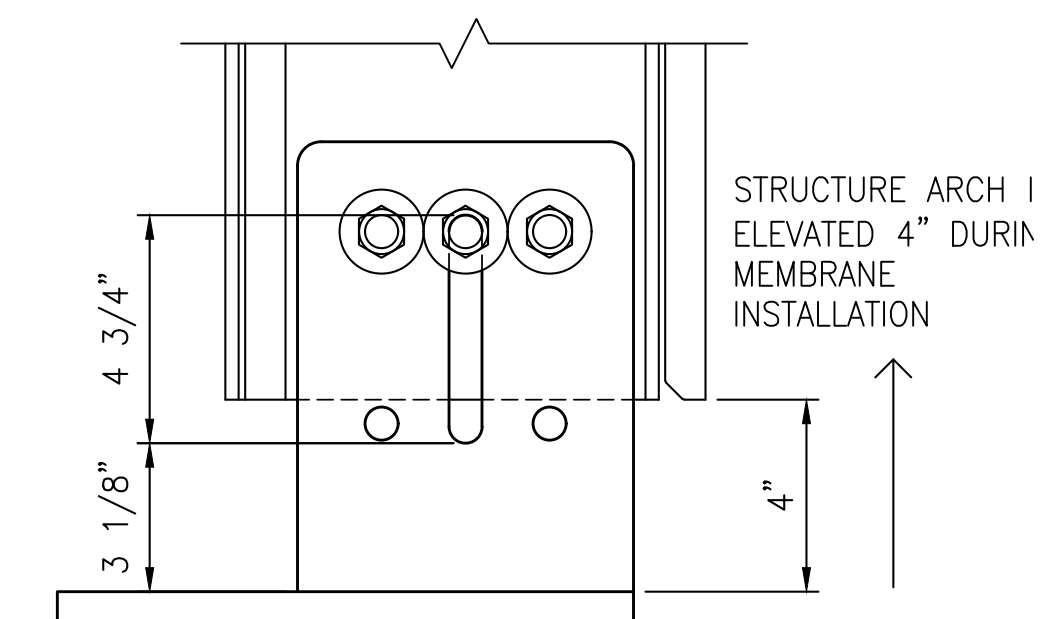
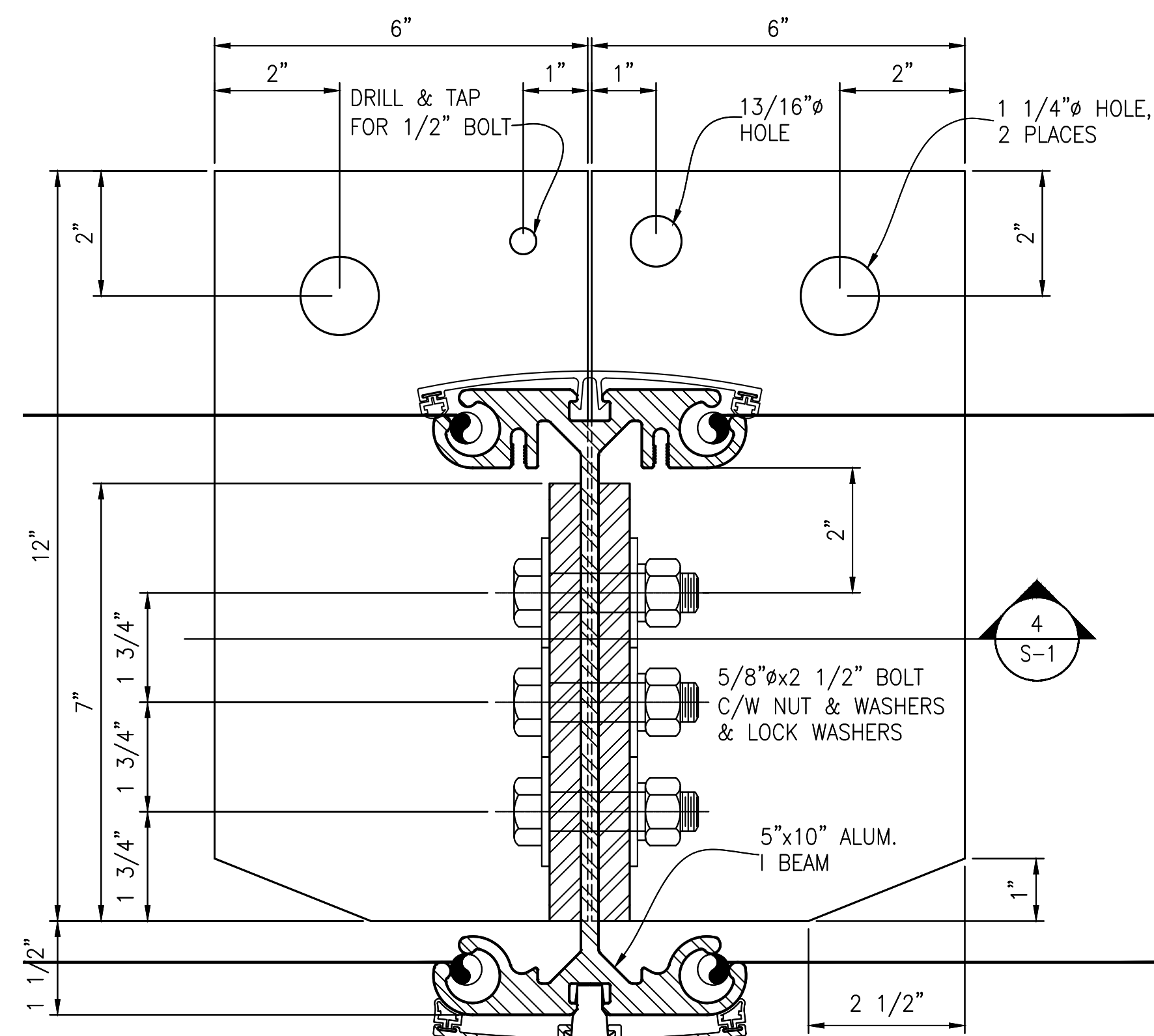
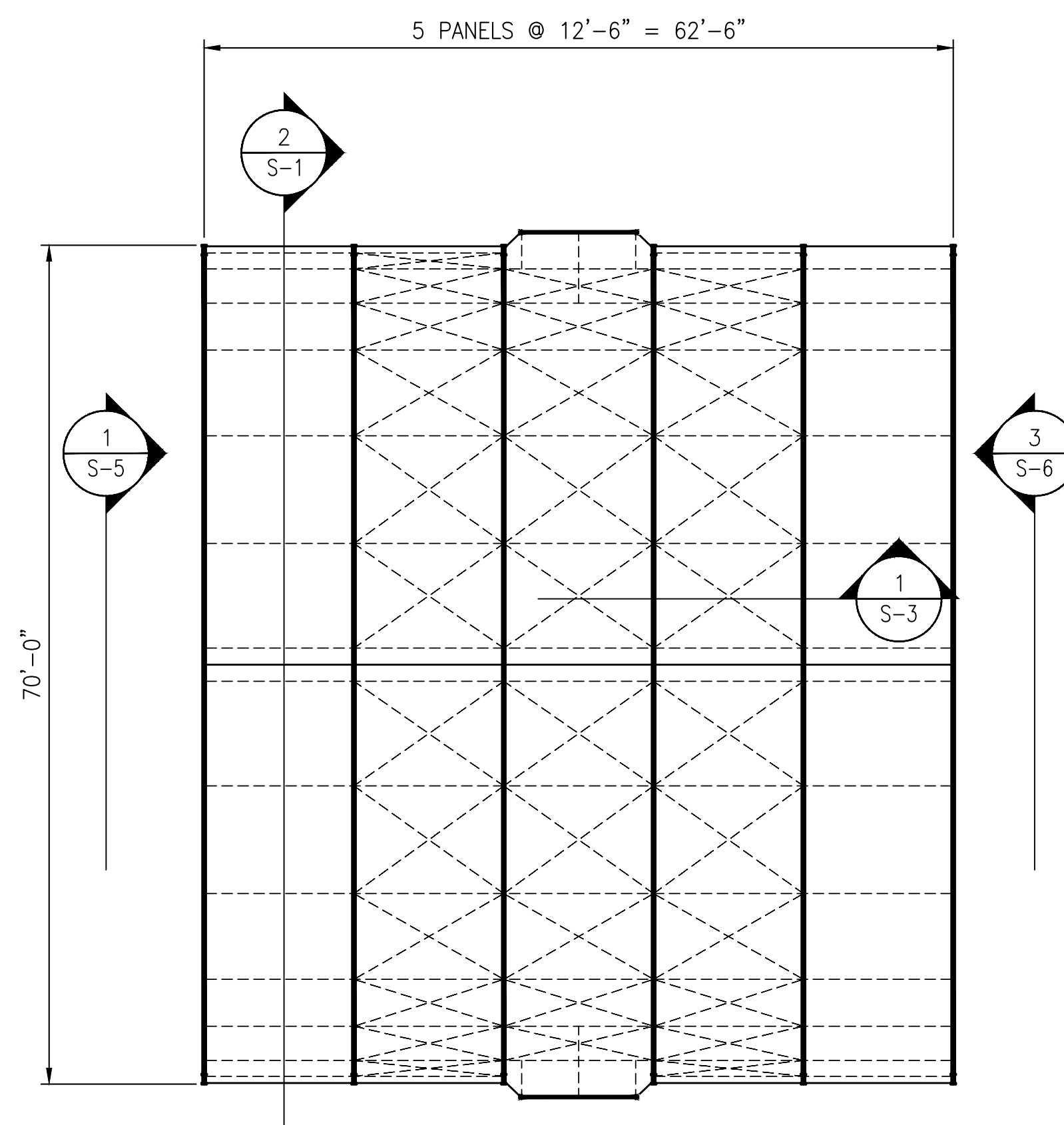
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WCC SERVICES INC

70.0' x 62.5'
BUMPOUT DETAILS

DRAWN BY E. HAMPTON	DATE 01/07/2020
CHECKED BY	APP'D BY
SCALE AS NOTED	DRAWING #
CUST. APP'L	P19-1336.2





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or (403) 601-2292 www.sprung.com

BUILDING MATERIALS:

STRUCTURAL BOLTS:
ZINC-DICHROMATE PLATED SAE GRADE 8
ALL STRUCTURAL BOLTS SHALL BE
TIGHTENED TO A SNUG TIGHT CONDITION;
I.E., ALL PLIES SHALL BE BROUGHT INTO
FIRM CONTACT WITH A FEW IMPACTS OF AN
IMPACT WRENCH OR THE FULL EFFORT OF
A MAN WITH A SPUD WRENCH.

ANCHOR BOLTS:
ANCHOR BOLTS SHALL NOT BE
CAST-IN-PLACE. THE DEVELOPMENT OF
THE POST-INSTALLED ANCHORS INTO THE
CONCRETE FOUNDATION IS THE
RESPONSIBILITY OF THE OWNER OR THE
OWNER'S REGISTERED FOUNDATION
ENGINEER.

ALUMINUM: 6351-T6, DESIGN AND FABRICATION SHALL BE PER THE ALUMINUM DESIGN MANUAL.

STEEL: 300W CSA, G40.21, FY=44 KSI,
ALL STEEL IN CONTACT WITH ALUMINUM
SHALL BE HOT DIP GALVANIZED. DESIGN
AND FABRICATION OF STRUCTURAL STEEL
SHALL BE IN CONFORMANCE WITH AISC
360.

SPECIAL INSPECTION:
THIS BUILDING INCORPORATES STRUCTURAL BOLTS AND POST-INSTALLED ANCHORS WHICH MAY REQUIRE SPECIAL INSPECTION UNDER THE BUILDING CODE. PER THE BUILDING CODE, SPECIAL INSPECTION, IF REQUIRED, IS THE RESPONSIBILITY OF THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT.

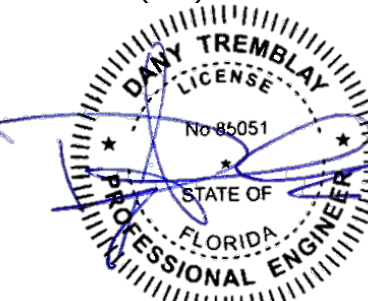
CONCRETE: 4000psi OR GREATER

DESIGN LOADS

STRUCTURE LOCATION: PANAMA CITY, FL
BUILDING CODE: FBC 2012, 6TH ED.
WIND SPEED: 146 MPH 3 SEC GUST
RISK CATEGORY: IV EXPOSURE C
GROUND SNOW LOAD: NA
(SEE SNOW SHED REPORT)



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Salt Lake City, Utah 84106
Phone: (801) 486-6848



SIGNATURE SERIES

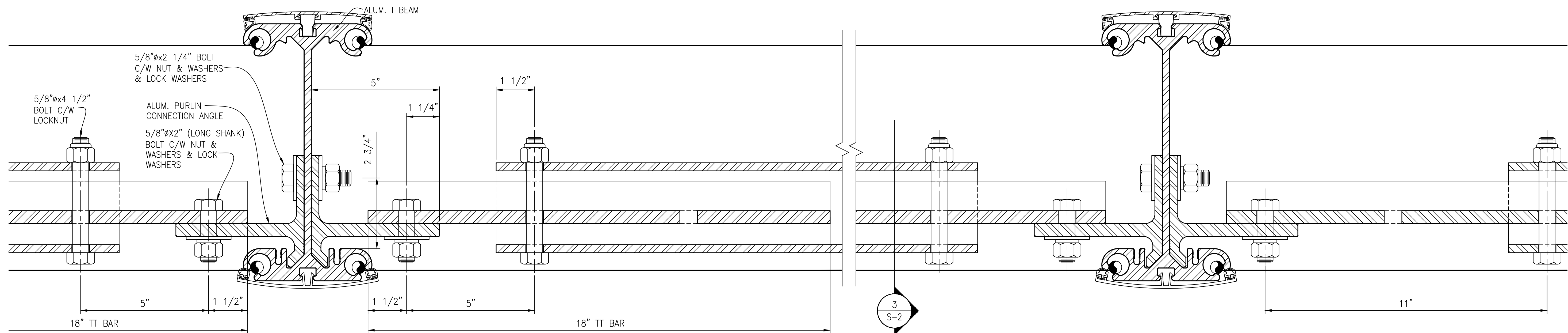
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WCC SERVICES INC

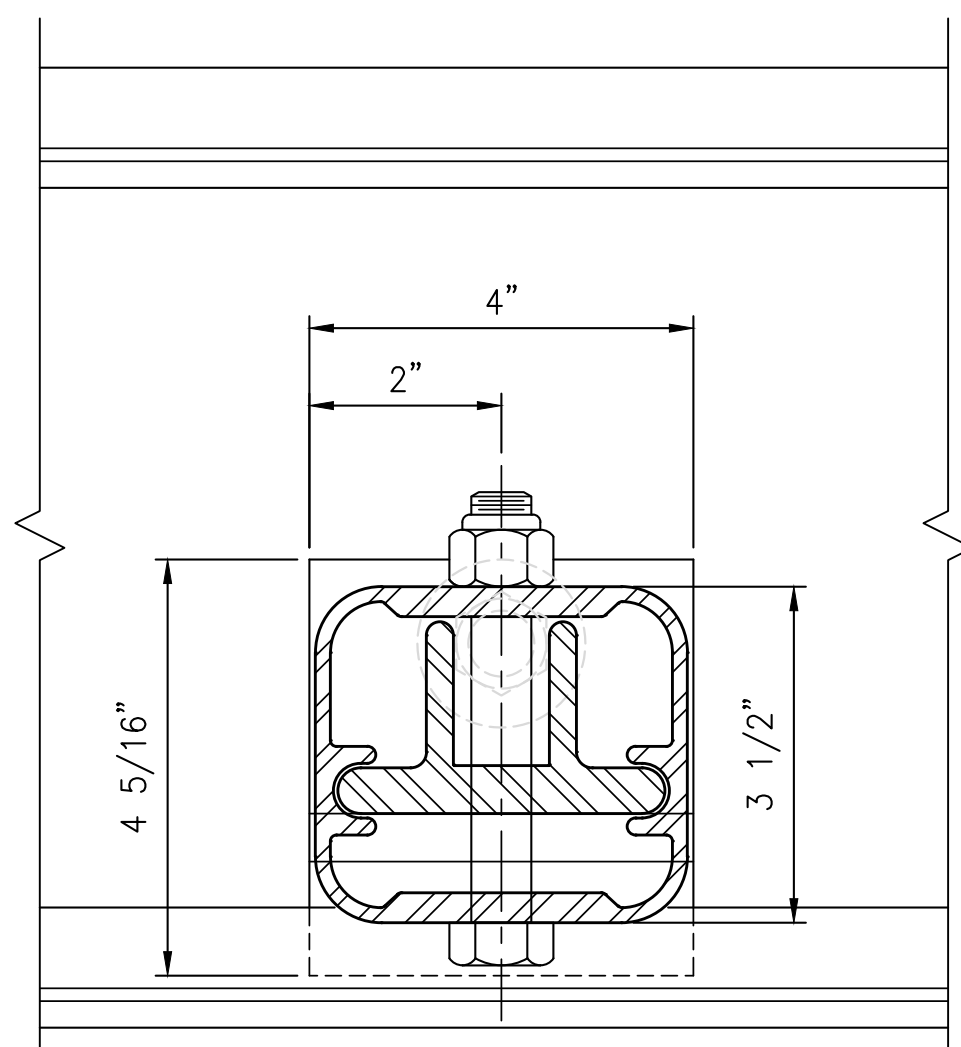
70.0' STRUCTURE
SECTION & BASE DETAILS

DRAWN BY: D. BENNETT	DATE: 01/08/2020
SCALE: AS NOTED	DRAWING # S-1
SPRUNG WO: 23455	

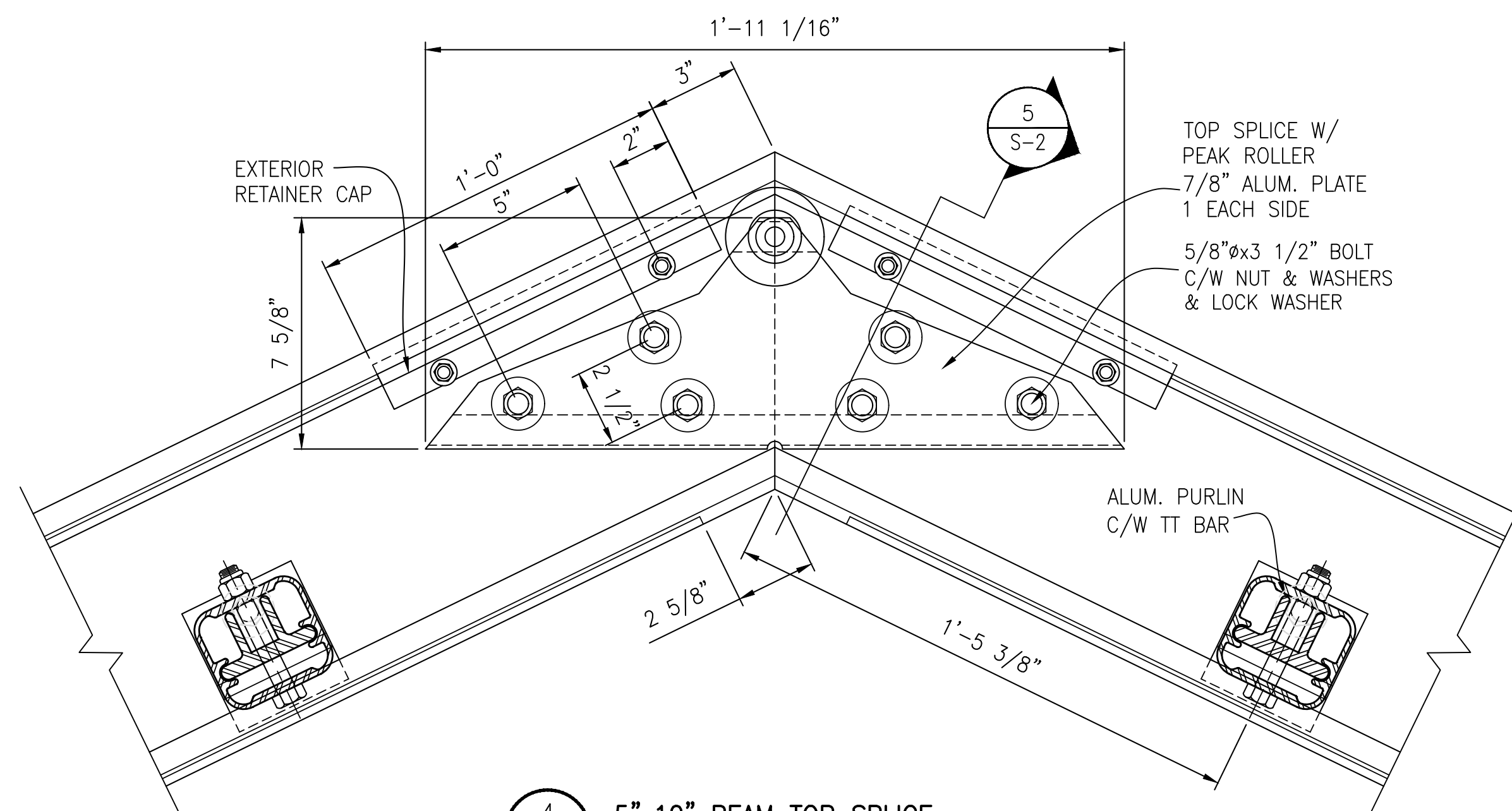


1 5"x10" PURLIN – ELEVATION
S-2 6"=1'-0" (ERECTION CONDITION)

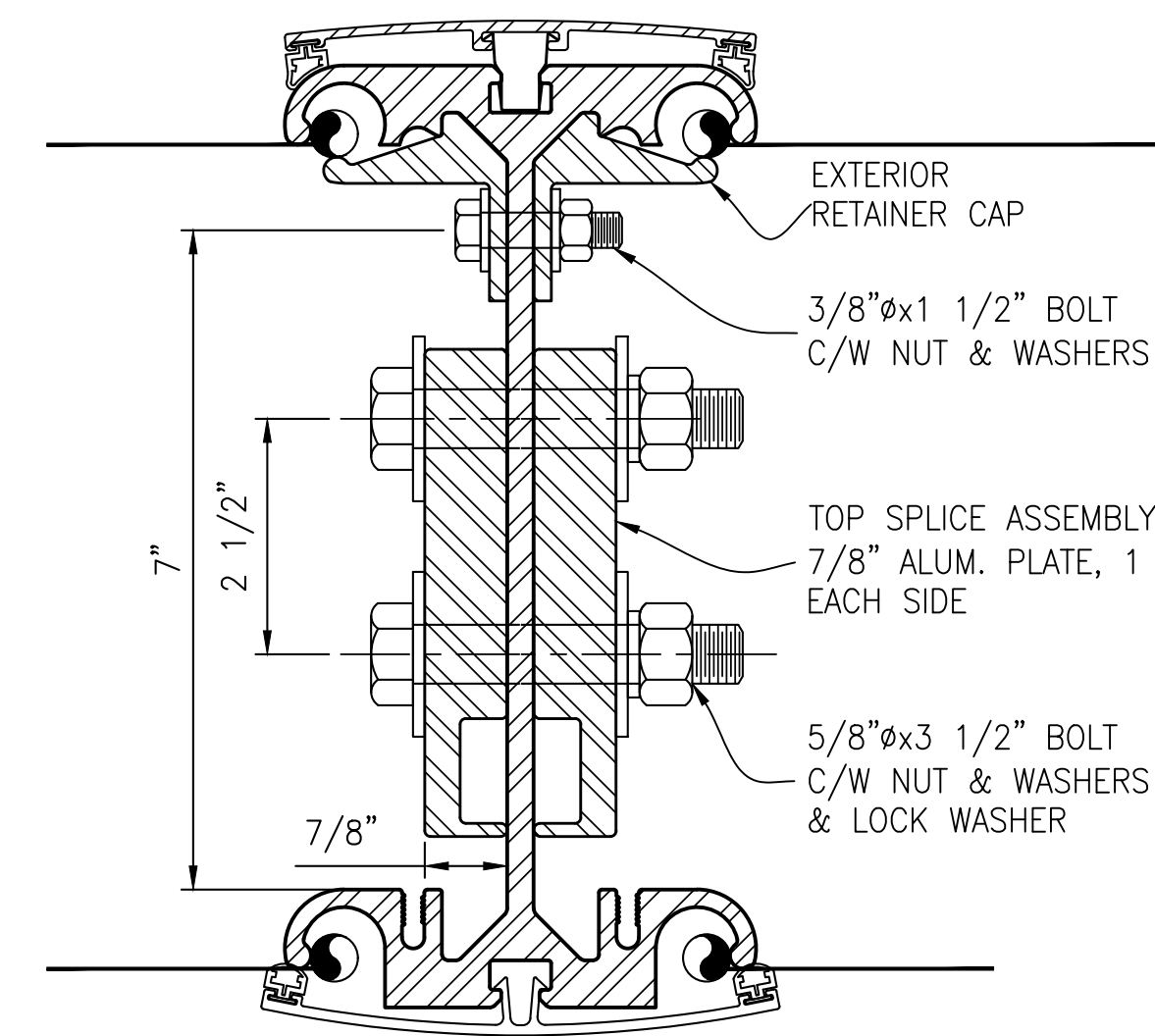
2 5"x10" PURLIN – ELEVATION
S-2 6"=1'-0" (FINAL CONDITION)



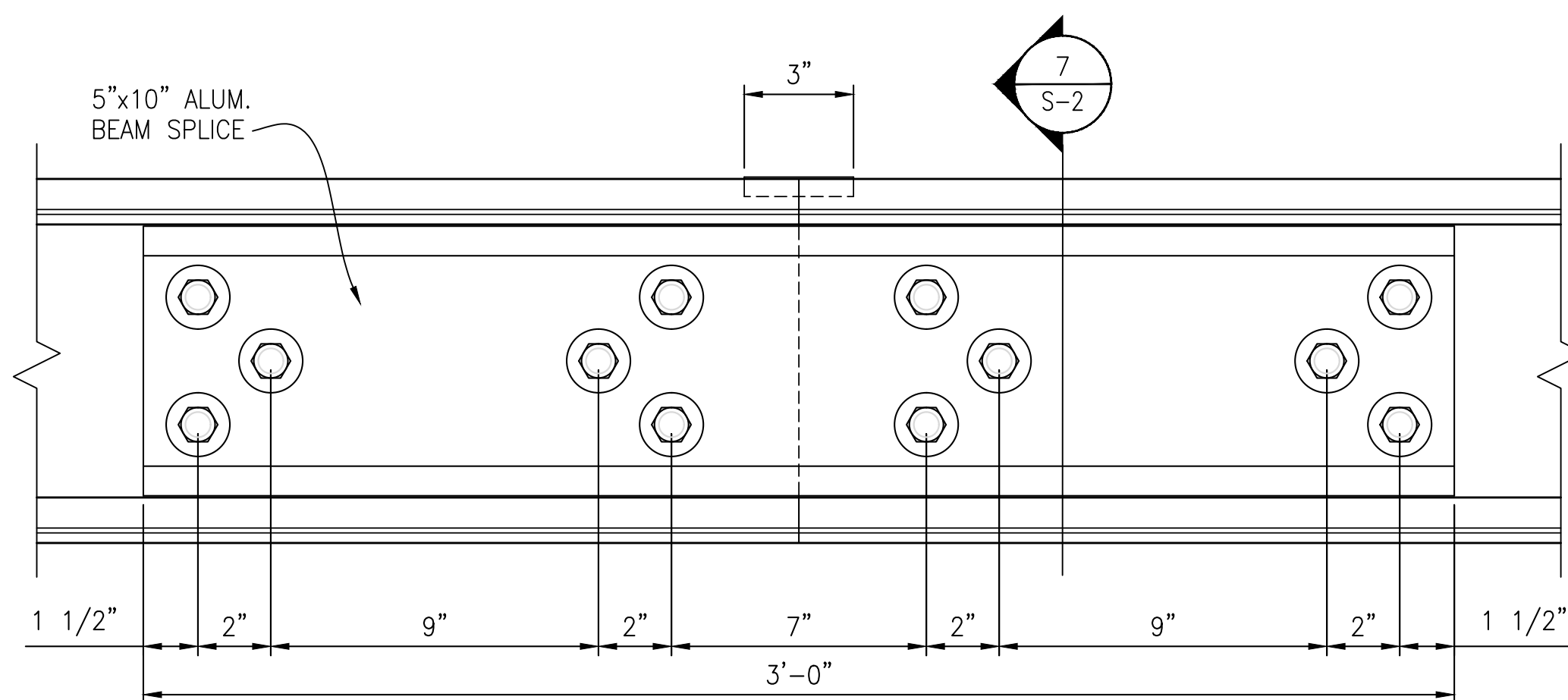
3 5"x10" PURLIN – SECTION
S-2 6"=1'-0"



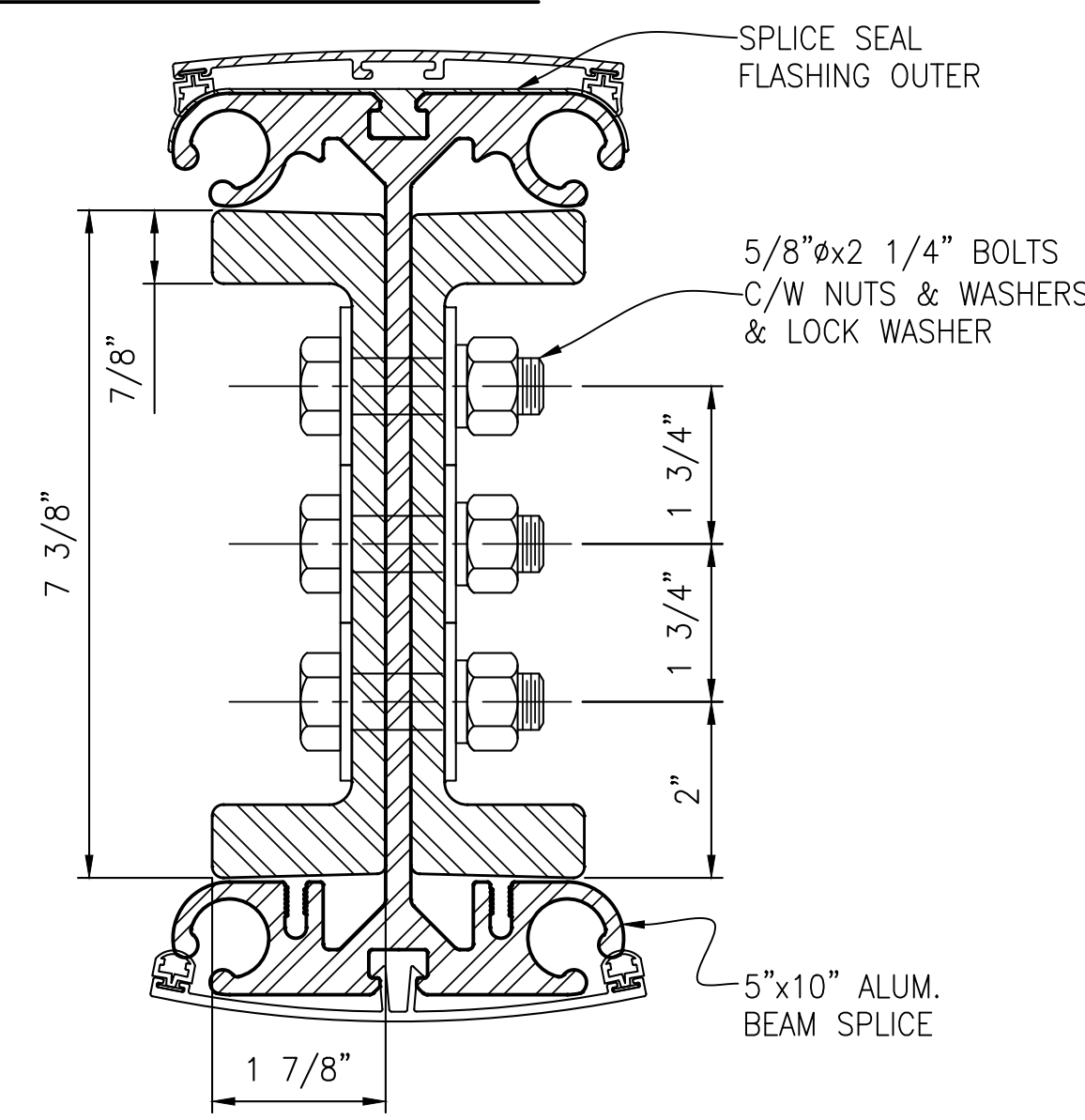
4 5"x10" BEAM TOP SPLICE
S-2 3"=1'-0"



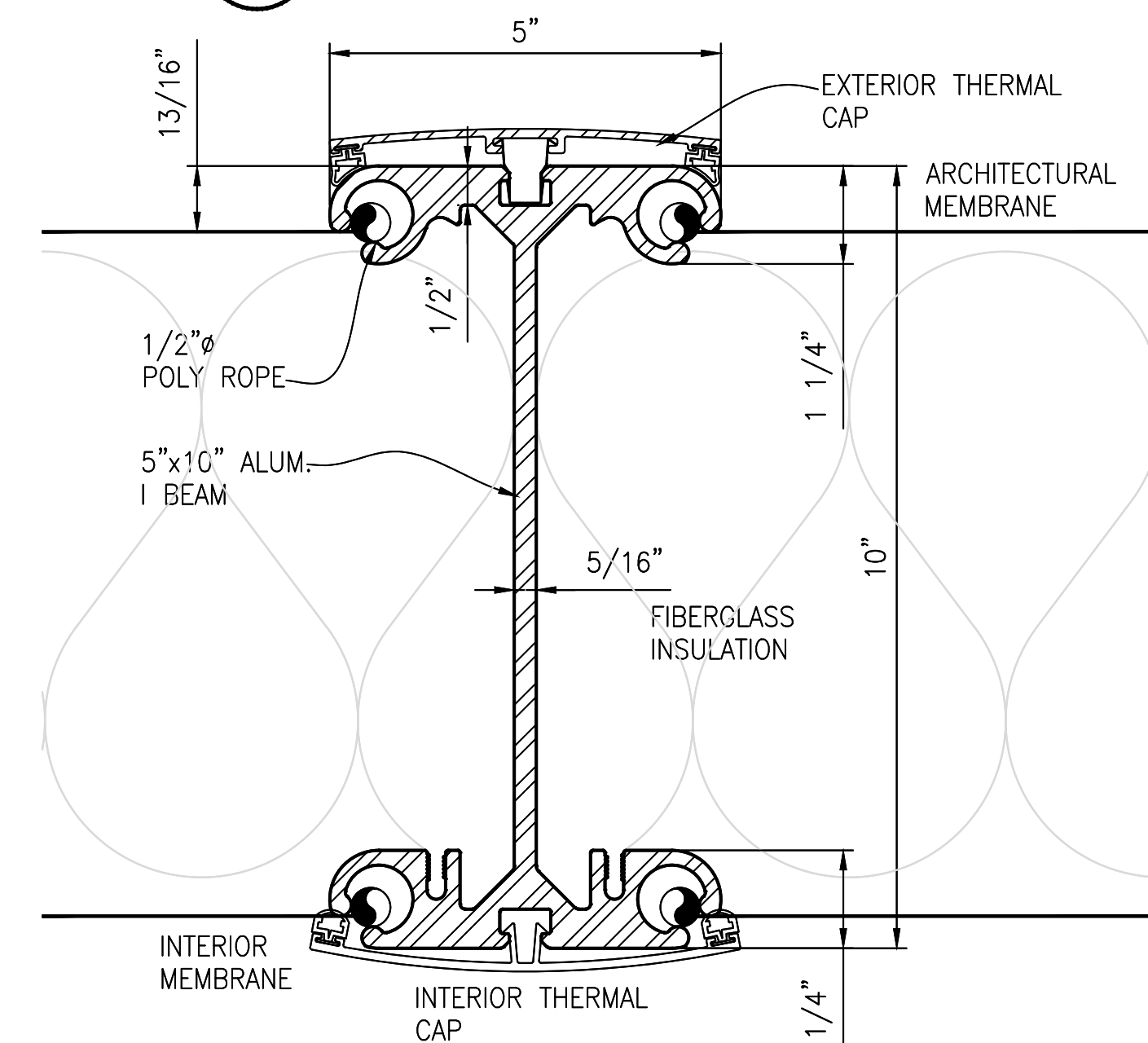
5 5"x10" TOP SPLICE – SECTION
S-2 6"=1'-0"



6 5"x10" BEAM SPLICE
S-2 3"=1'-0"



7 5"x10" BEAM SPLICE – SECTION
S-2 6"=1'-0"



8 5"x10" INSUL. BEAM SECTION
S-2 6"=1'-0"

AS-BUILT

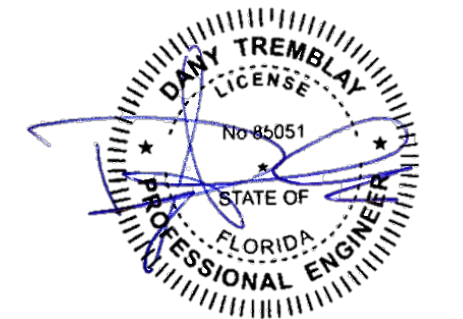


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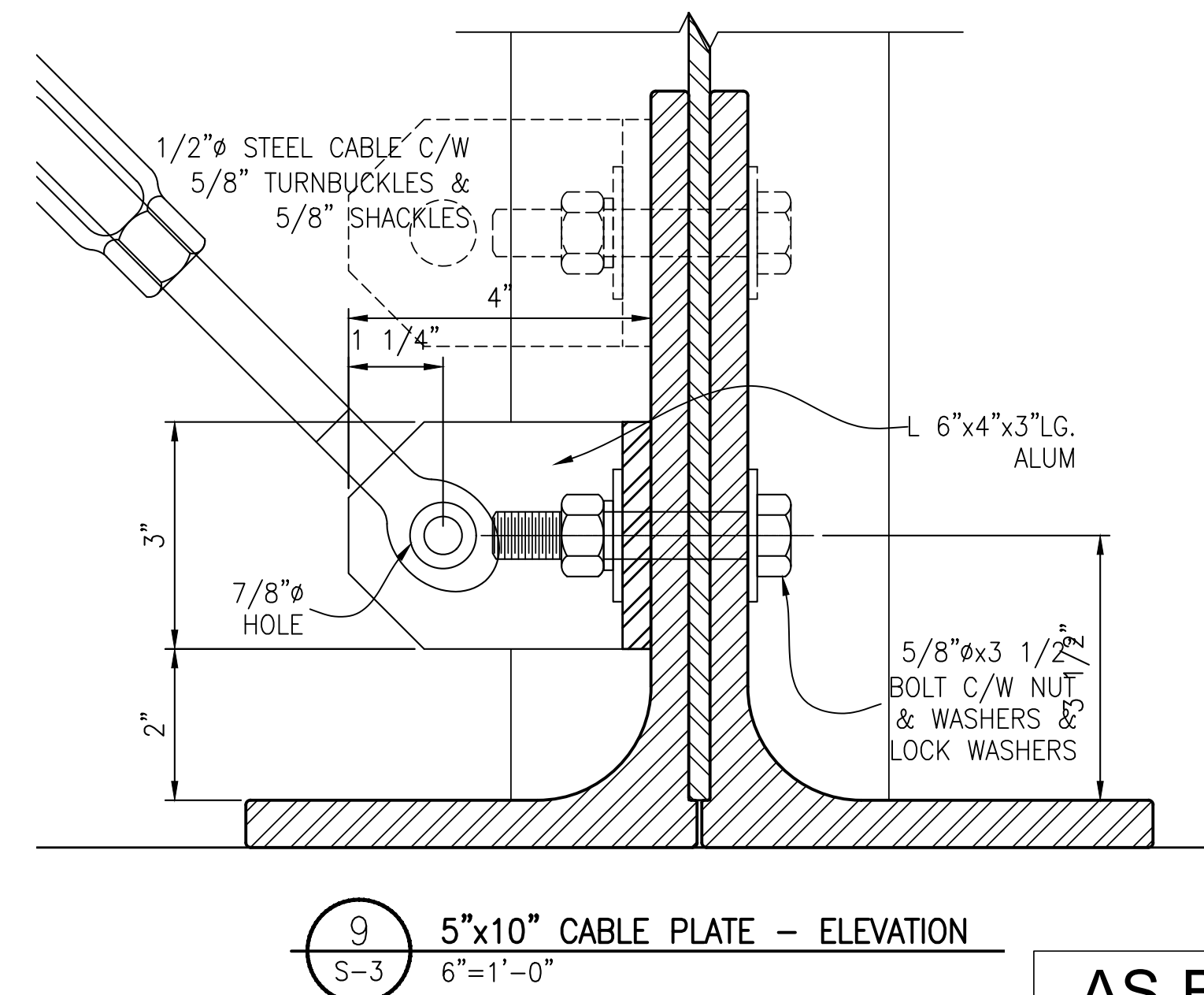
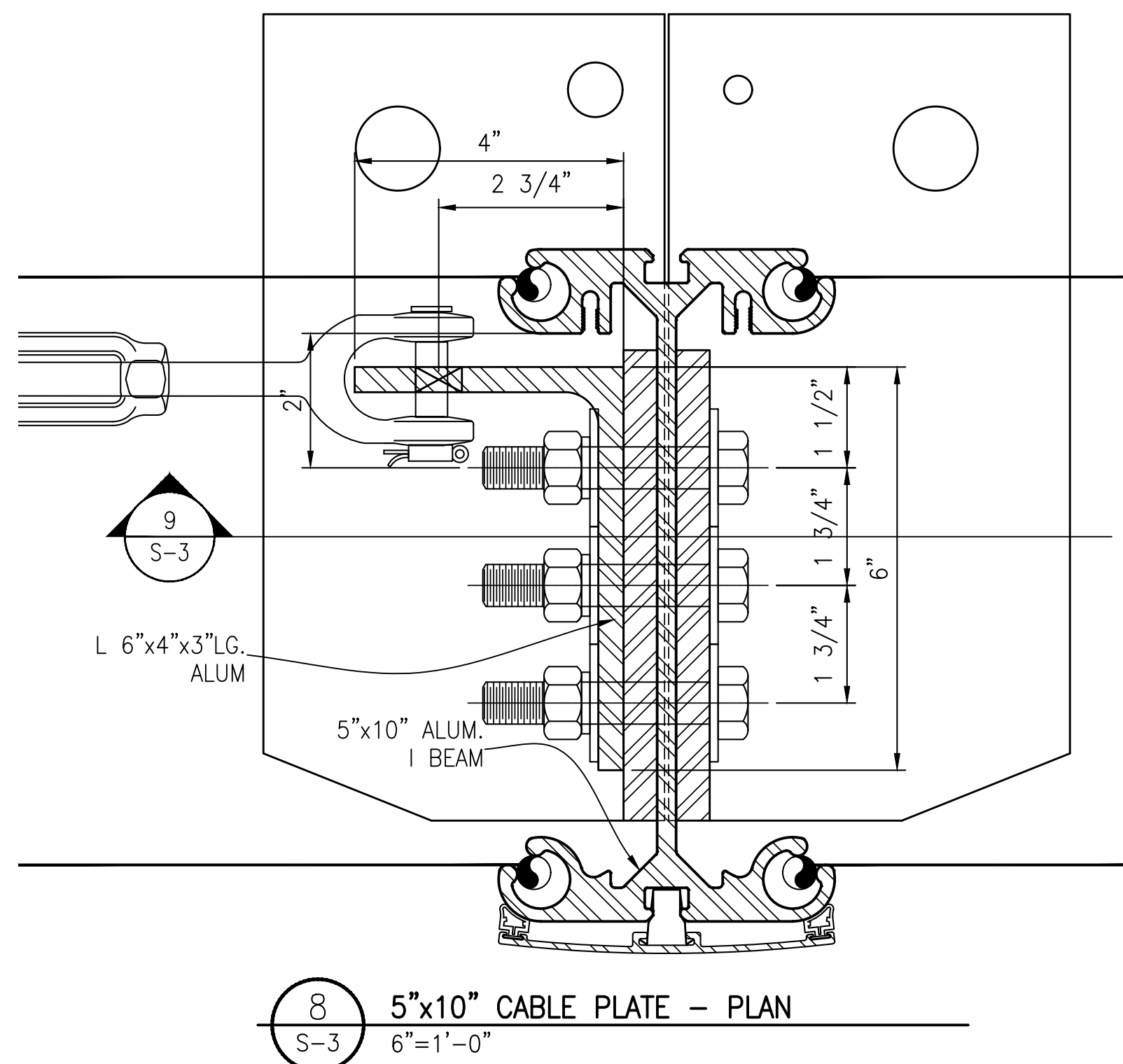
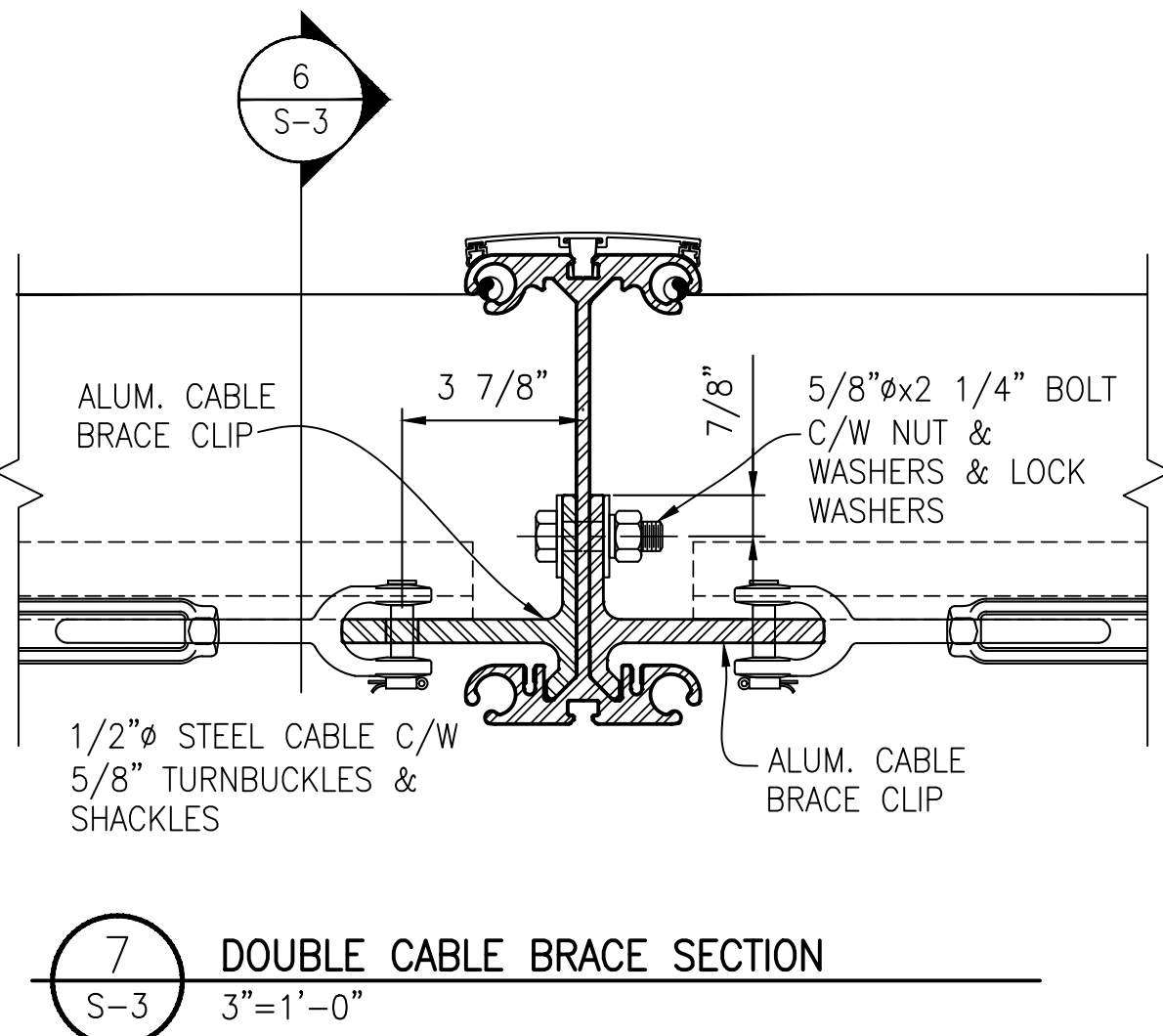
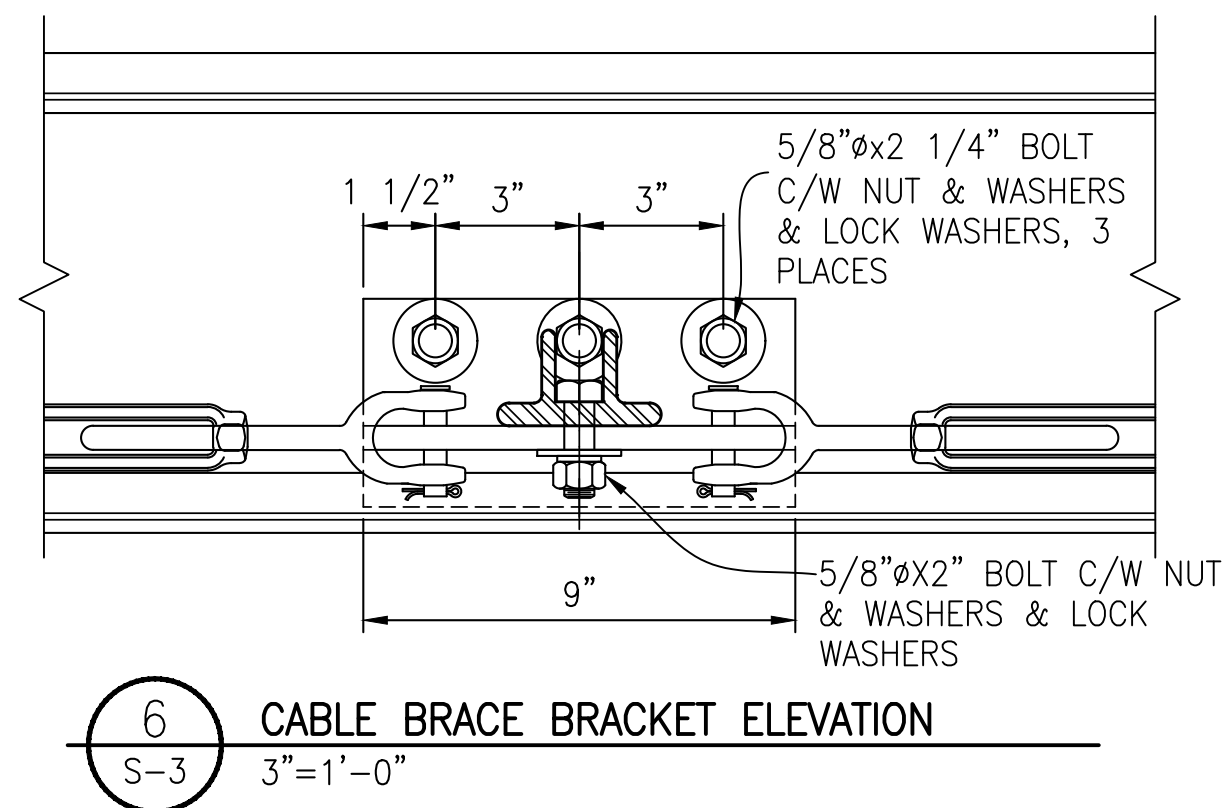
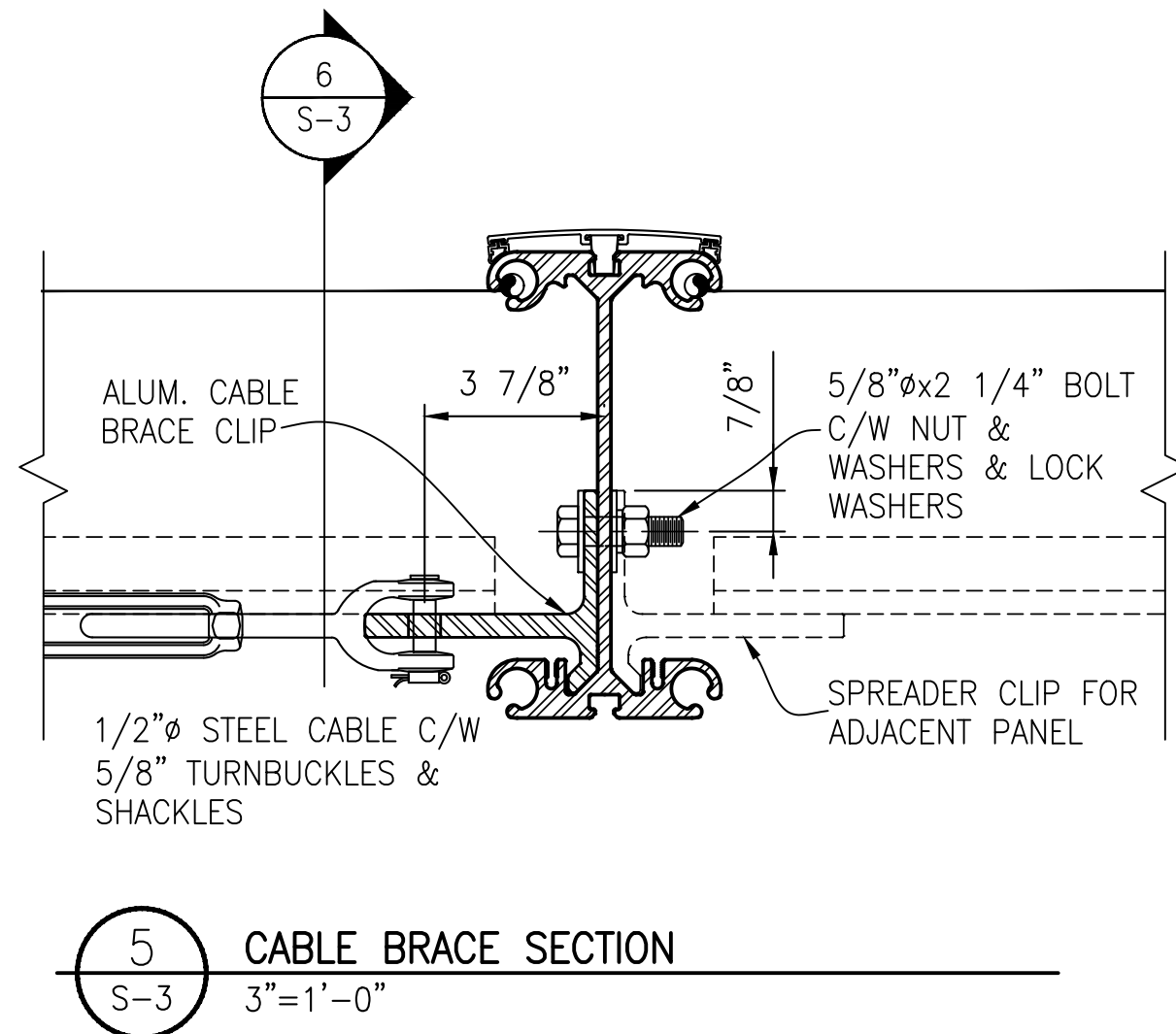
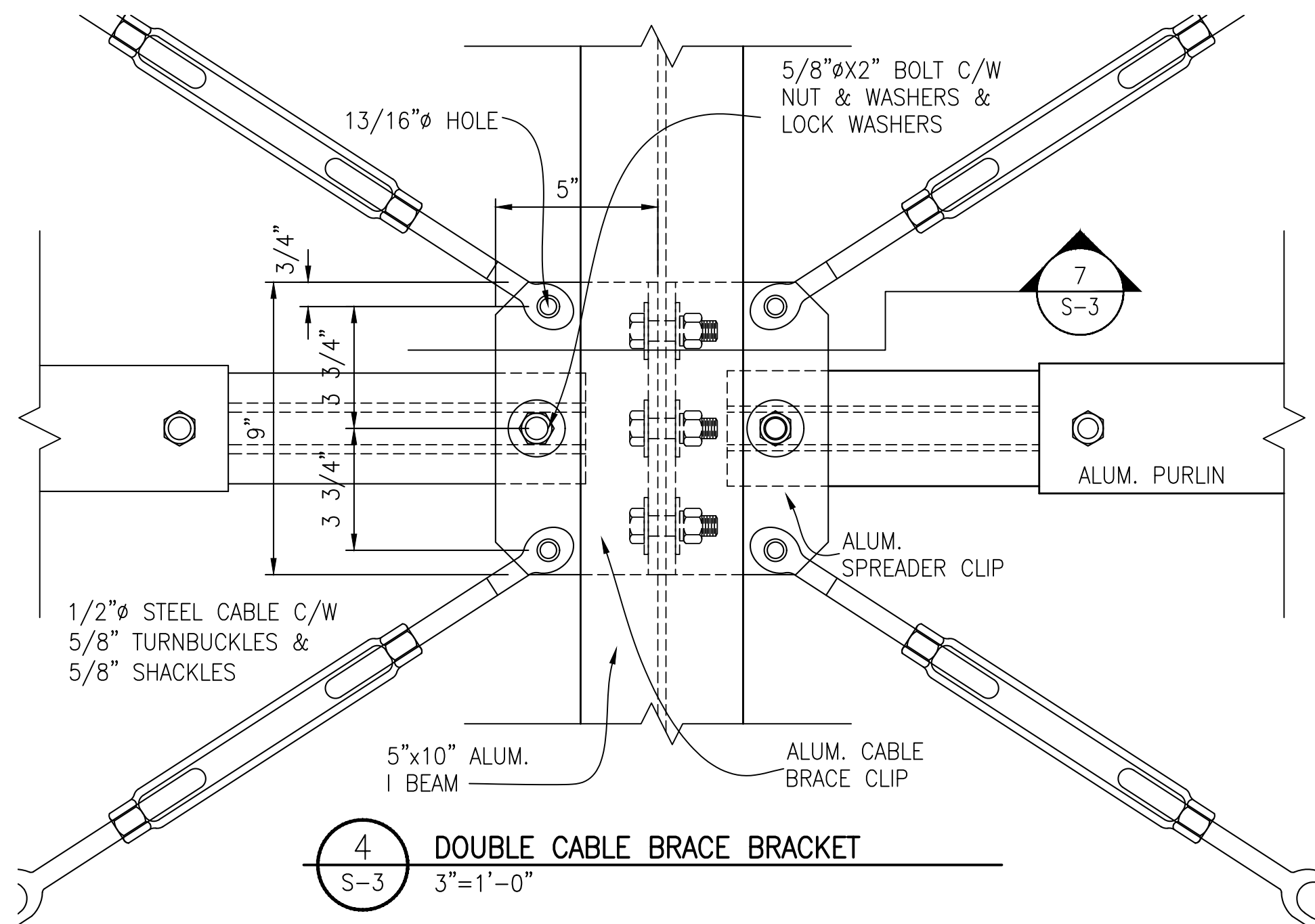
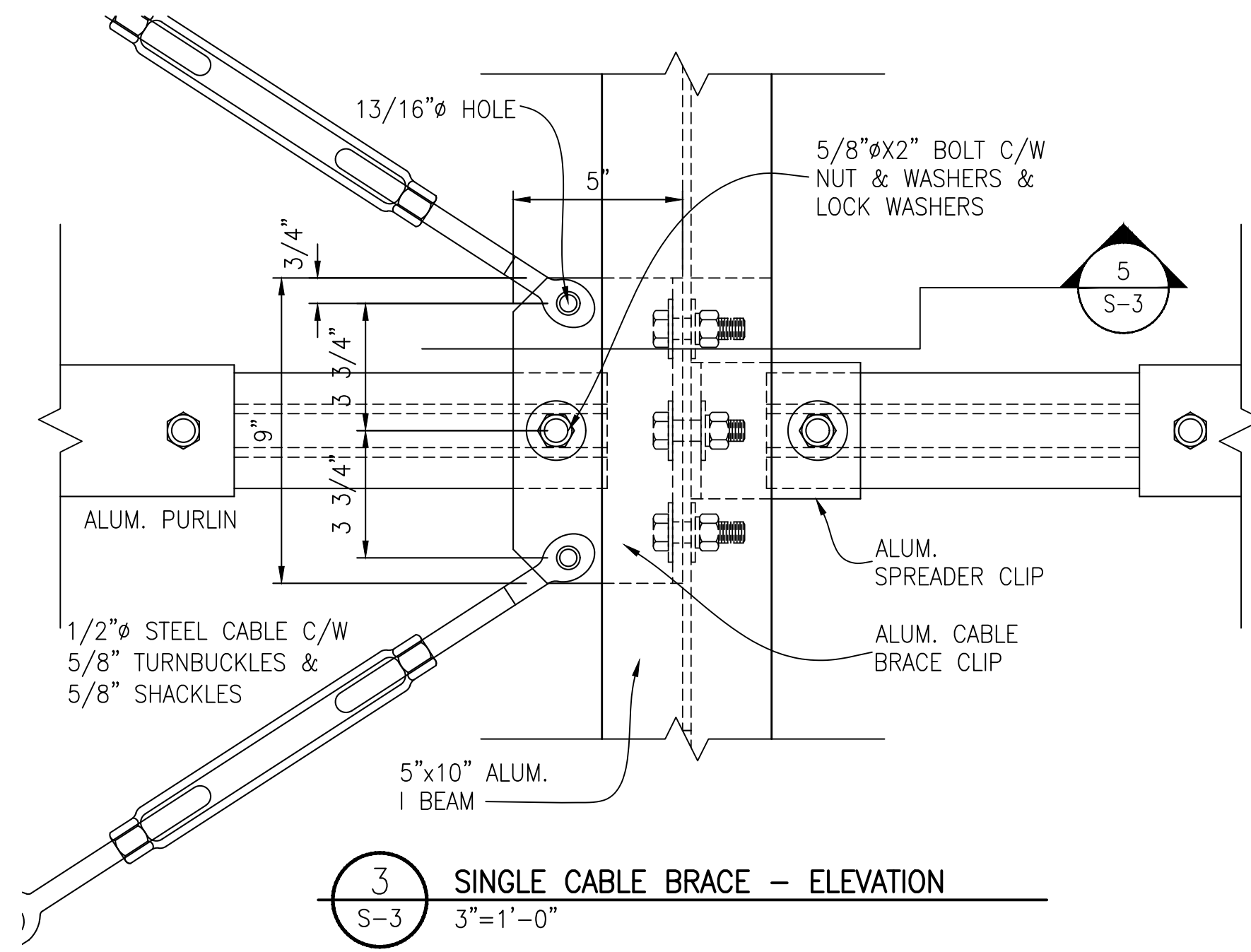
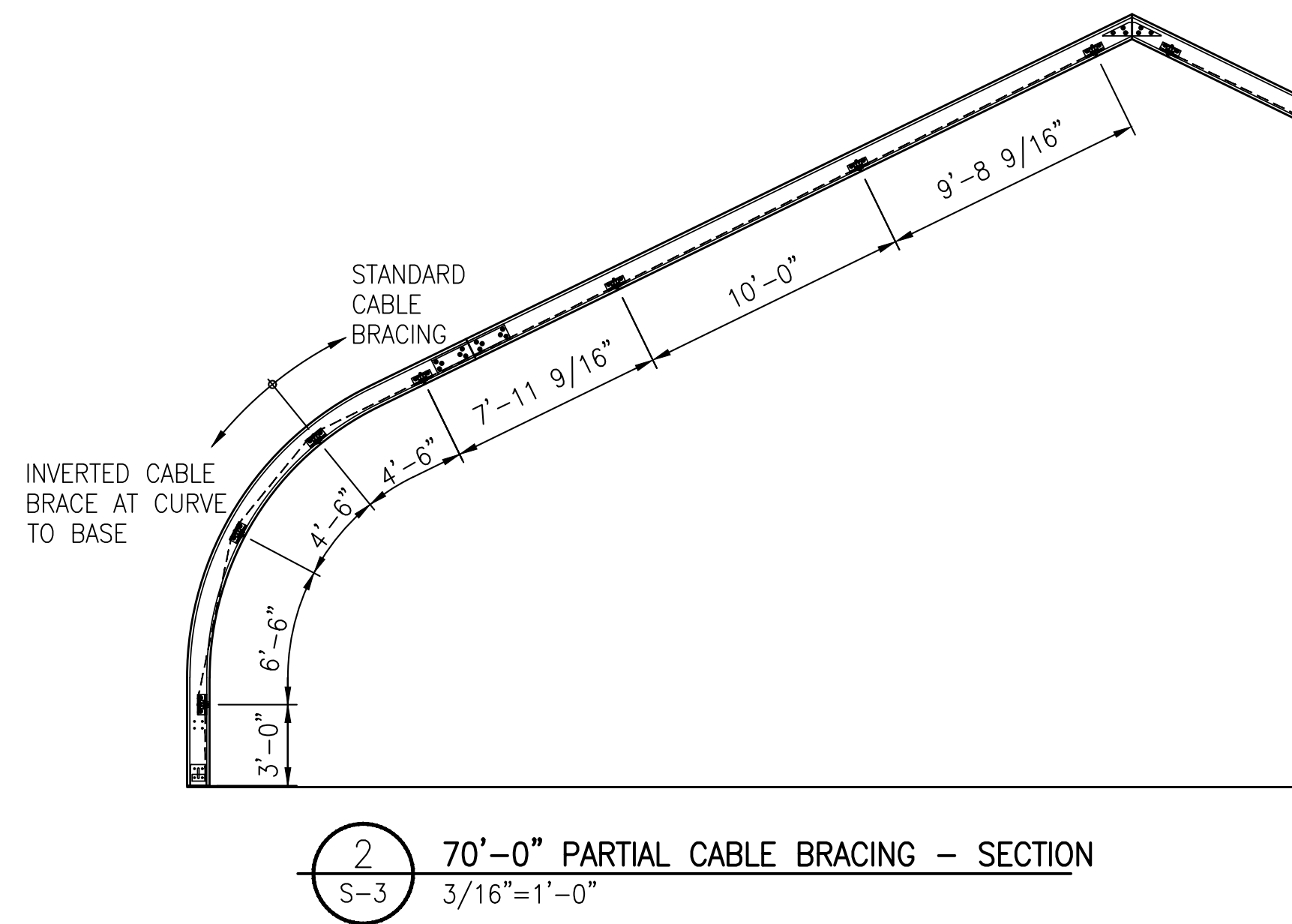
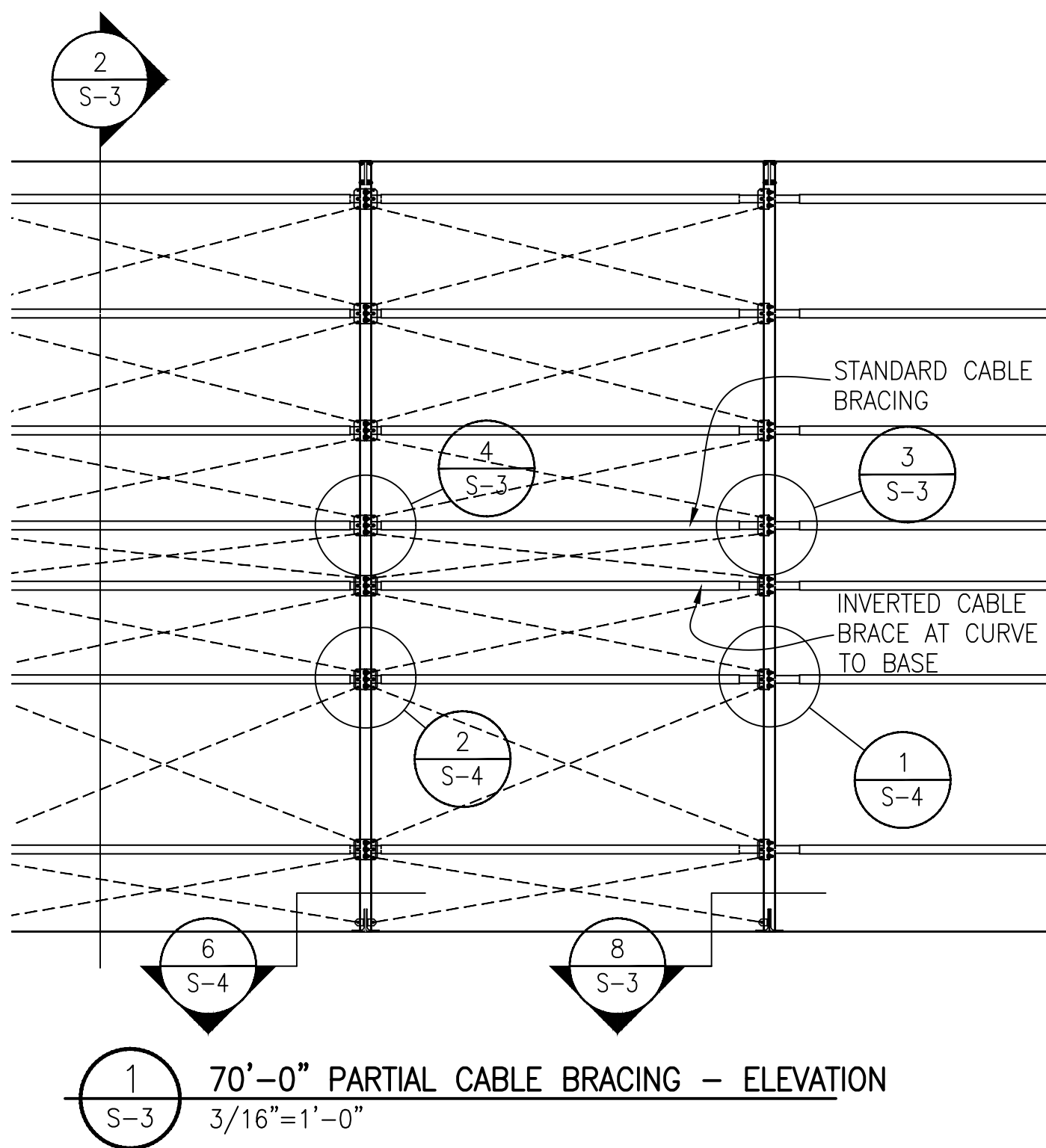
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WCC SERVICES INC

70.0' STRUCTURE
PURLIN & SPLICE DETAILS

DRAWN BY: D. BENNETT DATE: 01/06/2020
SCALE: AS NOTED DRAWING #
SPRUNG WO: 23455 S-2

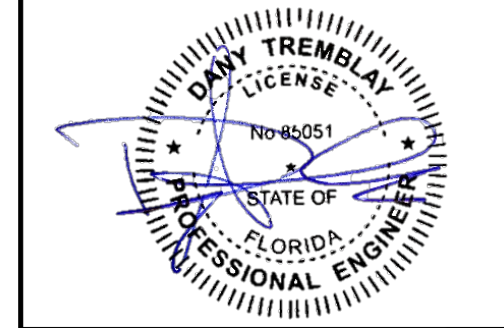


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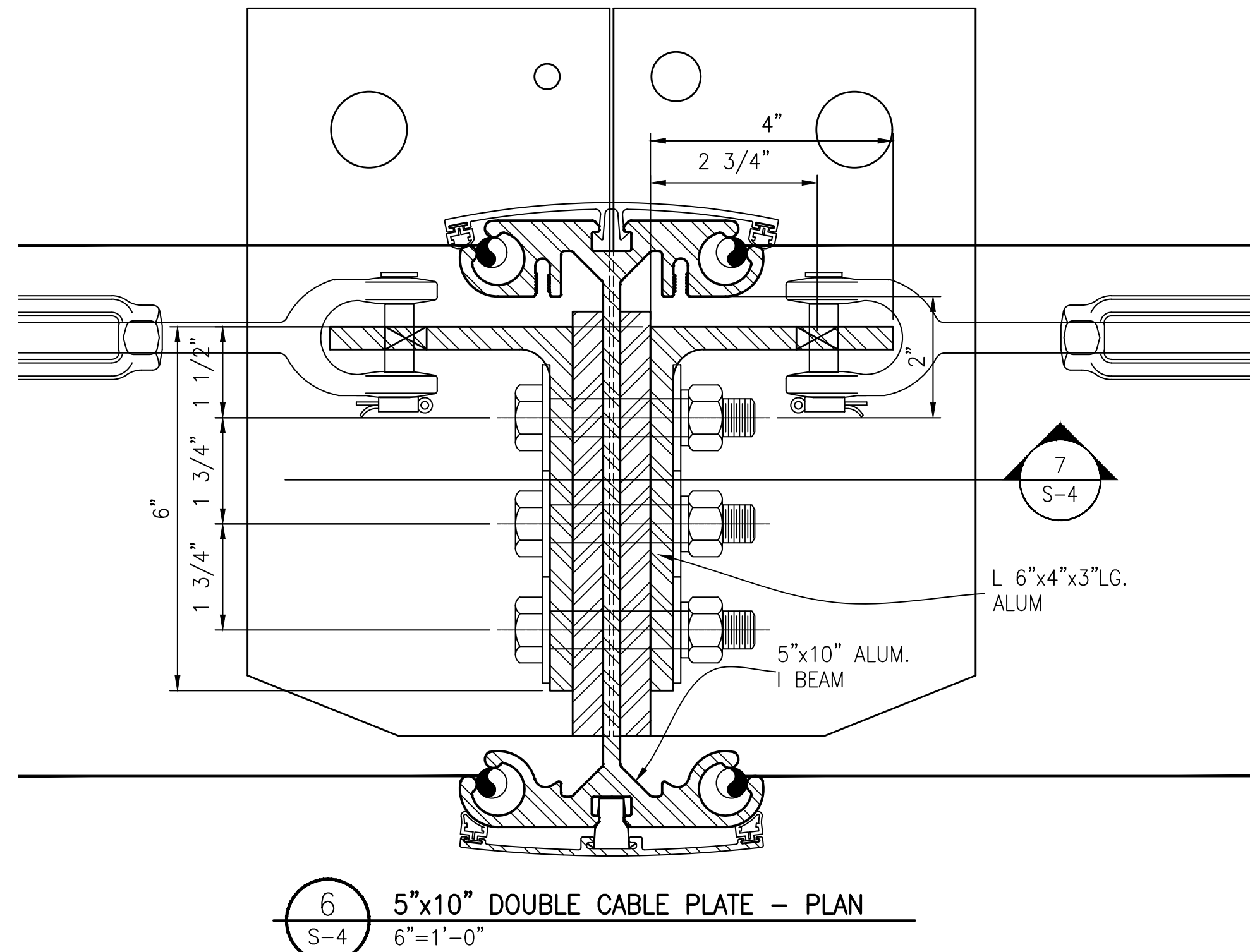
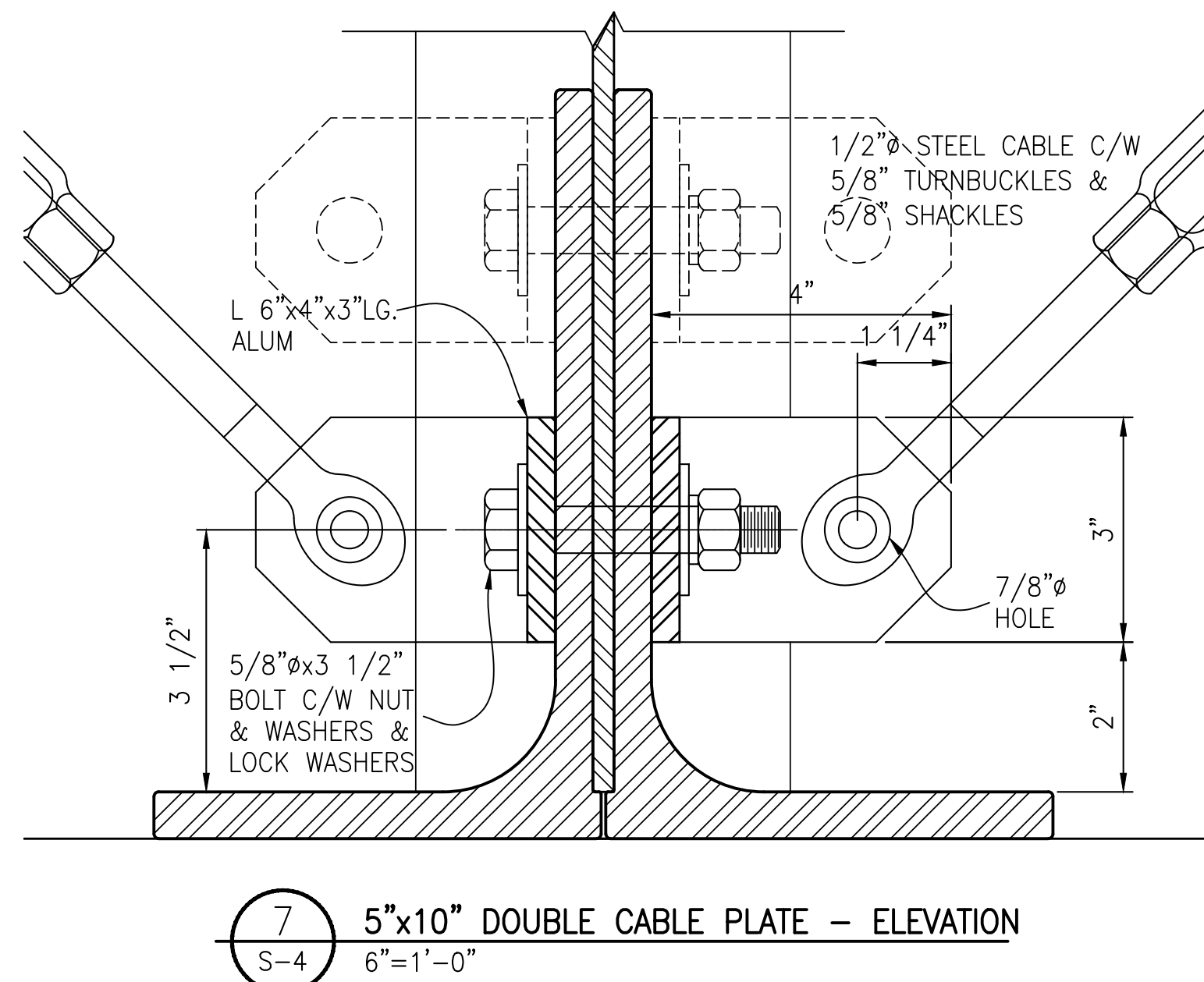
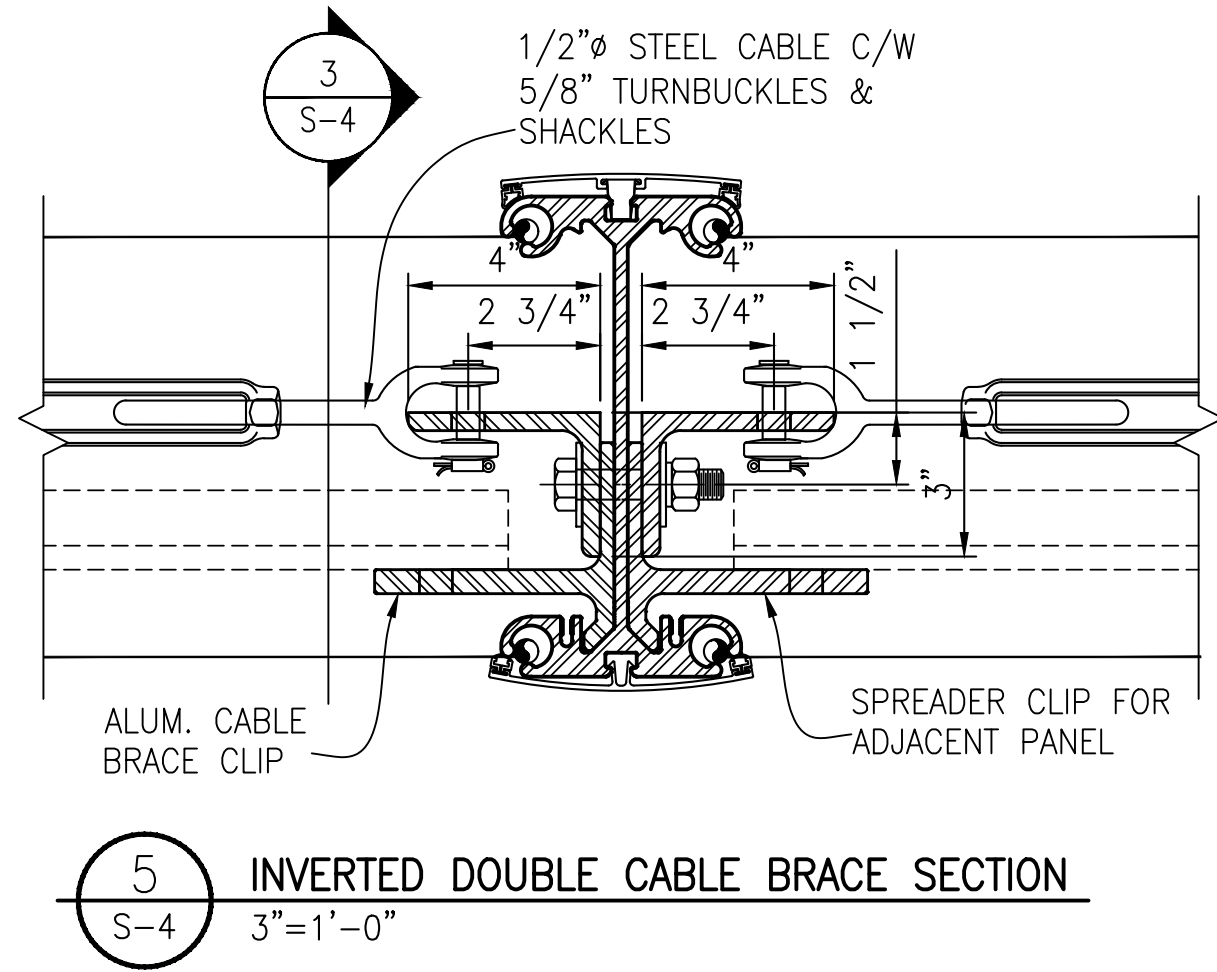
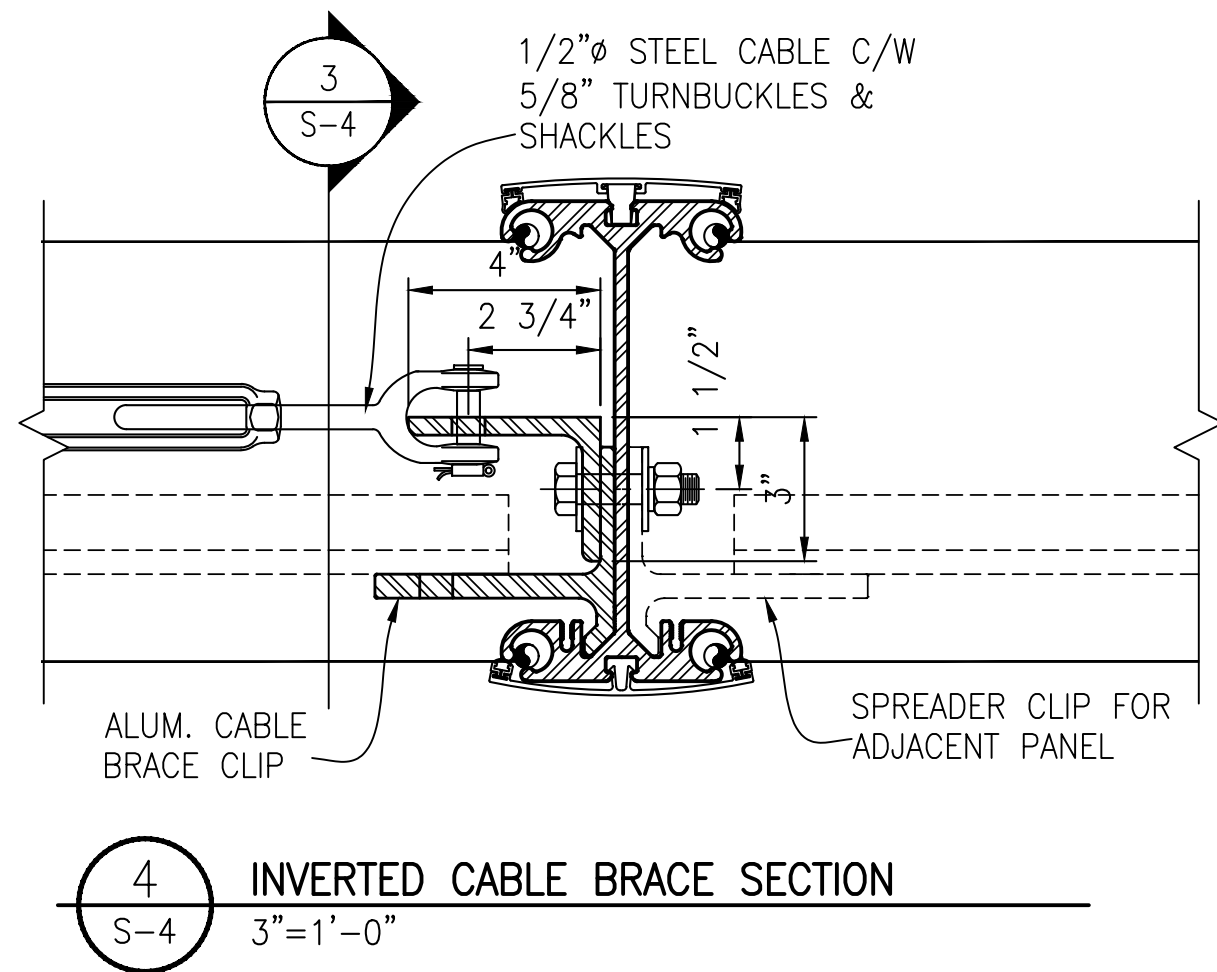
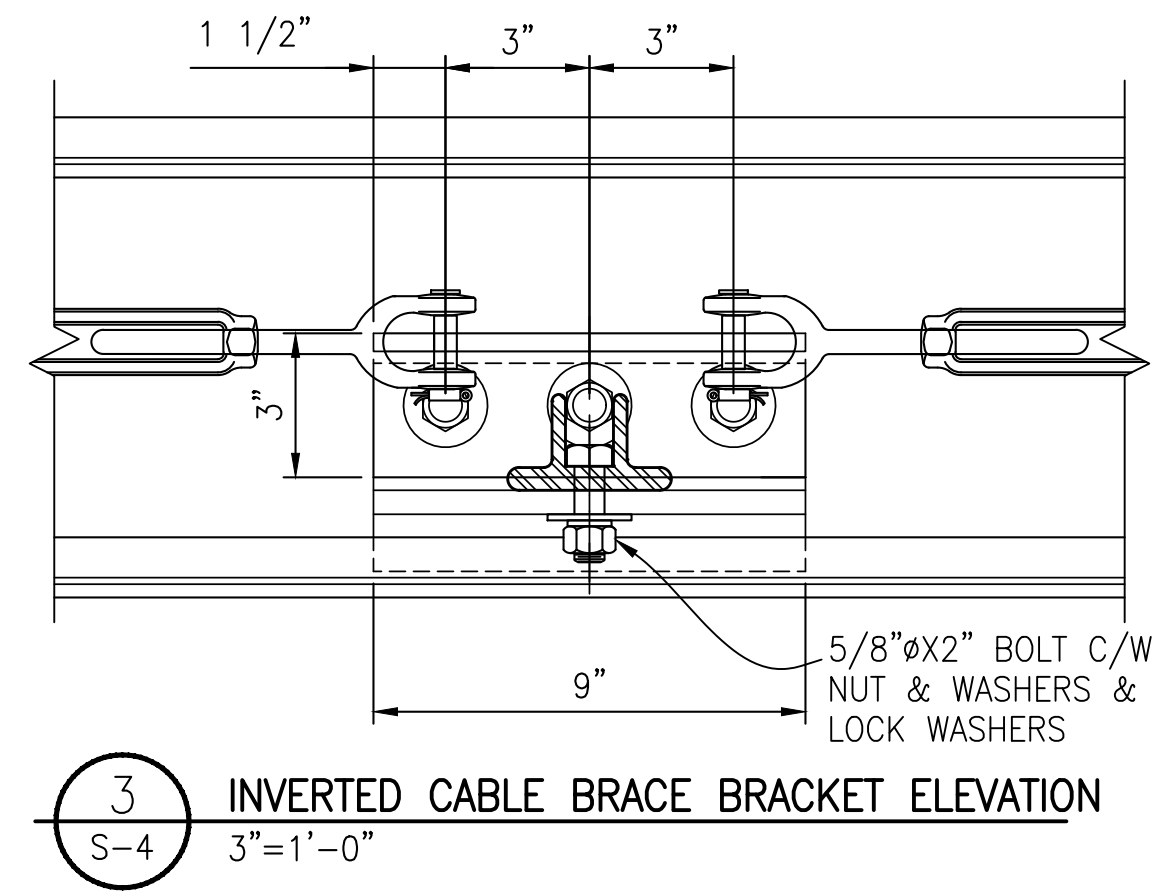
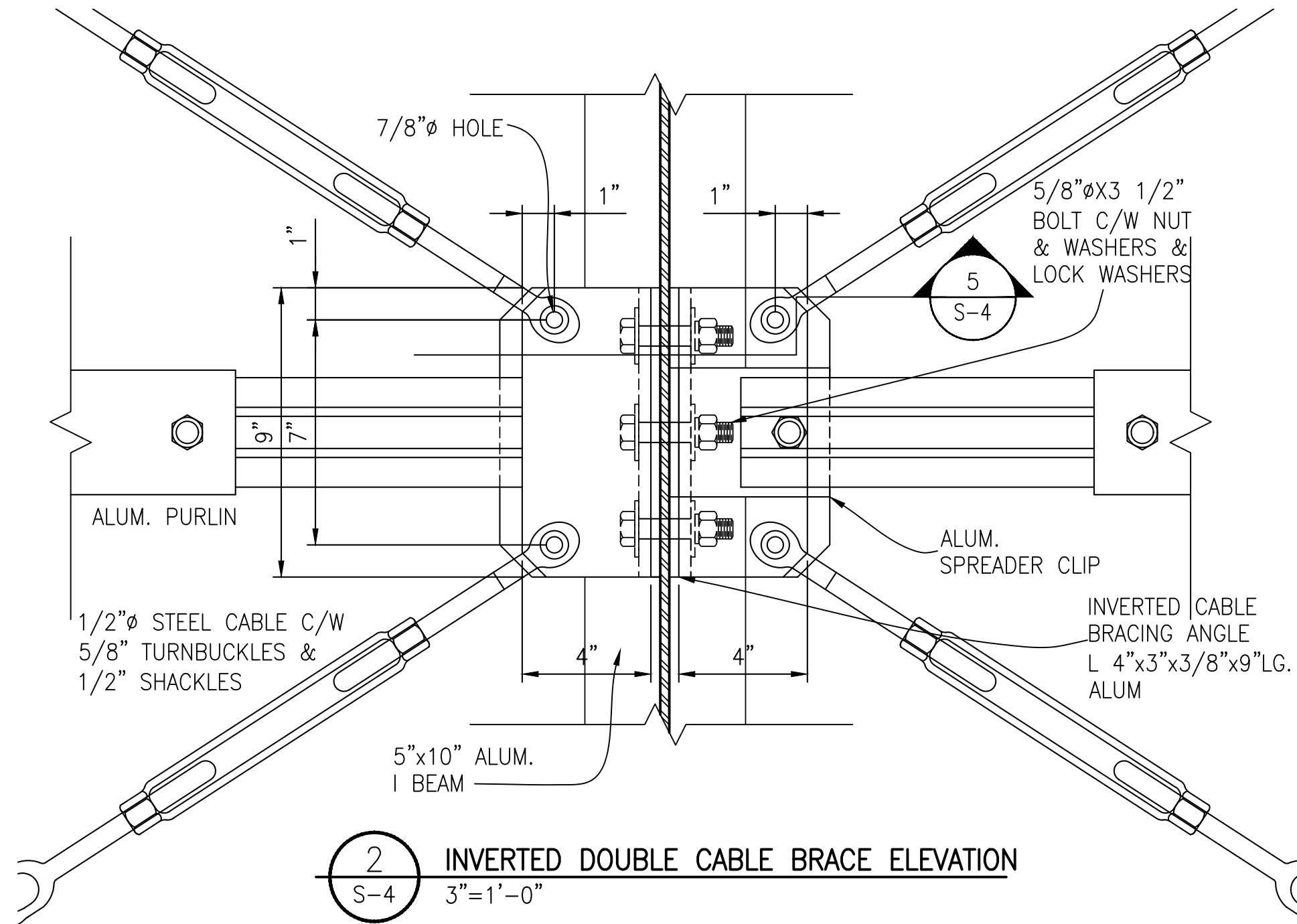
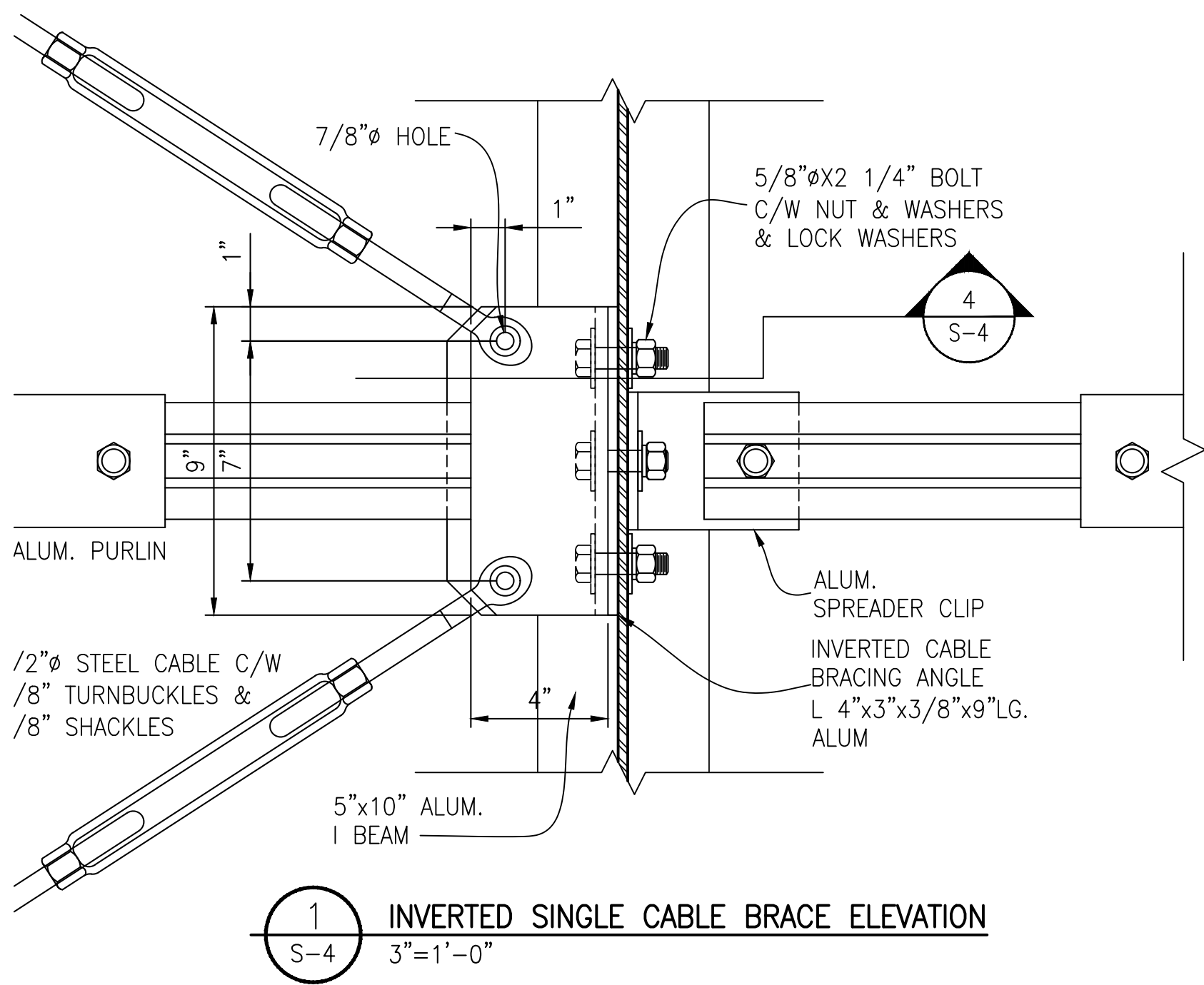
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WCC SERVICES INC

70.0' STRUCTURE
CABLE BRACE DETAILS

DRAWN BY: D. BENNETT DATE: 01/06/2020
SCALE: AS NOTED DRAWING #
SPRUNG WO: 23455 S-3

AS-BUILT

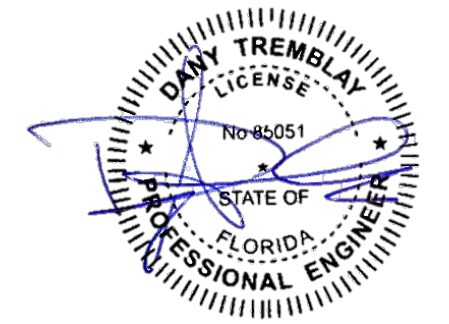


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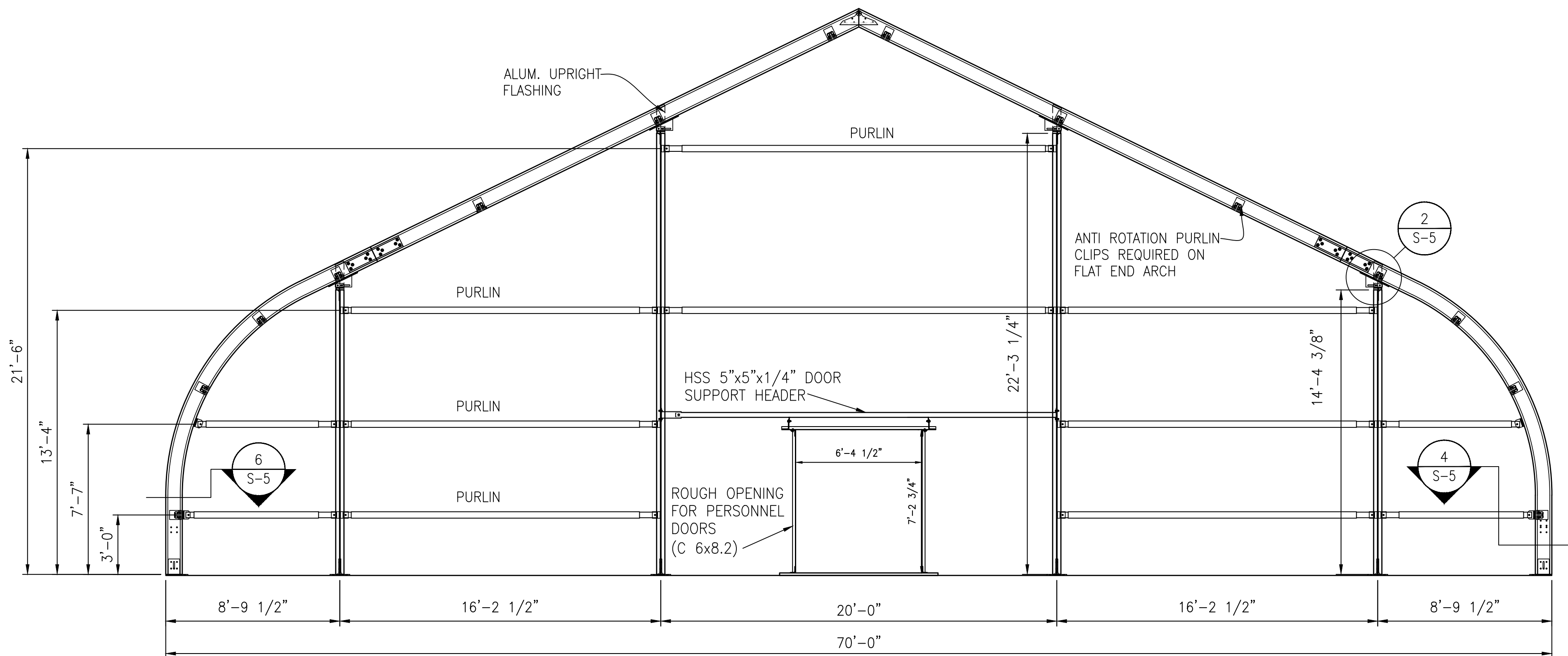
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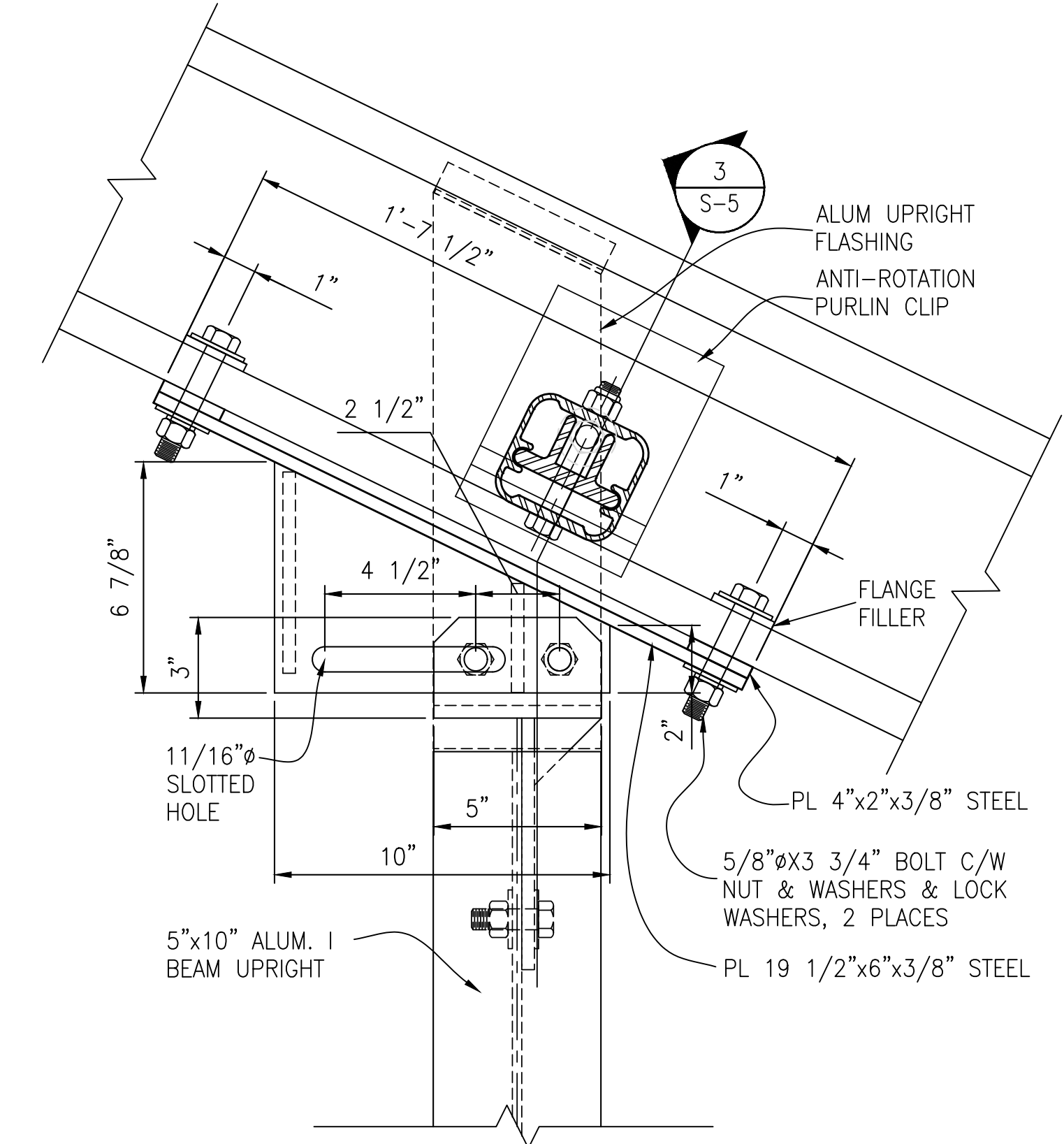
WCC SERVICES INC

70.0' STRUCTURE
CABLE BRACE DETAILS

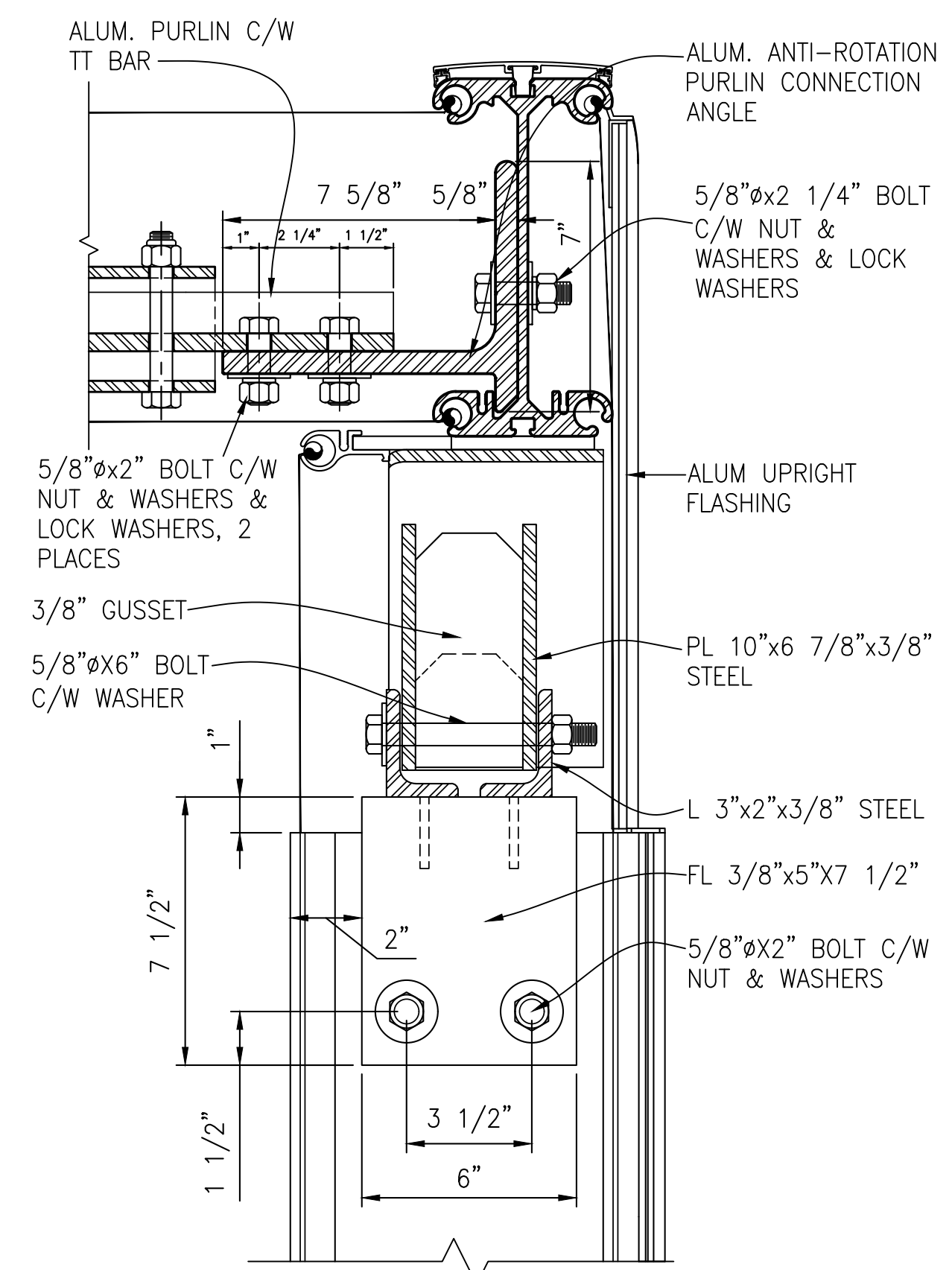
DRAWN BY: D. BENNETT DATE: 01/06/2020
SCALE: AS NOTED DRAWING #
SPRUNG WO: 23455 S-4



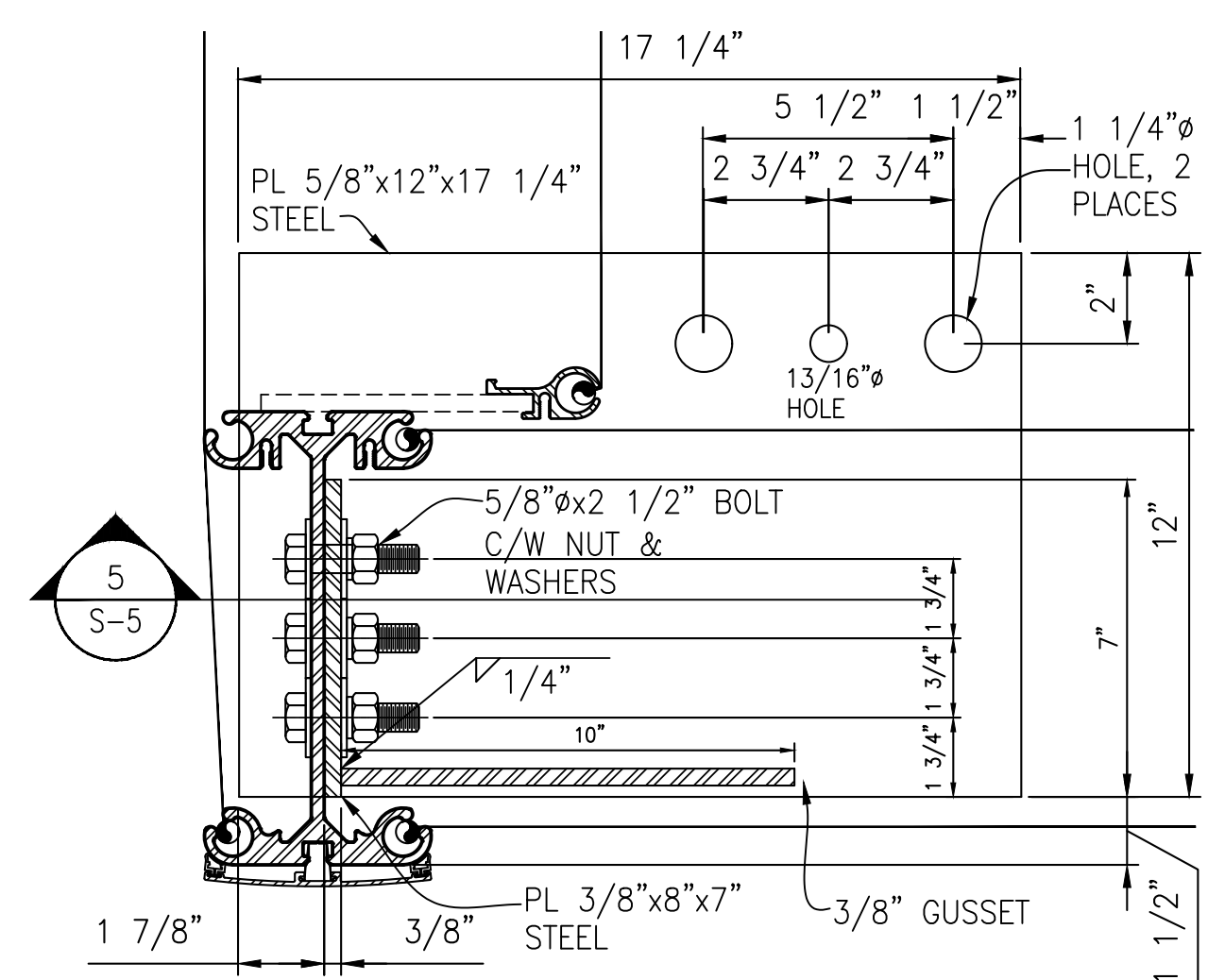
1 LEFT FLAT END 70'-0" INSULATED STRUCTURE
1/4"=1'-0"



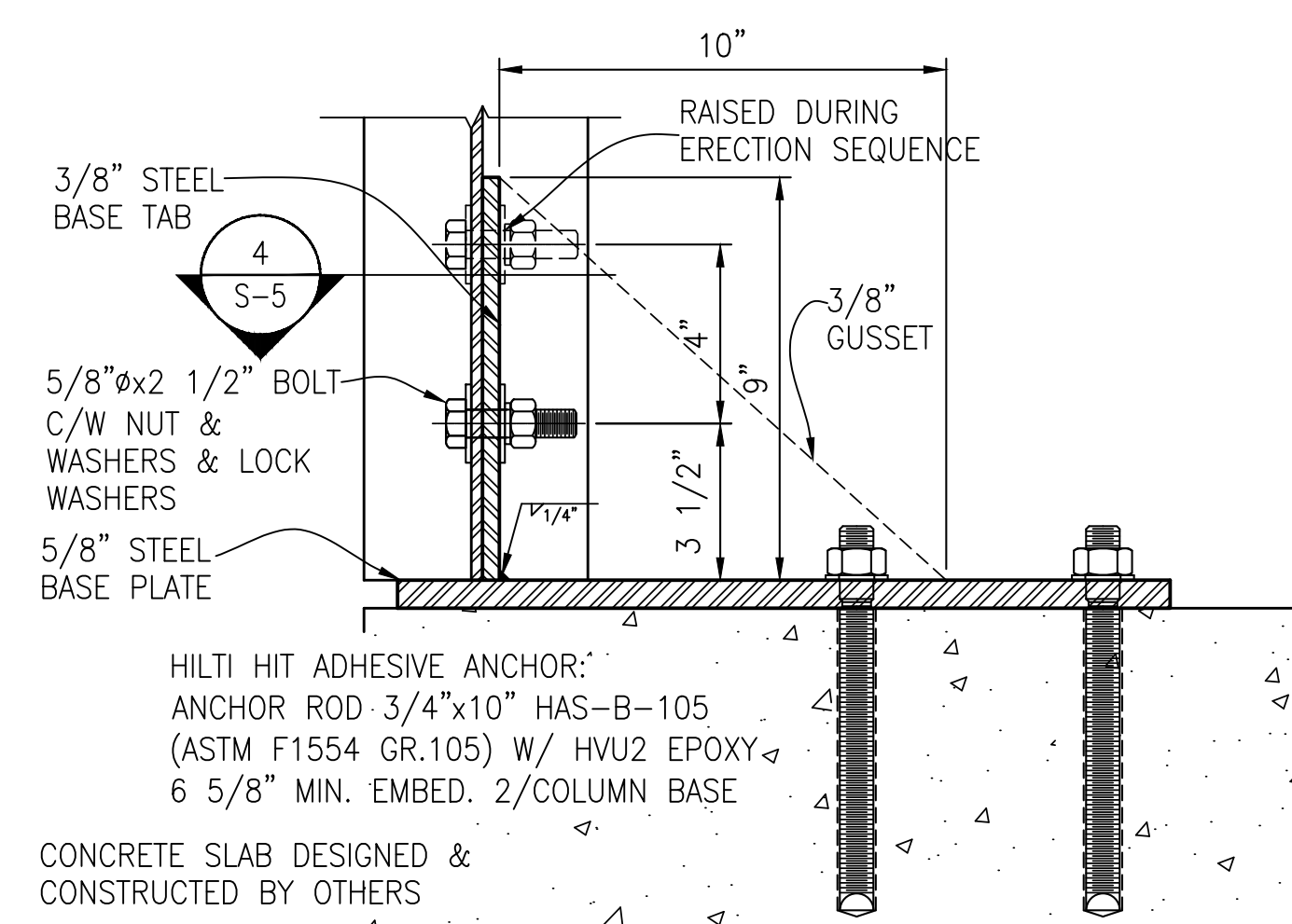
2 FLAT END UPRIGHT BRACKET - ELEV.
3"=1'-0"



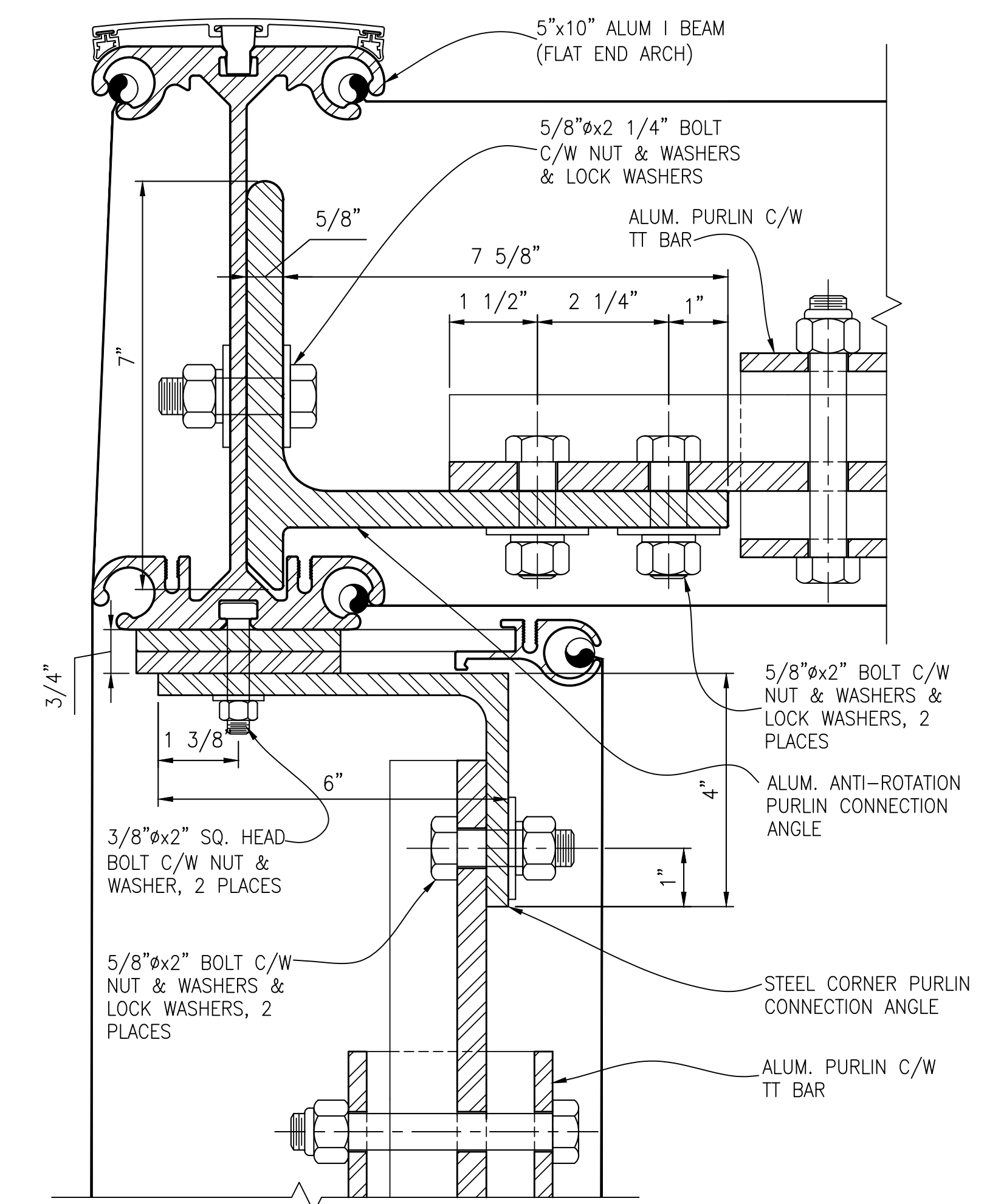
3 FLAT END UPRIGHT BRACKET - SECTION
3"=1'-0"



4 5"x10" INS. CORNER BASE PLATE - PLAN
3"=1'-0"



5 5"x10" CORNER BASE PLATE - SECTION
3"=1'-0"

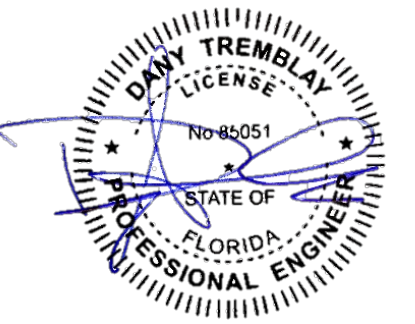


6 5"x10" CORNER PURLIN CONNECTION
6"=1'-0"

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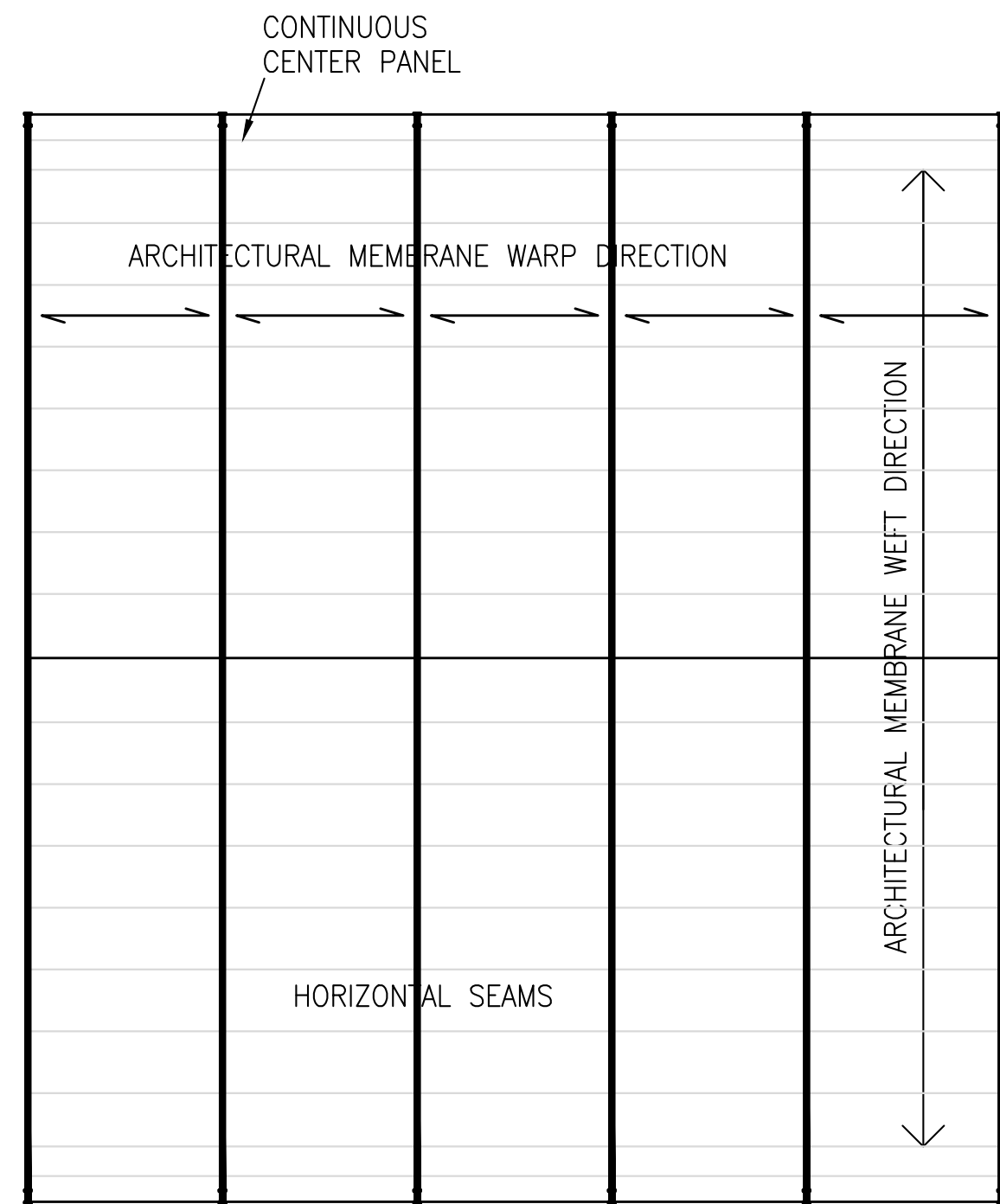
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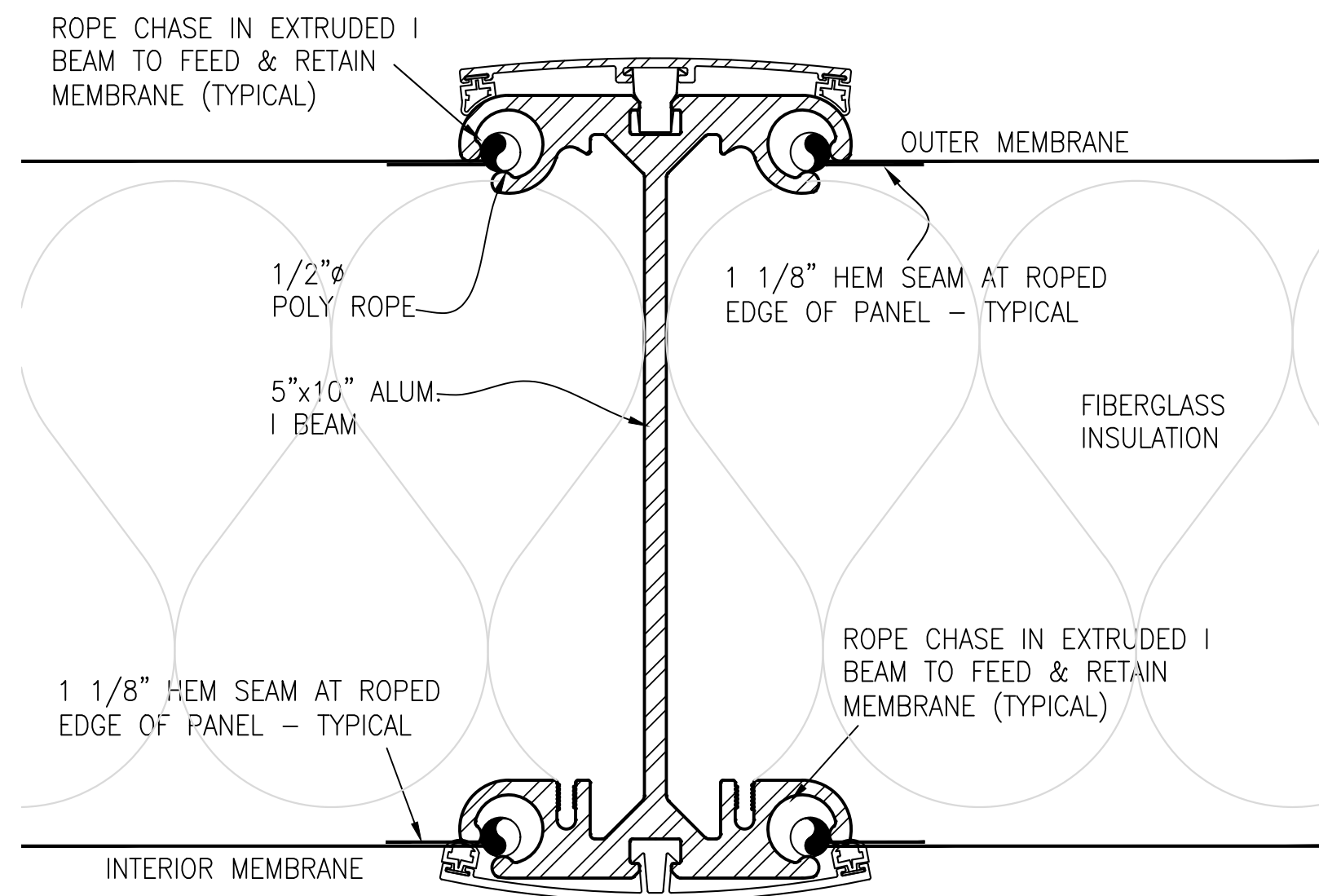
WCC SERVICES INC

70.0' STRUCTURE
FLAT END DETAILS

DRAWN BY:	D. BENNETT	DATE:	01/06/2020
SCALE:	AS NOTED	DRAWING #	
SPRUNG WO:	23455		S-5



1
S-6
MEMBRANE LAYOUT
3/32"=1'-0"



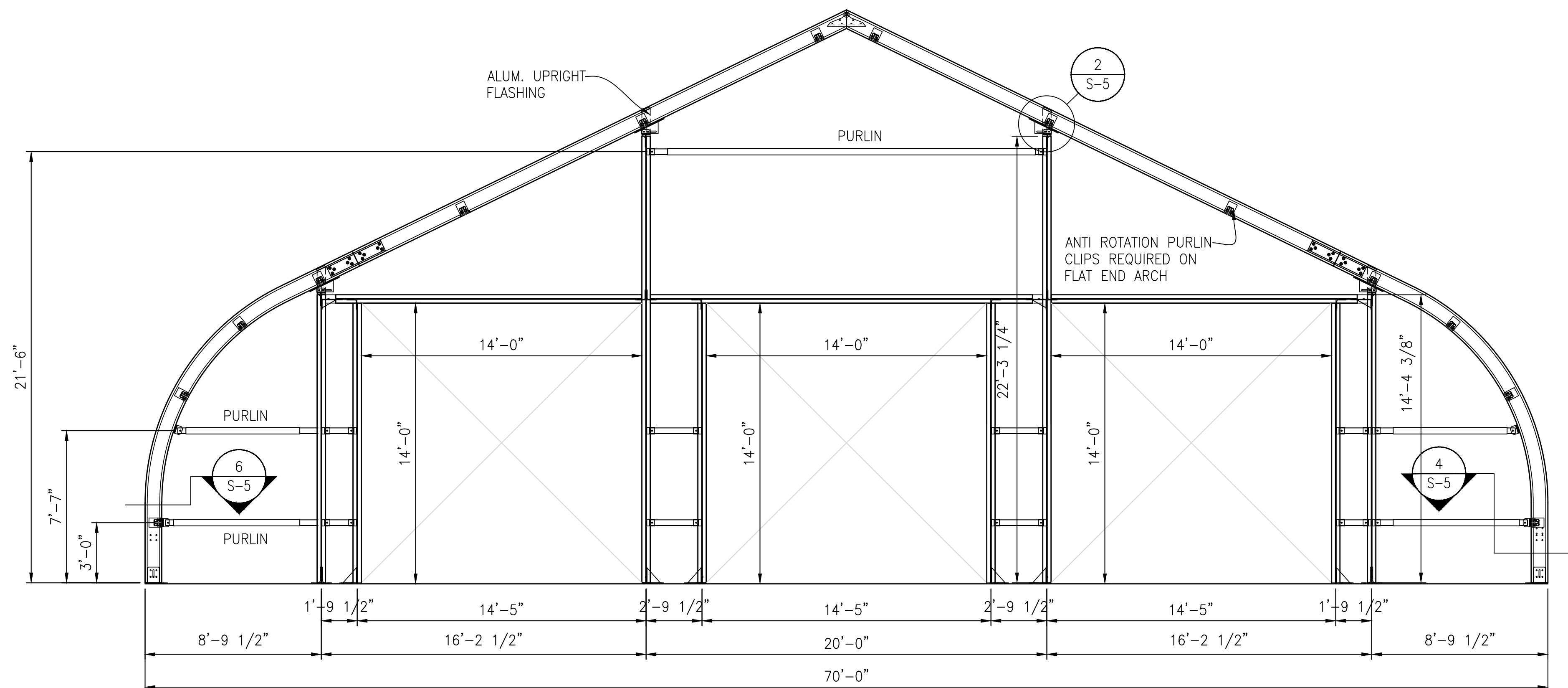
2
S-6
5"x10" BEAM SECTION - MEMBRANE
6"=1'-0"

NOTES:

OUTER MEMBRANE:
SEAMAN SHELTER-RITE 8324
1. MEMBRANE STRENGTH:
WARP = 300 pli
FILL (WEFT) = 240 pli
2. PRESTRESS (COMPENSATION)
WARP = 1.1%
FILL (WEFT) = 0.5%
3. MEMBRANE - PVC COATED POLYESTER SCRIM

INNER MEMBRANE/LINER:
HERCULITE EXCEL 14 W/ACRYLIC TOP COAT
1. MEMBRANE STRENGTH:
WARP = 170 pli
FILL (WEFT) = 140 pli
2. PRESTRESS (COMPENSATION)
WARP = 1.0%
FILL (WEFT) = 0.5%
3. MEMBRANE - PVC COATED POLYESTER SCRIM

WARP DIRECTION IS THE SPAN DIRECTION FOR THE FABRIC FOR THIS STRUCTURE.
ALL HORIZONTAL SEAMS = 1 INCH



3
S-6
MODIFIED RIGHT FLAT END 70'-0" INSULATED STRUCTURE
1/4"=1'-0"

AS-BUILT



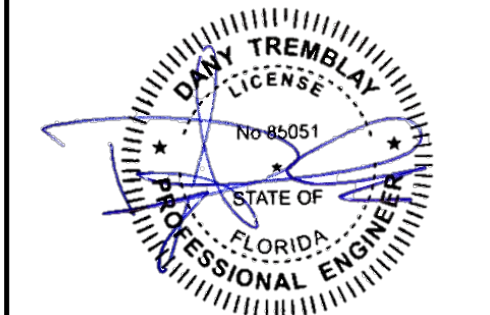
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ARCHITECTURAL MEMBRANE

OUTER MEMBRANE:
SEAMAN 8324 ARCHITECTURAL MEMBRANE W/KYNAR/TEDLAR TOP COAT. MEETS FIRE PROPAGATION CRITERIA OF:
• CALIFORNIA STATE FIRE MARSHALL
• NFPA 701
• ASTM-E-84
• CAN/ULC-S-109
• CAN/ULC-S-102

INNER MEMBRANE/LINER:
HERCULITE EXCEL 14 MEMBRANE C/W ACRYLIC TOP COAT. MEETS FIRE PROPAGATION CRITERIA OF:
• CALIFORNIA STATE FIRE MARSHALL
• NFPA 701
• ASTM-E-84
• CAN/ULC-S-109
• CAN/ULC-S-102

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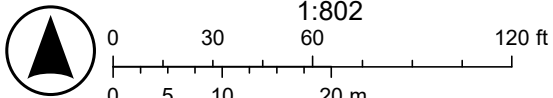
WCC SERVICES INC			
70.0' STRUCTURE MEMBRANE DETAILS			
DRAWN BY:	D. BENNETT	DATE:	01/06/2020
SCALE:	AS NOTED	DRAWING #	
SPRUNG WO:	23455		S-6

Utility Detail Map



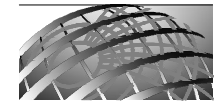
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- | | | | |
|----------------------|--------------------------------|-------------------|--------------------------------|
| Water Hydrant | Water Network Structure | Water Main | Sewer Network Structure |
| Standard | Treatment Plant | Retail Water | Treatment Plant |
| Flushing | Pump Station | Wholesale Water | Lift Station |
| | Storage Tank | Raw Water | |
| | Water System Valve | | |
| | Water Control Valve | | |



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

ITB 26-52 Southport Fire Station #8 Relocation



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STRUCTURAL BOLTS:
ZINC-DICHROMATE PLATED SAE GRADE 8
ALL STRUCTURAL BOLTS SHALL BE
TIGHTENED TO A SNUG TIGHT CONDITION;
I.E., ALL PLIES SHALL BE BROUGHT INTO
FIRM CONTACT WITH A FEW IMPACTS OF AN
IMPACT WRENCH OR THE FULL EFFORT OF
A MAN WITH A SPUD WRENCH.

ANCHOR BOLTS:
ANCHOR BOLTS SHALL NOT BE
CAST-IN-PLACE. THE DEVELOPMENT OF
THE POST-INSTALLED ANCHORS INTO THE
CONCRETE FOUNDATION IS THE
RESPONSIBILITY OF THE OWNER OR THE
OWNER'S REGISTERED FOUNDATION
ENGINEER.

ALUMINUM: 6351-T6, DESIGN AND
FABRICATION SHALL BE PER THE ALUMINUM
DESIGN MANUAL.

STEEL: 300W CSA, G40.21, FY=44 KSI,
ALL STEEL IN CONTACT WITH ALUMINUM
SHALL BE HOT DIP GALVANIZED. DESIGN
AND FABRICATION OF STRUCTURAL STEEL
SHALL BE IN CONFORMANCE WITH AISC
360.

SPECIAL INSPECTION:
THIS BUILDING INCORPORATES STRUCTURAL
BOLTS AND POST-INSTALLED ANCHORS
WHICH MAY REQUIRE SPECIAL INSPECTION
UNDER THE BUILDING CODE. PER THE
BUILDING CODE, SPECIAL INSPECTION, IF
REQUIRED, IS THE RESPONSIBILITY OF THE
OWNER OR THE REGISTERED DESIGN
PROFESSIONAL IN RESPONSIBLE CHARGE
ACTING AS THE OWNER'S AGENT.

CONCRETE: 4000psi or GREATER

DESIGN LOADS

STRUCTURE LOCATION: PANAMA CITY, FL
BUILDING CODE: FBC 2012, 6TH ED.
WIND SPEED: 146 MPH 3 SEC GUST
RISK CATEGORY: IV EXPOSURE C
GROUND SNOW LOAD: NA
(SEE SNOW SHED REPORT)



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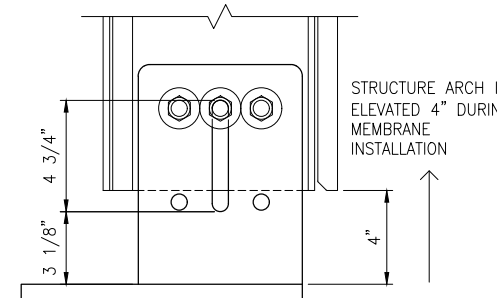
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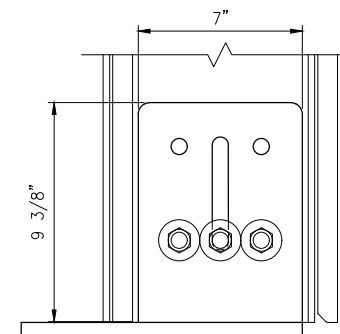
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70.0' STRUCTURE SECTION & BASE DETAILS

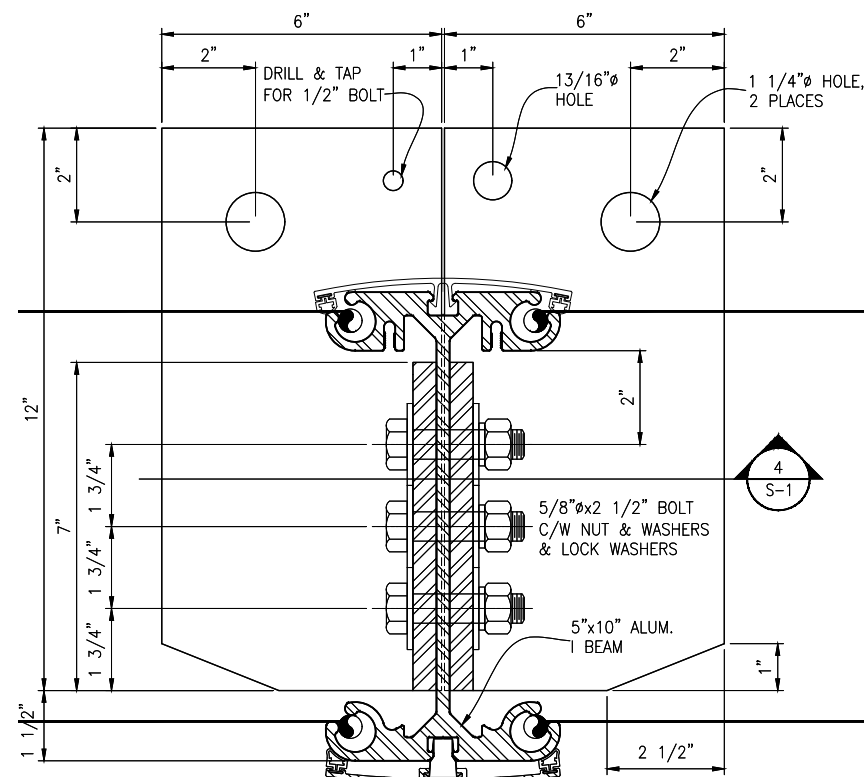
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SCALE:	AS NOTED	DRAWING #	
SPRUNG WO:	23455		S-1



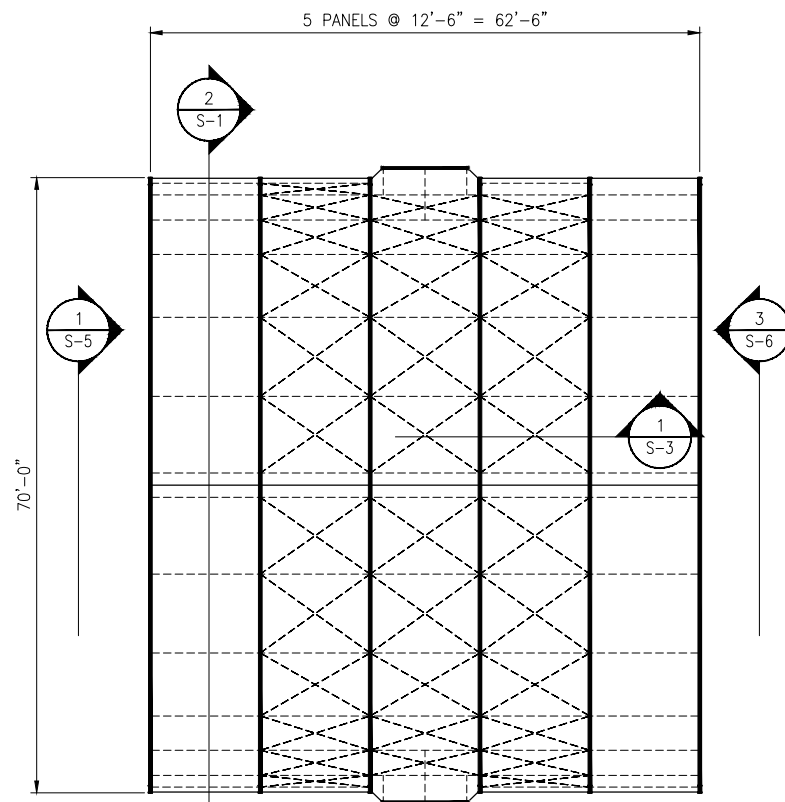
5 5"x10" BEAM BASE PLATE - ELEVATION
3"=1'-0" (ERECTION CONDITION)



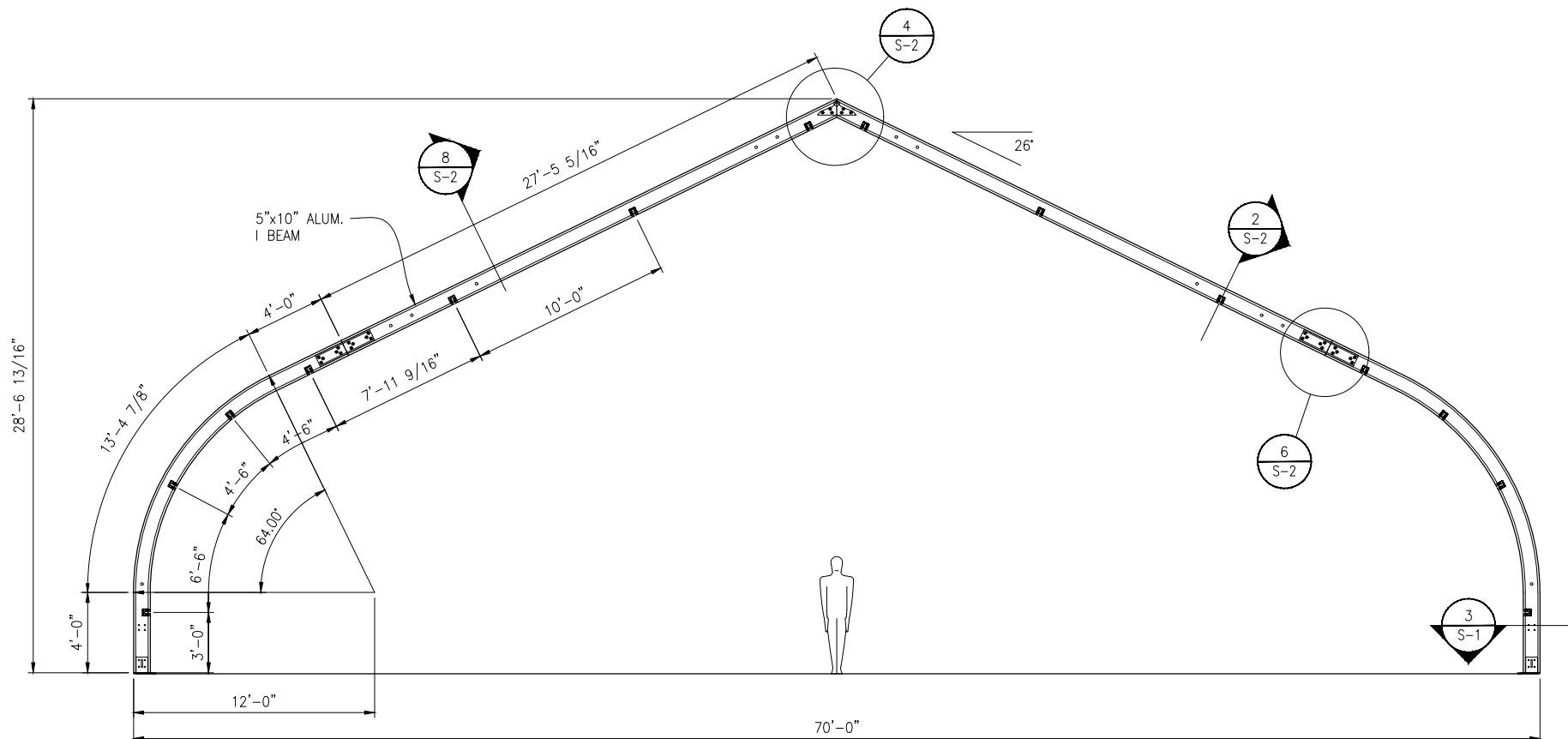
6 5"x10" BEAM BASE PLATE - ELEVATION
3"=1'-0" (FINAL CONDITION)



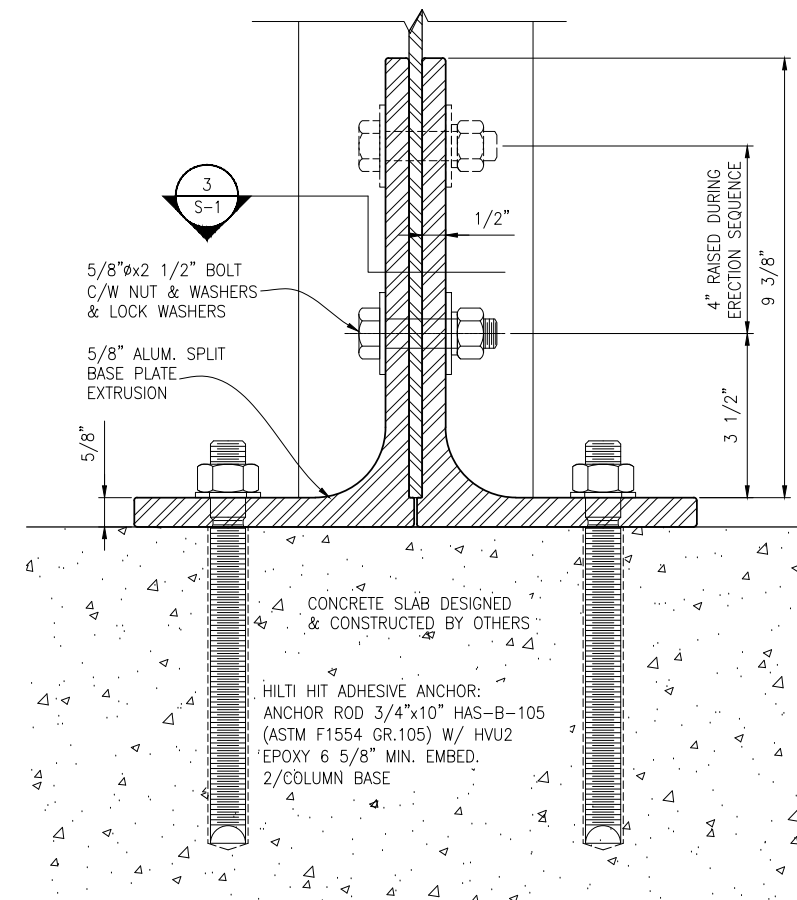
3 5"x10" BEAM BASE PLATE - PLAN
6"=1'-0"



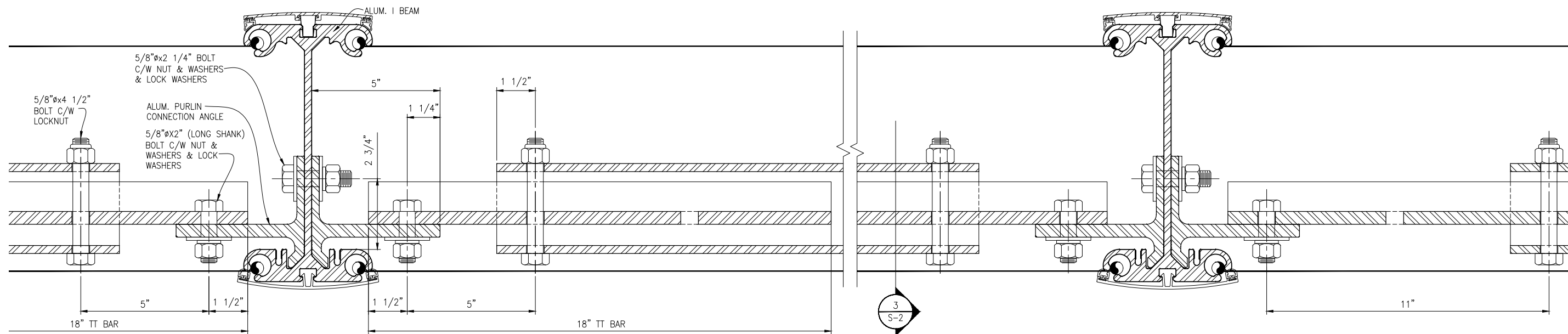
1 PLAN VIEW
3/32"=1'-0"



2 SECTION 70'-0" INSULATED STRUCTURE
1/4"=1'-0"

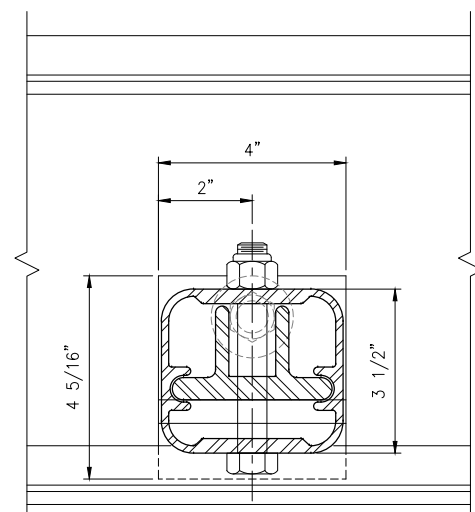


4 5"x10" BEAM BASE PLATE - SECTION
6"=1'-0"

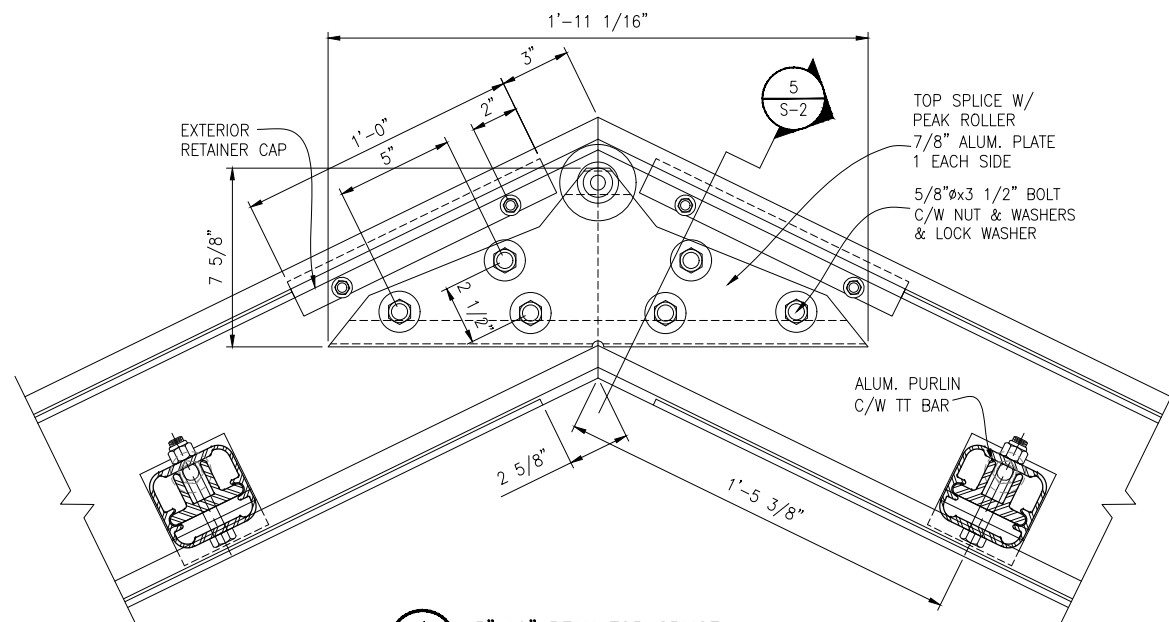


1 5"x10" PURLIN - ELEVATION
6"=1'-0" (ERECTION CONDITION)

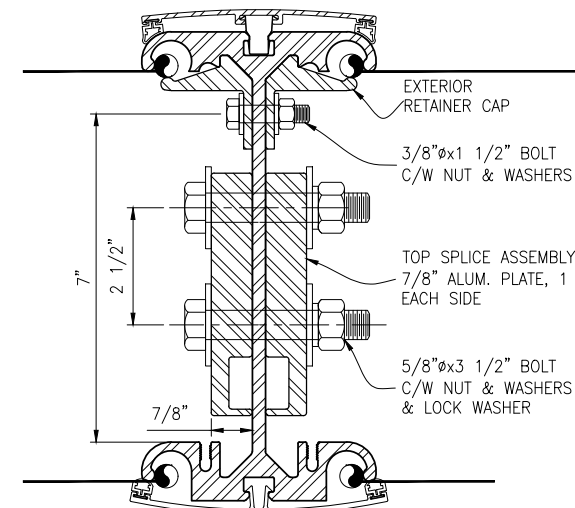
2 5"x10" PURLIN - ELEVATION
6"=1'-0" (FINAL CONDITION)



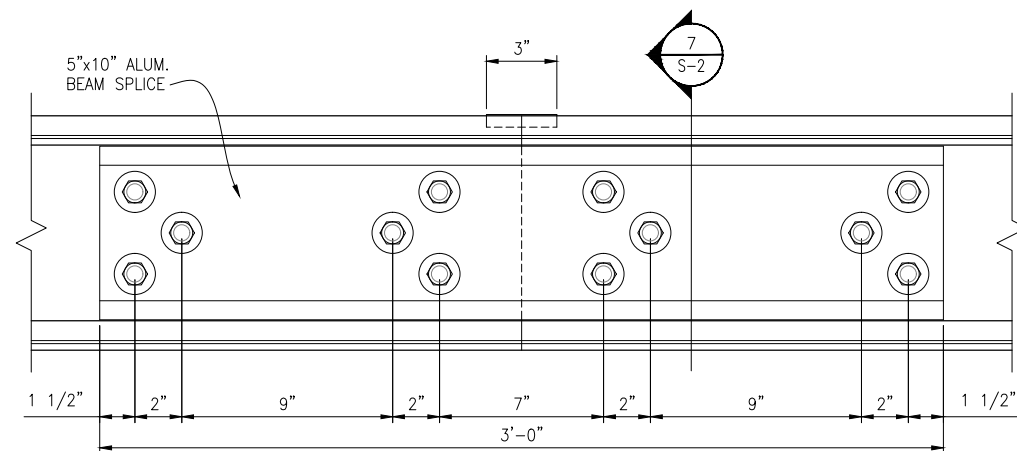
3 5"x10" PURLIN - SECTION
6"=1'-0"



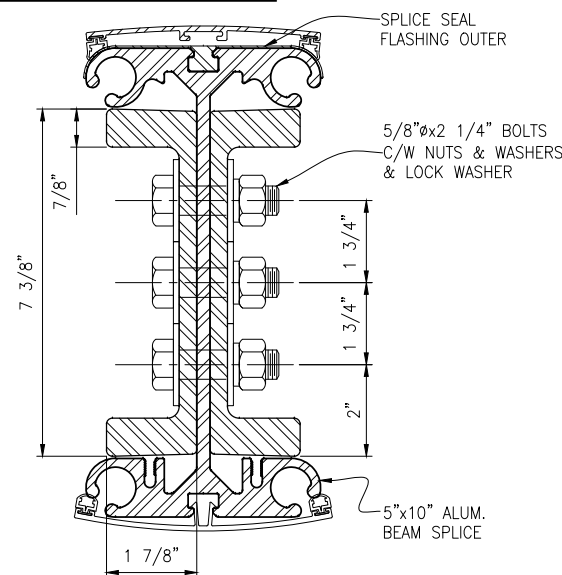
4 5"x10" BEAM TOP SPLICE
3"=1'-0"



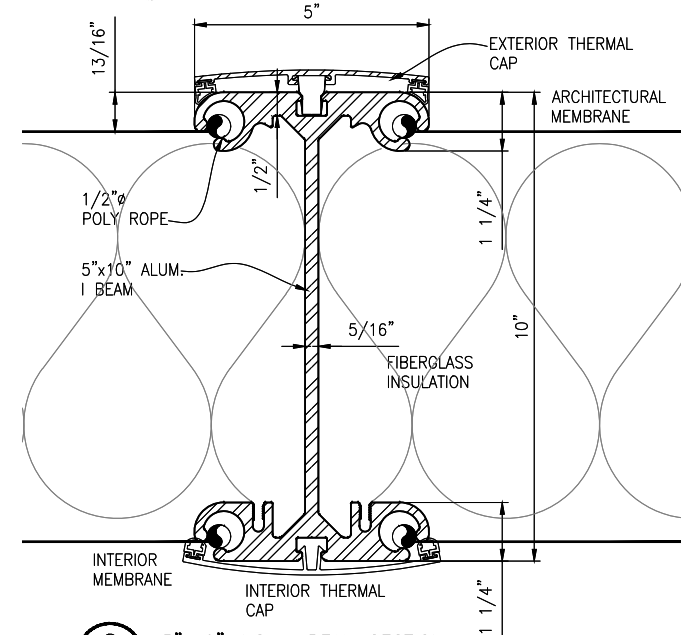
5 5"x10" TOP SPLICE - SECTION
6"=1'-0"



6 5"x10" BEAM SPLICE
3"=1'-0"



7 5"x10" BEAM SPLICE - SECTION
6"=1'-0"



8 5"x10" INSUL. BEAM SECTION
6"=1'-0"

ITB 26-52 Southport Fire Station #8 Relocation



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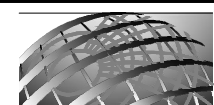
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70.0' STRUCTURE
PURLIN & SPLICE DETAILS

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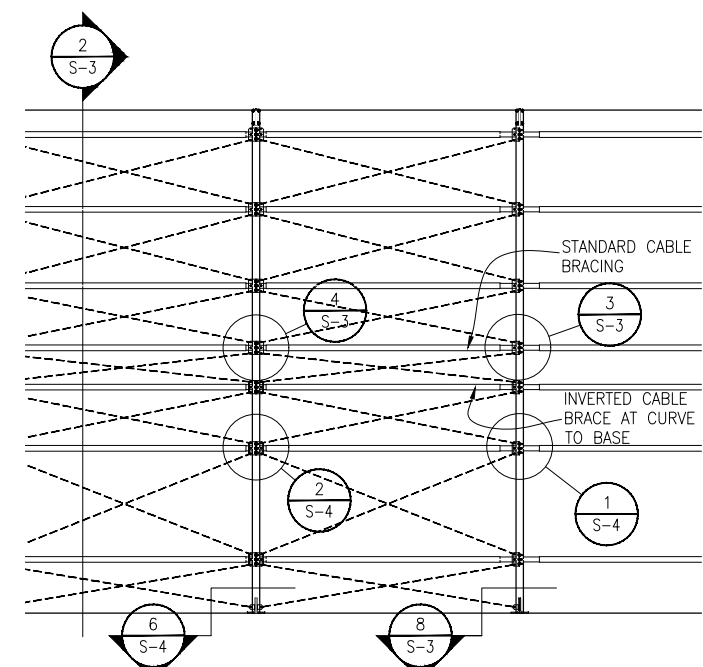
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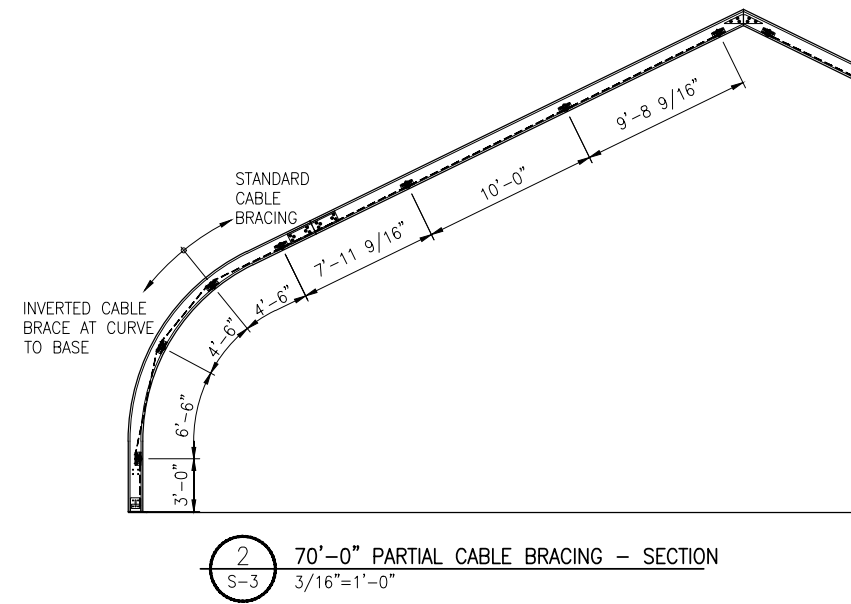
WCC SERVICES INC

70.0' STRUCTURE CABLE BRACE DETAILS

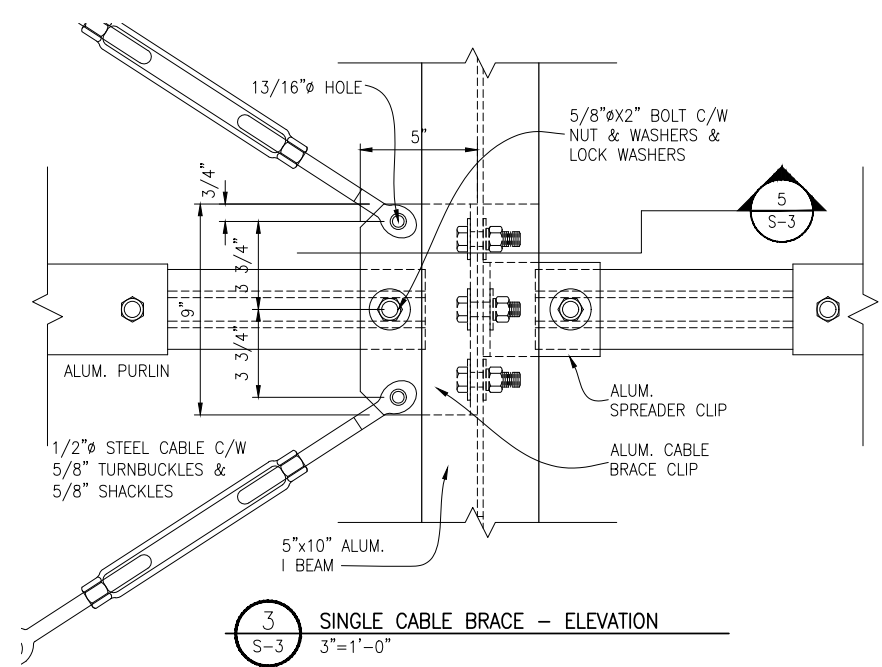
DRAWN BY: 910-208	DATE: 01/08/2020
SCALE: AS NOTED	DRAWING #
SPRUNG WO: 23455	S-3



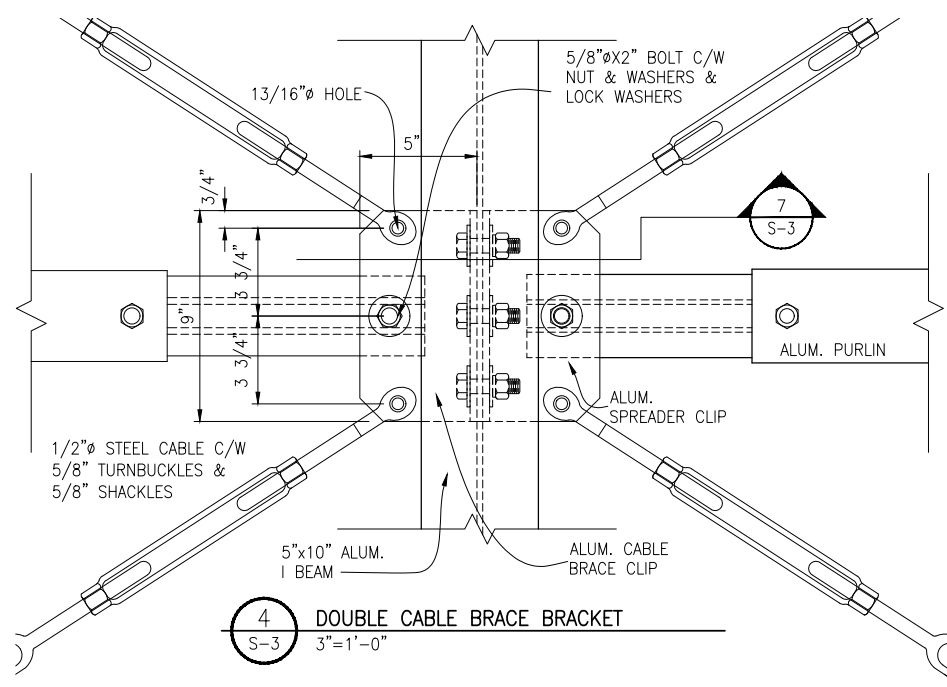
1 70'-0" PARTIAL CABLE BRACING - ELEVATION
3/16"=1'-0"



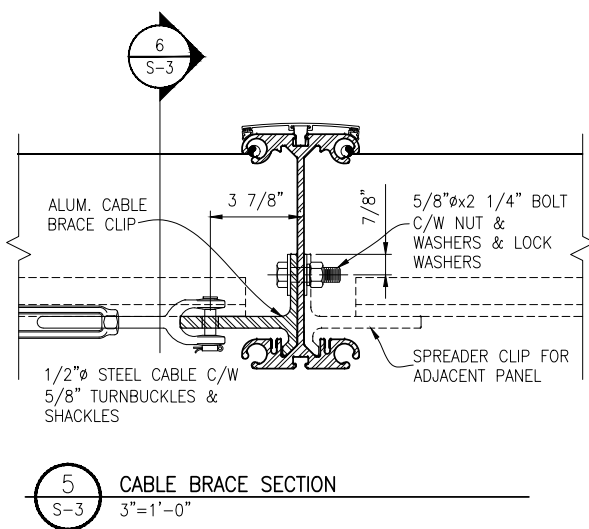
2 70'-0" PARTIAL CABLE BRACING - SECTION
3/16"=1'-0"



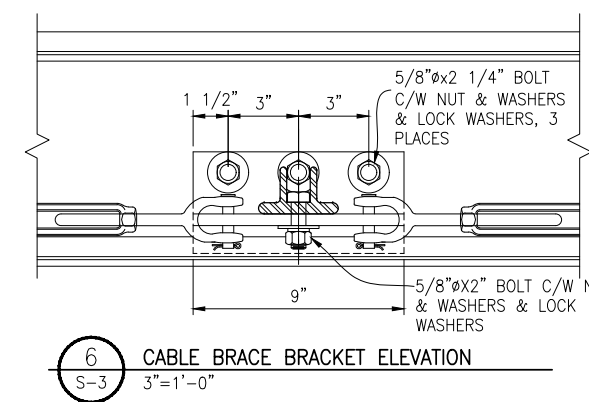
3 SINGLE CABLE BRACE - ELEVATION
3"=1'-0"



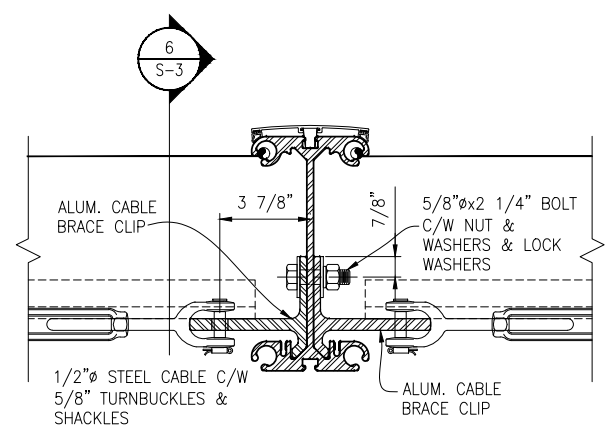
4 DOUBLE CABLE BRACE BRACKET
3"=1'-0"



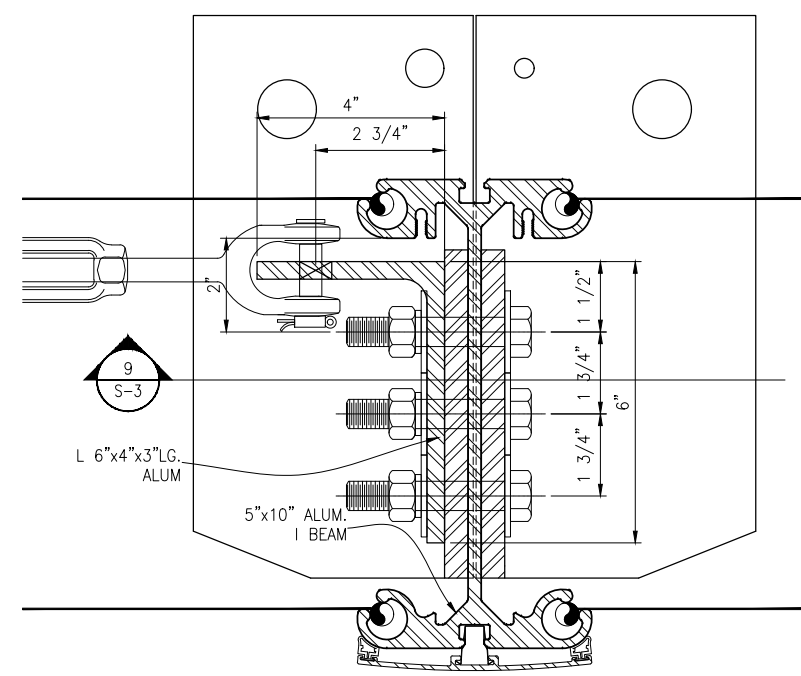
5 CABLE BRACE SECTION
3"=1'-0"



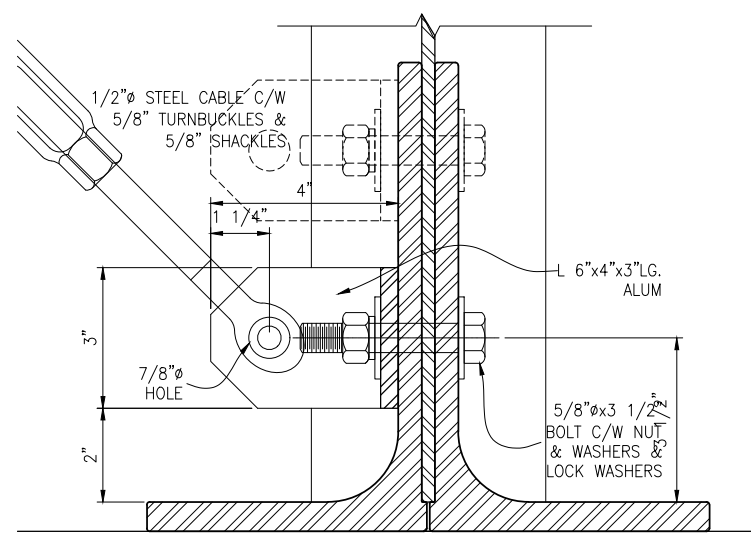
6 CABLE BRACE BRACKET ELEVATION
3"=1'-0"



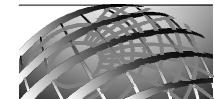
6 DOUBLE CABLE BRACE SECTION
3"=1'-0"



7 5" x 10" CABLE PLATE - PLAN
6"=1'-0"



8 5" x 10" CABLE PLATE - ELEVATION
6"=1'-0"



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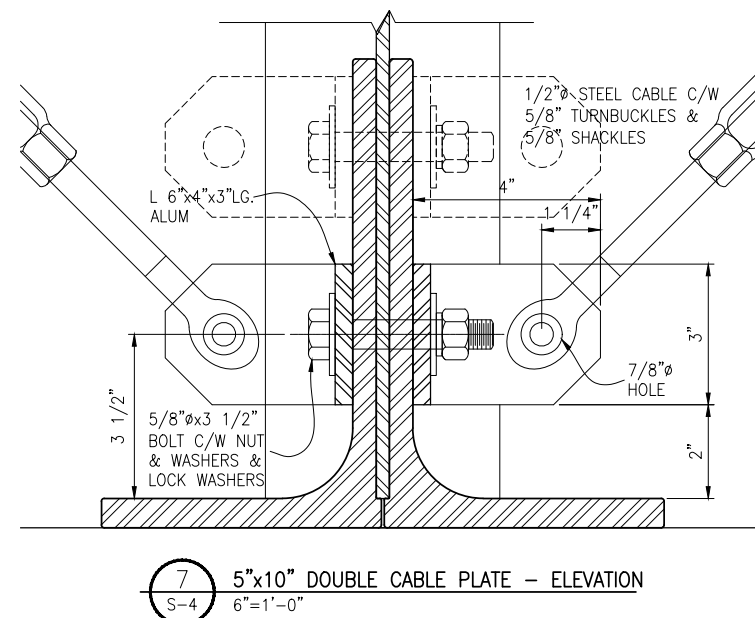
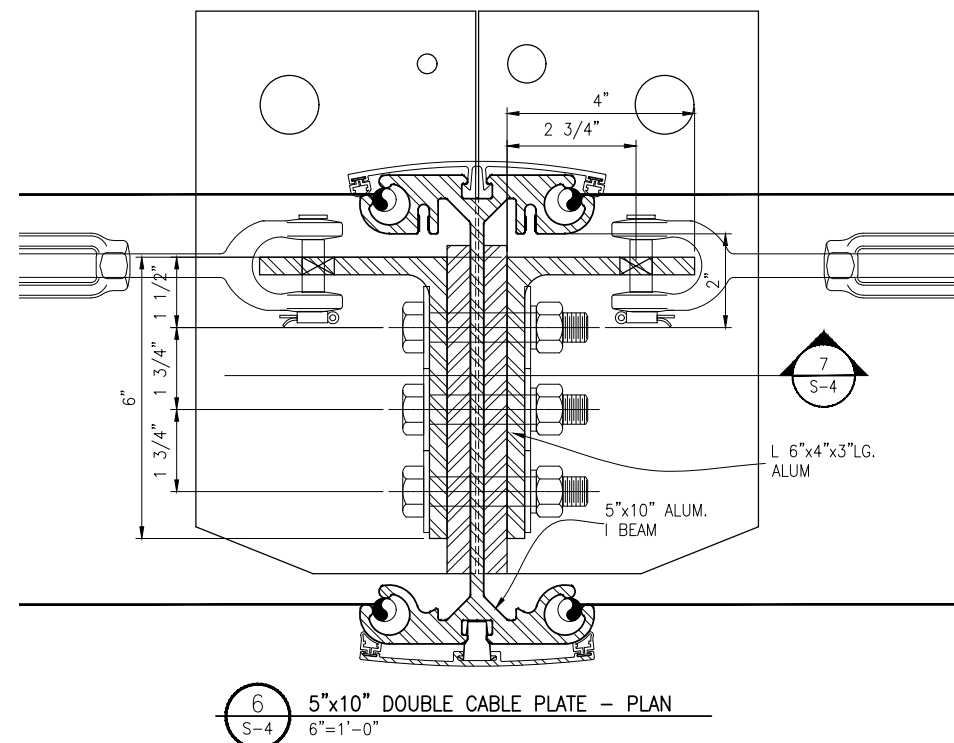
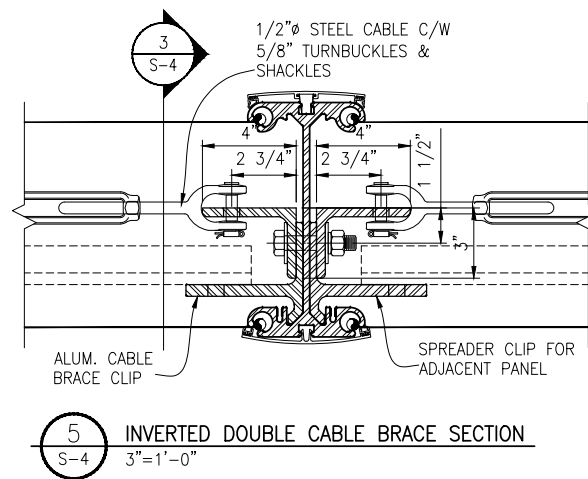
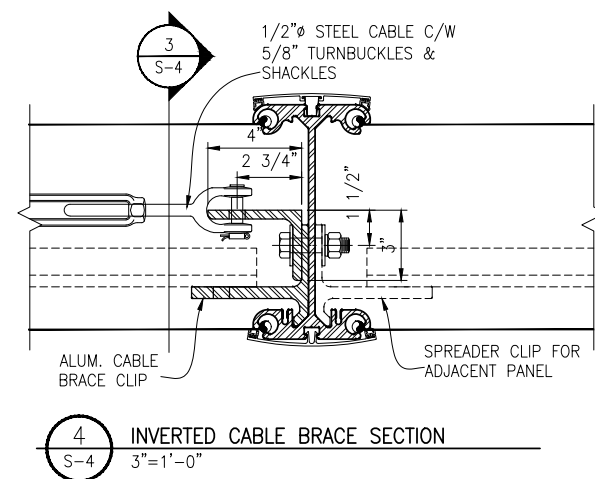
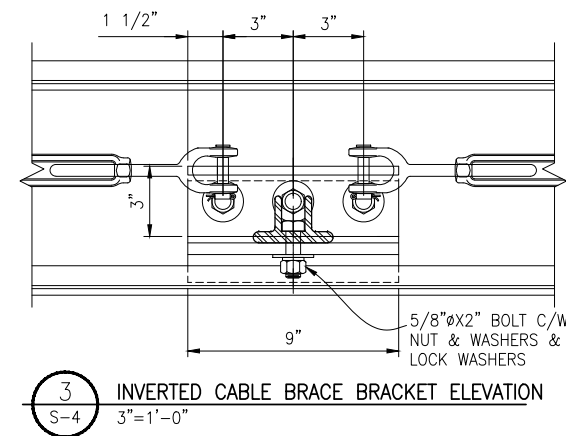
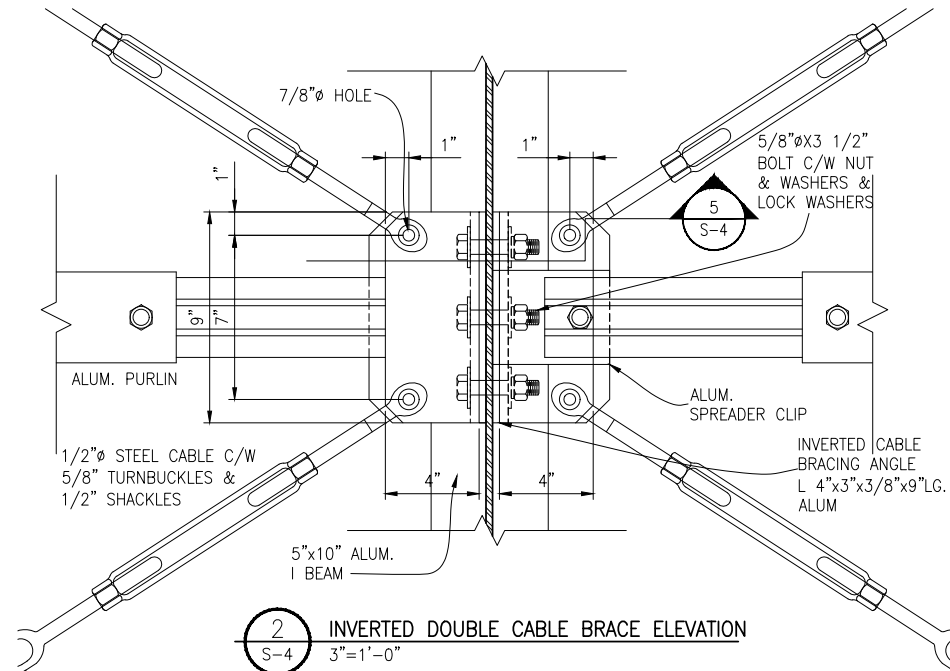
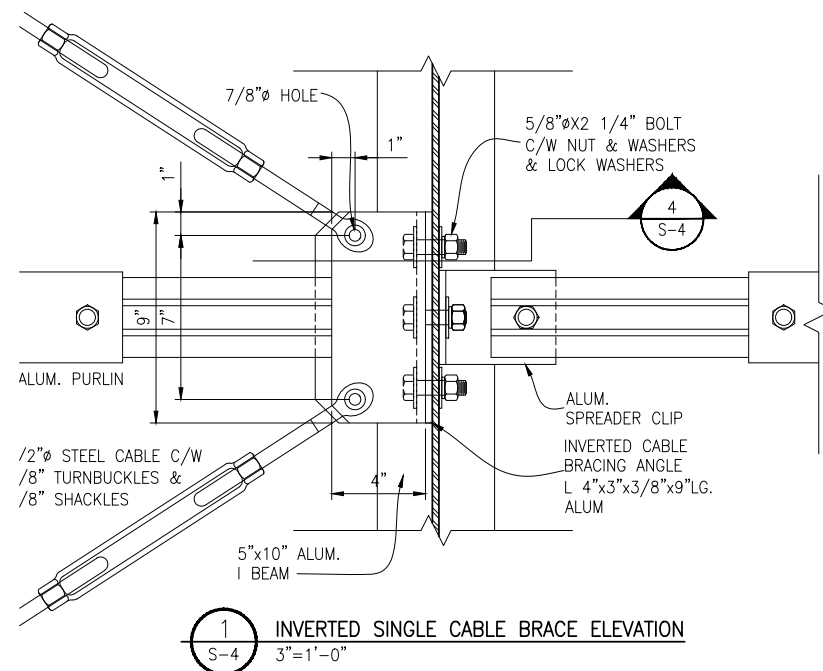
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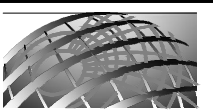
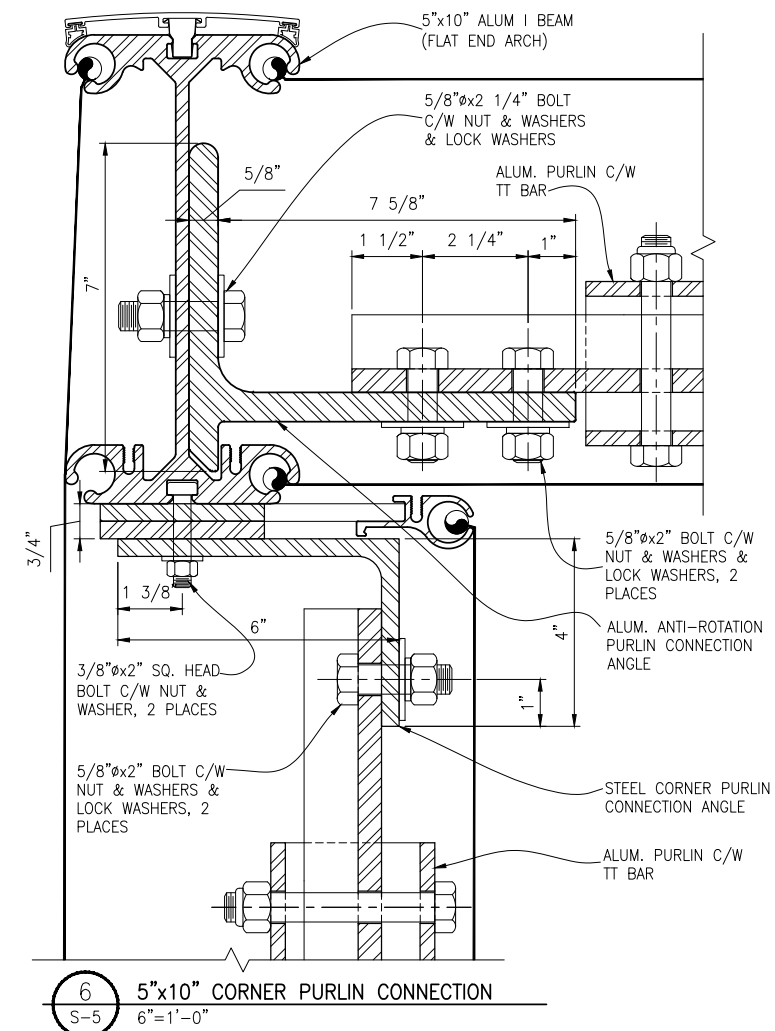
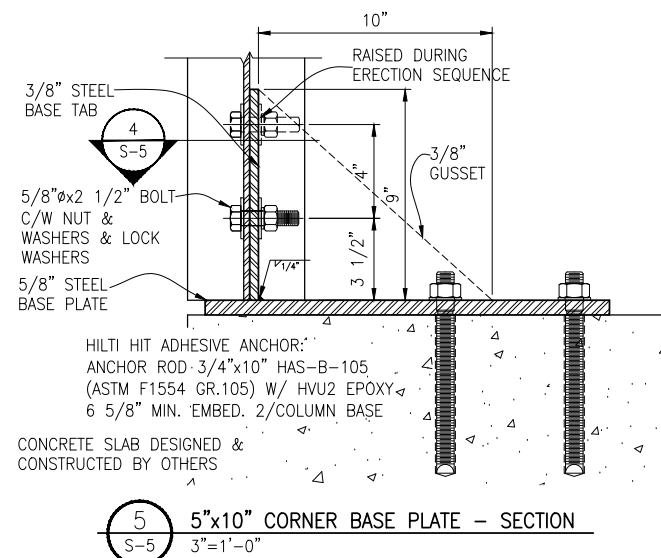
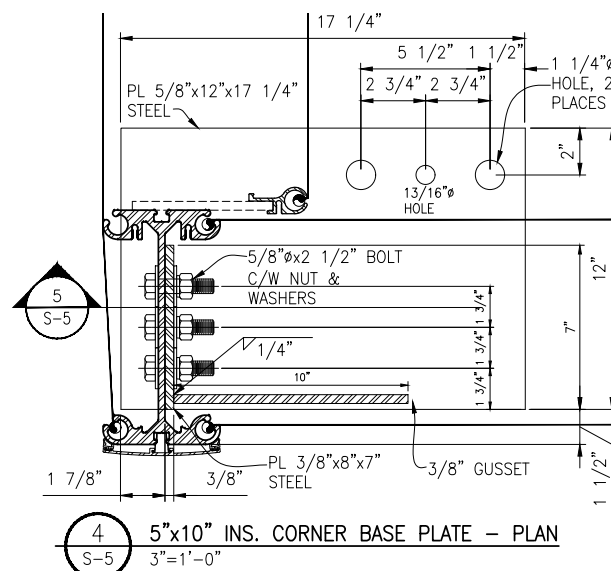
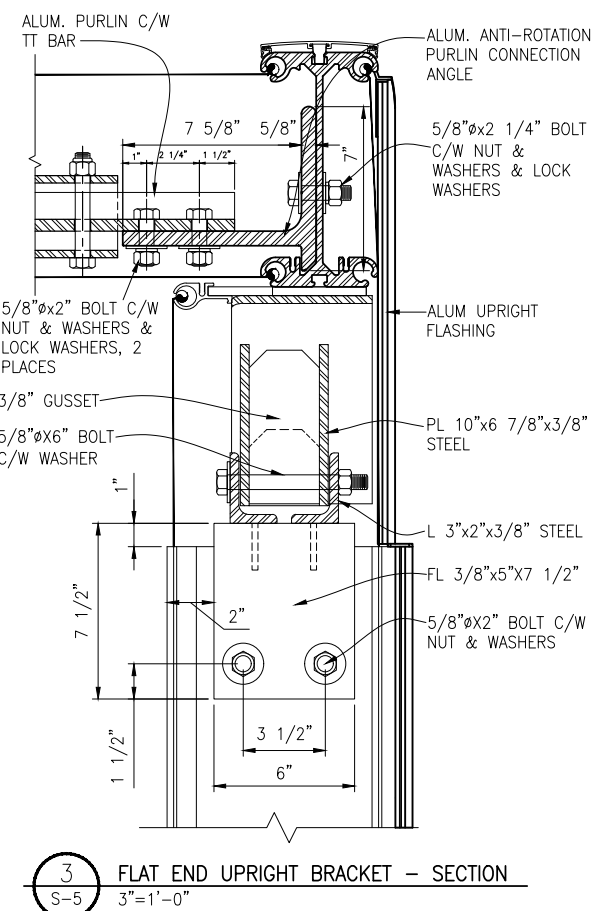
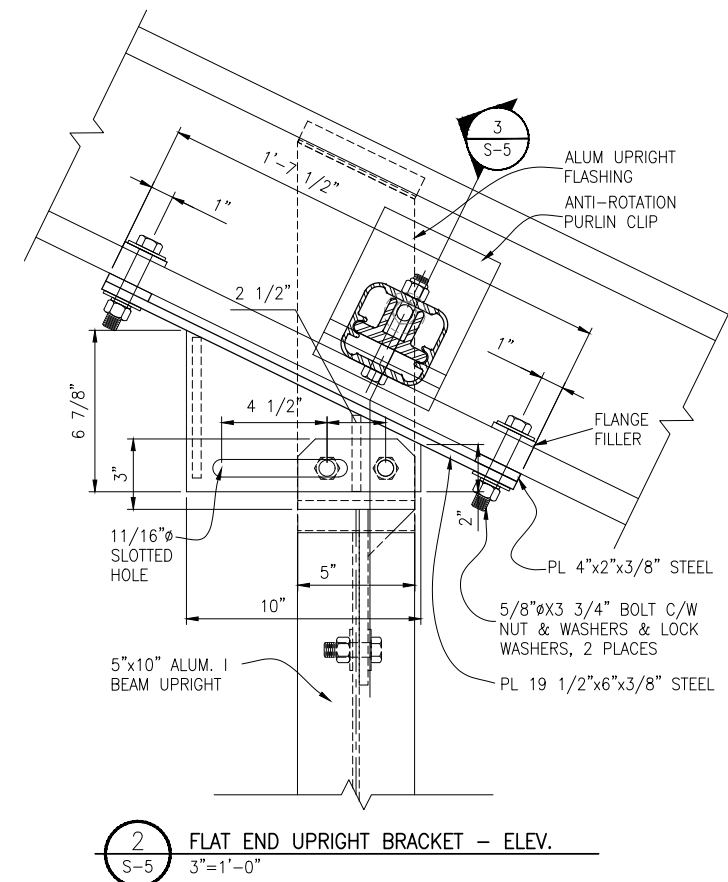
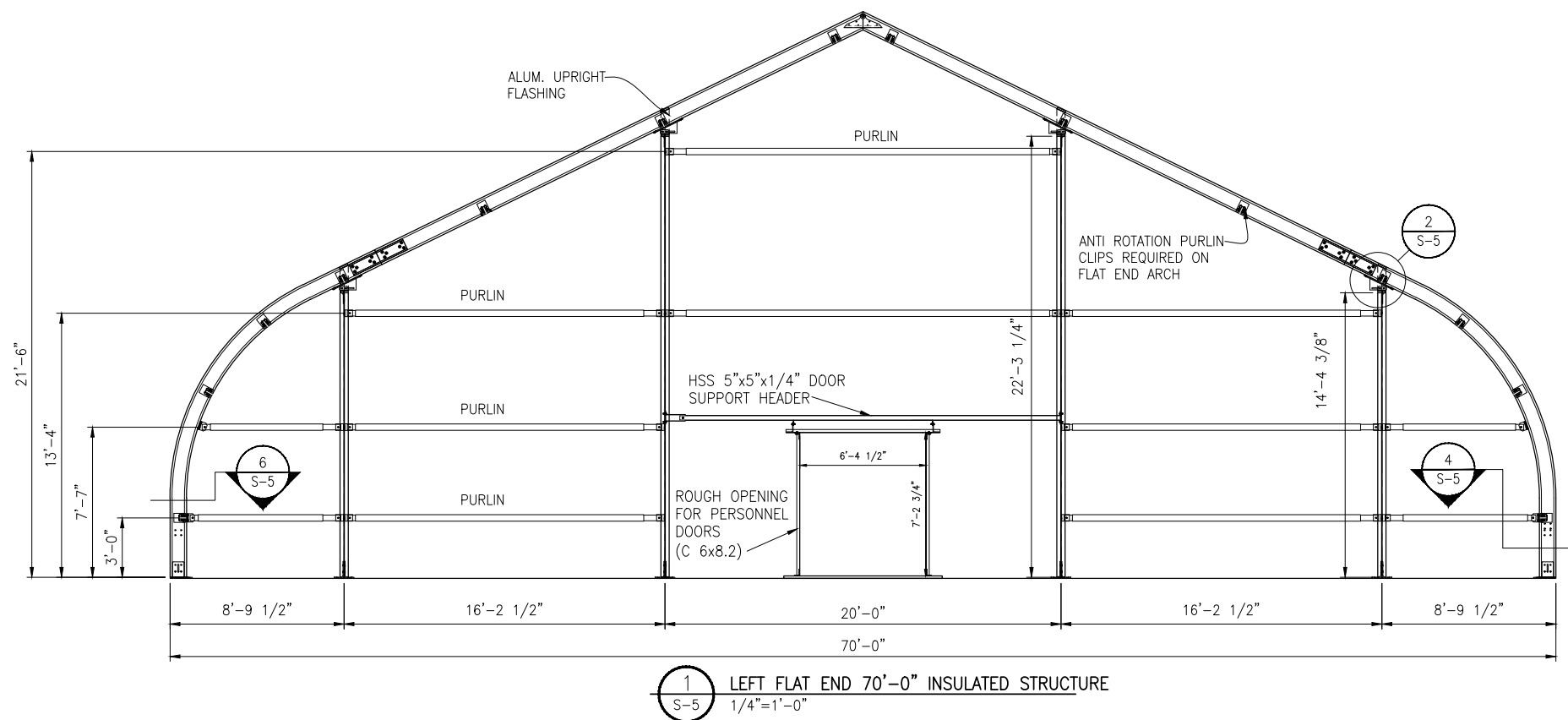
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70.0' STRUCTURE CABLE BRACE DETAILS

DRAWN BY: **920128** DATE: 01/08/2020
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S-4





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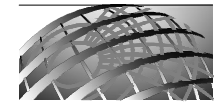
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70.0' STRUCTURE
FLAT END DETAILS

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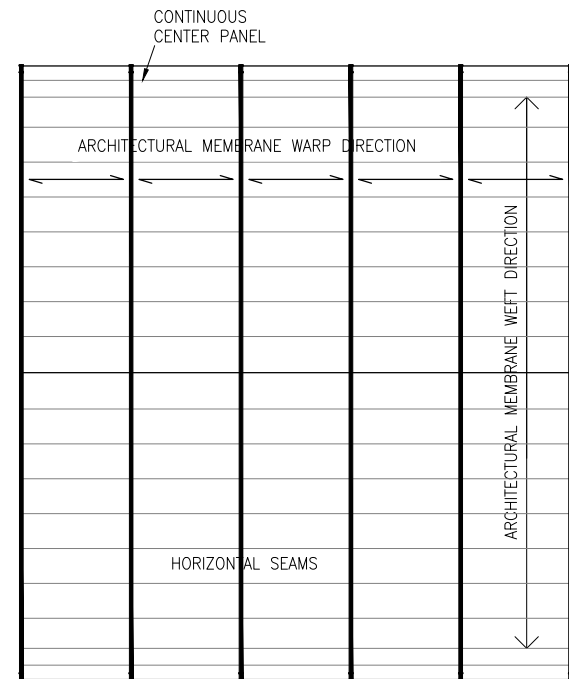
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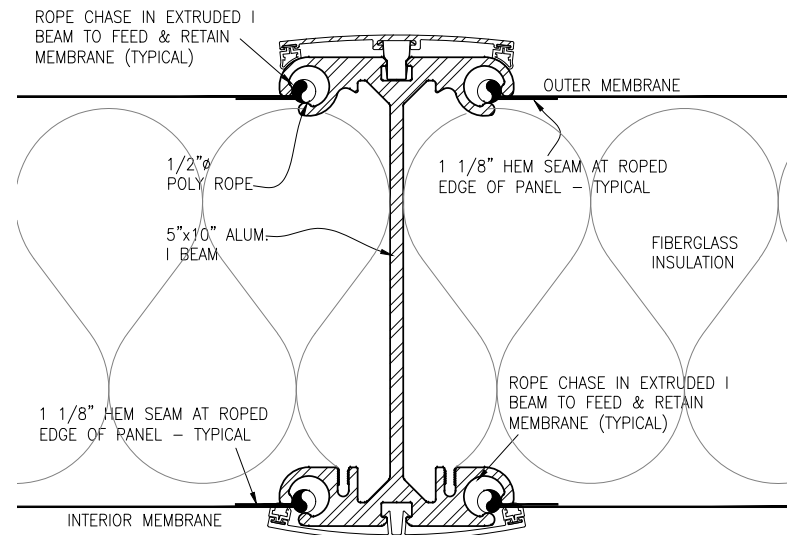
ARCHITECTURAL MEMBRANE

OUTER MEMBRANE:
SEAMAN 8324 ARCHITECTURAL
MEMBRANE W/KYNAR/TEDLAR TOP COAT.
MEETS FIRE PROPAGATION CRITERIA OF:
• CALIFORNIA STATE FIRE MARSHALL
• NFPA 701
• ASTM-E-84
• CAN/ULC-S-109
• CAN/ULC-S-102

INNER MEMBRANE/LINER:
HERCULITE EXCEL 14 MEMBRANE C/W
ACRYLIC TOP COAT.
MEETS FIRE PROPAGATION CRITERIA OF:
• CALIFORNIA STATE FIRE MARSHALL
• NFPA 701
• ASTM-E-84
• CAN/ULC-S-109
• CAN/ULC-S-102



1
S-6
MEMBRANE LAYOUT
3/32"=1'-0"



2
S-6
5"x10" BEAM SECTION - MEMBRANE
6"=1'-0"

NOTES:

OUTER MEMBRANE:

SEAMAN SHELTER-RITE 8324

1. MEMBRANE STRENGTH:

WARP = 300 pli

FILL (WEFT) = 240 pli

2. PRESTRESS (COMPENSATION)

WARP = 1.1%

FILL (WEFT) = 0.5%

3. MEMBRANE - PVC COATED POLYESTER SCRIM

WARP DIRECTION IS THE SPAN
DIRECTION FOR THE FABRIC
FOR THIS STRUCTURE.
ALL HORIZONTAL SEAMS = 1 INCH

INNER MEMBRANE/LINER:

HERCULITE EXCEL 14 W/ACRYLIC
TOP COAT

1. MEMBRANE STRENGTH:

WARP = 170 pli

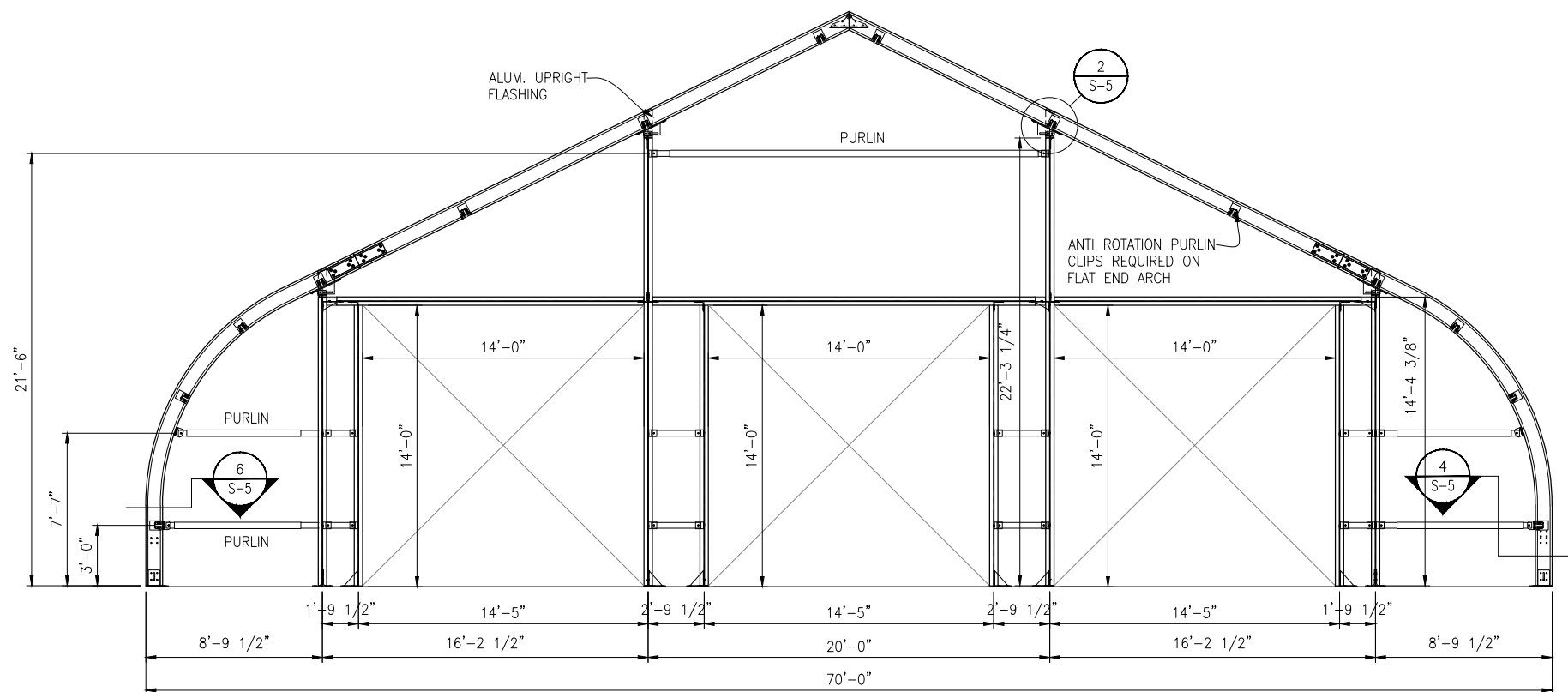
FILL (WEFT) = 140 pli

2. PRESTRESS (COMPENSATION)

WARP = 1.0%

FILL (WEFT) = 0.5%

3. MEMBRANE - PVC COATED POLYESTER SCRIM



3
S-6
MODIFIED RIGHT FLAT END 70'-0" INSULATED STRUCTURE
1/4"=1'-0"



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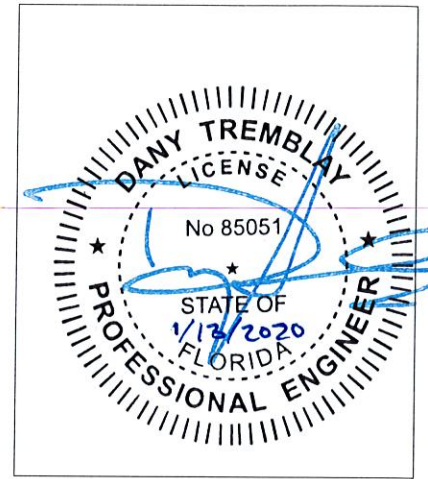
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70.0' STRUCTURE MEMBRANE DETAILS

DRAWN BY: **940128** DATE: 01/08/2020
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CALCULATIONS

WCC Services Inc

70x62.5 fire station

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Panama City, FL 32409

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DESIGN CRITERIA

Codes FBC 2012

ASCE 7-10 for wind and seismic forces

Arch spacing typical

Loads Wind (LRFD) = 3 sec gust, risk category IV

Exposure

base shear factor

fabric (0.2) + utility (1.0) + fire suppression (3.6)

Roof snow (see supporting information studies)

Ground snow at location

Material Arch: proprietary I-shaped aluminium section

Spreaders: 6351-T6 aluminium

Bolts: SAE grade 8, structural

Plates, bars, and angles,: CAN/SCA G40.21 steel

Load cases

SWT = self weight of aluminium members

RFLD = uniform roof dead load

HRF = half roof dead load, 1st half

HRF2 = half roof dead load, 2nd half

IP = internal pressure

W0 = longitudinal wind, 1psf x Cp value from wind tunnel testing

W30 = 30° from longitudinal wind, 1psf x Cp value from wind tunnel testing

W60 = 60° from longitudinal wind, 1psf x Cp value from wind tunnel testing

W90 = 90° from longitudinal wind, 1psf x Cp value from wind tunnel testing

EQX = earthquake in X direction, SWT + 3.4 psf

EQY = earthquake in Y direction, SWT + 3.4 psf

EQZ = earthquake in Z direction, SWT + 3.4 psf

ASD Load

combinations from ASCE 7-10, section 2.4.1: combo factor * load (Cp for wind, base shear for seismic)

DL COM1 = 1.0SWT + 3.4RFLD

DL + snow COM2 = 1.0SWT + 3.4RFLD + 0HRFD = DL + 0psf on half roof

DL + snow COM3 = 1.0SWT + 3.4RFLD + 0HRFD + 0HRFD2 = DL + 0psf snow on full roof

0.6DL + 0.6W COM4 = 0.6SWT + 2.04RFLD + 4.7IP + 25.9W0 = DL + W0

0.6DL + 0.6W COM5 = 0.6SWT + 2.04RFLD + 4.7IP + 25.9W30 = DL + W30

0.6DL + 0.6W COM6 = 0.6SWT + 2.04RFLD + 4.7IP + 25.9W60 = DL + W60

0.6DL + 0.6W COM7 = 0.6SWT + 2.04RFLD + 4.7IP + 25.9W90 = DL + W90

DL + 0.7Eh + 0.7Ev COM8 = 1.0SWT + 3.4RFLD + 0.007EQX + 0.00105EQZ

last term is 15% seismic effect

DL + 0.7Eh + 0.7Ev COM9 = 1.0SWT + 3.4RFLD + 0.007EQY + 0.00105EQZ

last term is 15% seismic effect

0.6DL + 0.7Eh - 0.7Ev COM10 = 0.6SWT + 2.04RFLD + 0.007EQY - 0.00105EQZ

last term is 15% seismic effect

0.6DL + 0.7Eh - 0.7Ev COM11 = 0.6SWT + 2.04RFLD + 0.007EQY - 0.00105EQZ

last term is 15% seismic effect

Correlation of load combos and IBC requirements explained on following page

Load combination review

Load combos are based on FBC 2012

Due to the shape of the structure, for which the wind tends to create primarily suction forces, and to its relatively light weight, the controlling design conditions tend to maximize gravity forces and reduce the effects of wind or tend to maximize wind forces and reduce the effects of gravity.

Load combos and their comparable Section 1605.3 equations are as follows

COM1 = 16-8

COM2 = 16-10

COM2 = 16-10

COM4 = 16-15

COM5 = 16-15

COM6 = 16-15

COM7 = 16-15

COM8 = 16-12 for .7E

COM9 = 16-12 for .7E

16-9 is not applicable

16-11 is not applicable

16-12 is not applicable for .6W since full DL reduces the effect of wind

16-13 is not applicable as per 16-12

16-14 and 16-16 are not applicable since full seismic + full gravity control over a reduced combination of one or both.

2015 ADM Section C requires stability analysis at ultimate loads. Multiply W * 1.6. Q is not considered.

Ultimate (overload) combinations

COM1 = 1.0SWT + 3.4RFLD

COM2 = 1.0SWT + 3.4RFLD + 0HRFD

COM3 = 1.0SWT + 3.4RFLD + 0HRFD + 0HRFD2

COM4 = 1.0SWT + 3.4RFLD + 7.52IP + 41.44W0

COM5 = 1.0SWT + 3.4RFLD + 7.52IP + 41.44W30

COM6 = 1.0SWT + 3.4RFLD + 7.52IP + 41.44W60

COM7 = 1.0SWT + 3.4RFLD + 7.52IP + 41.44W90

General structural system

The structure consists of a tensioned membrane fabric on aluminium framing. The aluminium framing consists of a series of 3-pin arches consisting themselves of 5x10 nominal flanged sections. Each full arch is pinned at the bases and at the peak. Horizontal spreaders or nominal 3.5x3.8 aluminium sections tie the arches together and provide for transfer of HORZ forces in the direction parallel to the ridge. The 5x10 and 3.5x3.8 sections are proprietary and were developed by Sprung and its engineering consultants.

Resistance to gravity loads is provided by the aluminium arches.

Resistance to wind and seismic forces is provided by 3-pin arches in the direction perpendicular to the ridge. In the direction parallel to the ridge, resistance to wind and seismic forces is provided by the purlins/spreaders transferring HORZ forces to the flat (or rounded) ends.

Wind acts perpendicular to the fabric's surface thus resulting primarily in suction forces on the structure. Seismic forces act in a horizontal and vertical direction.

Project address **2115 County Rd, Panama City, FL**

Lat degree 30

Lat minutes 12

Lat seconds 4.14

Latitude 30.201150 North

Long degree 85

Long minutes 37

Long seconds 24.14

Longitude -85.623372 West

winds pressure combination factors calculation

Speed	146 mph	wall height	4 ft
Exp	C	max height	26.2 ft
h	15.1 ft		
G	1 gust factor		
Kz	0.9 at average structure height (h)		
Kzt	1		
Kd	0.85		

q	43.2 psf	Ultimate pressure
0.6q	25.9 psf	ASD pressure (0.6W)

GCpf	0.61 windward wa0 & 30	Fig. 28.4-1
	15.8 psf	

GCpf	-0.43 leeward wall
	-11.1 psf

GCpf	0 wind and lee 60 & 90
	0.0 psf

GCpi	0.18 Enclosed	or 60 & 90 if partially enclosed
	0.55 Partially	0 & 30

COM1 = :	4.7 psf	Enclosed
----------	---------	----------

COM2 = :	14.2 psf	Partially
----------	----------	-----------

Combination factor = 14.2 partially enclosed, based on unit load of 1psf

Combination factor = 4.7 enclosed (or 60 & 90 if partially enclosed), based on unit load of 1psf

5x10 Aluminum Section

A510 8.31 in²
 tf 0.625 in²
 d510 10 in
 tw 0.3125 in
 bw 7.625 in

b1510 5 in
 b2510 5
 t1510 0.625
 t2510 0.625

J510 0.891 in⁴

Aw510 2.38 in²
 Ix 134.73 in⁴
 Iy 10.94 in⁴

Sxt 26.946 in³
 Sxb 26.946 in³
 Syt 4.376 in³
 Syb 4.376 in³

Zpx 31.7 in³
 rx 4.02 in
 ry 1.15 in
 κ 1 ksi
 rye 2.11 in
 kt 1

6351-T6 Fy1 37 ksi
 Fcy1 37
 Fu1 42
 Fbu1 84
 Fsu1 27
 Fsy1 22.2

6061-T6 Fy2 35
 Fu2 42
 Fbu2 82
 Fby2 58

α 0.5
 Cw 189.2598

Allowable Strength Design

Tension - Chapter D

Pnt 307.5 K Pnt/Ω_{ty} 186.3 K gross section
 1 in hole

Ae 7.9975 in²

Pnt2 335.895 K Pnt2/Ω_{tr} 172.2538 K

Compression - Chapter E

Member Bucking - E.2

Pnc 307.47 K
 λ_{1c} 17.71

λ_{2c}	63.77	member	
L_{cx}	24.1 ft	length	
L_{cy}	5.7 ft	37	k
L_{zc}	5.7 ft	8.7	0.65
		8.7	0.65

Flexural Buckling - E2.1

k_{xc}	1
k_{yc}	1
k_{zc}	1
λ_{xc}	71.79
λ_{yc}	59.01
F_{cc}	16.44 ksi
P_{ncc}	136.62 K

Torsional and Flexural-Torsional Buckling - E2.2

Doubly Symmetric

k_z	1
L_z	37 ft
F_e	51.38 ksi
λ_{tft}	44.05
F_{c2}	16.44 ksi
P_{nc3}	136.62 K

Local Buckling - E.3

E3.2	
P_{nc1}	307.47 K
E.4	
P_{nc2}	404.43 K

Flexure - Chapter F**Yielding - F.2**

M_{np1}	97.74 K-ft		
M_{np2}	124.63 K-ft		
M_{np3}	124.63 K-ft		
M_{nu}	110.95 K-ft	M_{nu}/Ω_{tr}	56.90 K-ft
M_{np}	110.95 K-ft	M_{np1}/Ω_b	59.24 K-ft
M_{nlb}	83.08 K-ft	M_{nlb}/Ω_b	50.35 K-ft
		M_{nmb1}/Ω_b	56.62 K-ft

Local Buckling - F.3

M_{nlb}	83.08 K-ft
-----------	------------

Lateral Torsional Buckling - F.4

C_b	1.67
r_{ye1}	1.38 in

12/15/2019

λ_{bt}	24.89
C_c	63.77
$S_{xc}=S_{xb}$	26.946 in ³
M_{nmb1}	93.43 K-ft
M_{nmb2}	361.40 K-ft

Shear - Chapter G

λ_{s1}	34.69
λ_{s2}	61.30
b_w/t_w	24.4
$F_{sv}=F_{sy1}$	22.2 ksi

Allowable Forces

P_t	186.35 K
P_c	82.80 K
M_{cx}	50.35 K-ft
V_a	32.06 K

Splice

$I_{xsplice}$	39.03 in ⁴
$I_{ysplice}$	1.72 in ⁴
d_{splice}	7.25 in
b_{splice}	1.94 in
$Z_{xsplice}$	14.24 in ³
$S_{xsplice}$	10.8 in ³
A_{splice}	5.22 in ²
$A_{wsplice}$	2.22 in ²
$r_{xsplice}$	2.73 in
$r_{ysplice}$	0.57 in

Allowable Forces**Moment**

$M_{xspliceall}$	22.84 K-ft
$2*M_{xsplice}$	45.68 K-ft

Shear

$V_{spliceall}$	29.87 K
$2*V_{spliceal}$	59.74 K

Compression

$P_{splicecomp}$	193.14 K
------------------	----------

Tension

$P_{splicetensi}$	193.14 K
-------------------	----------

3.5"x3.875" spreader Aluminum Section

A44	3.19 in ²	6351-T6	Fy1	37 ksi
t44	0.1875 in		Fcy1	37
t442	0.3125 in		Fu1	42
d44	1.85 in		Fbu1	84
bw44	0.225 in		Fsu1	27
			Fsy1	22.2
Aw44	0.042 in ²	6061-T6	Fy2	35
Ix	5.75 in ⁴		Fu2	42
Iy	5.48 in ⁴		Fbu2	82
Sx44	6.22 in ³		Fby2	58
rx44	1.34 in			
ry44	1.31 in			

Allowable Strength Design**Tension - Chapter D**

Pnt	118.03 K	Pnt/ Ω_t	71.53 K	gross section
	0.8125 in hole			
A44net	2.662656 in ²			
Pnt2	111.83 K	Pnt2/ Ω_{tr}	57.35 K	

**Compression - Chapter E
Member Buckling - E.2**

λ_{1c} 17.71

L44 12 ft
k44 1

λ_{44} 109.87
 λ_{2c} 63.77

Fc44 7.02 ksi
Pnc44 22.39 K
Pnc44/ Ω_c 13.57 K

Bolt Strength, Bolt Tearout, Bolt Bearing, Pullout

dbolt 0.625 in
Fnt 113 ksi
Fnv 68 ksi

F _{nvx}	84 ksi		
Ω_{bolt}	1.95	20	0.65
		6	
A _{bolt}	0.31 in ²	6	
P _{ntbolt}	34.67 K		
P _{ntbolt} / Ω	17.78 K		
V _{nvbolt}	25.77 K		
V _{nvbolt} / Ω	13.22 K		

Bolt bearing

d _{e44}	1.5 in
R _{n44}	116.55 K
Limit	16.41 K
Double shear	20.19 K

Bolt Summary

0.625 in dia.

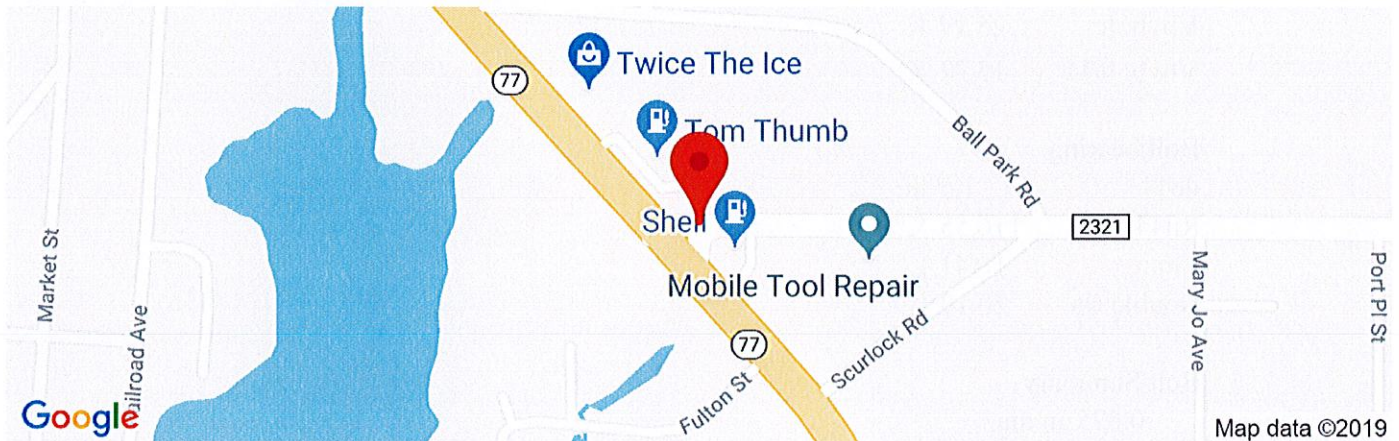
Allowable	17.78 K
Allowable	13.22 K
Bolt Bearing	116.55 K



Wcc fire station 70x63

2115 Co Rd 2321, Panama City, FL 32409, USA

Latitude, Longitude: 30.2857553, -85.6368172



Date	12/19/2019, 6:36:56 PM
Design Code Reference Document	ASCE7-10
Risk Category	II
Site Class	D - Stiff Soil

Type	Value	Description
S_S	0.076	MCE_R ground motion. (for 0.2 second period)
S_1	0.05	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.122	Site-modified spectral acceleration value
S_{M1}	0.119	Site-modified spectral acceleration value
S_{DS}	0.081	Numeric seismic design value at 0.2 second SA
S_{D1}	0.08	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2 second
F_v	2.4	Site amplification factor at 1.0 second
PGA	0.035	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.056	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
S_{sRT}	0.076	Probabilistic risk-targeted ground motion. (0.2 second)
S_{sUH}	0.082	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
S_{sD}	1.5	Factored deterministic acceleration value. (0.2 second)
S_{1RT}	0.05	Probabilistic risk-targeted ground motion. (1.0 second)
S_{1UH}	0.056	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S_{1D}	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.926	Mapped value of the risk coefficient at short periods

Company

Address
City, State
Phone

JOB TITLE Kern County homeless shelter 80x105

JOB NO.
CALCULATED BY
CHECKED BY

SHEET NO.
DATE
DATE

Seismic Loads:

IBC 2015

Strength Level Forces

Risk Category : II
Importance Factor (I) : 1.00

Site Class : D

Ss (0.2 sec) = 106.70 %g
S1 (1.0 sec) = 39.40 %g

Fa = 1.073	Sms = 1.145	S _{DS} = 0.763	Design Category = D
Fv = 1.612	Sm1 = 0.635	S _{D1} = 0.423	Design Category = D

Seismic Design Category = D

Redundancy Coefficient ρ = 1.00 Code exception must be met for ρ to equal 1.0

Number of Stories: 1

Structure Type: All other building system:

Horizontal Struct Irregularities: No plan Irregularity

Vertical Structural Irregularities: No vertical Irregularity

Flexible Diaphragms: Yes

Building System: **Structural steel systems not specifically detailed for seismic resistance**Seismic resisting system: **Structural steel systems not specifically detailed for seismic resistance**System Structural Height Limit: **System not permitted for this seismic design category**

Actual Structural Height (hn) = 31.0 ft

See ASCE7 Section 12.2.5 for exceptions and other system limitations

DESIGN COEFFICIENTS AND FACTORS

Response Modification Coefficient (R) = 3
Over-Strength Factor (Ω_o) = 2.5
Deflection Amplification Factor (Cd) : 3
S_{DS} = 0.763
S_{D1} = 0.423

Seismic Load Effect (E) = $E_h \pm E_v = \rho C_E \pm 0.2 S_{DS} D$ = $Q_E \pm 0.153 D$ Q_E = horizontal seismic force
Special Seismic Load Effect (Em) : $E_{mh} \pm E_v = \Omega_o C_E \pm 0.2 S_{DS} D$ = $2.5 Q_E \pm 0.153 D$ D = dead load

PERMITTED ANALYTICAL PROCEDURES**Simplified Analysis** - Use Equivalent Lateral Force Analysis**Equivalent Lateral-Force Analysis** - Permitted

Building period coef. (C_T) = 0.020 $C_u = 1.40$
Approx fundamental period (Ta) : $C_T h_n^{\wedge} = 0.263 \text{ sec}$ $x = 0.75$ $T_{max} = C_u T_a = 0.368$
User calculated fundamental period (T) = sec **Use T = 0.263**
Long Period Transition Period (TL) = ASCE7 map = error
Seismic response coef. (Cs) : $S_{DS}/R = 0.254$
need not exceed Cs = $S_{d1} / TL/RT^2 = 0.000$
but not less than Cs = $0.044 S_{d1} = 0.034$
USE Cs = 0.034

Design Base Shear V = error, you need to enter TL (see link to right)

Model & Seismic Response Analysis - Permitted (see code for procedure)**ALLOWABLE STORY DRIFT**

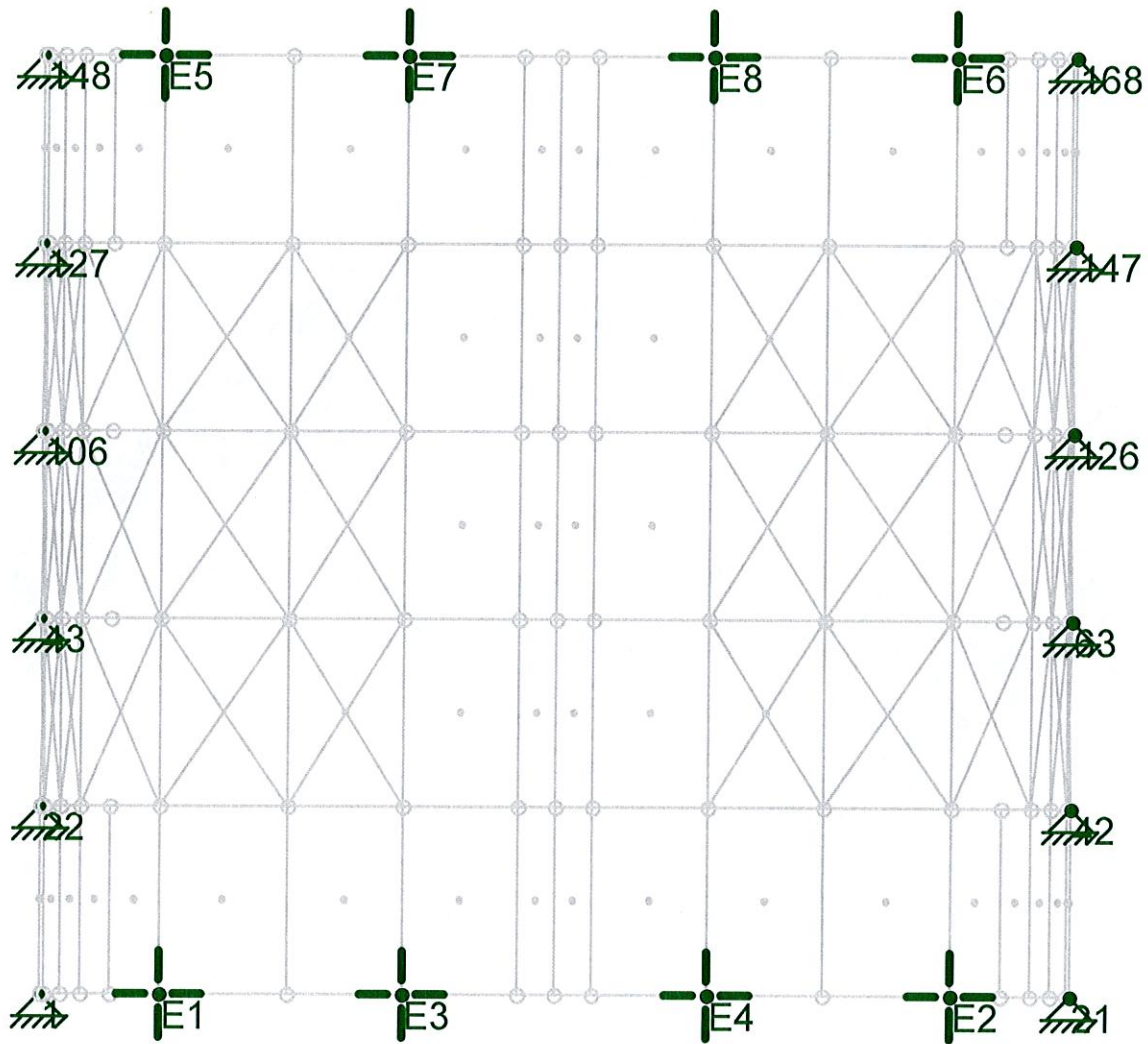
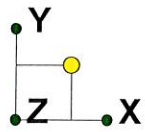
Structure Type: All other structures

Allowable story drift $\Delta a = 0.020 h_{sx}$ where h_{sx} is the story height below level x

End arch			Distributed wind load (klf) = lpsf x trib x Cp / 1000												
Arch	ft		0		30ad		30bc		60ad		60bc		90		
Membe	i	j	trib	wi	wj	wi	wj	wi	wj	wi	wj	wi	wj	wi	wj
1	1	2	6.25	-0.0024	-0.0024	-0.0003	-0.0003	-0.0020	-0.0020	0.0021	0.0021	-0.0003	-0.0003	0.0018	0.0018
2	2	3	6.25	-0.0024	-0.0027	-0.0003	-0.0004	-0.0020	-0.0021	0.0021	0.0020	-0.0003	-0.0002	0.0018	0.0020
3	3	4	6.25	-0.0027	-0.0031	-0.0004	-0.0006	-0.0021	-0.0022	0.0020	0.0020	-0.0002	-0.0002	0.0020	0.0021
4	4	5	6.25	-0.0031	-0.0029	-0.0006	-0.0008	-0.0022	-0.0024	0.0020	0.0014	-0.0002	-0.0007	0.0021	0.0015
5	5	6	6.25	-0.0029	-0.0026	-0.0008	-0.0010	-0.0024	-0.0026	0.0014	0.0006	-0.0007	-0.0012	0.0015	0.0009
6	6	7	6.25	-0.0026	-0.0030	-0.0010	-0.0015	-0.0026	-0.0028	0.0006	-0.0001	-0.0012	-0.0015	0.0009	0.0002
7	7	8	6.25	-0.0030	-0.0033	-0.0015	-0.0020	-0.0028	-0.0031	-0.0001	-0.0008	-0.0015	-0.0019	0.0002	-0.0004
8	8	9	6.25	-0.0033	-0.0045	-0.0020	-0.0040	-0.0031	-0.0035	-0.0008	-0.0033	-0.0019	-0.0024	-0.0004	-0.0019
9	9	10	6.25	-0.0045	-0.0051	-0.0040	-0.0049	-0.0035	-0.0037	-0.0033	-0.0045	-0.0024	-0.0026	-0.0019	-0.0025
10	10	11	6.25	-0.0051	-0.0053	-0.0049	-0.0053	-0.0037	-0.0038	-0.0045	-0.0050	-0.0026	-0.0027	-0.0025	-0.0028
11	11	12	6.25	-0.0053	-0.0051	-0.0055	-0.0054	-0.0035	-0.0031	-0.0027	-0.0030	-0.0027	-0.0027	-0.0027	-0.0027
12	12	13	6.25	-0.0051	-0.0045	-0.0054	-0.0052	-0.0031	-0.0023	-0.0030	-0.0036	-0.0027	-0.0028	-0.0027	-0.0028
13	13	14	6.25	-0.0045	-0.0033	-0.0052	-0.0047	-0.0023	-0.0004	-0.0036	-0.0051	-0.0028	-0.0030	-0.0028	-0.0028
14	14	15	6.25	-0.0033	-0.0030	-0.0047	-0.0041	-0.0004	0.0002	-0.0051	-0.0048	-0.0030	-0.0028	-0.0028	-0.0030
15	15	16	6.25	-0.0030	-0.0026	-0.0041	-0.0034	0.0002	0.0009	-0.0048	-0.0046	-0.0028	-0.0025	-0.0030	-0.0032
16	16	17	6.25	-0.0026	-0.0029	-0.0034	-0.0033	0.0009	0.0015	-0.0046	-0.0038	-0.0025	-0.0027	-0.0032	-0.0033
17	17	18	6.25	-0.0029	-0.0031	-0.0033	-0.0032	0.0015	0.0021	-0.0038	-0.0032	-0.0027	-0.0029	-0.0033	-0.0034
18	18	19	6.25	-0.0031	-0.0027	-0.0032	-0.0026	0.0021	0.0020	-0.0032	-0.0027	-0.0029	-0.0025	-0.0034	-0.0033
19	19	20	6.25	-0.0027	-0.0024	-0.0026	-0.0020	0.0020	0.0018	-0.0027	-0.0024	-0.0025	-0.0022	-0.0033	-0.0032
20	20	21	6.25	-0.0024	-0.0024	-0.0020	-0.0020	0.0018	0.0018	-0.0024	-0.0024	-0.0022	-0.0022	-0.0032	-0.0032

1st interior arch			Distributed wind load (klf) = lpsf x trib x Cp / 1000												
ft			0		30ad		30bc		60ad		60bc		90		
Arch			wi	wj	wi	wj	wi	wj	wi	wj	wi	wj	wi	wj	
Membe	i	j	trib												
21	22	23	12.5	-0.0015	-0.0015	0.0008	0.0008	-0.0002	-0.0002	0.0041	0.0041	0.0028	0.0028	0.0048	0.0048
22	23	24	12.5	-0.0015	-0.0015	0.0008	0.0007	-0.0002	-0.0004	0.0041	0.0039	0.0028	0.0028	0.0048	0.0047
23	24	25	12.5	-0.0015	-0.0016	0.0007	0.0007	-0.0004	-0.0007	0.0039	0.0037	0.0028	0.0027	0.0047	0.0046
24	25	26	12.5	-0.0016	-0.0018	0.0007	0.0002	-0.0007	-0.0013	0.0037	0.0024	0.0027	0.0014	0.0046	0.0034
25	26	27	12.5	-0.0018	-0.0020	0.0002	-0.0004	-0.0013	-0.0020	0.0024	0.0008	0.0014	0.0000	0.0034	0.0020
26	27	28	12.5	-0.0020	-0.0021	-0.0004	-0.0013	-0.0020	-0.0024	0.0008	-0.0001	0.0000	-0.0005	0.0020	0.0011
27	28	29	12.5	-0.0021	-0.0022	-0.0013	-0.0021	-0.0024	-0.0029	-0.0001	-0.0009	-0.0005	-0.0011	0.0011	0.0004
28	29	30	12.5	-0.0022	-0.0046	-0.0021	-0.0061	-0.0029	-0.0036	-0.0009	-0.0060	-0.0011	-0.0020	0.0004	-0.0025
29	30	31	12.5	-0.0046	-0.0023	-0.0061	-0.0084	-0.0036	-0.0085	-0.0060	-0.0081	-0.0020	0.0070	-0.0025	-0.0041
30	31	32	12.5	-0.0023	-0.0023	-0.0084	-0.0093	-0.0085	-0.0093	-0.0081	-0.0091	0.0070	0.0082	-0.0041	-0.0047
31	32	33	12.5	-0.0023	-0.0023	-0.0082	-0.0078	-0.0082	-0.0073	-0.0081	-0.0083	-0.0081	-0.0079	-0.0051	-0.0051
32	33	34	12.5	-0.0023	-0.0022	-0.0078	-0.0070	-0.0073	-0.0054	-0.0083	-0.0086	-0.0079	-0.0076	-0.0051	-0.0051
33	34	35	12.5	-0.0022	-0.0022	-0.0070	-0.0052	-0.0054	-0.0011	-0.0086	-0.0095	-0.0076	-0.0069	-0.0051	-0.0052
34	35	36	12.5	-0.0022	-0.0021	-0.0052	-0.0046	-0.0011	-0.0005	-0.0095	-0.0091	-0.0069	-0.0072	-0.0052	-0.0056
35	36	37	12.5	-0.0021	-0.0020	-0.0046	-0.0040	-0.0005	0.0000	-0.0091	-0.0087	-0.0072	-0.0076	-0.0056	-0.0061
36	37	38	12.5	-0.0020	-0.0018	-0.0040	-0.0032	0.0000	0.0014	-0.0087	-0.0072	-0.0076	-0.0074	-0.0061	-0.0063
37	38	39	12.5	-0.0018	-0.0016	-0.0032	-0.0025	0.0014	0.0027	-0.0072	-0.0058	-0.0074	-0.0073	-0.0063	-0.0066
38	39	40	12.5	-0.0016	-0.0015	-0.0025	-0.0019	0.0027	0.0038	-0.0058	-0.0045	-0.0073	-0.0050	-0.0066	-0.0057
39	40	41	12.5	-0.0015	-0.0015	-0.0019	-0.0015	0.0038	0.0048	-0.0045	-0.0035	-0.0050	-0.0032	-0.0057	-0.0050
40	41	42	12.5	-0.0015	-0.0015	-0.0015	-0.0015	0.0048	0.0048	-0.0035	-0.0035	-0.0032	-0.0032	-0.0050	-0.0050

TYP interior arch			Distributed wind load (klf) = 1psf x trib x Cp / 1000												
ft			0		30ad		30bc		60ad		60bc		90		
Arch			trib	wi	wj	wi	wj	wi	wj	wi	wj	wi	wj	wi	wj
Membe	i	j													
41	43	44	12.5	-0.0008	-0.0008	0.0006	0.0006	0.0005	0.0005	0.0034	0.0034	0.0036	0.0036	0.0047	0.0047
42	44	45	12.5	-0.0008	-0.0010	0.0006	0.0005	0.0005	0.0004	0.0034	0.0034	0.0036	0.0036	0.0047	0.0048
43	45	46	12.5	-0.0010	-0.0013	0.0005	0.0004	0.0004	0.0002	0.0034	0.0034	0.0036	0.0036	0.0048	0.0050
44	46	47	12.5	-0.0013	-0.0015	0.0004	-0.0002	0.0002	-0.0005	0.0034	0.0021	0.0036	0.0021	0.0050	0.0038
45	47	48	12.5	-0.0015	-0.0018	-0.0002	-0.0009	-0.0005	-0.0012	0.0021	0.0007	0.0021	0.0006	0.0038	0.0025
46	48	49	12.5	-0.0018	-0.0018	-0.0009	-0.0015	-0.0012	-0.0019	0.0007	-0.0002	0.0006	-0.0003	0.0025	0.0017
47	49	50	12.5	-0.0018	-0.0019	-0.0015	-0.0020	-0.0019	-0.0025	-0.0002	-0.0010	-0.0003	-0.0011	0.0017	0.0010
48	50	51	12.5	-0.0019	-0.0046	-0.0020	-0.0061	-0.0025	-0.0036	-0.0010	-0.0060	-0.0011	-0.0020	0.0010	-0.0025
49	51	52	12.5	-0.0046	-0.0021	-0.0061	-0.0083	-0.0036	-0.0086	-0.0060	-0.0078	-0.0020	-0.0079	-0.0025	-0.0036
50	52	53	12.5	-0.0021	-0.0022	-0.0083	-0.0092	-0.0086	-0.0095	-0.0078	-0.0088	-0.0079	-0.0089	-0.0036	-0.0043
51	53	54	12.5	-0.0022	-0.0021	-0.0092	-0.0085	-0.0092	-0.0085	-0.0088	-0.0089	-0.0088	-0.0088	-0.0041	-0.0042
52	54	55	12.5	-0.0021	-0.0021	-0.0085	-0.0071	-0.0085	-0.0071	-0.0089	-0.0091	-0.0088	-0.0088	-0.0042	-0.0043
53	55	56	12.5	-0.0021	-0.0019	-0.0071	-0.0039	-0.0071	-0.0040	-0.0091	-0.0096	-0.0088	-0.0088	-0.0043	-0.0046
54	56	57	12.5	-0.0019	-0.0018	-0.0039	-0.0034	-0.0040	-0.0035	-0.0096	-0.0095	-0.0088	-0.0087	-0.0046	-0.0052
55	57	58	12.5	-0.0018	-0.0018	-0.0034	-0.0029	-0.0035	-0.0029	-0.0095	-0.0093	-0.0087	-0.0086	-0.0052	-0.0058
56	58	59	12.5	-0.0018	-0.0015	-0.0029	-0.0021	-0.0029	0.0005	-0.0093	-0.0081	-0.0086	-0.0076	-0.0058	-0.0061
57	59	60	12.5	-0.0015	-0.0013	-0.0021	-0.0014	0.0005	0.0036	-0.0081	-0.0071	-0.0076	-0.0068	-0.0061	-0.0065
58	60	61	12.5	-0.0013	-0.0010	-0.0014	-0.0013	0.0036	0.0036	-0.0071	-0.0049	-0.0068	-0.0047	-0.0065	-0.0049
59	61	62	12.5	-0.0010	-0.0008	-0.0013	-0.0012	0.0036	0.0036	-0.0049	-0.0032	-0.0047	-0.0031	-0.0049	-0.0036
60	62	63	12.5	-0.0008	-0.0008	-0.0012	-0.0012	0.0036	0.0036	-0.0032	-0.0032	-0.0031	-0.0031	-0.0036	-0.0036



Envelope Only Solution

Canyons Structural Inc.

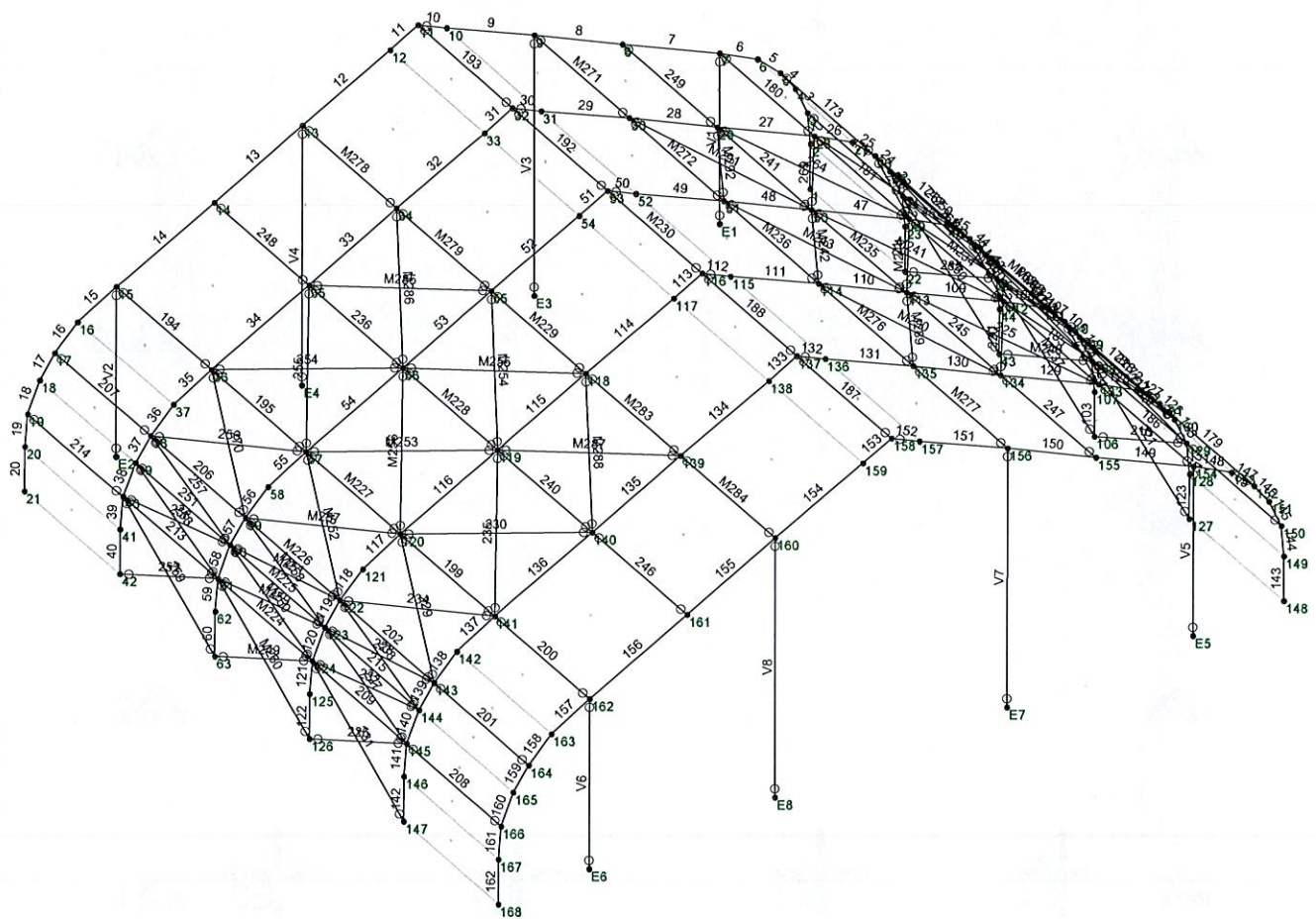
Dany Tremblay, SE PE PE...

WCC Services fire station FL 70x63

Boundary nodes

Dec 19, 2019 at 4:56 PM

WCC Services fire station FL 70x6...



Envelope Only Solution

Canyons Structural Inc.

Dany Tremblay, SE PE PE...

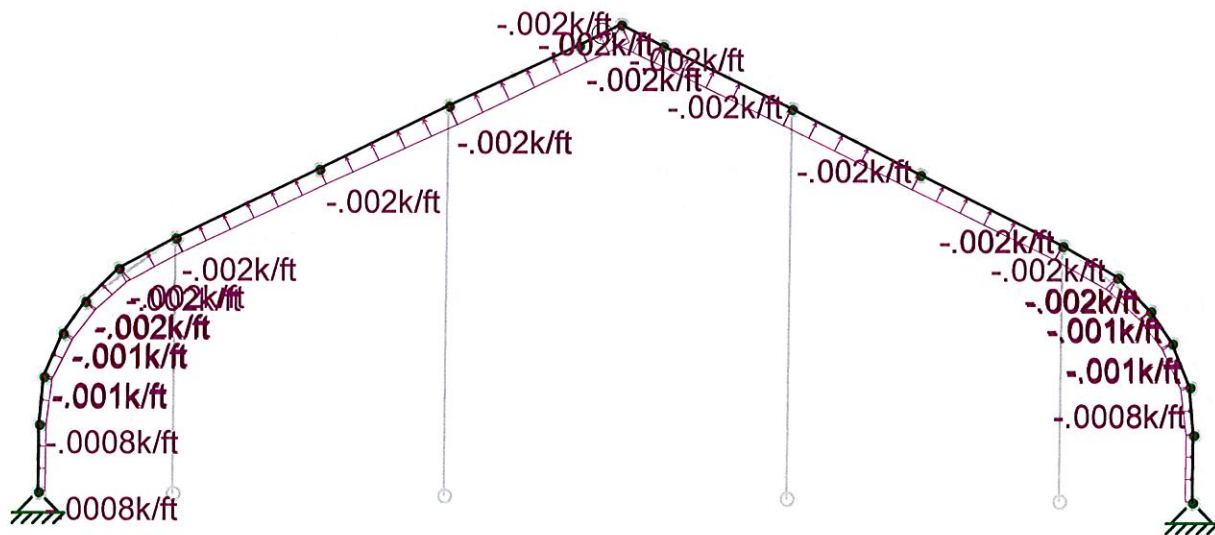
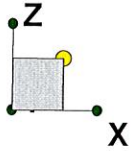
WCC Services fire station FL 70x63

Members and nodes

Dec 19, 2019 at 4:58 PM

WCC Services fire station FL 70x6...

Page 14



Loads: BLC 6, 0 degree wind 1 psf

Canyons Structural Inc.

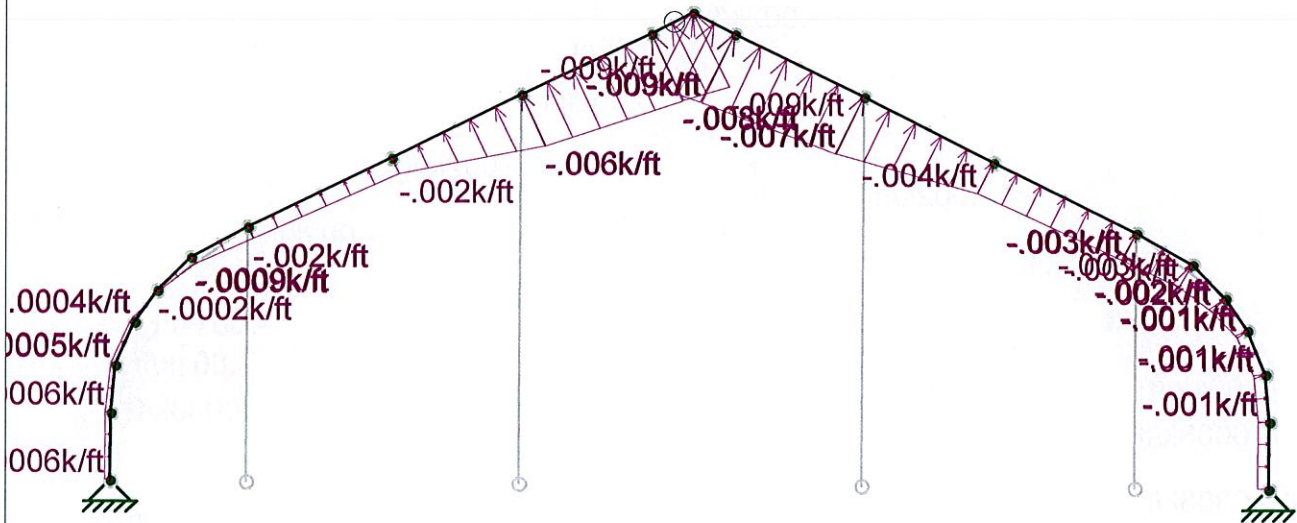
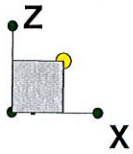
Dany Tremblay, SE PE PE...

WCC Services fire station FL 70x63

Wind tunnel loading envelope, 0° influence

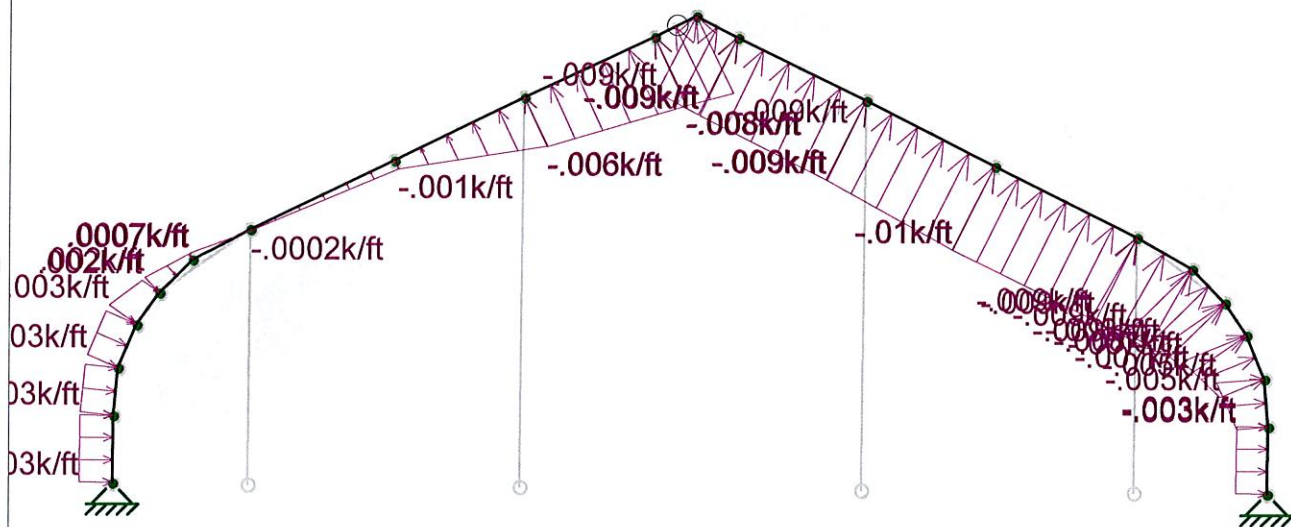
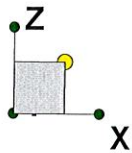
Dec 19, 2019 at 5:56 PM

WCC Services fire station FL 70x6...



Loads: BLC 7, 30 degree wind 1 psf

Canyons Structural Inc.	WCC Services fire station FL 70x63	Dec 19, 2019 at 5:57 PM
Dany Tremblay, SE PE PE...	Wind tunnel loading envelope, 30* influence	WCC Services fire station FL 70x6...



Loads: BLC 8, 60 degree wind 1 psf

Canyons Structural Inc.

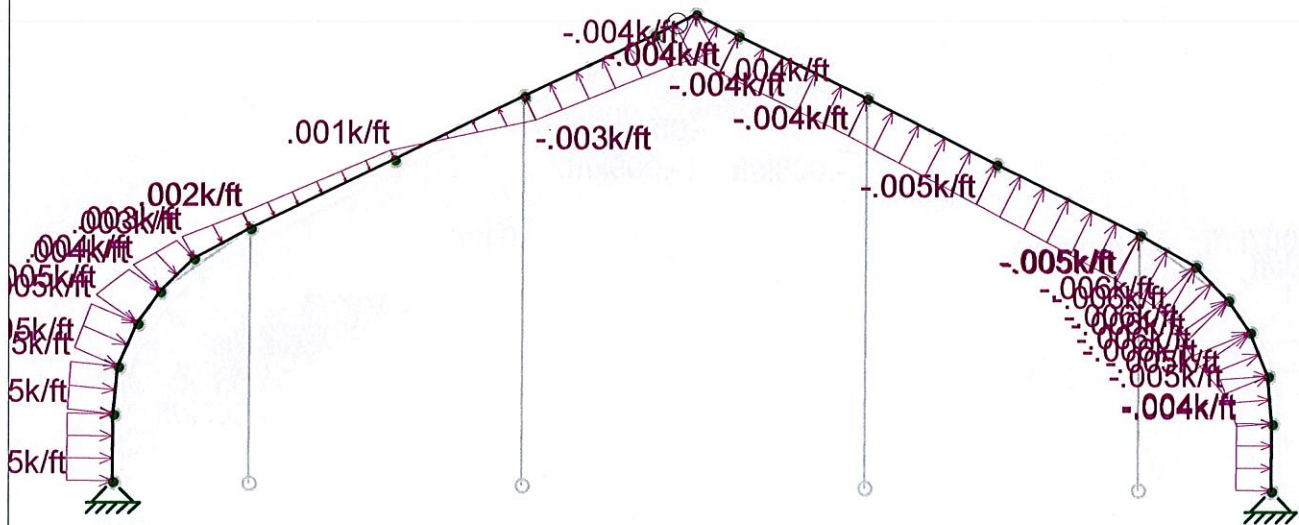
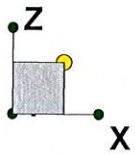
Dany Tremblay, SE PE PE...

WCC Services fire station FL 70x63

Wind tunnel loading envelope, 60° influence

Dec 19, 2019 at 5:57 PM

WCC Services fire station FL 70x6...



Loads: BLC 9, 90 Degree Wind 1 psf

Canyons Structural Inc.	WCC Services fire station FL 70x63 Wind tunnel loading envelope, 90* influence	
Dany Tremblay, SE PE PE...		Dec 19, 2019 at 5:57 PM
		WCC Services fire station FL 70x6...

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	1	-34.58	0	0	0	
2	2	-34.58	0	4	0	
3	3	-34.33	0	6.833	0	
4	4	-33.25	0	9.42	0	
5	5	-31.92	0	11.33	0	
6	6	-29.92	0	13.33	0	
7	7	-26.58	0	15.17	0	
8	8	-18	0	19.33	0	
9	9	-10.25	0	23.17	0	
10	10	-2.5	0	26.83	0	
11	11	0	0	28.08	0	
12	12	2.5	0	26.83	0	
13	13	10.25	0	23.17	0	
14	14	18	0	19.33	0	Yes
15	15	26.58	0	15.17	0	
16	16	29.92	0	13.33	0	
17	17	31.92	0	11.33	0	
18	18	33.25	0	9.42	0	
19	19	34.33	0	6.833	0	
20	20	34.58	0	4	0	
21	21	34.58	0	0	0	
22	22	-34.58	12.5	0	0	
23	23	-34.58	12.5	4	0	
24	24	-34.33	12.5	6.833	0	
25	25	-33.25	12.5	9.42	0	
26	26	-31.92	12.5	11.33	0	
27	27	-29.92	12.5	13.33	0	
28	28	-26.58	12.5	15.17	0	
29	29	-18	12.5	19.33	0	
30	30	-10.25	12.5	23.17	0	
31	31	-2.5	12.5	26.83	0	
32	32	0	12.5	28.08	0	
33	33	2.5	12.5	26.83	0	
34	34	10.25	12.5	23.17	0	
35	35	18	12.5	19.33	0	
36	36	26.58	12.5	15.17	0	
37	37	29.92	12.5	13.33	0	
38	38	31.92	12.5	11.33	0	
39	39	33.25	12.5	9.42	0	
40	40	34.33	12.5	6.833	0	
41	41	34.58	12.5	4	0	
42	42	34.58	12.5	0	0	
43	43	-34.58	25	0	0	
44	44	-34.58	25	4	0	
45	45	-34.33	25	6.833	0	
46	46	-33.25	25	9.42	0	
47	47	-31.92	25	11.33	0	
48	48	-29.92	25	13.33	0	
49	49	-26.58	25	15.17	0	
50	50	-18	25	19.33	0	
51	51	-10.25	25	23.17	0	
52	52	-2.5	25	26.83	0	
53	53	0	25	28.08	0	
54	54	2.5	25	26.83	0	
55	55	10.25	25	23.17	0	
56	56	18	25	19.33	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
57	57	26.58	25	15.17	0	
58	58	29.92	25	13.33	0	
59	59	31.92	25	11.33	0	
60	60	33.25	25	9.42	0	
61	61	34.33	25	6.833	0	
62	62	34.58	25	4	0	
63	63	34.58	25	0	0	
64	E1	-26.58	0	0	0	
65	E2	26.58	0	0	0	
66	E3	-10.25	0	0	0	
67	E4	10.25	0	0	0	
68	106	-34.58	37.5	0	0	
69	107	-34.58	37.5	4	0	
70	108	-34.33	37.5	6.833	0	
71	109	-33.25	37.5	9.42	0	
72	110	-31.92	37.5	11.33	0	
73	111	-29.92	37.5	13.33	0	
74	112	-26.58	37.5	15.17	0	
75	113	-18	37.5	19.33	0	
76	114	-10.25	37.5	23.17	0	
77	115	-2.5	37.5	26.83	0	
78	116	0	37.5	28.08	0	
79	117	2.5	37.5	26.83	0	
80	118	10.25	37.5	23.17	0	
81	119	18	37.5	19.33	0	
82	120	26.58	37.5	15.17	0	
83	121	29.92	37.5	13.33	0	
84	122	31.92	37.5	11.33	0	
85	123	33.25	37.5	9.42	0	
86	124	34.33	37.5	6.833	0	
87	125	34.58	37.5	4	0	
88	126	34.58	37.5	0	0	
89	127	-34.58	50	0	0	
90	128	-34.58	50	4	0	
91	129	-34.33	50	6.833	0	
92	130	-33.25	50	9.42	0	
93	131	-31.92	50	11.33	0	
94	132	-29.92	50	13.33	0	
95	133	-26.58	50	15.17	0	
96	134	-18	50	19.33	0	
97	135	-10.25	50	23.17	0	
98	136	-2.5	50	26.83	0	
99	137	0	50	28.08	0	
100	138	2.5	50	26.83	0	
101	139	10.25	50	23.17	0	
102	140	18	50	19.33	0	
103	141	26.58	50	15.17	0	
104	142	29.92	50	13.33	0	
105	143	31.92	50	11.33	0	
106	144	33.25	50	9.42	0	
107	145	34.33	50	6.833	0	
108	146	34.58	50	4	0	
109	147	34.58	50	0	0	
110	148	-34.58	62.5	0	0	
111	149	-34.58	62.5	4	0	
112	150	-34.33	62.5	6.833	0	
113	151	-33.25	62.5	9.42	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
114	152	-31.92	62.5	11.33	0	
115	153	-29.92	62.5	13.33	0	
116	154	-26.58	62.5	15.17	0	
117	155	-18	62.5	19.33	0	
118	156	-10.25	62.5	23.17	0	
119	157	-2.5	62.5	26.83	0	
120	158	0	62.5	28.08	0	
121	159	2.5	62.5	26.83	0	
122	160	10.25	62.5	23.17	0	
123	161	18	62.5	19.33	0	
124	162	26.58	62.5	15.17	0	
125	163	29.92	62.5	13.33	0	
126	164	31.92	62.5	11.33	0	
127	165	33.25	62.5	9.42	0	
128	166	34.33	62.5	6.833	0	
129	167	34.58	62.5	4	0	
130	168	34.58	62.5	0	0	
131	E5	-26.58	62.5	0	0	
132	E6	26.58	62.5	0	0	
133	E7	-10.25	62.5	0	0	
134	E8	10.25	62.5	0	0	

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	1	1	2			5x10	None	None	Alum_635...	DR1 7
2	2	2	3		90	5x10	None	None	Alum_635...	DR1 7
3	3	3	4		90	5x10	None	None	Alum_635...	DR1 7
4	4	4	5		90	5x10	None	None	Alum_635...	DR1 7
5	5	5	6		90	5x10	None	None	Alum_635...	DR1 7
6	6	6	7		90	5x10splice	None	None	Alum_635...	DR1 7
7	7	7	8		90	5x10	None	None	Alum_635...	DR1 7
8	8	8	9		90	5x10	None	None	Alum_635...	DR1 7
9	9	9	10		90	5x10	None	None	Alum_635...	DR1 7
10	10	10	11		90	5x10	None	None	Alum_635...	DR1 7
11	11	11	12		90	5x10	None	None	Alum_635...	DR1 7
12	12	12	13		90	5x10	None	None	Alum_635...	DR1 7
13	13	13	14		90	5x10	None	None	Alum_635...	DR1 7
14	14	14	15		90	5x10	None	None	Alum_635...	DR1 7
15	15	15	16		90	5x10splice	None	None	Alum_635...	DR1 7
16	16	16	17		90	5x10	None	None	Alum_635...	DR1 7
17	17	17	18		90	5x10	None	None	Alum_635...	DR1 7
18	18	18	19		90	5x10	None	None	Alum_635...	DR1 7
19	19	19	20		90	5x10	None	None	Alum_635...	DR1 7
20	20	20	21			5x10	None	None	Alum_635...	DR1 7
21	21	22	23			5x10	None	None	Alum_635...	DR1 7
22	22	23	24		90	5x10	None	None	Alum_635...	DR1 7
23	23	24	25		90	5x10	None	None	Alum_635...	DR1 7
24	24	25	26		90	5x10	None	None	Alum_635...	DR1 7
25	25	26	27		90	5x10	None	None	Alum_635...	DR1 7
26	26	27	28		90	5x10splice	None	None	Alum_635...	DR1 7
27	27	28	29		90	5x10	None	None	Alum_635...	DR1 7
28	28	29	30		90	5x10	None	None	Alum_635...	DR1 7
29	29	30	31		90	5x10	None	None	Alum_635...	DR1 7
30	30	31	32		90	5x10	None	None	Alum_635...	DR1 7
31	31	32	33		90	5x10	None	None	Alum_635...	DR1 7

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
32	32	33	34		90	5x10	None	None	Alum_635...	DR1_7
33	33	34	35		90	5x10	None	None	Alum_635...	DR1_7
34	34	35	36		90	5x10	None	None	Alum_635...	DR1_7
35	35	36	37		90	5x10splice	None	None	Alum_635...	DR1_7
36	36	37	38		90	5x10	None	None	Alum_635...	DR1_7
37	37	38	39		90	5x10	None	None	Alum_635...	DR1_7
38	38	39	40		90	5x10	None	None	Alum_635...	DR1_7
39	39	40	41		90	5x10	None	None	Alum_635...	DR1_7
40	40	41	42			5x10	None	None	Alum_635...	DR1_7
41	41	43	44			5x10	None	None	Alum_635...	DR1_7
42	42	44	45		90	5x10	None	None	Alum_635...	DR1_7
43	43	45	46		90	5x10	None	None	Alum_635...	DR1_7
44	44	46	47		90	5x10	None	None	Alum_635...	DR1_7
45	45	47	48		90	5x10	None	None	Alum_635...	DR1_7
46	46	48	49		90	5x10splice	None	None	Alum_635...	DR1_7
47	47	49	50		90	5x10	None	None	Alum_635...	DR1_7
48	48	50	51		90	5x10	None	None	Alum_635...	DR1_7
49	49	51	52		90	5x10	None	None	Alum_635...	DR1_7
50	50	52	53		90	5x10	None	None	Alum_635...	DR1_7
51	51	53	54		90	5x10	None	None	Alum_635...	DR1_7
52	52	54	55		90	5x10	None	None	Alum_635...	DR1_7
53	53	55	56		90	5x10	None	None	Alum_635...	DR1_7
54	54	56	57		90	5x10	None	None	Alum_635...	DR1_7
55	55	57	58		90	5x10splice	None	None	Alum_635...	DR1_7
56	56	58	59		90	5x10	None	None	Alum_635...	DR1_7
57	57	59	60		90	5x10	None	None	Alum_635...	DR1_7
58	58	60	61		90	5x10	None	None	Alum_635...	DR1_7
59	59	61	62		90	5x10	None	None	Alum_635...	DR1_7
60	60	62	63			5x10	None	None	Alum_635...	DR1_7
61	V1	E1	7		90	5x10VERT	None	None	Alum_635...	DR1_7
62	V2	E2	15		90	5x10VERT	None	None	Alum_635...	DR1_7
63	V3	E3	9		90	5x10VERT	None	None	Alum_635...	DR1_7
64	V4	E4	13		90	5x10VERT	None	None	Alum_635...	DR1_7
65	103	106	107			5x10	None	None	Alum_635...	DR1_7
66	104	107	108		90	5x10	None	None	Alum_635...	DR1_7
67	105	108	109		90	5x10	None	None	Alum_635...	DR1_7
68	106	109	110		90	5x10	None	None	Alum_635...	DR1_7
69	107	110	111		90	5x10	None	None	Alum_635...	DR1_7
70	108	111	112		90	5x10splice	None	None	Alum_635...	DR1_7
71	109	112	113		90	5x10	None	None	Alum_635...	DR1_7
72	110	113	114		90	5x10	None	None	Alum_635...	DR1_7
73	111	114	115		90	5x10	None	None	Alum_635...	DR1_7
74	112	115	116		90	5x10	None	None	Alum_635...	DR1_7
75	113	116	117		90	5x10	None	None	Alum_635...	DR1_7
76	114	117	118		90	5x10	None	None	Alum_635...	DR1_7
77	115	118	119		90	5x10	None	None	Alum_635...	DR1_7
78	116	119	120		90	5x10	None	None	Alum_635...	DR1_7
79	117	120	121		90	5x10splice	None	None	Alum_635...	DR1_7
80	118	121	122		90	5x10	None	None	Alum_635...	DR1_7
81	119	122	123		90	5x10	None	None	Alum_635...	DR1_7
82	120	123	124		90	5x10	None	None	Alum_635...	DR1_7
83	121	124	125		90	5x10	None	None	Alum_635...	DR1_7
84	122	125	126			5x10	None	None	Alum_635...	DR1_7
85	123	127	128			5x10	None	None	Alum_635...	DR1_7
86	124	128	129		90	5x10	None	None	Alum_635...	DR1_7
87	125	129	130		90	5x10	None	None	Alum_635...	DR1_7
88	126	130	131		90	5x10	None	None	Alum_635...	DR1_7

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
89	127	131	132		90	5x10	None	None	Alum_635...	DR1_7
90	128	132	133		90	5x10splice	None	None	Alum_635...	DR1_7
91	129	133	134		90	5x10	None	None	Alum_635...	DR1_7
92	130	134	135		90	5x10	None	None	Alum_635...	DR1_7
93	131	135	136		90	5x10	None	None	Alum_635...	DR1_7
94	132	136	137		90	5x10	None	None	Alum_635...	DR1_7
95	133	137	138		90	5x10	None	None	Alum_635...	DR1_7
96	134	138	139		90	5x10	None	None	Alum_635...	DR1_7
97	135	139	140		90	5x10	None	None	Alum_635...	DR1_7
98	136	140	141		90	5x10	None	None	Alum_635...	DR1_7
99	137	141	142		90	5x10splice	None	None	Alum_635...	DR1_7
100	138	142	143		90	5x10	None	None	Alum_635...	DR1_7
101	139	143	144		90	5x10	None	None	Alum_635...	DR1_7
102	140	144	145		90	5x10	None	None	Alum_635...	DR1_7
103	141	145	146		90	5x10	None	None	Alum_635...	DR1_7
104	142	146	147			5x10	None	None	Alum_635...	DR1_7
105	143	148	149			5x10	None	None	Alum_635...	DR1_7
106	144	149	150		90	5x10	None	None	Alum_635...	DR1_7
107	145	150	151		90	5x10	None	None	Alum_635...	DR1_7
108	146	151	152		90	5x10	None	None	Alum_635...	DR1_7
109	147	152	153		90	5x10	None	None	Alum_635...	DR1_7
110	148	153	154		90	5x10splice	None	None	Alum_635...	DR1_7
111	149	154	155		90	5x10	None	None	Alum_635...	DR1_7
112	150	155	156		90	5x10	None	None	Alum_635...	DR1_7
113	151	156	157		90	5x10	None	None	Alum_635...	DR1_7
114	152	157	158		90	5x10	None	None	Alum_635...	DR1_7
115	153	158	159		90	5x10	None	None	Alum_635...	DR1_7
116	154	159	160		90	5x10	None	None	Alum_635...	DR1_7
117	155	160	161		90	5x10	None	None	Alum_635...	DR1_7
118	156	161	162		90	5x10	None	None	Alum_635...	DR1_7
119	157	162	163		90	5x10splice	None	None	Alum_635...	DR1_7
120	158	163	164		90	5x10	None	None	Alum_635...	DR1_7
121	159	164	165		90	5x10	None	None	Alum_635...	DR1_7
122	160	165	166		90	5x10	None	None	Alum_635...	DR1_7
123	161	166	167		90	5x10	None	None	Alum_635...	DR1_7
124	162	167	168			5x10	None	None	Alum_635...	DR1_7
125	V5	E5	154		270	5x10VERT	None	None	Alum_635...	DR1_7
126	V6	E6	162		270	5x10VERT	None	None	Alum_635...	DR1_7
127	V7	E7	156		270	5x10VERT	None	None	Alum_635...	DR1_7
128	V8	E8	160		270	5x10VERT	None	None	Alum_635...	DR1_7
129	165	150	129			4x4purlin	None	None	Alum_635...	DR1_8
130	166	129	108			4x4purlin	None	None	Alum_635...	DR1_8
131	170	45	24			4x4purlin	None	None	Alum_635...	DR1_8
132	171	24	3			4x4purlin	None	None	Alum_635...	DR1_8
133	172	130	109			4x4purlin	None	None	Alum_635...	DR1_8
134	173	5	26			4x4purlin	None	None	Alum_635...	DR1_8
135	174	26	47			4x4purlin	None	None	Alum_635...	DR1_8
136	178	110	131			4x4purlin	None	None	Alum_635...	DR1_8
137	179	131	152			4x4purlin	None	None	Alum_635...	DR1_8
138	180	7	28			4x4purlin	None	None	Alum_635...	DR1_8
139	181	28	49			4x4purlin	None	None	Alum_635...	DR1_8
140	185	112	133			4x4purlin	None	None	Alum_635...	DR1_8
141	186	133	154			4x4purlin	None	None	Alum_635...	DR1_8
142	187	158	137			4x4purlin	None	None	Alum_635...	DR1_8
143	188	137	116			4x4purlin	None	None	Alum_635...	DR1_8
144	192	53	32			4x4purlin	None	None	Alum_635...	DR1_8
145	193	32	11			4x4purlin	None	None	Alum_635...	DR1_8

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
146	194	15	36			4x4purlin	None	None	Alum_635...	DR1_8
147	195	36	57			4x4purlin	None	None	Alum_635...	DR1_8
148	199	120	141			4x4purlin	None	None	Alum_635...	DR1_8
149	200	141	162			4x4purlin	None	None	Alum_635...	DR1_8
150	201	164	143			4x4purlin	None	None	Alum_635...	DR1_8
151	202	143	122			4x4purlin	None	None	Alum_635...	DR1_8
152	206	59	38			4x4purlin	None	None	Alum_635...	DR1_8
153	207	38	17			4x4purlin	None	None	Alum_635...	DR1_8
154	208	166	145			4x4purlin	None	None	Alum_635...	DR1_8
155	209	145	124			4x4purlin	None	None	Alum_635...	DR1_8
156	213	61	40			4x4purlin	None	None	Alum_635...	DR1_8
157	214	40	19			4x4purlin	None	None	Alum_635...	DR1_8
158	215	123	144			4x4purlin	None	None	Alum_635...	DR1_8
159	216	106	129			cable	None	None	gen_Steel	DR1_1
160	217	129	109			cable	None	None	gen_Steel	DR1_1
161	218	109	131			cable	None	None	gen_Steel	DR1_1
162	219	131	112			cable	None	None	gen_Steel	DR1_1
163	220	112	134			cable	None	None	gen_Steel	DR1_1
164	221	127	108			cable	None	None	gen_Steel	DR1_1
165	222	108	130			cable	None	None	gen_Steel	DR1_1
166	223	130	110			cable	None	None	gen_Steel	DR1_1
167	224	110	133			cable	None	None	gen_Steel	DR1_1
168	225	133	113			cable	None	None	gen_Steel	DR1_1
169	226	126	145			cable	None	None	gen_Steel	DR1_1
170	227	145	123			cable	None	None	gen_Steel	DR1_1
171	228	123	143			cable	None	None	gen_Steel	DR1_1
172	229	143	120			cable	None	None	gen_Steel	DR1_1
173	230	120	140			cable	None	None	gen_Steel	DR1_1
174	231	147	124			cable	None	None	gen_Steel	DR1_1
175	232	124	144			cable	None	None	gen_Steel	DR1_1
176	233	144	122			cable	None	None	gen_Steel	DR1_1
177	234	122	141			cable	None	None	gen_Steel	DR1_1
178	235	141	119			cable	None	None	gen_Steel	DR1_1
179	236	35	56			4x4purlin	None	None	Alum_635...	DR1_8
180	240	119	140			4x4purlin	None	None	Alum_635...	DR1_8
181	241	29	50			4x4purlin	None	None	Alum_635...	DR1_8
182	245	113	134			4x4purlin	None	None	Alum_635...	DR1_8
183	246	140	161			4x4purlin	None	None	Alum_635...	DR1_8
184	247	134	155			4x4purlin	None	None	Alum_635...	DR1_8
185	248	35	14			4x4purlin	None	None	Alum_635...	DR1_8
186	249	29	8			4x4purlin	None	None	Alum_635...	DR1_8
187	250	46	25			4x4purlin	None	None	Alum_635...	DR1_8
188	251	39	60			4x4purlin	None	None	Alum_635...	DR1_8
189	252	42	61			cable	None	None	gen_Steel	DR1_1
190	253	61	39			cable	None	None	gen_Steel	DR1_1
191	254	36	56			cable	None	None	gen_Steel	DR1_1
192	255	35	57			cable	None	None	gen_Steel	DR1_1
193	256	57	38			cable	None	None	gen_Steel	DR1_1
194	257	38	60			cable	None	None	gen_Steel	DR1_1
195	258	60	40			cable	None	None	gen_Steel	DR1_1
196	259	40	63			cable	None	None	gen_Steel	DR1_1
197	260	43	24			cable	None	None	gen_Steel	DR1_1
198	261	24	46			cable	None	None	gen_Steel	DR1_1
199	262	46	26			cable	None	None	gen_Steel	DR1_1
200	263	26	49			cable	None	None	gen_Steel	DR1_1
201	264	49	29			cable	None	None	gen_Steel	DR1_1
202	265	22	45			cable	None	None	gen_Steel	DR1_1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
203	266	45	25			cable	None	None	gen_Steel	DR1_1
204	267	25	47			cable	None	None	gen_Steel	DR1_1
205	268	47	28			cable	None	None	gen_Steel	DR1_1
206	269	28	50			cable	None	None	gen_Steel	DR1_1
207	270	59	36			cable	None	None	gen_Steel	DR1_1
208	M271	9	30			4x4purlin	None	None	Alum_635...	DR1_8
209	M272	30	51			4x4purlin	None	None	Alum_635...	DR1_8
210	M276	114	135			4x4purlin	None	None	Alum_635...	DR1_8
211	M277	135	156			4x4purlin	None	None	Alum_635...	DR1_8
212	M278	13	34			4x4purlin	None	None	Alum_635...	DR1_8
213	M279	34	55			4x4purlin	None	None	Alum_635...	DR1_8
214	M283	118	139			4x4purlin	None	None	Alum_635...	DR1_8
215	M284	139	160			4x4purlin	None	None	Alum_635...	DR1_8
216	M285	35	55			cable	None	None	gen_Steel	DR1_1
217	M286	56	34			cable	None	None	gen_Steel	DR1_1
218	M287	119	139			cable	None	None	gen_Steel	DR1_1
219	M288	140	118			cable	None	None	gen_Steel	DR1_1
220	M289	113	135			cable	None	None	gen_Steel	DR1_1
221	M290	134	114			cable	None	None	gen_Steel	DR1_1
222	M291	50	30			cable	None	None	gen_Steel	DR1_1
223	M292	29	51			cable	None	None	gen_Steel	DR1_1
224	M224	61	124			4x4purlin	None	None	Alum_635...	DR1_8
225	M225	60	123			4x4purlin	None	None	Alum_635...	DR1_8
226	M226	59	122			4x4purlin	None	None	Alum_635...	DR1_8
227	M227	57	120			4x4purlin	None	None	Alum_635...	DR1_8
228	M228	56	119			4x4purlin	None	None	Alum_635...	DR1_8
229	M229	55	118			4x4purlin	None	None	Alum_635...	DR1_8
230	M230	53	116			4x4purlin	None	None	Alum_635...	DR1_8
231	M231	108	45			4x4purlin	None	None	Alum_635...	DR1_8
232	M232	109	46			4x4purlin	None	None	Alum_635...	DR1_8
233	M233	110	47			4x4purlin	None	None	Alum_635...	DR1_8
234	M234	112	49			4x4purlin	None	None	Alum_635...	DR1_8
235	M235	113	50			4x4purlin	None	None	Alum_635...	DR1_8
236	M236	114	51			4x4purlin	None	None	Alum_635...	DR1_8
237	M237	106	45			cable	None	None	gen_Steel	DR1_1
238	M238	45	109			cable	None	None	gen_Steel	DR1_1
239	M239	109	47			cable	None	None	gen_Steel	DR1_1
240	M240	47	112			cable	None	None	gen_Steel	DR1_1
241	M241	112	50			cable	None	None	gen_Steel	DR1_1
242	M242	50	114			cable	None	None	gen_Steel	DR1_1
243	M243	51	113			cable	None	None	gen_Steel	DR1_1
244	M244	113	49			cable	None	None	gen_Steel	DR1_1
245	M245	49	110			cable	None	None	gen_Steel	DR1_1
246	M246	110	46			cable	None	None	gen_Steel	DR1_1
247	M247	46	108			cable	None	None	gen_Steel	DR1_1
248	M248	108	43			cable	None	None	gen_Steel	DR1_1
249	M249	63	124			cable	None	None	gen_Steel	DR1_1
250	M250	124	60			cable	None	None	gen_Steel	DR1_1
251	M251	60	122			cable	None	None	gen_Steel	DR1_1
252	M252	122	57			cable	None	None	gen_Steel	DR1_1
253	M253	57	119			cable	None	None	gen_Steel	DR1_1
254	M254	119	55			cable	None	None	gen_Steel	DR1_1
255	M255	118	56			cable	None	None	gen_Steel	DR1_1
256	M256	56	120			cable	None	None	gen_Steel	DR1_1
257	M257	120	59			cable	None	None	gen_Steel	DR1_1
258	M258	59	123			cable	None	None	gen_Steel	DR1_1
259	M259	123	61			cable	None	None	gen_Steel	DR1_1

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
260	M260	61	126			cable	None	None	gen_Steel	DR1_1

Load Combinations

	Description	So...	P...	S...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...	BLC Fac...
1	Self+Dead	Yes			1	1	2	3.4												
2	S+D+SL1/2				1	1	2	3.4	3											
3	S+D+SLfull				1	1	2	3.4	3	4										
4	0.6S+0.6D+presIP...	Yes			1	.6	2	2.88			5	4.7	6	25.9						
5	0.6S+0.6D+presIP...	Yes			1	.6	2	2.88			5	4.7	7	25.9						
6	0.6S+0.6D+presIP...	Yes			1	.6	2	2.88			5	4.7	8	25.9						
7	0.6S+0.6D+presIP...	Yes			1	.6	2	2.88			5	4.7	9	25.9						
8	S+D+baseshearE...				1	1	2	3.4			10	.007	12	.001						
9	S+D+baseshearE...				1	1	2	3.4			11	.007	12	.001						
10	0.6S+0.6D+bases...				1	.6	2	2.88			10	.007	12	-.001						
11	0.6S+0.6D+bases...				1	.6	2	2.88			11	.007	12	-.001						

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	1.341	1	.378	6	2.858	1	0	7	0	7	0	7
2		min	-2.454	6	-.289	4	-1.396	5	0	1	0	1	0	1
3	21	max	.527	5	.322	1	2.857	1	0	7	0	7	0	7
4		min	-3.583	6	-2.42	6	-4.746	5	0	1	0	1	0	1
5	22	max	1.461	1	.497	6	2.619	1	0	7	0	7	0	7
6		min	-3.252	6	-.23	4	-2.927	6	0	1	0	1	0	1
7	42	max	1.429	5	.172	1	2.615	1	0	7	0	7	0	7
8		min	-1.46	1	-2.454	6	-1.837	4	0	1	0	1	0	1
9	43	max	1.513	1	.289	6	3.065	1	0	7	0	7	0	7
10		min	-3.164	6	0	1	-2.569	5	0	1	0	1	0	1
11	63	max	1.67	5	.049	4	3.06	1	0	7	0	7	0	7
12		min	-1.512	1	-.14	5	-6.42	6	0	1	0	1	0	1
13	E1	max	0	7	2.66	6	0	7	0	7	0	7	0	7
14		min	0	1	0	1	-1.18	4	0	1	0	1	0	1
15	E2	max	0	7	2.66	6	0	1	0	7	0	7	0	7
16		min	0	1	0	1	-4.357	6	0	1	0	1	0	1
17	E3	max	0	7	4.063	6	0	7	0	7	0	7	0	7
18		min	0	1	0	1	-.805	5	0	1	0	1	0	1
19	E4	max	0	7	4.063	6	0	1	0	7	0	7	0	7
20		min	0	1	0	1	-2.29	6	0	1	0	1	0	1
21	106	max	1.549	1	.34	6	3.128	1	0	7	0	7	0	7
22		min	-2.845	6	0	1	-2.557	5	0	1	0	1	0	1
23	126	max	2.192	5	.137	6	3.128	1	0	7	0	7	0	7
24		min	-1.55	1	0	1	-5.819	6	0	1	0	1	0	1
25	127	max	1.848	1	1.485	5	3.275	1	0	7	0	7	0	7
26		min	-2.059	6	-.16	1	-.858	4	0	1	0	1	0	1
27	147	max	1.264	5	4.094	6	3.276	1	0	7	0	7	0	7
28		min	-1.847	1	-.16	1	-1.205	4	0	1	0	1	0	1
29	148	max	1.481	1	1.327	5	3.033	1	0	7	0	7	0	7
30		min	-2.588	6	-.335	1	-4.512	6	0	1	0	1	0	1
31	168	max	.098	5	3.659	6	3.033	1	0	7	0	7	0	7
32		min	-3.869	6	-.334	1	-1.803	6	0	1	0	1	0	1
33	E5	max	0	7	0	1	0	7	0	7	0	7	0	7
34		min	0	1	-2.333	7	-1.168	4	0	1	0	1	0	1
35	E6	max	0	7	0	1	0	1	0	7	0	7	0	7
36		min	0	1	-2.333	7	-4.094	6	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
37	E7	max	0	7	0	1	0	7	0	7	0	7	0	7
38		min	0	1	-3.49	7	-1.208	5	0	1	0	1	0	1
39	E8	max	0	7	0	1	0	1	0	7	0	7	0	7
40		min	0	1	-3.49	7	-1.917	6	0	1	0	1	0	1
41	Totals:	max	.953	4	14.846	6	35.947	1						
42		min	-24.543	6	0	1	-38.375	6						

Envelope Maximum Member Section Forces

	Member		Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...]	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC
1	1	m...	2.139	0	1	0	0	6	1.341	0	1	0	0	7	5.363	4	1	.003	4	1
2		min	-1.111	4	5	0	0	1	-2.454	0	6	0	0	1	-9.616	4	6	-.002	4	6
3	2	m...	2.004	0	1	.002	0	1	1.119	2.844	1	0	0	1	8.535	2.844	1	.003	0	1
4		min	-1.333	2.844	6	0	0	7	-2.217	0	6	0	0	6	-15.815	2.844	6	-.004	2.844	4
5	3	m...	1.97	0	1	.004	0	5	.372	2.803	1	0	0	7	9.53	2.803	1	.006	2.803	1
6		min	-1.974	2.803	6	-.003	0	1	-1.45	0	6	-.001	0	4	-19.758	2.803	6	-.014	2.803	5
7	4	m...	1.792	0	1	.004	0	1	.226	0	4	0	0	1	9.53	0	1	.006	0	1
8		min	-2.318	2.327	6	-.007	0	6	-.747	0	6	-.004	0	6	-21.412	2.327	6	-.014	0	5
9	5	m...	1.574	0	1	.005	0	7	.314	0	5	0	0	1	9.248	0	1	.004	0	6
10		min	-2.522	2.828	6	-.002	0	4	-.47	0	1	-.004	0	5	-21.619	2.828	6	-.011	2.828	7
11	6	m...	1.242	0	1	0	0	1	.902	1.47	6	0	0	1	8.007	0	1	.042	3.813	6
12		min	-2.47	3.813	6	-.013	0	6	-.93	0	1	-.005	0	6	-21.619	0	6	-.011	0	7
13	7	m...	.997	0	1	.008	0	5	1.181	0	6	0	0	1	9.324	9.535	4	.042	0	6
14		min	-2.529	9.535	6	0	0	1	-.72	0	1	-.003	0	6	-18.181	0	6	-.04	9.535	5
15	8	m...	.905	0	1	0	0	1	1	0	6	0	0	1	9.825	3.153	4	.048	8.649	5
16		min	-2.463	8.649	6	-.01	0	5	-.631	8.649	4	-.002	0	6	-8.013	0	7	-.04	0	5
17	9	m...	.805	0	1	.01	0	5	.695	0	6	0	0	4	8.14	.357	4	.048	0	5
18		min	-2.192	8.571	4	0	0	1	-1.089	8.571	4	-.002	0	6	-3.178	0	1	-.035	8.571	5
19	10	m...	.783	0	1	.001	0	1	.476	2.795	1	0	0	4	3.744	0	4	.004	0	1
20		min	-2.408	2.795	4	-.012	0	5	-1.54	2.795	4	-.001	0	6	-1.219	0	1	-.035	0	5
21	11	m...	.783	2.795	1	.021	0	6	1.571	0	4	0	0	4	3.83	2.795	4	.004	2.795	1
22		min	-2.444	0	4	-.002	0	1	-.475	0	1	0	0	6	-1.222	2.795	1	-.059	2.795	6
23	12	m...	1.236	8.571	6	0	0	1	1.117	0	4	0	0	5	8.462	8.481	4	.086	8.571	6
24		min	-2.513	0	4	-.017	0	6	-.591	8.571	5	0	0	1	-3.178	8.571	1	-.059	0	6
25	13	m...	4.015	8.649	6	.021	0	6	1.85	0	6	.002	0	6	14.268	8.649	6	.086	0	6
26		min	-2.203	0	4	0	0	1	-.414	8.649	4	0	0	1	-3.179	0	1	-.096	8.649	6
27	14	m...	5.214	9.535	6	0	0	1	.884	0	6	.003	0	6	17.072	6.456	6	.063	9.535	6
28		min	-1.935	0	4	-.017	0	6	-1.256	9.535	5	0	0	1	-.926	0	1	-.096	0	6
29	15	m...	6.888	3.813	6	.008	0	5	3.214	0	6	.006	0	6	27.679	3.813	6	.063	0	6
30		min	-1.475	0	4	0	0	1	-.659	3.813	5	0	0	1	-1.723	3.813	5	-.006	3.813	4
31	16	m...	6.147	2.828	6	.032	0	6	.924	0	7	.023	0	6	29.426	2.828	6	.058	0	6
32		min	-1.408	0	4	-.002	0	4	-.632	2.828	5	0	0	1	-3.115	2.828	5	-.031	2.828	6
33	17	m...	5.006	2.327	6	.005	0	5	.141	2.327	1	.018	0	6	29.394	0	6	.006	2.327	1
34		min	-1.337	0	5	-.004	0	1	-.864	2.327	6	0	0	1	-4.133	2.327	5	-.045	2.327	6
35	18	m...	3.27	2.803	6	.003	0	1	.204	0	4	.008	0	6	27.664	0	6	.006	0	1
36		min	-2.205	0	5	-.007	0	6	-2.104	2.803	6	0	0	4	-4.554	2.803	5	-.047	0	6
37	19	m...	2.004	2.844	1	0	0	4	.758	0	5	0	0	4	22.137	0	6	.014	2.844	6
38		min	-2.857	0	5	-.015	0	6	-3.133	2.844	6	-.001	0	6	-4.552	0	5	-.029	0	6
39	20	m...	2.139	4	1	.004	0	6	.853	0	5	0	0	7	13.6	0	6	.014	0	6
40		min	-3.491	0	5	0	0	4	-3.583	4	6	0	0	1	-2.76	0	5	-.002	0	4
41	21	m...	2.066	0	1	.001	0	1	1.461	0	1	0	0	6	5.843	4	1	.006	4	6
42		min	-2.396	4	6	-.001	0	6	-3.252	0	6	0	0	7	-12.628	4	6	-.005	4	1
43	22	m...	2.107	0	1	.005	0	6	1.245	2.844	1	0	0	6	9.366	2.844	1	.006	0	6
44		min	-2.488	2.844	6	-.003	0	1	-2.801	0	6	0	0	1	-20.395	2.844	6	-.009	2.844	6
45	23	m...	2.249	0	1	.003	0	1	.477	2.803	1	0	0	1	10.623	2.803	1	.003	2.803	7
46		min	-3.077	2.803	6	-.002	0	7	-1.556	0	6	-.002	0	6	-24.535	2.803	6	-.009	0	6

Envelope Maximum Member Section Forces (Continued)

	Member		Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC
47	24	m...	2.247	0	1	.011	0	5	.397	0	4	0	0	7	10.623	0	1	.012	2.327	1
48		min	-3.235	2.327	6	-.007	0	1	-.663	0	7	-.003	0	6	-25.651	2.327	6	-.027	2.327	5
49	25	m...	2.2	0	1	.006	0	1	.706	0	4	.002	0	1	10.465	0	1	.022	2.828	5
50		min	-3.121	2.828	6	-.017	0	5	-.486	0	1	-.007	0	5	-25.656	0	6	-.026	0	5
51	26	m...	2.069	0	1	.007	0	5	1.511	0	5	0	0	4	9.239	0	1	.023	0	5
52		min	-2.728	3.813	6	-.003	0	1	-1.12	0	1	0	0	6	-24.59	0	6	-.006	0	1
53	27	m...	2.035	0	1	0	0	1	1.756	0	6	0	0	1	11.624	9.535	4	.005	0	1
54		min	-3.322	9.535	6	0	0	6	-1.001	0	1	-.001	0	6	-19.029	0	6	-.006	0	4
55	28	m...	1.474	0	1	0	0	1	1.456	0	6	0	0	4	12.718	4.685	4	.012	8.649	5
56		min	-3.031	8.649	6	-.002	0	5	-.501	8.649	4	-.002	0	6	-7.159	0	7	-.004	0	5
57	29	m...	1.259	0	1	.002	0	5	.673	0	6	0	0	4	12.471	.536	5	.012	0	5
58		min	-3.725	8.571	6	0	0	7	-1.695	8.571	5	-.001	0	6	-4.009	0	1	-.006	8.571	5
59	30	m...	1.023	0	1	.003	0	7	.685	2.795	1	0	0	4	5.948	0	5	.008	0	7
60		min	-4.403	2.795	6	-.002	0	5	-2.483	2.795	5	-.002	0	6	-1.73	0	1	-.006	0	5
61	31	m...	1.023	2.795	1	.003	0	6	4.241	0	6	0	0	4	10.875	2.795	6	.007	2.795	4
62		min	-3.953	0	6	-.002	0	4	-.685	0	1	0	0	6	-1.726	2.795	1	-.009	2.795	5
63	32	m...	1.259	8.571	1	0	0	4	3.483	0	6	0	0	4	31.976	8.571	6	.025	8.571	6
64		min	-4.594	0	6	-.004	0	6	-.469	0	1	0	0	6	-4.006	8.571	1	-.009	0	5
65	33	m...	1.473	8.649	1	.006	0	6	1.654	0	6	0	0	5	37.42	6.577	6	.025	0	6
66		min	-5.108	0	6	0	0	1	-1.043	8.649	5	0	0	7	-4.004	0	1	-.027	8.649	6
67	34	m...	2.034	9.535	1	0	0	6	1.001	9.535	1	.001	0	6	36.858	0	6	.004	9.535	1
68		min	-6.689	0	6	0	0	5	-3.058	9.535	6	0	0	1	-2.095	0	1	-.032	9.535	6
69	35	m...	2.068	3.813	1	.003	0	1	1.12	3.813	1	0	0	5	19.571	0	6	.125	3.813	6
70		min	-6.57	0	6	-.041	0	6	-3.479	3.813	6	0	0	7	-10.684	3.813	5	-.033	0	6
71	36	m...	2.2	2.828	1	.092	0	6	.486	2.828	1	.035	0	6	10.964	0	7	.12	0	6
72		min	-6.252	0	6	-.006	0	1	-2.06	2.828	6	-.002	0	1	-13.328	2.828	5	-.141	2.828	6
73	37	m...	2.247	2.327	1	.007	0	1	.103	2.327	1	.009	0	6	10.626	2.327	1	.011	0	1
74		min	-5.315	0	6	-.059	0	6	-1.297	2.327	6	0	0	1	-13.501	2.327	5	-.145	0	6
75	38	m...	2.245	2.803	1	.004	0	6	.916	0	5	.008	0	6	10.625	0	1	.003	0	5
76		min	-4.113	0	6	-.003	0	1	-.76	2.803	7	0	0	1	-13.5	0	5	-.02	2.803	6
77	39	m...	2.104	2.844	1	.003	0	1	1.852	0	5	0	0	6	9.365	0	1	.005	2.844	5
78		min	-2.747	0	6	-.004	0	6	-1.245	0	1	0	0	5	-11.335	0	5	-.022	0	6
79	40	m...	2.063	4	1	.001	0	5	1.814	0	5	0	0	5	5.842	0	1	.005	0	5
80		min	-1.586	0	4	-.003	0	6	-1.46	0	1	0	0	7	-6.476	0	5	-.011	0	6
81	41	m...	3.055	0	1	0	0	4	1.513	0	1	0	0	6	6.051	4	1	0	4	1
82		min	-2.661	4	5	0	0	1	-3.158	0	6	0	0	1	-12.397	4	6	-.001	4	4
83	42	m...	2.967	0	1	0	0	4	1.27	2.844	1	0	0	6	9.644	2.844	1	0	2.844	1
84		min	-2.936	2.844	6	0	0	1	-2.804	0	6	0	0	4	-20.238	2.844	6	-.002	2.844	4
85	43	m...	3.018	0	1	.016	0	6	.438	2.803	1	0	0	1	10.793	2.803	1	0	0	1
86		min	-3.866	2.803	6	0	0	4	-1.614	0	6	0	0	4	-24.584	2.803	6	-.045	2.803	6
87	44	m...	2.853	0	1	-.002	0	1	.469	0	4	0	0	1	10.793	0	1	.045	2.327	6
88		min	-4.243	2.327	6	-.038	0	6	-.707	0	7	-.01	0	6	-25.853	2.327	6	-.044	0	6
89	45	m...	2.645	0	1	.012	0	6	.773	0	4	0	0	7	10.541	0	1	.046	0	6
90		min	-3.942	2.828	6	0	0	1	-.512	0	1	-.001	0	6	-25.856	0	6	0	0	1
91	46	m...	2.327	0	1	.012	0	6	1.572	0	5	.002	0	6	9.242	0	1	.012	0	6
92		min	-3.752	3.813	6	0	0	1	-1.097	0	1	0	0	1	-24.723	0	6	-.033	3.813	6
93	47	m...	2.151	0	1	0	0	1	1.8	0	6	0	0	6	11.458	9.535	4	.023	9.535	6
94		min	-4.489	9.535	6	-.006	0	6	-.979	0	1	0	0	7	-19.161	0	6	-.033	0	6
95	48	m...	1.467	0	1	.003	0	6	1.456	0	6	0	0	1	12.541	4.775	4	.023	0	6
96		min	-3.777	8.649	6	0	0	1	-.485	8.649	4	0	0	5	-7.969	0	7	-.003	8.649	6
97	49	m...	1.078	0	1	0	0	5	.664	0	7	0	0	1	12.54	.446	5	.006	8.571	6
98		min	-3.653	8.571	6	-.001	0	6	-1.698	8.571	5	0	0	5	-3.797	0	1	-.004	8.571	5
99	50	m...	.95	0	1	.002	0	6	.664	2.795	1	0	0	1	5.935	0	5	.006	0	6
100		min	-4.39	2.795	6	-.002	0	5	-2.475	2.795	5	0	0	6	-1.673	0	1	-.004	0	5
101	51	m...	.95	2.795	1	.002	0	5	4.5	0	6	0	0	1	11.59	2.795	6	.003	2.795	1
102		min	-3.703	0	6	-.001	0	1	-.664	0	1	0	0	6	-1.673	2.795	1	-.006	2.795	5
103	52	m...	1.078	8.571	1	0	0	1	3.699	0	6	0	0	5	34.002	8.571	6	.004	8.571	6

Envelope Maximum Member Section Forces (Continued)

	Member	Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC	
104		min	-3.18	0	6	-.001	0	5	-.451	0	1	0	0	6	-3.796	8.571	1	-.006	0	5
105	53	m...	1.467	8.649	1	.001	0	5	1.688	0	6	0	0	4	39.472	6.487	6	.004	0	6
106		min	-3.93	0	6	0	0	4	-1.05	8.649	5	0	0	7	-3.796	0	1	-.009	8.649	5
107	54	m...	2.15	9.535	1	0	0	4	.979	9.535	1	0	0	4	38.828	0	6	.005	9.535	5
108		min	-5.474	0	6	-.001	0	5	-3.158	9.535	6	0	0	5	-1.895	9.535	5	-.009	0	5
109	55	m...	2.326	3.813	1	0	0	5	1.097	3.813	1	0	0	7	20.907	0	6	.009	3.813	6
110		min	-5.45	0	6	-.002	0	6	-3.766	3.813	6	0	0	4	-9.676	3.813	5	-.003	0	4
111	56	m...	2.644	2.828	1	0	0	5	.512	2.828	1	.003	0	6	12.814	0	7	.013	2.828	6
112		min	-6.208	0	6	-.002	0	6	-2.842	2.828	6	0	0	4	-13.031	2.828	5	-.001	2.828	5
113	57	m...	2.849	2.327	1	.004	0	7	.141	2.327	1	.005	0	6	10.793	2.327	1	.013	0	6
114		min	-6.745	0	6	.002	0	5	-2.116	2.327	6	0	0	5	-13.911	2.327	5	-.005	2.327	5
115	58	m...	3.014	2.803	1	.008	0	6	.632	0	5	.006	0	6	10.793	0	1	.007	0	6
116		min	-6.995	0	6	-.003	0	5	-1.226	2.803	7	0	0	5	-13.912	0	5	-.017	2.803	6
117	59	m...	2.963	2.844	1	0	0	5	1.904	0	5	0	0	6	9.641	0	1	.002	0	5
118		min	-6.784	0	6	-.003	0	6	-1.27	0	1	0	0	5	-12.446	0	5	-.018	0	6
119	60	m...	3.051	4	1	0	0	5	2.026	0	5	0	0	5	6.049	0	1	.001	0	5
120		min	-6.593	0	6	-.003	0	6	-1.512	0	1	0	0	1	-7.387	0	5	-.01	0	6
121	V1	m...	0	0	7	0	0	7	2.66	0	6	0	0	7	10.088	7.585	6	0	0	7
122		min	-1.271	15.17	4	0	0	1	-2.66	15.17	6	0	0	1	0	0	1	0	0	1
123	V2	m...	0	0	1	0	0	7	2.66	0	6	0	0	7	10.088	7.585	6	0	0	7
124		min	-4.448	15.17	6	0	0	1	-2.66	15.17	6	0	0	1	0	0	1	0	0	1
125	V3	m...	0	0	7	0	0	7	4.063	0	6	0	0	7	23.534	11.5...	6	0	0	7
126		min	-.943	23.17	5	0	0	1	-4.063	23.17	6	0	0	1	0	0	1	0	0	1
127	V4	m...	0	0	1	0	0	7	4.063	0	6	0	0	7	23.534	11.5...	6	0	0	7
128		min	-2.429	23.17	6	0	0	1	-4.063	23.17	6	0	0	1	0	0	1	0	0	1
129	103	m...	3.118	0	1	0	0	4	1.549	0	1	0	0	6	6.197	4	1	0	0	6
130		min	-2.605	4	5	0	0	1	-2.838	0	6	0	0	1	-11.078	4	6	0	4	4
131	104	m...	3.033	0	1	0	0	4	1.301	2.844	1	0	0	6	9.877	2.844	1	0	0	1
132		min	-2.862	2.844	5	0	0	1	-2.514	0	6	0	0	4	-18.072	2.844	6	-.002	2.844	4
133	105	m...	3.094	0	1	.017	0	6	.448	2.803	1	0	0	1	11.053	2.803	1	.003	2.803	4
134		min	-3.446	2.803	5	-.002	0	4	-1.493	0	6	0	0	4	-22.058	2.803	6	-.048	2.803	6
135	106	m...	2.903	0	1	0	0	4	.457	0	4	0	0	4	11.051	0	1	.056	2.327	6
136		min	-3.613	2.327	5	-.044	0	6	-.72	0	7	-.01	0	6	-23.317	2.327	6	-.047	0	6
137	107	m...	2.67	0	1	.015	0	6	.768	0	5	.001	0	5	10.796	0	1	.057	0	6
138		min	-3.312	2.828	5	0	0	1	-.517	0	1	0	0	1	-23.319	0	6	0	2.828	4
139	108	m...	2.349	0	1	.015	0	6	1.52	0	5	.004	0	6	9.484	0	1	.013	0	6
140		min	-3.085	3.813	5	0	0	1	-1.109	0	1	0	0	1	-22.43	0	6	-.044	3.813	6
141	109	m...	2.146	0	1	0	0	1	1.552	0	5	.001	0	6	11.397	9.535	4	.034	9.535	6
142		min	-3.557	9.535	6	-.008	0	6	-.987	0	1	0	0	4	-18.055	0	6	-.044	0	6
143	110	m...	1.349	0	1	.006	0	6	1.077	0	6	0	0	6	12.479	4.775	4	.034	0	6
144		min	-3.673	8.649	6	0	0	1	-.485	8.649	4	0	0	5	-8.043	0	7	-.016	8.649	6
145	111	m...	.96	0	1	0	0	7	.716	0	6	0	0	6	11.577	0	4	.016	8.571	6
146		min	-3.934	8.571	6	-.004	0	6	-1.422	8.571	5	0	0	5	-3.748	0	1	-.016	0	6
147	112	m...	.907	0	1	.006	0	6	.66	2.795	1	0	0	1	5.202	0	5	.016	0	6
148		min	-4.263	2.795	6	0	0	5	-2.224	2.795	5	0	0	5	-1.661	0	1	0	2.795	1
149	113	m...	.907	2.795	1	0	0	7	4.358	0	6	0	0	1	11.192	2.795	6	.009	2.795	6
150		min	-3.503	0	6	-.003	0	6	-.66	0	1	0	0	5	-1.665	2.795	1	0	2.795	7
151	114	m...	.961	8.571	1	.002	0	6	3.576	0	6	0	0	7	32.706	8.571	6	.009	0	6
152		min	-3.224	0	6	0	0	7	-.447	0	1	0	0	6	-3.75	8.571	1	-.011	8.571	6
153	115	m...	1.35	8.649	1	0	0	1	1.611	0	6	0	0	7	37.91	6.487	6	.025	8.649	6
154		min	-3.776	0	6	-.004	0	6	-1.069	8.649	5	0	0	6	-3.753	0	1	-.011	0	6
155	116	m...	2.147	9.535	1	.005	0	6	.987	9.535	1	0	0	7	37.322	0	6	.025	0	6
156		min	-4.825	0	6	0	0	1	-2.906	9.535	6	0	0	6	-2.367	9.535	5	-.023	9.535	6
157	117	m...	2.35	3.813	1	0	0	1	1.109	3.813	1	0	0	1	20.864	0	6	.005	0	1
158		min	-4.84	0	6	-.003	0	6	-3.458	3.813	6	-.002	0	6	-10.017	3.813	5	-.023	0	6
159	118	m...	2.671	2.828	1	0	0	1	.517	2.828	1	.001	0	1	12.788	0	7	.006	2.828	5
160		min	-5.536	0	6	-.003	0	6	-2.672	2.828	6	-.005	0	6	-13.486	2.828	5	-.009	0	6

Envelope Maximum Member Section Forces (Continued)

	Member		Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC
161	119	m..	2.904	2.327	1	.005	0	5	.143	2.327	1	.001	0	1	11.054	2.327	1	.037	2.327	6
162		min	-6.123	0	6	-.015	0	6	-2.018	2.327	6	-.005	0	6	-14.686	2.327	5	-.005	2.327	1
163	120	m..	3.094	2.803	1	.016	0	6	.529	2.803	5	.003	0	6	11.056	0	1	.037	0	6
164		min	-6.35	0	6	-.003	0	5	-1.222	2.803	7	-.002	0	5	-14.68	0	5	-.009	2.803	6
165	121	m..	3.033	2.844	1	0	0	5	1.779	2.844	5	0	0	6	9.88	0	1	.005	0	5
166		min	-6.088	0	6	-.001	0	6	-1.301	0	1	0	0	5	-13.395	0	5	-.009	0	6
167	122	m..	3.118	4	1	0	0	5	2.192	4	5	0	0	7	6.198	0	1	.003	0	5
168		min	-5.917	0	6	-.001	0	6	-1.55	0	1	0	0	6	-8.49	0	5	-.005	0	6
169	123	m..	2.602	0	1	.001	0	6	1.848	0	1	0	0	6	7.39	4	1	.002	4	1
170		min	-.851	4	4	0	0	1	-2.051	0	6	0	0	1	-8.095	4	6	-.006	4	6
171	124	m..	2.677	0	1	.002	0	1	1.573	2.844	1	0	0	1	11.845	2.844	1	.002	0	1
172		min	-1.279	2.844	5	0	0	7	-1.935	0	6	0	0	6	-13.529	2.844	6	-.006	0	6
173	125	m..	2.927	0	1	.005	0	6	.581	2.803	1	0	0	5	13.394	2.803	1	.005	2.803	4
174		min	-2.121	2.803	5	-.003	0	1	-1.359	0	6	-.002	0	6	-17.225	2.803	6	-.017	2.803	6
175	126	m..	2.989	0	1	.009	0	1	.32	0	4	0	0	4	13.394	0	1	.042	2.327	5
176		min	-2.691	2.327	5	-.02	0	6	-.755	0	7	-.005	0	6	-18.884	2.327	6	-.019	2.327	1
177	127	m..	2.967	0	1	.022	0	5	.541	0	4	.007	0	5	13.059	0	1	.042	0	5
178		min	-2.769	2.828	5	-.012	0	1	-.723	0	1	-.004	0	1	-18.99	2.828	6	-.021	2.828	5
179	128	m..	2.674	0	1	.005	0	1	1.47	0	5	.002	0	6	11.162	0	1	.016	0	1
180		min	-2.982	3.813	5	-.005	0	4	-1.408	0	1	0	0	4	-18.99	0	6	-.022	0	5
181	129	m..	2.637	0	1	0	0	1	1.425	0	5	.002	0	6	9.36	9.535	4	.02	9.535	5
182		min	-3.553	9.535	5	-.003	0	5	-1.328	0	1	0	0	4	-16.397	0	6	-.008	0	6
183	130	m..	1.981	0	1	.004	0	5	1.052	0	7	.002	0	6	11.076	5.676	4	.02	0	5
184		min	-2.994	8.649	5	0	0	1	-.382	8.649	4	0	0	4	-10.711	0	6	-.011	8.649	5
185	131	m..	1.855	0	1	0	0	7	.749	0	7	.002	0	6	10.529	0	4	.003	8.571	5
186		min	-2.542	8.571	5	-.002	0	5	-1.314	8.571	5	0	0	4	-6.023	0	6	-.011	0	5
187	132	m..	1.593	0	1	0	0	5	1.201	2.795	6	.002	0	6	4.803	0	5	.003	0	5
188		min	-2.38	2.795	5	-.003	0	6	-2.075	2.795	5	0	0	4	-2.65	0	6	-.008	0	6
189	133	m..	1.593	2.795	1	.002	0	4	3.669	0	6	.001	0	6	9.311	2.795	6	.013	2.795	6
190		min	-2.235	0	5	-.005	0	6	-.807	0	1	0	0	4	-2.058	2.795	1	-.006	2.795	4
191	134	m..	1.854	8.571	1	.004	0	6	3.025	0	6	0	0	6	27.056	8.571	6	.013	0	6
192		min	-2.34	0	7	0	0	4	-.574	0	1	0	0	5	-5.236	8.571	1	-.025	8.571	6
193	135	m..	1.979	8.649	1	0	0	4	1.283	0	6	0	0	7	30.89	6.036	6	.039	8.649	6
194		min	-3.354	0	6	-.007	0	6	-.967	8.649	5	0	0	5	-5.344	2.252	1	-.025	0	6
195	136	m..	2.635	9.535	1	.002	0	5	1.328	9.535	1	0	0	1	30.226	0	6	.039	0	6
196		min	-5.208	0	6	0	0	4	-2.078	9.535	6	-.001	0	6	-4.375	0	1	-.005	9.535	5
197	137	m..	2.673	3.813	1	.036	0	6	1.408	3.813	1	0	0	7	19.757	0	6	.025	0	6
198		min	-5.304	0	6	-.005	0	1	-2.496	3.813	6	-.001	0	5	-5.786	3.813	5	-.113	3.813	6
199	138	m..	2.966	2.828	1	.012	0	1	.723	2.828	1	.004	0	1	13.058	2.828	1	.126	2.828	6
200		min	-4.48	0	6	-.083	0	6	-1.438	2.828	6	-.032	0	6	-7.098	2.828	5	-.109	0	6
201	139	m..	2.989	2.327	1	.042	0	6	.182	2.327	1	0	0	1	13.393	2.327	1	.13	0	6
202		min	-3.735	0	6	-.009	0	1	-.956	2.327	6	-.009	0	6	-7.239	2.327	5	-.019	0	1
203	140	m..	2.927	2.803	1	.011	0	6	.376	2.803	5	.001	0	1	13.392	0	1	.033	0	6
204		min	-2.279	0	6	-.002	0	5	-.825	2.803	7	-.003	0	7	-7.245	0	5	-.005	2.803	1
205	141	m..	2.678	2.844	1	0	0	4	.86	2.844	5	0	0	4	11.844	0	1	.017	2.844	6
206		min	-1.214	0	4	-.005	0	6	-1.573	0	1	-.001	0	6	-6.374	0	5	-.005	0	1
207	142	m..	2.602	4	1	.004	0	6	1.262	4	5	0	0	7	7.39	0	1	.017	0	6
208		min	-1.056	0	4	0	0	4	-1.847	0	1	0	0	5	-4.292	0	5	-.003	0	4
209	143	m..	2.242	0	1	.001	0	1	1.481	0	1	0	0	7	5.923	4	1	.004	4	6
210		min	-3.542	4	6	0	0	6	-2.738	4	6	0	0	1	-10.653	4	6	-.005	4	1
211	144	m..	2.123	0	1	.004	0	6	1.243	2.844	1	0	0	6	9.448	2.844	1	.004	0	6
212		min	-3.225	2.844	6	-.001	0	1	-2.479	2.844	6	0	0	1	-17.568	2.844	6	-.007	2.844	6
213	145	m..	2.078	0	1	.003	0	1	.433	2.803	1	0	0	4	10.614	2.803	1	.004	2.803	5
214		min	-3.278	2.803	6	0	0	5	-1.302	2.803	6	-.002	0	6	-21.117	2.803	6	-.009	2.803	1
215	146	m..	1.85	0	1	.001	0	7	.298	0	5	.001	0	5	10.614	0	1	.005	2.327	4
216		min	-3.096	2.327	6	-.005	0	1	-.649	0	7	-.003	0	6	-22.199	2.327	6	-.009	0	1
217	147	m..	1.609	0	1	.001	0	4	.596	0	5	.002	0	5	10.389	0	1	.021	2.828	6

Envelope Maximum Member Section Forces (Continued)

	Member	Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC	
218		min	-3.115	2.828	6	-.008	0	6	-.468	0	1	-.003	0	6	-22.203	0	6	-.003	0	7
219	148	m...	1.279	0	1	.01	0	5	1.217	0	6	.003	0	7	9.154	0	1	.021	0	6
220		min	-3.03	3.813	6	0	0	1	-.961	0	1	0	0	1	-21.753	0	6	-.036	3.813	5
221	149	m...	1.041	0	1	.001	0	1	1.361	0	6	.002	0	6	9.239	9.535	4	.043	9.535	5
222		min	-2.442	9.535	6	-.008	0	5	-.756	0	1	0	0	1	-17.428	0	6	-.037	0	5
223	150	m...	.868	0	1	.009	0	5	.88	0	6	.002	0	6	9.737	3.153	4	.043	0	5
224		min	-2.029	8.649	6	-.002	0	1	-.653	8.649	5	0	0	1	-8.109	0	7	-.036	8.649	5
225	151	m...	.693	0	1	.002	0	6	.617	0	7	.002	0	6	8.056	.446	4	.024	8.571	5
226		min	-2.223	8.571	4	-.007	0	5	-1.082	8.571	4	0	0	4	-2.848	0	7	-.036	0	5
227	152	m...	.689	0	1	.009	0	5	.441	2.795	1	.002	0	6	3.722	0	4	.024	0	5
228		min	-2.428	2.795	4	-.007	0	6	-1.532	2.795	4	0	0	4	-1.123	0	1	-.02	0	6
229	153	m...	.689	2.795	1	0	0	1	1.564	0	4	.001	0	6	3.807	2.795	4	.04	2.795	6
230		min	-2.463	0	4	-.015	0	6	-.44	0	1	0	0	4	-1.13	2.795	1	-.002	2.795	1
231	154	m...	1.875	8.571	6	.012	0	6	1.111	0	4	0	0	6	8.382	8.392	4	.04	0	6
232		min	-2.542	0	4	0	0	1	-.598	8.571	5	0	0	5	-2.799	8.571	1	-.062	8.571	6
233	155	m...	5.108	8.649	6	.001	0	1	1.512	0	6	0	0	1	11.796	8.649	6	.081	8.649	6
234		min	-2.211	0	4	-.017	0	6	-.416	8.649	4	-.001	0	5	-2.805	0	1	-.062	0	6
235	156	m...	6.334	9.535	6	.013	0	6	.886	0	6	0	0	1	16.408	9.535	6	.081	0	6
236		min	-2.016	0	4	-.001	0	1	-1.256	9.535	4	-.002	0	5	-1.392	9.535	5	-.042	9.535	7
237	157	m...	7.661	3.813	6	.006	0	6	3.421	0	6	0	0	1	28.838	3.813	6	.008	3.813	4
238		min	-1.635	0	4	-.008	0	5	-.609	3.813	4	-.004	0	5	-1.407	0	5	-.064	3.813	6
239	158	m...	6.941	2.828	6	.003	0	4	.939	0	7	.002	0	1	31.037	2.828	6	.048	2.828	6
240		min	-1.532	0	4	-.038	0	6	-.257	2.828	4	-.021	0	6	-1.434	2.828	4	-.061	0	6
241	159	m...	5.766	2.327	6	.014	0	6	.116	2.327	1	.003	0	1	31.011	0	6	.051	0	6
242		min	-1.377	0	4	0	0	5	-.794	2.327	6	-.013	0	6	-1.479	2.327	4	-.009	2.327	1
243	160	m...	3.655	2.803	6	0	0	5	.252	0	4	0	0	1	29.405	0	6	.031	2.803	6
244		min	-1.329	0	4	-.003	0	6	-2.185	2.803	6	-.008	0	6	-1.479	0	4	-.01	0	1
245	161	m...	2.123	2.844	1	.017	0	6	.505	0	4	.001	0	6	23.626	0	6	.032	0	6
246		min	-1.26	0	4	0	0	4	-3.356	2.844	6	0	0	4	-1.155	0	4	-.017	2.844	6
247	162	m...	2.242	4	1	0	0	4	.296	0	4	0	0	7	14.551	0	6	.002	0	4
248		min	-1.243	0	4	-.004	0	6	-3.869	4	6	0	0	1	-.487	0	5	-.017	0	6
249	V5	m...	0	0	7	0	0	7	2.333	0	7	0	0	7	8.237	7.269	7	0	0	7
250		min	-1.259	15.17	4	0	0	1	-2.202	15.17	5	0	0	1	0	0	1	0	0	1
251	V6	m...	0	0	1	0	0	7	2.333	0	7	0	0	7	8.237	7.269	7	0	0	7
252		min	-4.185	15.17	6	0	0	1	-2.202	15.17	5	0	0	1	0	0	1	0	0	1
253	V7	m...	0	0	7	0	0	7	3.49	0	7	0	0	7	18.411	10.8...	7	0	0	7
254		min	-1.347	23.17	5	0	0	1	-2.964	23.17	5	0	0	1	0	0	1	0	0	1
255	V8	m...	0	0	1	0	0	7	3.49	0	7	0	0	7	18.411	10.8...	7	0	0	7
256		min	-2.056	23.17	6	0	0	1	-2.964	23.17	5	0	0	1	0	0	1	0	0	1
257	165	m...	.164	0	5	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
258		min	-.208	0	1	-.022	12.5	1	0	0	1	0	0	5	0	0	1	-.07	6.25	1
259	166	m...	.616	0	5	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
260		min	-.193	0	1	-.022	12.5	1	0	0	1	-.001	0	5	0	0	1	-.07	6.25	1
261	170	m...	.509	0	5	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
262		min	-.133	0	1	-.022	12.5	1	0	0	1	0	0	5	0	0	1	-.07	6.25	1
263	171	m...	.182	0	5	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
264		min	-.124	0	1	-.022	12.5	1	0	0	1	-.001	0	5	0	0	1	-.07	6.25	1
265	172	m...	.435	0	6	.022	0	1	0	0	7	0	0	7	0	0	7	0	0	7
266		min	-.144	0	4	-.022	12.5	1	0	0	1	-.003	0	6	0	0	1	-.07	6.25	1
267	173	m...	.169	0	6	.022	0	1	0	0	7	.006	0	5	0	0	7	0	0	7
268		min	-.172	0	4	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
269	174	m...	.852	0	6	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
270		min	-.51	0	4	-.022	12.5	1	0	0	1	0	0	7	0	0	1	-.07	6.25	1
271	178	m...	.366	0	1	.022	0	1	0	0	7	0	0	7	0	0	7	0	0	7
272		min	-.638	0	4	-.022	12.5	1	0	0	1	-.006	0	6	0	0	1	-.07	6.25	1
273	179	m...	-.006	0	1	.022	0	1	0	0	7	.005	0	6	0	0	7	0	0	7
274		min	-.423	0	6	-.022	12.5	1	0	0	1	-.003	0	5	0	0	1	-.07	6.25	1

Envelope Maximum Member Section Forces (Continued)

Member		Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC	
275	180	m...	.035	0	1	.022	0	1	0	0	7	.013	0	5	0	0	7	0	7	
276		min	-1.079	0	6	-.022	12.5	1	0	0	1	-.002	0	1	0	0	1	-.07	6.25	1
277	181	m...	.444	0	1	.022	0	1	0	0	7	0	0	5	0	0	7	0	7	
278		min	-1.528	0	5	-.022	12.5	1	0	0	1	-.002	0	7	0	0	1	-.07	6.25	1
279	185	m...	.889	0	6	.022	0	1	0	0	7	-.002	0	7	0	0	7	0	7	
280		min	-1.186	0	4	-.022	12.5	1	0	0	1	-.011	0	6	0	0	1	-.07	6.25	1
281	186	m...	.039	0	1	.022	0	1	0	0	7	.009	0	6	0	0	7	0	7	
282		min	-.824	0	5	-.022	12.5	1	0	0	1	-.008	0	5	0	0	1	-.07	6.25	1
283	187	m...	.796	0	6	.022	0	1	0	0	7	.009	0	1	0	0	7	0	7	
284		min	-.139	0	1	-.022	12.5	1	0	0	1	-.067	0	6	0	0	1	-.07	6.25	1
285	188	m...	1.324	0	6	.022	0	1	0	0	7	-.002	0	7	0	0	7	0	7	
286		min	-.191	0	1	-.022	12.5	1	0	0	1	-.022	0	5	0	0	1	-.07	6.25	1
287	192	m...	.751	0	6	.022	0	1	0	0	7	.007	0	6	0	0	7	0	7	
288		min	-.195	0	1	-.022	12.5	1	0	0	1	-.003	0	5	0	0	1	-.07	6.25	1
289	193	m...	.502	0	6	.022	0	1	0	0	7	.078	0	6	0	0	7	0	7	
290		min	-.138	0	1	-.022	12.5	1	0	0	1	-.003	0	1	0	0	1	-.07	6.25	1
291	194	m...	.035	0	1	.022	0	1	0	0	7	.002	0	1	0	0	7	0	7	
292		min	-2.811	0	6	-.022	12.5	1	0	0	1	-.054	0	6	0	0	1	-.07	6.25	1
293	195	m...	.443	0	1	.022	0	1	0	0	7	.002	0	5	0	0	7	0	7	
294		min	-6.716	0	6	-.022	12.5	1	0	0	1	-.005	0	6	0	0	1	-.07	6.25	1
295	199	m...	.496	0	1	.022	0	1	0	0	7	.016	0	5	0	0	7	0	7	
296		min	-5.841	0	6	-.022	12.5	1	0	0	1	.002	0	4	0	0	1	-.07	6.25	1
297	200	m...	.038	0	1	.022	0	1	0	0	7	.046	0	6	0	0	7	0	7	
298		min	-2.173	0	6	-.022	12.5	1	0	0	1	-.006	0	1	0	0	1	-.07	6.25	1
299	201	m...	-.006	0	1	.022	0	1	0	0	7	.026	0	6	0	0	7	0	7	
300		min	-1.353	0	6	-.022	12.5	1	0	0	1	-.004	0	1	0	0	1	-.07	6.25	1
301	202	m...	.365	0	1	.022	0	1	0	0	7	.011	0	6	0	0	7	0	7	
302		min	-3.039	0	6	-.022	12.5	1	0	0	1	.001	0	4	0	0	1	-.07	6.25	1
303	206	m...	.148	0	1	.022	0	1	0	0	7	0	0	5	0	0	7	0	7	
304		min	-2.565	0	6	-.022	12.5	1	0	0	1	-.005	0	6	0	0	1	-.07	6.25	1
305	207	m...	-.042	0	1	.022	0	1	0	0	7	0	0	1	0	0	7	0	7	
306		min	-.949	0	6	-.022	12.5	1	0	0	1	-.031	0	6	0	0	1	-.07	6.25	1
307	208	m...	.589	0	6	.022	0	1	0	0	7	.001	0	5	0	0	7	0	7	
308		min	-.208	0	1	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
309	209	m...	2.546	0	6	.022	0	1	0	0	7	.002	0	5	0	0	7	0	7	
310		min	-.192	0	1	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
311	213	m...	2.458	0	6	.022	0	1	0	0	7	.001	0	5	0	0	7	0	7	
312		min	-.133	0	1	-.022	12.5	1	0	0	1	0	0	6	0	0	1	-.07	6.25	1
313	214	m...	.762	0	6	.022	0	1	0	0	7	.002	0	5	0	0	7	0	7	
314		min	-.124	0	1	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
315	215	m...	.259	0	5	.022	0	1	0	0	7	.007	0	6	0	0	7	0	7	
316		min	-.153	0	4	-.022	12.5	1	0	0	1	0	0	4	0	0	1	-.07	6.25	1
317	216	m...	0	14.2...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	7	
318		min	-.023	14.2...	7	-.003	14.2...	7	0	0	1	0	14.2...	1	0	0	1	-.009	7.124	7
319	217	m...	-.094	0	7	.004	0	1	0	0	7	0	0	1	0	0	7	0	7	
320		min	-.645	12.8...	6	-.004	12.8...	1	0	0	1	0	0	6	0	0	1	-.013	6.405	1
321	218	m...	0	12.7...	7	.003	0	4	0	0	7	0	12.7...	7	0	0	7	0	7	
322		min	-.014	12.7...	4	-.003	12.7...	4	0	0	1	0	0	4	0	0	1	-.008	6.357	4
323	219	m...	-.057	0	1	.005	0	1	0	0	7	0	0	1	0	0	7	0	7	
324		min	-1.753	14.1...	6	-.005	14.1...	1	0	0	1	0	0	6	0	0	1	-.016	7.062	1
325	220	m...	0	15.7...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	7	
326		min	-.146	15.7...	4	-.003	15.7...	4	0	0	1	0	0	4	0	0	1	-.012	7.861	4
327	221	m...	0	14.2...	1	.003	0	7	0	0	7	0	14.2...	1	0	0	7	0	7	
328		min	-.43	14.2...	6	-.003	14.2...	4	0	0	1	0	0	6	0	0	1	-.009	7.124	4
329	222	m...	0	12.8...	7	0	6.272	7	0	0	7	0	12.8...	7	0	0	7	0	7	
330		min	0	0	1	0	12.8...	1	0	0	1	0	12.8...	1	0	0	1	0	12.6...	1
331	223	m...	-.119	0	7	.004	0	1	0	0	7	0	0	1	0	0	7	0	7	

Envelope Maximum Member Section Forces (Continued)

	Member	Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC	
332		min	-.774	12.7...	6	-.004	12.7...	1	0	0	1	0	6	0	1	-.013	6.357	1		
333	224	m...	0	14.1...	6	.003	0	7	0	0	7	0	7	0	0	7	0	0	7	
334		min	-.429	14.1...	7	-.003	14.1...	7	0	0	1	0	14.1...	1	0	0	1	-.01	7.062	
335	225	m...	0	15.7...	1	.003	0	7	0	0	7	0	4	0	0	7	0	0	7	
336		min	-.67	15.7...	5	-.003	15.7...	4	0	0	1	0	6	0	0	1	-.012	7.861	4	
337	226	m...	0	14.2...	7	0	6.976	7	0	0	7	0	14.2...	7	0	0	7	0	0	7
338		min	0	0	1	0	14.2...	1	0	0	1	0	1	0	0	1	0	14.0...	1	
339	227	m...	0	12.8...	7	.004	0	1	0	0	7	0	5	0	0	7	0	0	7	
340		min	-.255	12.8...	6	-.004	12.8...	1	0	0	1	0	1	0	0	1	-.013	6.405	1	
341	228	m...	0	12.7...	5	.003	0	7	0	0	7	0	6	0	0	7	0	0	7	
342		min	-.372	12.7...	7	-.003	12.7...	6	0	0	1	0	1	0	0	1	-.008	6.357	6	
343	229	m...	-.056	0	1	.005	0	1	0	0	7	0	5	0	0	7	0	0	7	
344		min	-1.288	14.1...	6	-.005	14.1...	1	0	0	1	0	7	0	0	1	-.016	7.062	1	
345	230	m...	0	15.7...	1	.003	0	7	0	0	7	0	6	0	0	7	0	0	7	
346		min	-.465	15.7...	5	-.003	15.7...	4	0	0	1	0	1	0	0	1	-.012	7.861	4	
347	231	m...	0	14.2...	1	.003	0	7	0	0	7	0	5	0	0	7	0	0	7	
348		min	-.484	14.2...	6	-.003	14.2...	4	0	0	1	0	7	0	0	1	-.009	7.124	4	
349	232	m...	0	12.8...	7	0	6.272	7	0	0	7	0	12.8...	7	0	0	7	0	0	7
350		min	0	0	1	0	12.8...	1	0	0	1	0	1	0	0	1	0	12.6...	1	
351	233	m...	-.067	0	7	.004	0	1	0	0	7	0	5	0	0	7	0	0	7	
352		min	-.528	12.7...	6	-.004	12.7...	1	0	0	1	0	1	0	0	1	-.013	6.357	1	
353	234	m...	0	14.1...	6	.003	0	7	0	0	7	0	7	0	0	7	0	0	7	
354		min	-.178	14.1...	7	-.003	14.1...	7	0	0	1	0	1	0	0	1	-.01	7.062	7	
355	235	m...	0	15.7...	5	.003	0	7	0	0	7	0	15.7...	5	0	0	7	0	0	7
356		min	-1.031	15.7...	6	-.003	15.7...	4	0	0	1	0	6	0	0	1	-.012	7.861	4	
357	236	m...	.047	0	1	.022	0	1	0	0	7	.002	0	7	0	0	7	0	0	7
358		min	-.945	0	6	-.022	12.5	1	0	0	1	0	6	0	0	1	-.07	6.25	1	
359	240	m...	-.06	0	1	.022	0	1	0	0	7	.005	0	5	0	0	7	0	0	7
360		min	-1.306	0	6	-.022	12.5	1	0	0	1	0	7	0	0	1	-.07	6.25	1	
361	241	m...	.27	0	6	.022	0	1	0	0	7	0	5	0	0	7	0	0	7	
362		min	-.491	0	4	-.022	12.5	1	0	0	1	0	7	0	0	1	-.07	6.25	1	
363	245	m...	-.06	0	1	.022	0	1	0	0	7	0	5	0	0	7	0	0	7	
364		min	-.578	0	4	-.022	12.5	1	0	0	1	-.007	0	6	0	0	1	-.07	6.25	1
365	246	m...	-.068	0	5	.022	0	1	0	0	7	.019	0	6	0	0	7	0	0	7
366		min	-.429	0	6	-.022	12.5	1	0	0	1	-.003	0	4	0	0	1	-.07	6.25	1
367	247	m...	-.018	0	7	.022	0	1	0	0	7	.005	0	6	0	0	7	0	0	7
368		min	-.349	0	6	-.022	12.5	1	0	0	1	-.007	0	5	0	0	1	-.07	6.25	1
369	248	m...	.034	0	6	.022	0	1	0	0	7	.001	0	1	0	0	7	0	0	7
370		min	-.093	0	5	-.022	12.5	1	0	0	1	-.023	0	6	0	0	1	-.07	6.25	1
371	249	m...	.356	0	6	.022	0	1	0	0	7	.01	0	5	0	0	7	0	0	7
372		min	-.047	0	1	-.022	12.5	1	0	0	1	-.001	0	1	0	0	1	-.07	6.25	1
373	250	m...	.384	0	6	.022	0	1	0	0	7	0	1	0	0	7	0	0	7	
374		min	-.031	0	1	-.022	12.5	1	0	0	1	0	7	0	0	1	-.07	6.25	1	
375	251	m...	.658	0	6	.022	0	1	0	0	7	0	5	0	0	7	0	0	7	
376		min	-.069	0	4	-.022	12.5	1	0	0	1	-.004	0	6	0	0	1	-.07	6.25	1
377	252	m...	0	14.2...	1	.003	0	7	0	0	7	0	7	0	0	7	0	0	7	
378		min	-.289	14.2...	5	-.003	14.2...	4	0	0	1	0	5	0	0	1	-.009	7.124	4	
379	253	m...	0	12.8...	5	.004	0	1	0	0	7	0	4	0	0	7	0	0	7	
380		min	-.139	12.8...	6	-.004	12.8...	1	0	0	1	0	1	0	0	1	-.013	6.405	1	
381	254	m...	0	15.7...	1	.003	0	7	0	0	7	0	6	0	0	7	0	0	7	
382		min	-.76	15.7...	5	-.003	15.7...	4	0	0	1	0	1	0	0	1	-.012	7.861	4	
383	255	m...	0	15.7...	5	.003	0	7	0	0	7	0	5	0	0	7	0	0	7	
384		min	-.551	0	6	-.003	15.7...	4	0	0	1	0	6	0	0	1	-.012	7.861	4	
385	256	m...	0	14.1...	7	.003	0	6	0	0	7	0	6	0	0	7	0	0	7	
386		min	-.652	0	5	-.003	14.1...	5	0	0	1	0	5	0	0	1	-.01	7.062	5	
387	257	m...	-.011	12.7...	1	.004	0	1	0	0	7	0	5	0	0	7	0	0	7	
388		min	-.651	0	6	-.004	12.7...	1	0	0	1	0	1	0	0	1	-.013	6.357	1	

Envelope Maximum Member Section Forces (Continued)

Member	Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC
389	258	m...	0	12.8...	7	0	6.272	7	0	0	7	0	12.8...	7	0	0	7	0
390		min	0	0	1	0	12.8...	1	0	0	1	0	0	1	0	0	1	0
391	259	m...	0	14.2...	7	.003	0	4	0	0	7	0	0	4	0	0	7	0
392		min	-.064	0	4	-.003	14.2...	4	0	0	1	0	14.2...	1	0	0	1	-.009
393	260	m...	0	14.2...	1	.003	0	7	0	0	7	0	14.2...	1	0	0	7	0
394		min	-.331	14.2...	6	-.003	14.2...	4	0	0	1	0	0	6	0	0	1	-.009
395	261	m...	0	12.8...	7	0	6.272	7	0	0	7	0	12.8...	7	0	0	7	0
396		min	0	0	1	0	12.8...	1	0	0	1	0	12.8...	1	0	0	1	0
397	262	m...	-.011	0	1	.004	0	1	0	0	7	0	0	1	0	0	7	0
398		min	-.339	12.7...	6	-.004	12.7...	1	0	0	1	0	0	6	0	0	1	-.013
399	263	m...	0	14.1...	4	.003	0	7	0	0	7	0	0	6	0	0	7	0
400		min	-.397	14.1...	7	-.003	14.1...	5	0	0	1	0	14.1...	1	0	0	1	-.01
401	264	m...	0	15.7...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0
402		min	-.374	15.7...	6	-.003	15.7...	4	0	0	1	0	0	7	0	0	1	-.012
403	265	m...	0	14.2...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0
404		min	-.059	14.2...	7	-.003	14.2...	4	0	0	1	0	14.2...	1	0	0	1	-.009
405	266	m...	-.022	0	1	.004	0	1	0	0	7	0	0	1	0	0	7	0
406		min	-.324	12.8...	6	-.004	12.8...	1	0	0	1	0	0	6	0	0	1	-.013
407	267	m...	0	12.7...	7	0	6.225	7	0	0	7	0	12.7...	7	0	0	7	0
408		min	0	0	1	0	12.7...	1	0	0	1	0	12.7...	1	0	0	1	0
409	268	m...	0	14.1...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0
410		min	-1.184	14.1...	6	-.003	14.1...	4	0	0	1	0	0	6	0	0	1	-.01
411	269	m...	0	15.7...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0
412		min	-.128	15.7...	4	-.003	15.7...	4	0	0	1	0	0	4	0	0	1	-.012
413	270	m...	0	14.1...	1	.003	0	7	0	0	7	0	0	5	0	0	7	0
414		min	-.788	14.1...	6	-.003	14.1...	4	0	0	1	0	0	7	0	0	1	-.01
415	M271	m...	-.023	0	1	.022	0	1	0	0	7	0	0	1	0	0	7	0
416		min	-1.373	0	6	-.022	12.5	1	0	0	1	-.006	0	5	0	0	1	-.07
417	M272	m...	-.029	0	1	.022	0	1	0	0	7	.001	0	7	0	0	7	0
418		min	-.688	0	5	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07
419	M276	m...	-.191	0	6	.022	0	1	0	0	7	.005	0	6	0	0	7	0
420		min	-.821	0	5	-.022	12.5	1	0	0	1	.001	0	7	0	0	1	-.07
421	M277	m...	.056	0	1	.022	0	1	0	0	7	.005	0	5	0	0	7	0
422		min	-1.207	0	5	-.022	12.5	1	0	0	1	-.005	0	1	0	0	1	-.07
423	M278	m...	-.024	0	1	.022	0	1	0	0	7	.033	0	6	0	0	7	0
424		min	-2.34	0	6	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07
425	M279	m...	-.029	0	1	.022	0	1	0	0	7	.003	0	6	0	0	7	0
426		min	-1.798	0	6	-.022	12.5	1	0	0	1	-.003	0	5	0	0	1	-.07
427	M283	m...	.029	0	1	.022	0	1	0	0	7	-.002	0	4	0	0	7	0
428		min	-1.557	0	6	-.022	12.5	1	0	0	1	-.012	0	5	0	0	1	-.07
429	M284	m...	.056	0	1	.022	0	1	0	0	7	.005	0	1	0	0	7	0
430		min	-1.582	0	7	-.022	12.5	1	0	0	1	-.028	0	6	0	0	1	-.07
431	M285	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	6	0	0	7	0
432		min	-.298	15.2...	5	-.003	15.2...	4	0	0	1	0	15.2...	1	0	0	1	-.011
433	M286	m...	0	15.2...	1	.003	0	7	0	0	7	0	15.2...	1	0	0	7	0
434		min	-.523	15.2...	6	-.003	15.2...	4	0	0	1	0	0	6	0	0	1	-.011
435	M287	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	6	0	0	7	0
436		min	-.308	15.2...	7	-.003	15.2...	4	0	0	1	0	15.2...	1	0	0	1	-.011
437	M288	m...	-.002	0	1	.005	0	1	0	0	7	0	0	1	0	0	7	0
438		min	-.241	15.2...	6	-.005	15.2...	1	0	0	1	0	0	6	0	0	1	-.019
439	M289	m...	0	15.2...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0
440		min	-.117	15.2...	4	-.003	15.2...	4	0	0	1	0	0	4	0	0	1	-.011
441	M290	m...	-.002	0	1	.005	0	1	0	0	7	0	0	4	0	0	7	0
442		min	-.383	15.2...	6	-.005	15.2...	1	0	0	1	0	0	6	0	0	1	-.019
443	M291	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0
444		min	-.225	15.2...	5	-.003	15.2...	4	0	0	1	0	0	7	0	0	1	-.011
445	M292	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	7	0	0	7	0

Envelope Maximum Member Section Forces (Continued)

	Member	Axial[k]	Loc[ft]	LC v Shear...	Loc[ft]	LC z Shear...	Loc[ft]	LC Torque[...	Loc[ft]	LC y-y Mome...	Loc[ft]	LC z-z Mome...	Loc[ft]	LC
446		min	-.089	15.2...	7	-.003	15.2...	4	0	0	1	0	0	4
447	M224	m...	2.359	0	6	.022	0	1	0	0	7	.001	0	5
448		min	-.154	0	1	-.022	12.5	1	0	0	1	0	0	1
449	M225	m...	.244	0	6	.022	0	1	0	0	7	.001	0	6
450		min	-.145	0	4	-.022	12.5	1	0	0	1	0	0	1
451	M226	m...	.188	0	1	.022	0	1	0	0	7	.002	0	6
452		min	-2.715	0	6	-.022	12.5	1	0	0	1	0	0	1
453	M227	m...	.444	0	1	.022	0	1	0	0	7	.003	0	6
454		min	-6.224	0	6	-.022	12.5	1	0	0	1	0	0	5
455	M228	m...	.145	0	1	.022	0	1	0	0	7	.001	0	6
456		min	-2.788	0	6	-.022	12.5	1	0	0	1	-.001	0	5
457	M229	m...	-.033	0	1	.022	0	1	0	0	7	0	0	1
458		min	-2.103	0	6	-.022	12.5	1	0	0	1	-.002	0	6
459	M230	m...	.87	0	6	.022	0	1	0	0	7	0	0	1
460		min	-.161	0	5	-.022	12.5	1	0	0	1	-.004	0	6
461	M231	m...	.559	0	5	.022	0	1	0	0	7	0	0	1
462		min	-.154	0	1	-.022	12.5	1	0	0	1	0	0	5
463	M232	m...	.463	0	6	.022	0	1	0	0	7	0	0	1
464		min	-.124	0	4	-.022	12.5	1	0	0	1	-.001	0	6
465	M233	m...	.451	0	6	.022	0	1	0	0	7	0	0	1
466		min	-.593	0	4	-.022	12.5	1	0	0	1	-.003	0	6
467	M234	m...	.444	0	1	.022	0	1	0	0	7	0	0	1
468		min	-1.258	0	4	-.022	12.5	1	0	0	1	-.006	0	6
469	M235	m...	.399	0	6	.022	0	1	0	0	7	0	0	7
470		min	-1.045	0	4	-.022	12.5	1	0	0	1	-.004	0	6
471	M236	m...	-.033	0	1	.022	0	1	0	0	7	.003	0	6
472		min	-.884	0	5	-.022	12.5	1	0	0	1	0	0	1
473	M237	m...	0	14.2...	1	.003	0	7	0	0	7	0	14.2...	1
474		min	-.389	14.2...	6	-.003	14.2...	4	0	0	1	0	0	6
475	M238	m...	0	12.8...	7	0	6.272	7	0	0	7	0	12.8...	7
476		min	0	0	1	0	12.8...	1	0	0	1	0	0	1
477	M239	m...	-.039	0	1	.004	0	1	0	0	7	0	0	1
478		min	-.607	12.7...	6	-.004	12.7...	1	0	0	1	0	0	6
479	M240	m...	0	14.1...	6	.003	0	7	0	0	7	0	0	7
480		min	-.507	14.1...	7	-.003	14.1...	4	0	0	1	0	0	4
481	M241	m...	0	15.7...	1	.003	0	7	0	0	7	0	0	4
482		min	-.682	15.7...	5	-.003	15.7...	4	0	0	1	0	0	6
483	M242	m...	0	15.2...	6	.003	0	7	0	0	7	0	0	7
484		min	-.133	15.2...	4	-.003	15.2...	4	0	0	1	0	0	4
485	M243	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	4
486		min	-.448	0	5	-.003	15.2...	4	0	0	1	0	0	7
487	M244	m...	0	15.7...	6	.003	0	7	0	0	7	0	0	7
488		min	-.132	0	4	-.003	15.7...	4	0	0	1	0	0	4
489	M245	m...	0	14.1...	1	.003	0	7	0	0	7	0	0	4
490		min	-1.507	0	6	-.003	14.1...	4	0	0	1	0	0	6
491	M246	m...	0	12.7...	7	.003	0	4	0	0	7	0	0	4
492		min	-.01	0	4	-.003	12.7...	4	0	0	1	0	12.7...	1
493	M247	m...	-.04	12.8...	1	.004	0	1	0	0	7	0	0	1
494		min	-.478	0	6	-.004	12.8...	1	0	0	1	0	0	6
495	M248	m...	0	14.2...	6	.003	0	7	0	0	7	0	0	7
496		min	-.045	0	7	-.003	14.2...	7	0	0	1	0	0	1
497	M249	m...	0	14.2...	7	.003	0	5	0	0	7	0	0	7
498		min	-.162	14.2...	5	-.003	14.2...	4	0	0	1	0	0	5
499	M250	m...	0	12.8...	7	.004	0	1	0	0	7	0	0	6
500		min	-.225	12.8...	6	-.004	12.8...	1	0	0	1	0	0	1
501	M251	m...	0	12.7...	6	.003	0	7	0	0	7	0	0	7
502		min	-.203	12.7...	5	-.003	12.7...	5	0	0	1	0	0	5

Envelope Maximum Member Section Forces (Continued)

	Member	Axial[k]	Loc[ft]	LC	y Shear...	Loc[ft]	LC	z Shear...	Loc[ft]	LC	Torque[...	Loc[ft]	LC	y-y Mome...	Loc[ft]	LC	z-z Mome...	Loc[ft]	LC	
503	M252	m...	0	14.1...	1	.003	0	7	0	0	7	0	0	5	0	0	7	0	7	
504		min	-.94	14.1...	6	-.003	14.1...	4	0	0	1	0	0	7	0	0	1	-.01	7.062	4
505	M253	m...	0	15.7...	1	.003	0	7	0	0	7	0	0	6	0	0	7	0	7	
506		min	-.666	15.7...	5	-.003	15.7...	4	0	0	1	0	0	1	0	0	1	-.012	7.861	4
507	M254	m...	0	15.2...	5	.003	0	7	0	0	7	0	0	5	0	0	7	0	7	
508		min	-.568	15.2...	6	-.003	15.2...	4	0	0	1	0	0	6	0	0	1	-.011	7.6	4
509	M255	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	6	0	0	7	0	7	
510		min	-.524	0	5	-.003	15.2...	4	0	0	1	0	15.2...	1	0	0	1	-.011	7.6	4
511	M256	m...	0	15.7...	5	.003	0	7	0	0	7	0	0	5	0	0	7	0	7	
512		min	-1.014	0	6	-.003	15.7...	4	0	0	1	0	0	6	0	0	1	-.012	7.861	4
513	M257	m...	0	14.1...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	7	
514		min	-.945	0	5	-.003	14.1...	4	0	0	1	0	0	5	0	0	1	-.01	7.062	4
515	M258	m...	0	12.7...	5	.004	0	1	0	0	7	0	0	6	0	0	7	0	7	
516		min	-.552	0	6	-.004	12.7...	1	0	0	1	0	0	1	0	0	1	-.013	6.357	1
517	M259	m...	0	12.8...	7	.003	0	5	0	0	7	0	12.8...	7	0	0	7	0	7	
518		min	-.082	0	5	-.003	12.8...	5	0	0	1	0	0	5	0	0	1	-.008	6.405	5
519	M260	m...	0	14.2...	7	.003	0	6	0	0	7	0	0	6	0	0	7	0	7	
520		min	-.159	0	6	-.003	14.2...	4	0	0	1	0	14.2...	1	0	0	1	-.009	7.124	4

Arch Forces Unity Check	
5x10	
Tension (-)	
LC	6
Member	34
Mt	37.1 K-ft
Pt	6.7 K
Ma	50.35 K-ft
Pta	186.35 K
IR	0.77 OK
Compression (+)	
LC	6
Member	158
Mc	32 K-ft
Pc	7.1 K
Ma	50.35 K-ft
Pca	82.8 K
IR	0.72 OK
Splice (double channel)	
LC	6
Member	157
Axial	7.9 K
V	3.5 K
M	29.8 K-ft
Pallow	193 K
Vallow	59.74 K
Mallow	45.68 K-ft
IR	0.75 OK

Spreader Forces Unity Check	
4x4	
Tension (-)	
LC	6
Member	195
Pt	6.7 K
Pta	57.35 K
IR	0.12 OK
Compression (+)	
LC	6
Member	209
Pc	2.6 K
Pca	13.57 K
IR	0.19 OK

Cable Forces Unity Check	
1/2"	
Tension (-)	
LC	6
Member	219
Pt	2.6 K
Pta	19.5 K
IR	0.13 OK

Base reactions (kips, service)

Listed reactions are computed worst case at each boundary (ASD)

Hilti anchors must be determined using ultimate loads

Service factors added in Hilti Profis software

arch end

Flat end

ASD reactions (kip)				Anchoring (kip), service	
Node	FX	FY	FZ	Combined shear	Uplift
Combo	1	DL			
1	1.34	0.32	2.86	1.38	-
21	-1.34	0.32	2.86	1.38	-
22	1.46	0.17	2.62	1.47	-
42	-1.46	0.17	2.62	1.47	-
43	1.51	0.00	3.07	1.51	-
63	-1.51	0.00	3.06	1.51	-
E1	0.00	0.00	0.00	0.00	0.00
E2	0.00	0.00	0.00	0.00	0.00
E3	0.00	0.00	0.00	0.00	0.00
E4	0.00	0.00	0.00	0.00	0.00
106	1.55	0.00	3.13	1.55	-
126	-1.55	0.00	3.13	1.55	-
127	1.85	-0.16	3.28	1.85	-
147	-1.85	-0.16	3.28	1.85	-
148	1.48	-0.34	3.03	1.52	-
168	-1.48	-0.33	3.03	1.52	-
E5	0.00	0.00	0.00	0.00	0.00
E6	0.00	0.00	0.00	0.00	0.00
E7	0.00	0.00	0.00	0.00	0.00
E8	0.00	0.00	0.00	0.00	0.00
Combo	4	0*W			
1	0.34	-0.07	-1.03	0.35	1.03
21	-0.31	-0.06	-1.05	0.32	1.05
22	0.03	0.01	-1.59	0.03	1.59
42	-0.02	0.02	-1.61	0.02	1.61
43	-0.01	0.04	-1.50	0.04	1.50
63	0.00	0.04	-1.48	0.04	1.48
E1	0.00	0.69	-1.04	0.69	1.04
E2	0.00	0.76	-1.02	0.76	1.02
E3	0.00	1.16	-0.39	1.16	0.39
E4	0.00	1.16	-0.38	1.16	0.38
106	0.00	0.05	-1.47	0.05	1.47
126	-0.01	0.05	-1.44	0.05	1.44
127	0.27	0.15	-1.06	0.31	1.06

Greatest downforce

Listed reactions are computed worst case at each boundary (ASD)

Hilti anchors must be determined using ultimate loads

Service factors added in Hilti Profis software

arch end

Flat end

ASD reactions (kip)				Anchoring (kip), service	
Node	FX	FY	FZ	Combined shear	Uplift
147	-0.14	0.18	-0.97	0.22	0.97
148	0.33	0.16	-1.12	0.37	1.12
168	-0.42	0.19	-1.27	0.46	1.27
E5	0.00	-0.76	-1.03	0.76	1.03
E6	0.00	-0.76	-1.00	0.76	1.00
E7	0.00	-1.09	-0.40	1.09	0.40
E8	0.00	-1.09	-0.39	1.09	0.39
Combo 5 30*W					
1	-0.55	-0.14	-1.36	0.56	1.36
21	0.72	-1.67	-5.04	1.82	5.04
22	-1.40	-0.04	-1.93	1.40	1.93
42	1.55	-1.74	-1.75	2.33	1.75
43	-1.58	0.13	-2.64	1.58	2.64
63	1.79	-0.16	-4.14	1.80	4.14
E1	0.00	1.55	-0.15	1.55	0.15
E2	0.00	1.55	-0.83	1.55	0.83
E3	0.00	2.36	-0.88	2.36	0.88
E4	0.00	2.36	-1.58	2.36	1.58
106	-1.75	0.23	-2.94	1.76	2.94
126	2.32	0.00	-2.95	2.32	2.95
127	-1.29	1.72	-0.38	2.15	0.38
147	1.41	0.48	-0.01	1.49	0.01
148	-0.96	1.55	-4.80	1.83	4.80
168	0.27	0.43	-0.47	0.51	0.47
E5	0.00	-1.55	-0.08	1.55	0.08
E6	0.00	-1.55	0.00	1.55	0.00
E7	0.00	-2.29	-1.35	2.29	1.35
E8	0.00	-2.29	-0.83	2.29	0.83
Combo 6 60*W					
1	-2.49	0.44	-0.97	2.53	0.97
21	-3.66	-2.39	-0.46	4.37	0.46
22	-3.30	0.56	-3.07	3.35	3.07
42	-0.41	-2.42	-0.69	2.45	0.69
43	-3.20	0.30	-2.62	3.21	2.62
63	0.49	0.00	-6.38	0.49	6.38
E1	0.00	2.66	0.00	2.66	0.00
E2	0.00	2.66	-4.41	2.66	4.41

Greatest uplift @ arch end

Listed reactions are computed worst case at each boundary (ASD)

Hilti anchors must be determined using ultimate loads

Service factors added in Hilti Profis software

arch end

Flat end

ASD reactions (kip)				Anchoring (kip), service	
Node	FX	FY	FZ	Combined shear	Uplift
E3	0.00	4.06	0.00	4.06	0.00
E4	0.00	4.06	-2.33	4.06	2.33
106	-3.14	0.34	-2.33	3.15	2.33
126	0.24	0.15	-5.76	0.28	5.76
127	-1.61	1.22	0.29	2.02	-
147	-1.31	4.20	2.85	4.40	-
148	-2.50	0.94	-3.95	2.67	3.95
168	-3.98	3.75	-1.79	5.47	1.79
E5	0.00	-1.15	0.00	1.15	0.00
E6	0.00	-1.15	-4.20	1.15	4.20
E7	0.00	-1.69	0.00	1.69	0.00
E8	0.00	-1.69	-1.90	1.69	1.90
Combo	7	90*W			
1	-1.96	-0.08	-1.19	1.96	1.19
21	-3.49	-1.97	0.12	4.00	-
22	-2.28	-0.07	-0.59	2.28	0.59
42	-1.43	-2.07	0.56	2.52	-
43	-2.17	0.04	-0.42	2.17	0.42
63	-0.89	0.00	-3.29	0.89	3.29
E1	0.00	2.34	0.00	2.34	0.00
E2	0.00	2.33	-3.54	2.33	3.54
E3	0.00	3.56	0.00	3.56	0.00
E4	0.00	3.56	-1.73	3.56	1.73
106	-2.15	0.08	-0.36	2.15	0.36
126	-0.91	0.00	-3.21	0.91	3.21
127	-2.03	0.25	-0.01	2.05	0.01
147	-1.57	2.32	1.35	2.80	-
148	-1.98	0.19	-1.35	1.99	1.35
168	-3.58	2.14	-0.20	4.18	0.20
E5	0.00	-2.33	0.00	2.33	0.00
E6	0.00	-2.33	-3.52	2.33	3.52
E7	0.00	-3.49	0.00	3.49	0.00
E8	0.00	-3.49	-1.74	3.49	1.74

www.hilti.com

Company:	Sprung	Page:	1
Address:	Canyons Structural, 940 E. Elm Ave.	Specifier:	Dany Tremblay
Phone Fax:	8014866848	E-Mail:	
Design:	Concrete - Dec 19, 2019 (2)	Date:	12/20/2019
Fastening point:	Wind - greatest uplift		

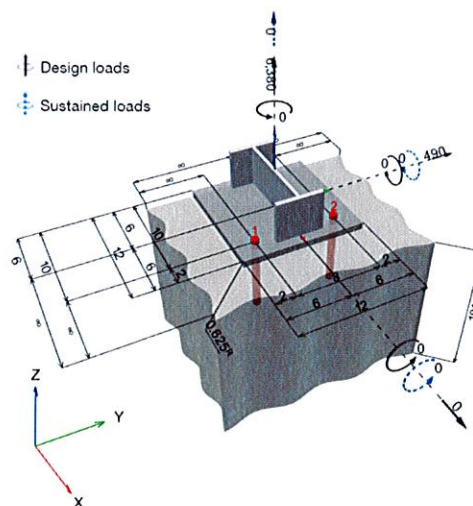
Specifiser's comments:

1 Input data

Anchor type and diameter:	HVU2 + HAS 3/4
Return period (service life in years):	50
Item number:	385432 HAS 5.8 3/4"x10" (element) / not available (capsule)
Effective embedment depth:	$h_{ef,act} = 6.625$ in., $h_{nom} = 6.625$ in.
Material:	5.8
Evaluation Service Report:	ESR-4372
Issued Valid:	6/1/2019 6/1/2020
Proof:	Design Method ACI 318-14 / Chem
Stand-off installation:	$e_b = 0.000$ in. (no stand-off); $t = 0.625$ in.
Anchor plate ^R :	$l_x \times l_y \times t = 12.000$ in. $\times$ 12.000 in. $\times$ 0.625 in.; (Recommended plate thickness: not calculated)
Profile:	S shape (AISC), S10X25.4; (L x W x T x FT) = 10.000 in. $\times$ 4.660 in. $\times$ 0.311 in. $\times$ 0.491 in.
Base material:	uncracked concrete, 4000, $f'_c = 4,000$ psi; $h = 18.000$ in., Temp. short/long: 40/74 °F
Installation:	hammer drilled hole, Installation condition: Dry, Installation direction: vertical downward
Reinforcement:	tension: condition B, shear: condition B; no supplemental splitting reinforcement present edge reinforcement: > No. 4 bar


^R - The anchor calculation is based on a rigid anchor plate assumption.

Geometry [in.] & Loading [lb, in.lb]





www.hilti.com

Company:	Sprung	Page:	2
Address:	Canyons Structural, 940 E. Elm Ave.	Specifier:	Dany Tremblay
Phone Fax:	8014866848	E-Mail:	
Design:	Concrete - Dec 19, 2019 (2)	Date:	12/20/2019
Fastening point:	Wind- greatest uplift		

1.1 Design results

Case	Description	Forces [lb] / Moments [in.lb]	Seismic	Max. Util. Anchor [%]
1	Load case: Design loads	N = 6,380; $V_x = 0$; $V_y = 490$; $M_x = 0$; $M_y = 0$; $M_z = 0$; $N_{sus} = 0$; $M_{x,sus} = 0$; $M_{y,sus} = 0$;	no	96

www.hilti.com

Company:	Sprung	Page:	3
Address:	Canyons Structural, 940 E. Elm Ave.	Specifier:	Dany Tremblay
Phone Fax:	8014866848	E-Mail:	
Design:	Concrete - Dec 19, 2019 (2)	Date:	12/20/2019
Fastening point:	Wind- greatest uplift		

2 Proof I Utilization (Governing Cases)

Loading	Proof	Design values [lb]		Utilization	Status
		Load	Capacity	β_N / β_V [%]	
Tension	Concrete Breakout Failure	21,079	22,053	96 / -	OK
Shear	Steel Strength	346	8,730	- / 4	OK

Loading	β_N	β_V	ζ	Utilization $\beta_{N,V}$ [%]	Status
Combined tension and shear loads	0.956	0.040	1.000	83	OK

3 Warnings

- Please consider all details and hints/warnings given in the detailed report!

Fastening meets the design criteria!



High Performance Building Solutions

CONCRETE DESIGN & INSTALLATION – HELPFUL HINTS [HILTI MECHANICAL/ADHESIVE ANCHOR BOLTS]

This letter is intended to be utilized in conjunction with the enclosed column base layout diagram by the party designing and/or installing concrete footings or foundations for the Sprung Structure.

In order to assist you with completing your site work prior to beginning the erection of the Sprung Structure, we offer the following helpful hints and reminders along with a column base layout and structural calculations, all essential to the completion of any concrete work.

The design of the foundation is normally provided by a local professional engineer or architect who can create the foundation design using all the required information including the column base layout drawing from Sprung, geotechnical information which you arrange to obtain from your site and any special considerations you wish incorporated into the pad (such as extra thickness to support vehicles). This professional can also provide advice to you on what information is required to be submitted to the local building official to permit your project.

Although our suggested pad or strip footing details show the pad elevated relative to the surrounding ground surface, there may be areas where the ground gets built up or water collects outside the structure which could result in water finding its way into the structure. In a heavy rainstorm a tremendous amount of water can be shed to the perimeter. We have shown a recess continuously around the outside perimeter of the pad or footing terminating only at the door areas. This detail provides a second line of defence to ensure that, should any surface water migrate into the structure, it stops at the recess.

Also note that the pad has bump outs at all door locations where our special hood system is installed. These bump outs accommodate the hood arch which sits out from the structure.

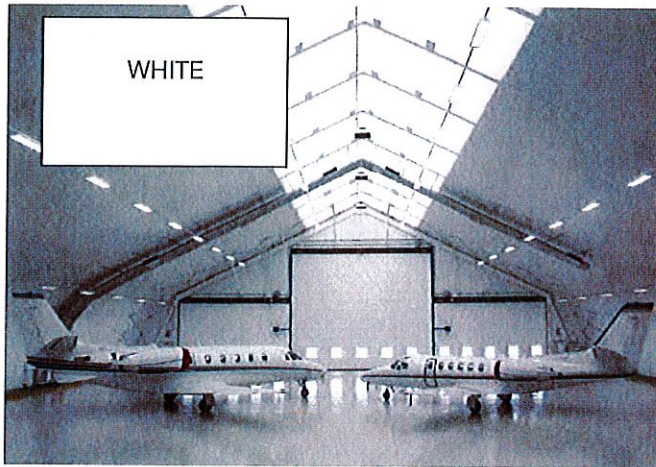
The structure is typically anchored to the concrete pad/foundation using two concrete Hilti type anchors per column base. These anchors are either mechanical or adhesive. Please ensure that any reinforcement steel in the concrete is not placed under the locations of the concrete anchors. The specified anchor type, location of the Hilti type anchors in relationship to the base plate and embedment depth can be found on the design notes and column base layout provided by Sprung. Product information can be found on the Hilti website (www.hilti.com). The appropriate reinforcement and the amount of concrete required underneath the anchor would need to be determined by the foundation engineer and designer.

Some customers choose to crown their concrete pad sloping outward in all directions from the center point to allow for positive drainage.

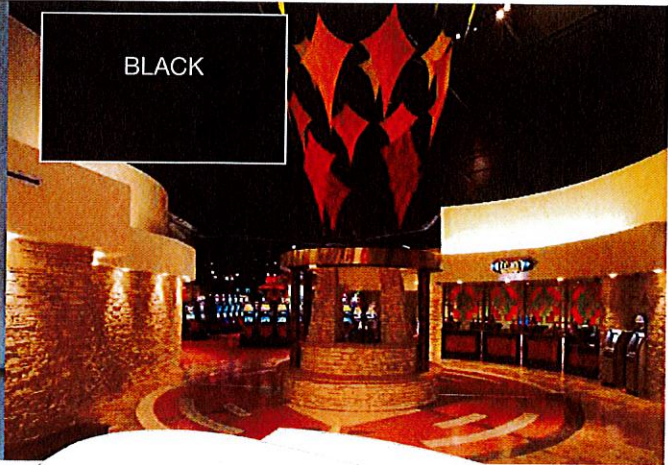
During the erection process, our column bases must freely slide along the perimeter of the footing or foundation. Therefore, we do not utilize "cast in place" anchorage such as "J" bolts.

Should you have any questions regarding the accompanying drawings, please feel free to contact me at (403) 601-2292 or Toll Free at 1-800-661-1163.

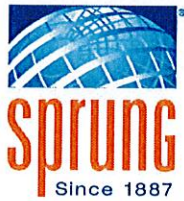
Yours truly,
SRUNG INSTANT STRUCTURES LTD.
Peter J. Bos



WHITE



BLACK



www.sprung.com
info@sprung.com

Interior Membrane Offers Superior Performance

- Weighs approximately 14 oz. per square yard
- High strength, rip-stop
- Exceptional fire-retardant capability
- 12-year pro-rata guarantee
- Available in white or black

The above color chips are not true and accurate representations of the actual membrane color. Please request a membrane sample prior to ordering.

Durability, color choices and ease of cleaning are among the many hallmarks of the architectural membrane of your Sprung structure.



INTERIOR MEMBRANE

Base Fabric Type (Scrim)	Polyester
Adhesion ASTM D4431	24lbs (lbs/2in)
Finish Coated Weight ASTM D3776	14 oz (+/-5%)
Surface Protection	PVC
Tongue Tear (lbs) Method ASTM D2261	W120/F122 lbs
Grab Tensile 4" ASTM D5034	W230/F215 lbs
Strip Tensile 1" FED-STD-191A Method 5102	W170/F140 lbs
Hydrostatic Burst ASTM D751/A	R380 F380 PSI
Cold Crack FED-STD-191A Method 5874	Pass -40° F

FIRE RATINGS

- 1 NFPA 701
- 2 ASTM E84
- 3 California State Fire Marshall
- 4 CAN/ULC-S-109
- 5 CAN/ULC-S-102

Flame Spread Index <25
Smoke Development rating <450



CALIFORNIA DEPARTMENT OF FORESTRY and FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL

REGISTERED FLAME RESISTANT PRODUCT

Product:

ARCHITENT EXCEL 14

Registration No.

F-96401

Product Marketed By:

HERCULITE PRODUTS, INC
105 E SINKING SPRINGS LANE
EMIGSVILLE, PA 17313

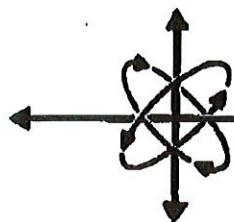
This product meets the minimum requirements of flame resistance established by the California State Fire Marshal for products identified in Section 13115, California Health and Safety Code.

The scope of the approved use of this product is provided in the current edition of the **CALIFORNIA APPROVED LIST OF FLAME RETARDANT CHEMICALS AND FABRICS, GENERAL AND LIMITED APPLICATIONS CONCERNS** published by the California State Fire Marshal.


Deputy State Fire Marshal

Expire: 6/30/2020

FR-U



DIVERSIFIED
TESTING LABORATORIES, INC.
WORLDWIDE SERVICE

"We Test Per Your Request"

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P.O. BOX 4004
BURLINGTON, NORTH CAROLINA 27215
PHONE (336) 227-7710 • FAX (336) 227-1175
www.diversifiedtestinglabs.com

July 14, 2014

Ms. Stephanie Mummert
HERCULITE PRODUCTS, INC.
P.O. Box 435
Emigsville, PA 17318

Reference: Flammability Test Report
Lab Identification No. 10954
Invoice No. 41716 (Attached)

Dear Ms. Mummert:

One (1) sample, identified as 110688 ARCHITENT EXCEL 14 LOT 14522, was received and tested in accordance with the National Fire Prevention Association No. 701, "Standard Methods of Fire Tests for Flame Propagation of Textiles and Films, 2010 Edition, (Test 1, Small Scale)". The results are as follows:

<u>Specimen Number</u>	<u>Residual Flame</u> <u>(seconds)</u>	<u>Weight Loss</u> <u>(percent)</u>
1	0.0	26.11
2	0.0	1.45
3	0.0	1.99
4	0.0	0.79
5	0.0	1.79
6	0.0	0.76
7	0.0	3.87
8	0.0	1.27
9	0.0	2.36
10	0.0	2.18
AVG.	0.0	4.26

The fabric sample submitted meets the minimum requirements of the above standard. The average percent weight loss cannot exceed 40% and the weight loss of individual specimens cannot exceed mean value plus three standard deviations. The average residual flame cannot exceed 2.0 seconds.

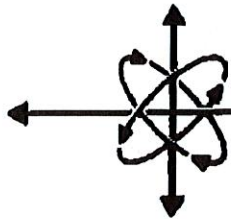
If there are any questions or when we can be of further assistance, please let us know.

Sincerely,

Bobby E. Puett

BEP/mr
Attachment

OUR LETTERS AND REPORTS ARE FOR THE EXCLUSIVE USE OF THE CLIENT TO WHOM THEY ARE ADDRESSED. ANY COMMUNICATION TO OTHERS OR THE USE OF OUR COMPANY NAME MUST RECEIVE PRIOR APPROVAL. OUR TEST RESULTS APPLY ONLY TO THE SAMPLE TESTED AND ARE NOT NECESSARILY INDICATIVE OF THE QUALITIES OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS. SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF THIRTY DAYS. THE LETTERS, REPORTS OR NAME OF DIVERSIFIED TESTING LABORATORIES, INC. MAY NOT BE USED IN ADVERTISING TO THE GENERAL PUBLIC.



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www.diversifiedtestinglabs.com

July 14, 2014

Ms. Stephanie Mummert
HERCULITE PRODUCTS, INC.
P.O. Box 435
Emigsville, PA 17318

Reference: Flammability Test Report
Lab Identification No. 10954
Invoice No. 41716 (Attached)

Dear Ms. Mummert:

One (1) sample, identified as **110688 ARCHITENT EXCEL 14 LOT 14522**, was received and tested in accordance with the National Fire Prevention Association No. 701, "Standard Methods of Fire Tests for Flame Propagation of Textiles and Films, 2010 Edition, (Test 2, Large Scale)". The results are as follows:

<u>Specimen Number</u>	<u>After Flame</u> <u>(seconds)</u>	<u>Residual Flame</u> <u>(seconds)</u>	<u>Char Length</u> <u>(inches)</u>
Folds 1	0.0	0.0	12.0
2	0.0	0.0	14.5
3	0.0	0.0	13.0
4	0.0	0.0	13.0

The sample submitted **meets** the minimum requirements of the above standard. The length of char on the individual folded specimens shall not exceed 41.3 inches. Additionally, no specimen shall continue flaming for more than two (2) seconds after the test flame is removed and no residues shall fall to the floor of the test chamber and continue flaming for more than two (2) seconds at any time during the test.

If there are any questions or when we can be of further assistance, please let us know.

Sincerely,

Bobby E. Fuett

BEP/mr
Attachment

OUR LETTERS AND REPORTS ARE FOR THE EXCLUSIVE USE OF THE CLIENT TO WHOM THEY ARE ADDRESSED. ANY COMMUNICATION TO OTHERS OR THE USE OF OUR COMPANY NAME MUST RECEIVE PRIOR APPROVAL. OUR TEST RESULTS APPLY ONLY TO THE SAMPLE TESTED AND ARE NOT NECESSARILY INDICATIVE OF THE QUALITIES OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS. SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF THIRTY DAYS. THE LETTERS, REPORTS OR NAME OF DIVERSIFIED TESTING LABORATORIES, INC. MAY NOT BE USED IN ADVERTISING TO THE GENERAL PUBLIC.



Report On
Surface Burning Characteristics Determined By
ASTM E84/ (UL 723) Twenty-Five Foot Tunnel
Furnace Test Method

PREPARED FOR:
Herculite Products, Inc.
Aberdeen Road
Emigsville, PA

TEST NUMBER T-14574

MATERIAL TESTED:
Architent Excel 14

DATE OF ISSUE 7/2/2014

**I. SCOPE**

This report contains the reference to the test method, purpose, test procedure, rounding procedures, preparation and conditioning of specimens, description of materials, test and post test observation data, and test results.

II. TEST METHOD

The test was conducted in accordance with ASTM E 84, "Standard Test Method for Surface Burning Characteristics of Building Materials." The 25-foot tunnel method is also described by NFPA 255 and UL 723.

III. PURPOSE

The purpose of the test is to determine the relative performance of the test material under standardized fire exposure. Results are given for Flame Spread and Smoke Developed Index. The values obtained from burning the test material represent a comparison with that of 1/4" inorganic reinforced cement board expressed as zero and red oak flooring expressed as 100.

The flame spread results of 25-foot tunnel tests are frequently used by building code officials and regulatory agencies in the acceptance of interior finish material for various applications. The most widely accepted classification system is epitomized by the National Fire Protection Association Life Safety Code, NFPA 101:

Class A*	0 - 25	flame spread	0-450 smoke developed
Class B*	26 - 75	flame spread	0-450 smoke developed
Class C*	76 - 200	flame spread	0-450 smoke developed

*Class A, B and C correspond to I, II and III, respectively, in other code references.

This flame spread classification system is based on the premise that the higher the flame spread numbers, the greater the fire spread potential. The actual relationship between the numbers developed under this test and life safety from fire has not been adequately established.

IV. TEST PROCEDURE NOTES

The furnace was preheated to a minimum of 150°F as measured by an 18 AWG thermocouple embedded in cement 1/8" below the floor surface of the chamber, 23-1/4' from the centerline of the ignition burners. The furnace was then cooled to 105°F ($\pm$ 5°F) as measured by a thermocouple embedded 1/8" below the floor surface of the test chamber 13' from the fire end.

Prior 10-minute tests with 1/4" inorganic reinforced cement board provided the zero reference for flame spread. Periodic 10-minute tests with unfinished select grade red oak flooring provided for the 100 reference for flame spread and smoke developed as noted in Section III.



A. Flame Spread

The flame spread distance is observed and recorded at least every 15 seconds or every 2 feet of progression. The peak distance is noted at the time of occurrence. The flame spread distance is plotted over time. The total area under the flame spread distance-time curve is determined; flame front recessions are ignored. The flame spread is then calculated as a function of the area under the curve relative to the standard red oak curve area. The value for flame spread classification for the tested material may be compared with that of inorganic reinforced cement board and select grade red oak flooring.

B. Smoke Developed

The smoke developed during the test is determined by the reduction in output of a photoelectric cell. A light beam vertically orientated across the furnace outlet duct is attenuated by the smoke passing through the duct. The output of the photoelectric cell is related to the obscuration of the light source through the duct caused by the smoke. A curve is developed by plotting photoelectric cell output against time. The value of smoke developed is derived by calculating the net area under the curve for the test material and comparing this area with the net area under the curve for unfinished select grade 23/32" red oak flooring.

V. FLAME SPREAD AND SMOKE DEVELOPED ROUNDING PROCEDURES

Single test calculated flame spread and smoke developed values are rounded to the nearest multiple of 5 and reported as the Flame Spread or Smoke Developed Index. Actual test values are available on request.

For multiple tests, the individual calculated flame spread and smoke developed values are recorded, averaged, and the results rounded to the nearest multiple of 5. The averaged, rounded number is reported as the Flame Spread or Smoke Developed Index.

VI. PREPARATION AND CONDITIONING OF TEST SAMPLES

Three or four sections are generally used in the preparation of a complete test specimen which is 20-1/2" wide and 24' long. Materials 8' in length may be tested by using three sections 20-1/2" wide by 8' long for a total specimen length of 24'. A 14" length of uncoated 16 gauge steel sheet is used to make up the remainder of the test specimen; it is placed at the fire end of the test chamber. Prior to testing, three 8' long sections of 1/4" inorganic reinforced cement board are placed on the back side of the specimens to protect the furnace lid assembly. Test specimens are conditioned at a controlled temperature of 73.4°F ($\pm 5^\circ\text{F}$) and a controlled relative humidity of 50 ± 5 percent.

**VII: MATERIAL TESTED**

- 1) Manufacturer: Herculite Products, Inc.
Emigsville PA
- 2) Burn Number: 1
- 3) Average Thickness(in.): 0.014
- 4) Average Weight (lbs./sq.ft.): 0.098
- 5) Average Groove Depth (in.):
- 6) Product Description: Architent Excel 14
Item #110688. Lot # 14522H
- 7) Color: White
- 8) Surface: Face Side
- 9) Sample Selection: Manufacturer
- 10) Date of Selection: 6/30/2014
- 11) Material Description By: Manufacturer
- 12) Method of Mounting: Supported with 1/4" diameter steel rods spaced 24 inches on center
and 2" hexagonal wire mesh
- 13) Days in Conditioning: 2

VIII: TEST CONDITIONS AND DATA

- 1) Specimen Preheat Time (min.) 2:00
- 2) Tunnel Brick Temp (deg. F): 103
- 3) Ignition Time (seconds): 15
- 4) Time to End of Tunnel
or Flamefront Distance: 4'@0:45
- 5) Time-Distance Curve Area
(min./ft.): 38.8
- 6) Fuel and Temperature
 - a) Fuel (cu.ft./min.): 5.084
 - b) Max. Vent End Temp. (deg.F): 550
 - c) Time to Max. Temp (min.): 8:45
- 7) After Flaming: No



TEST NUMBER T-14574

Page 5 of 7

DATE OF TEST 7/2/2014

IX: TEST RESULTS

Test results calculated on the basis of the area under the curves of flame spread distance and smoke developed versus time are provided in the table below for calibration materials and for:

Architent Excel 14

Material Description	Flame Spread Index	Smoke Developed Index
High Density Inorganic Reinforced Cement Board	0	0
Red Oak Flooring	100	100
T-14574	20	350

Observations:

Melted to 9'.

Remarks:

The sample consisted of four pieces 72" long laid end-to-end.

Conclusions:

Meets Class A, Flame Spread Index 25 or less and Smoke Developed Index 450 or less.

REPORT PREPARED BY:

Tom Wilson

Manager of Fire Testing

REPORT REVIEWED BY:

Brian Sause

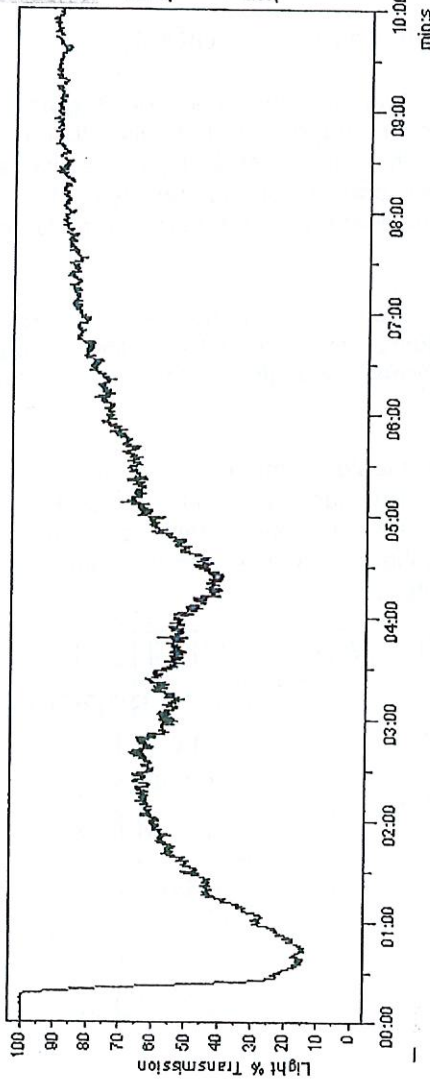
Director of Testing, Standards, and Certification

Conformance to the test standard is verified by a registered professional engineer. This is a factual report of the results obtained from laboratory tests of sample products. The results may be applied only to the products tested and should not be construed as applicable to other similar products of the manufacturer. The HPVA does not verify the description of materials and products when the description is provided by the client. The report is not a recommendation or a disapprobation by the Hardwood Plywood and Veneer Association of the material or product tested. While this report may be used for obtaining product acceptance; it may not be used in advertising.



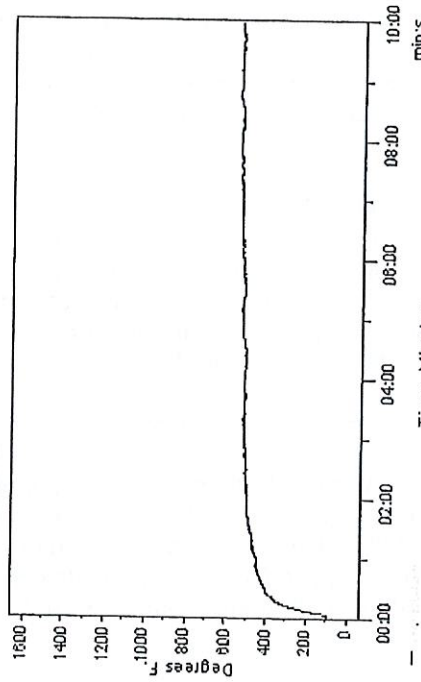
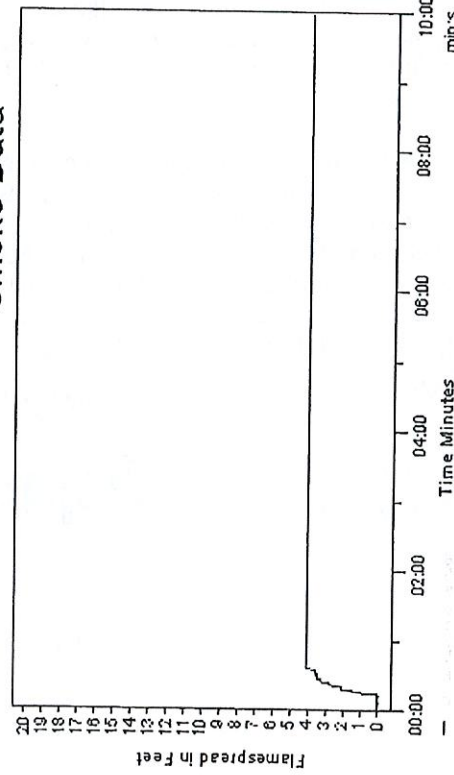
Test Time	600	FS Counts	38.8
Seconds		Fuel Counts	686
STOP Early		Smk Cts	592
NEW TEST			
program			

Flame Progression, Feet 21.43
 Smoke MV 8 15
 24 Ft. Temp, Deg. F 544
 13 Ft. Temp, Deg. F 167
 24 Foot Floor TC, Deg. F 123



Max Temp = 550
 @ Time = 525

Smoke Data



Fuel Data

test ON/OFF
 test ON
 Cool



LABORATORY ACCREDITATION

The HPVA has met the requirements of the International Accreditation Service, Inc. (IAS) Accreditation Criteria for Testing Laboratories (AC89), has demonstrated compliance with ANSI/ISO/IEC Standard 17025:2005, *General criteria for the competence of testing and calibration laboratories*, and is accredited for the ASTM E84 and other test methods listed in the approved scope of accreditation: Testing Laboratory TL-224.

The HPVA's product certifications, inspections, and test procedures are accredited by IAS and the HPVA has demonstrated compliance with ISO/IEC 17025, 17020, and Guide 65. These accreditations and the HPVA's test reports are recognized by the International Code Council (ICC) to satisfy testing requirements specified in the model building codes adopted by state and local jurisdictions which include but are not limited to The International Building Code (IBC), International Residential Codes (IRC), and International Fire Code (IFC).

HPVA FLAME SPREAD PROPERTY VERIFICATION PROGRAM

The Hardwood Plywood & Veneer Association provides a product property verification program for flame spread properties. This program is based on the selection and testing of panels within a given marketing line on the basis of that combination of factors that theoretically should give the highest flame spread values. Such factors as panel thickness, specific gravity, color of stain, type of lamination, surface texture, and product mix are taken into consideration in the selection of flame spread samples.

While it is standard procedure to include smoke developed values in test reports, the HPVA label identifies only the flame spread class. The HPVA label is evidence that the marketing line has been tested and inspected in accordance with the HPVA Flame Spread Inspection and Verification Program Procedures.

The HPVA label displayed below indicates conformance of the tested samples to the Type II glue bond requirements as set forth in ANSI/HPVA HP-1-2009 Standard For Hardwood And Decorative Plywood, and conformance to Flame Spread Class C (200 or less) as determined by the test procedures described in ASTM E 84. Depending on the type of product, the label may also include other information such as structural and formaldehyde emission ratings.

HARDWOOD PLYWOOD VENEER ASSOCIATION		
BOND LINE TYPE II ANSI/HPVA HP-1-2009		FLAME SPREAD 200 OR LESS CLASS C ASTM E 84
	MILL 00 SPECIALTY GRADE	SIMULATED DECORATIVE FINISH ON PLYWOOD

T/BP:6/2004

Exova
2395 Speakman Dr.
Mississauga
Ontario
Canada
L5K 1B3

T: +1 (905) 822-4111
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E: info@exova.com
W: www.exova.com



Testing, calibrating, advising

CAN/ULC-S102 Surface Burning Characteristics of "110688 Architent Excel 14" Reinforced Fabric

A Report To:

Herculite®

P.O. Box 435, Aberdeen Road
Emigsville, PA 17318
USA

Phone:

717-764-1192

E-mail:

smummert@herculite.com

Attention:

Stephanie Mummert

Submitted by:

Exova Warringtonfire North America

Report No.

14-002-420(B)
6 Pages

Date:

July 15, 2014

ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine the Flame Spread and Smoke Developed Classifications based upon triplicate testing conducted in accordance with CAN/ULC-S102-10, as per Herculite® Purchase Order No. 2734 and Exova Warringtonfire North America Quotation No. 14-002-304,463 accepted June 18, 2014.

SAMPLE IDENTIFICATION (Exova sample identification number 14-002-S0420)

Reinforced fabric material identified as:
"110688 Architent Excel 14, Lot #9363H"

TEST PROCEDURE

The method, designated as CAN/ULC-S102-10, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results of less than three identical specimens are expressed in terms of Flame Spread Value (FSV) and Smoke Developed Value (SDV). Results of three or more replicate tests on identical samples produce average values expressed as Flame Spread Rating (FSR) and Smoke Developed Classification (SDC).

Although the procedure is applicable to materials, products and assemblies used in building construction for development of comparative surface spread of flame data, the test results may not reflect the relative surface burning characteristics of tested materials under all building fire conditions.

SAMPLE PREPARATION

Each test sample consisted of 1 continuous section of material approximately 0.35 mm in thickness by 533 mm in width by 7315 mm in length. Prior to testing, the samples were conditioned to constant weight at a temperature of $23 \pm 3^\circ\text{C}$ and a relative humidity of $50 \pm 5\%$. During testing the samples were supported over their entire lengths by 50 mm hexagonal wire mesh and were further supported across their widths by 6 mm steel rods spaced nominally at 610 mm intervals.

The testing was performed on: Test #1: 2014-07-14 Test #2: 2014-07-14 Test #3: 2014-07-14

SUMMARY OF TEST PROCEDURE

The tunnel is preheated to 85°C , as measured by the backwall-embedded thermocouple located 7090 mm downstream of the burner ports, and allowed to cool to 40°C , as measured by the backwall-embedded thermocouple located 4000 mm from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 7315 mm long, 305 mm above the floor. The lid is then lowered into place.

SUMMARY OF TEST PROCEDURE (continued)

Upon ignition of the gas burners, the flame spread distance is observed and recorded every second. Flame spread distance versus time is plotted. Calculations ignore all flame front recessions and the Flame Spread Values (FSV) are determined by calculating the total area under the curve for each test sample. If the total area under the curve (AT) is less than or equal to 29.7 m·min, $FSV = 1.85 \cdot AT$; if greater, $FSV = 1640 / (59.4 - AT)$.

Smoke Developed Values (SDV) are determined by comparing the area under the obscuration curve for each test sample to that of inorganic reinforced cement board and red oak, established as 0 and 100, respectively. Each Smoke Developed Value is determined by dividing the total area under the obscuration curve by that of red oak and multiplying by 100.

TEST RESULTS

<u>SAMPLE</u>		<u>Flame Spread Value (FSV)</u>	<u>Smoke Developed Value (SDV)</u>
"110688 Architent Excel 14, Lot #9363H"	Test #1	11	205
	Test #2	16	184
	Test #3	16	146
	Average:	14	179

Rounded Average Flame Spread Rating (FSR): **15**

Rounded Average Smoke Developed Classification (SDC): **180**

Observations of Burning Characteristics

- Each of the test samples ignited approximately 16 to 20 seconds after exposure to the test flame. Shrinking, melting and dripping behavior was observed.
- All three respective flame fronts advanced to maximum distances of 0.6, 0.9, and 0.9 metres at approximately 35, 43, and 43 seconds into each respective test.


Robert A. Carleton,
Technologist.


Ian Smith,
Technical Manager.

Note: This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.

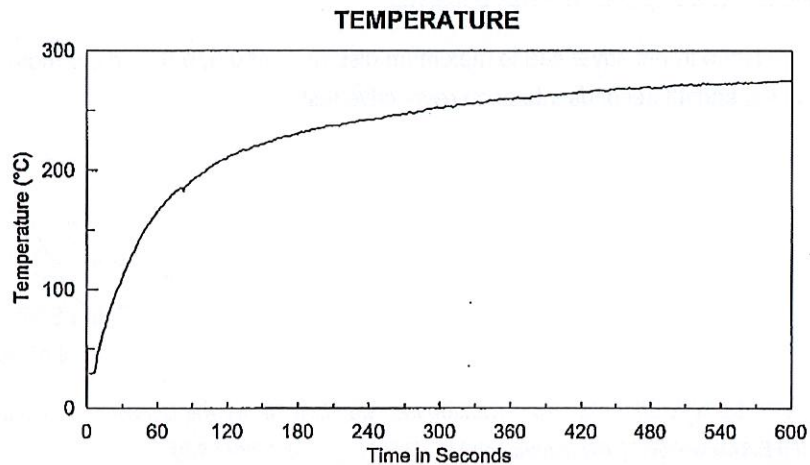
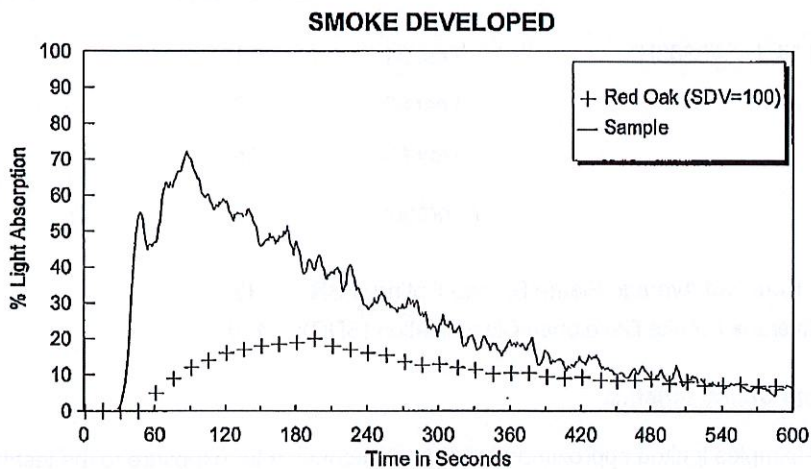
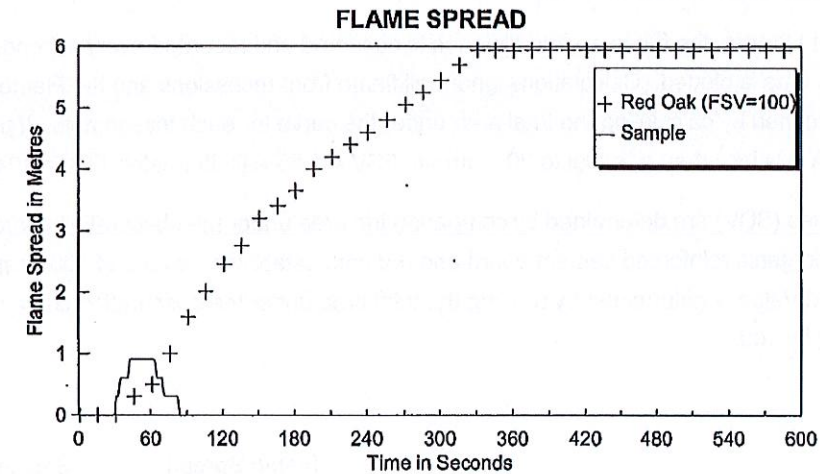
For: **Herculite®**

Report No. 14-002-420(B)

Sample: "110688 Architent Excel 14, Lot #9363H"

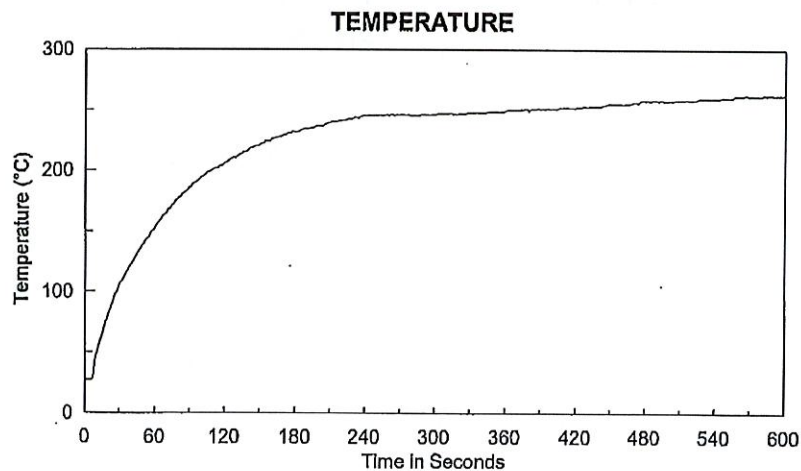
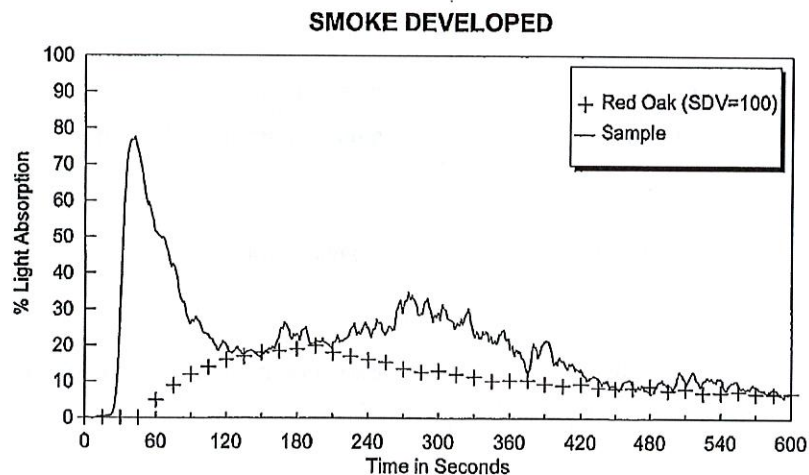
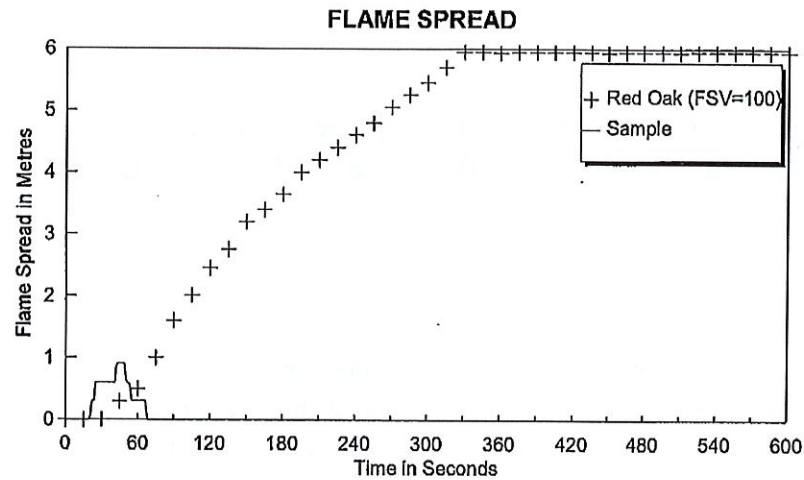
Exova

Test #2 of 3

**FSV**
16**SDV**
184**Max. Temp. (°C)**
276

Sample: "110688 Architent Excel 14, Lot #9363H"

Test #3 of 3

**FSV**

16

SDV

146

Max. Temp. (°C)

263

Exova
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Ontario
Canada
L5K 1A3

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F: +1 (905) 823-1446
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W: www.exova.com



Testing, calibrating, advising

CAN/ULC-S109 Flame Resistance of "110688 Architent Excel 14" Fabric

A Report To:

Herculite®

P.O. Box 435, Aberdeen Road
Emigsville, PA 17318
USA

Phone:

717-764-1192

Email:

smummert@herculite.com

Attention:

Stephanie Mummert

Submitted By:

Exova Warringtonfire North America

Report No.

14-002-420(A)

3 pages + appendix

Date:

July 17, 2014

ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine flame resistance in accordance with the CAN/ULC-S109-03 Small and Large Flame Tests, as per Exova Warringtonfire North America Quotation No. 14-002-304,463 accepted June 18, 2014.

IDENTIFICATION

Material identified as: "110688 Architent Excel 14 Lot #9363H."

(Exova sample identification number 14-002-S0420)

TEST RESULTS

CAN/ULC-S109-03 Small-Flame Test

Standard Methods of Tests for Flame-Resistant Textiles and Films

Tested "as-received"

Fabric Weight: 447 g/m ²		Damaged Length (mm)	Afterflame Time (s)	Flaming Dripping (s)	
Machine Direction	1:	123	0.0	0.0	
	2:	133	0.0	0.0	
	3:	141	0.0	0.0	
	4:	129	2.8	0.0	
	5:	138	2.1	0.0	
Cross Direction	6:	126	3.0	0.0	
	7:	151	0.0	0.0	
	8:	129	0.0	0.0	
	9:	142	0.0	0.0	
	10:	138	0.0	0.0	
Average:		135	-	-	
Maxima Specified by					
ULC-S109 Small Flame Test:		165	-	-	(average)
		190	-	2.0	(individual)

TEST RESULTS (continued)**CAN/ULC-S109-03 Large Flame Test**Standard Methods of Tests for Flame-Resistant Textiles and Films

Tested "as-received" and in single sheet configuration.

		Damaged Length (mm)	Afterflame Time (s)	Flaming Dripping (s)	
Machine Direction	1:	71	0.0	0.0	
	2:	80	0.0	0.0	
	3:	75	0.0	0.0	
	4:	77	0.0	0.0	
	5:	71	0.0	0.0	
Cross Direction	6:	45	0.0	0.0	
	7:	31	0.0	0.0	
	8:	49	0.0	0.0	
	9:	55	0.0	0.0	
	10:	53	0.0	0.0	
Average:		61	-	-	
Maxima Specified by					
ULC-S109 Large Flame Test:		-	-	-	(average)
		250	-	2.0	(individual)
(Above tip of test flame)					

CONCLUSIONS

When tested "as-received", the material identified in this report meets the flame resistance requirements of both the Small-Flame and Large-Flame Tests of CAN/ULC-S109-03.

Note: *This is an electronic copy of the report. Signatures are on file with the original report.*

Victor Tarcenco,
Technologist

Ian Smith,
Technical Manager

Note: *This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.*

CAN/ULC-S109 Flame Resistance of "110688 Architent Excel 14" Fabric

For: Herculite®

Report No. 14-002-420(A)

Exova

APPENDIX

(1 Page)

Summary of Test Procedure

CAN/ULC-S109-03

Standard Methods of Tests for Flame-Resistant Textiles and Films

Small-Flame Test

Ten specimens are cut, each 70 x 250 mm, with five in the warp direction and five in the weft direction, where applicable. The specimens are conditioned for 30 minutes at 105°C, or if they melt or distort at these temperatures, 18 - 22°C at 50% R.H. for at least 12 hours or by drying in an oven for 1 hour at 60°C.

Each specimen is removed from the conditioning chamber individually, clamped in a U-shaped metal holder and suspended in a specified cabinet. The free edge of the specimen is positioned 20 mm above the tip of a gas burner which has been adjusted to yield a flame height of 40 mm. Flame exposure time is 12 seconds. Char length and afterflame time are measured.

Flame Resistance Requirements:

Maximum Average Length of
Char or Destroyed Material for
Ten Specimens
165 mm

Maximum Length of Char or
Destroyed Material for any
Specimens
190 mm

The specified maximum flaming time for residue on the floor of the tester from any specimen is 2.0 seconds.

Large-Flame Test

For conducting flame tests of fabrics in single sheets, the procedure specifies ten specimens, 125 mm by 750 mm to 2100 mm long. The specimens are conditioned at 105 ± 2°C for 30 minutes or, if distortion or melting occurs at these temperatures, 20 ± 2°C at 25 - 50% relative humidity for at least 12 hours or by drying in an oven for 1 hour at 60°C.

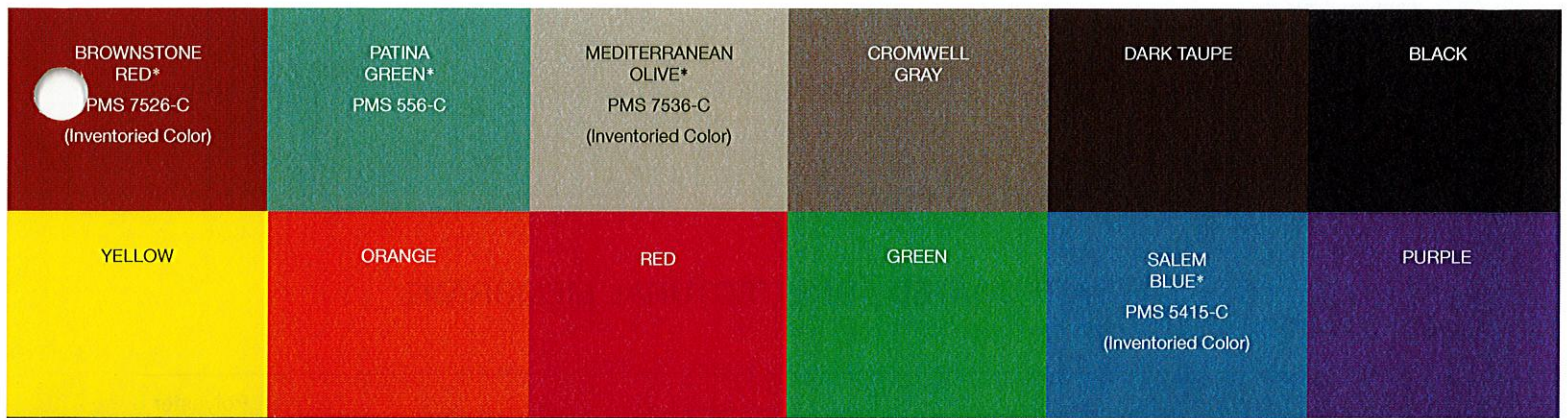
Each specimen is removed from the conditioning chamber and cooled in a desiccator prior to being suspended in a steel stack 310 mm square and 2130 mm high, the said stack being open both top and bottom and supported 300 mm above the floor. The lower edge of the specimen is positioned 100 mm above the tip of a gas burner which is inclined at 25° to the vertical. The burner, which has been adjusted to yield a flame 280 mm in height is ignited and inserted directly beneath the specimen for 2 minutes. Char length is measured from the tip of the flame, upwards.

For conducting flame tests of fabrics hung in folds, at least four specimens 625 mm by 750 mm to 2100 mm are required. Each specimen is folded longitudinally to form four folds.

Flame Resistance Requirements - Specified Maxima:

<u>Specimen Configuration</u>	<u>Char Length or Damaged Material Length (mm)</u>	<u>Flaming Residue on Floor of Tester (s)</u>
Single sheets	250	2.0
Folded	635	2.0

Note: As stated in the standard, "fabrics shall comply with both the Small-Flame and the Large-Flame Test".



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Base Fabric Type (Scrim)	Polyester
Base Fabric Weight (Scrim)	4.3 oz/sq. yd.
Finish Coated Weight Method 5041	24.0 oz/sq.yd. (+/-2)
Surface Protection	Kynar® Resin Coating
Tongue Tear Method ASTM D751 8" x 10" sample size	140/130 lbf
Trapezoid Tear Method ASTM D4533	80/65 lbf
Grab Tensile Method ASTM D751	400/350 lbf
Strip Tensile Method ASTM D751 Procedure B	300/240 lbf/in
Hydrostatic Resistance Method ATM D751 Procedure A	500 psi
Dead Load Room Temperature 160°F/71°C ASTM D751	1" seam, 4 hrs, 1" strip 120 lbf (room temperature) 60 lbf @160°F / 71°C
Cold Crack Method ASTM D2136	1/8" mandrel, 4 hr Pass -67°F
Adhesion Method ASTM D751 Dielectric Weld	10 lbf/in

FIRE RATINGS

1. California State Fire Marshal
2. National Fire Protection Association - 701
3. ASTM E84
4. CAN/ULC-S-109
5. CAN/ULC-S-102

Flame Spread Index <25
Smoke Development Rating <450



CALIFORNIA DEPARTMENT OF FORESTRY and FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL

REGISTERED FLAME RESISTANT PRODUCT

Product:

8324

Registration No.

F-97701

Product Marketed By:

SEAMAN CORPORATION
1000 VENTURE BLVD
WOOSTER, OH 44691

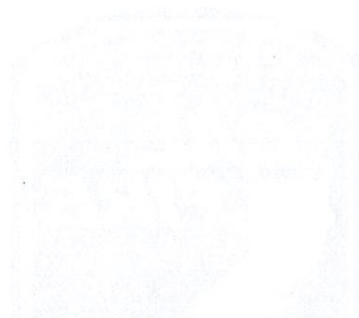
This product meets the minimum requirements of flame resistance established by the California State Fire Marshal for products identified in Section 13115, California Health and Safety Code.

The scope of the approved use of this product is provided in the current edition of the **CALIFORNIA APPROVED LIST OF FLAME RETARDANT CHEMICALS AND FABRICS, GENERAL AND LIMITED APPLICATIONS CONCERNS** published by the California State Fire Marshal.


Deputy State Fire Marshal

Expire: 6/30/2020

FR-8



UNITED STATES FIRE TESTING

SEAMAN CORPORATION TEST REPORT

SCOPE OF WORK

NFPA 701 METHOD 2 - 2015 STANDARD METHODS OF FIRE TESTS FOR
FLAME PROPAGATION OF TEXTILES AND FILMS / "8324 FRLTC"

REPORT NUMBER

103680724SAT-001

TEST DATE(S)

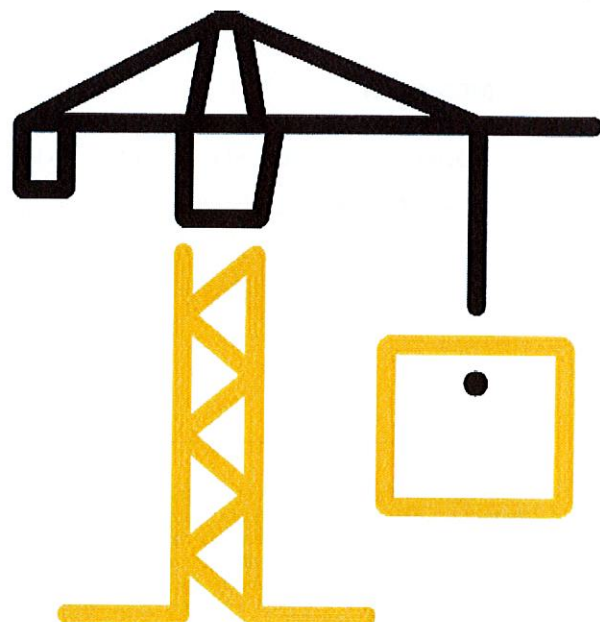
10/3/2018

ISSUE DATE

10/4/2018

PAGES

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TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-001

Date: 10/4/2018

REPORT ISSUED TO SEAMAN CORPORATION

1000 Venture Blvd.
Wooster, OH Zip 44691

SECTION 1 SCOPE

Intertek Building & Construction (B&C) was contracted by Seaman Corporation to perform testing in accordance with NFPA 701 Method 2 - 2015 Standard Methods of Fire Tests for Flame Propagation of Textiles and Films, on their "8324 FRLTC". Results obtained are tested values and were secured by using the designated test method. Testing was conducted at Intertek B&C test facility in Elmendorf, Texas. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY: Darrell Gonzales

TITLE: Technician II

SIGNATURE:

DATE: 10/4/2018

REVIEWED BY: Servando Romo

TITLE: Project Engineer

SIGNATURE:

DATE: 10/4/2018

SECTION 2 TEST METHOD(S)

The specimen was evaluated in accordance with the following:

NFPA 701 Method 2 - 2015, Standard Methods of Fire Tests for Flame Propagation of Textiles and Films

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TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-001

Date: 10/4/2018

SECTION 3

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Darrell Gonzales	Intertek B&C

SECTION 4

TEST PROCEDURE

10 specimens of material 5" in. x 48" in. are cut with their long dimension parallel to the length direction. The test specimens are conditioned to 220-225°F (105-108°C) for not less than one hour and not more than 3 hours. Specimens are removed from the oven one at a time and tested immediately. The specimens are supported with clips in a three-sided vertical column and exposed to an 11" flame for two minutes. The flame impinges approximately 7 inches on the specimen.

SECTION 5

TEST SPECIMEN DESCRIPTION

SAMPLE ID*	8324 FRLTC
DESCRIPTION*	PVC coated fabric
SPECIMEN PREP	The ten individual specimens were cut from a larger section by an Intertek technician on October 3, 2018 at the Intertek lab in Elmendorf, TX.
SPECIMEN DIMENSIONS	5 in. wide x 48 in. long x 0.02 in. thick
RECEIVED DATE	10/2/2018
INTERTEK SAMPLE TRACKER NUMBER	SAT1810021342-001
TEST WITNESSED BY	N/A

*From the client's material description and/or instructions

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TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-001

Date: 10/4/2018

SECTION 6

TEST CRITERIA

Specimen	Afterflame Duration (sec)	Floor Flaming (sec)	Char Length (in.)
1	0	0	6.0
2	0	0	8.0
3	0	0	9.0
4	0	0	8.0
5	0	0	9.0
6	0	0	5.0
7	0	0	8.0
8	0	0	7.0
9	0	0	9.0
10	0	0	9.0
Average	0	0	7.8

SECTION 7

TEST CRITERIA

No specimen shall continue flaming for more than two seconds. Length of char shall not exceed 17.1 inches from the bottom edge of the specimen. No flaming on floor of apparatus is allowed for longer than two seconds.

SECTION 8

CONCLUSION

THIS SPECIMEN PASSED TEST CRITERIA.

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TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-001

Date: 10/4/2018

SECTION 9
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	10/4/2018	N/A	Original Report Issue

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SEAMAN CORPORATION FIRE TEST REPORT

SCOPE OF WORK

ASTM E84 TESTING ON 8324 FRLTC

REPORT NUMBER

103680724SAT-002

TEST DATE(S)

10/3/18

ISSUE DATE

10/3/18

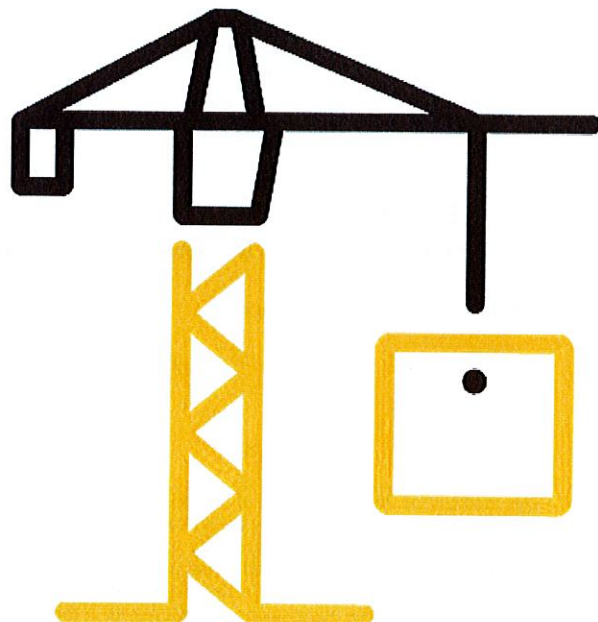
PAGES

11

DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-2780 (5/24/18)

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TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

REPORT ISSUED TO

Seaman Corporation
1000 Venture Boulevard
Wooster, OH 44691

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Seaman Corporation, 1000 Venture Boulevard, Wooster, OH 44691, to evaluate the flame spread and smoke developed properties of 8324 FRLTC. Testing was conducted at the Intertek B&C test facility in Elmendorf, Texas. Results obtained are tested values and were secured by using the designated test method(s). A summary of test results and the complete graphical test data is reported herein.

This report does not constitute performance certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

Specimen I.D.: 8324 FRLTC

ASTM E84 Test Results

FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX
15	300

*See Section 8 for additional information and commentary

For INTERTEK B&C:

COMPLETED BY: Joseph Martinez

TITLE: Technician

SIGNATURE:

DATE: 10/3/18

REVIEWED BY: Servando Romo

TITLE: Project Engineer

SIGNATURE:

DATE: 10/3/18

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TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

SECTION 3

TEST METHOD

The specimen was evaluated in accordance with the following:

ASTM E84-18a, Standard Test Method for Surface Burning Characteristics of Building Materials

SECTION 4

MATERIAL SOURCE/INSTALLATION

The test specimen was submitted to Intertek directly from the client. Samples were not independently selected for testing. Intertek has not verified the composition, manufacturing techniques or quality assurance procedures. The specimen, identified as 8324 FRLTC, was received in good order at the Evaluation Center on 10/2/18 and given identification number SAT1810021342-001.

SECTION 5

LIST OF OBSERVERS

NAME	COMPANY
Joseph Martinez	Intertek B&C
Samuel Barron	Intertek B&C

SECTION 6

TEST PROCEDURE

This report describes the results of testing conducted in accordance with ASTM E84-18a; Standard Test Method for Surface Burning Characteristics of Building Materials. The test method is for comparative surface burning behavior of building materials by determining a flame spread index (FSI) and a smoke developed index (SDI). This test is generally applicable to exposed surfaces, such as finish materials for ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period.

"The use of supporting materials on the underside of the test specimen may lower the flame spread index from that which might be obtained if the specimen could be tested without such support. This method may not be appropriate for obtaining comparative surface burning behavior of some cellular plastic materials. Testing of materials that melt, drip, or delaminate to such a degree that the continuity of the flame front is destroyed, results in low flame spread



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TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

indices that do not relate directly to indices obtained by testing materials that remain in place.” – ASTM E84-18a Section 1.3

The purpose of the method is to determine the relative burning behaviour of the material by observing the flame spread along the specimen. Flame spread and smoke density developed are reported, however, there is not necessarily a relationship between these two measurements.

SECTION 6 (Continued)

TEST PROCEDURE

It is the expressed intent of the test method to provide only comparative measurements of surface flame spread and smoke density of the tested material against measurements for select grade red oak flooring and fiber-cement board when tested under specific fire exposure conditions. The test method exposes a nominal 24-ft (7.32-m) long by 20-in. (508-mm) wide test specimen to a controlled air flow and flaming fire exposure adjusted to produce a specific flame spread distance vs time calibration using select grade red oak flooring.

The test method does not provide information regarding heat transmission through the tested surface, the effect of aggravated flame spread behavior resulting from the proximity of combustible walls and ceilings, or the classification or definition of materials as noncombustible using flame spread index alone.

This standard should be used to measure and describe the properties of materials, products, or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products, or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

There were no deviations from the requirements prescribed in ASTM E84.

TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

SECTION 7

TEST SPECIMEN DESCRIPTION

MANUFACTURER*	Seaman Corporation
SPECIMEN DESCRIPTION*	PVC coated fabric
CONDITIONING TIME	1 day
SPECIMEN LENGTH	24 ft. (Three 8 ft. long sections of PVC coated fabric)
SPECIMEN WIDTH	24 in.
THICKNESS	0.02 in.
TOTAL WEIGHT	12 lbs. (fabric); 93 lbs. (fabric & substrate)
COLOR	White
ADHESIVE/COVERAGE RATE	N/A
SIDE TO FLAME*	Fabric Side
SUPPORT USED*	Self
MOUNTING METHOD	Wrapped around 1/4 in. thick cement board and taped in the back with aluminum tape
SUBSTRATE USED*	1/4 in. thick cement board
CEMENT BOARD	1/4 in. thick fiber cement board was placed on top of the sample.

*From the client's material description and/or instructions

Note: Specimens were conditioned as per the requirements of Section 6.4 of ASTM E84.



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TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

SECTION 8

TEST RESULTS

TEST RESULTS	
Test Date	10/3/18
Test Operator	Joseph Martinez
Flame Spread Index (FSI)	15
Smoke Developed Index (SDI)	300
Red Oak Calibration (% * Min)	73.2

TEST DATA	
FSI (unrounded)	15.2
SDI (unrounded)	291.12
FS * Time Area (Ft * Min)	29.5
Smoke Area (% * Min)	213.1
Total Fuel Burned (Cubic Ft.)	45.62
Max Flame Front Advance (Ft.)	3.1
Time to Max Flame Front (sec)	36
Max Temp At Exposed T/C (°F)	560
Time To Max Temp (sec)	598

TEST OBSERVATIONS	
Transient Ignition Time	0:07
Ignition Time	0:11
Sagging Observed	0:19
Fallout Observed	0:20
Observations After the Test:	
0 – 8 ft.	The specimen was consumed.
8 – 10 ft.	The specimen was mostly consumed and heavily charred.
10 – 12 ft.	The specimen was charred.
12 – 17 ft.	The specimen was slightly melted, heavily discolored, and blistered.
17 – 24 ft.	The specimen was heavily discolored.

TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

SECTION 8 (Continued)

TEST RESULTS

COMMENTARY ON CLASSIFICATION

Neither ASTM E84 nor UL 723 include classification criteria for the results obtained from testing. The International Building Code® (IBC), NFPA 101: Life Safety Code® (NFPA 101), and NFPA 5000: Building Construction and Safety Code® (NFPA 5000) all describe a set of classification criteria required for interior wall and ceiling finish materials based on Flame Spread Index and Smoke Developed Index when tested in accordance with ASTM E84 or UL 723. The classification criteria for all three model codes is the same:

Class	Flame Spread Index	Smoke Developed Index
A	0-25	0-450
B	26-75	0-450
C	76-200	0-450

Note that classification under this scheme for interior wall and ceiling finishes does not strictly apply to all products or materials tested in accordance with ASTM E84 or UL 723 because not all products or materials are recommended or suitable for use as interior wall or ceiling finish materials in buildings, regardless of the surface burning characteristics. Consult with the product manufacturer and the local authority having jurisdiction (AHJ) regarding specific applications of a given product or material.

TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

SECTION 9
PHOTOGRAPHS

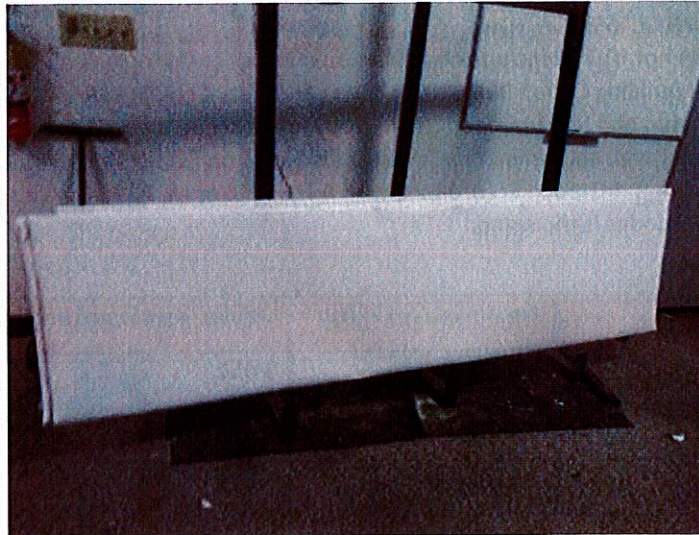


Photo No. 1
Exposed Surface of the Test Specimen (Pre-test)



Photo No. 2
Unexposed Surface of the Test Specimen (Pre-test)

TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

SECTION 9 (Continued)

PHOTOGRAPHS

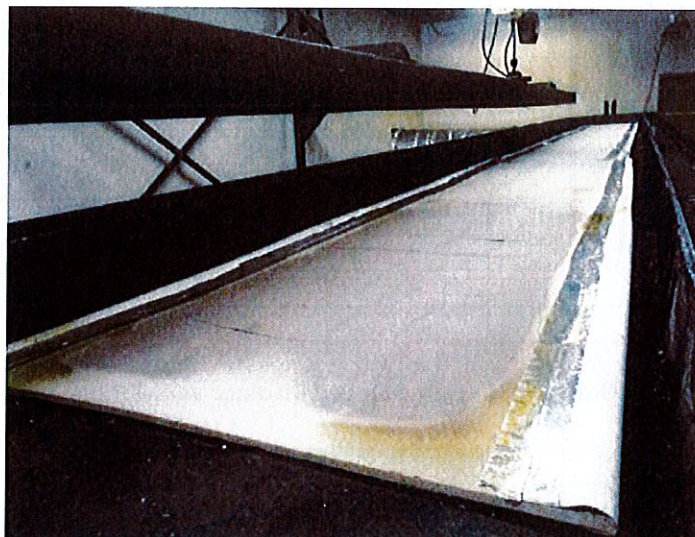


Photo No. 3
Unexposed Surface of the Test Specimen (Post-test)

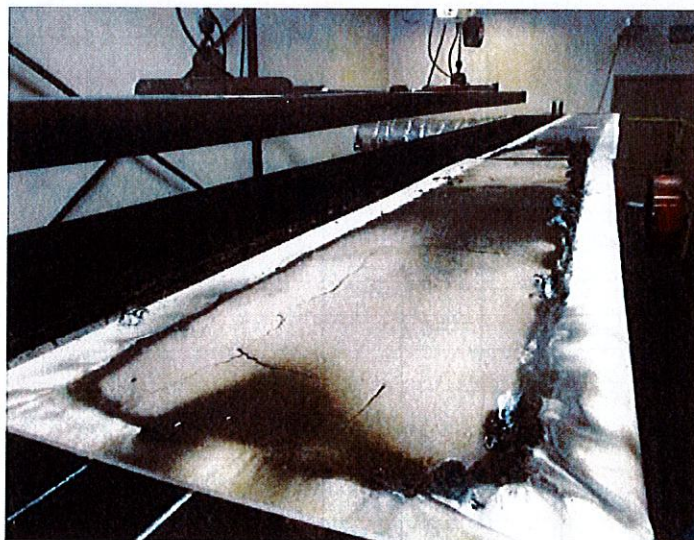


Photo No. 4
Exposed Surface of the Test Specimen (Post-test)

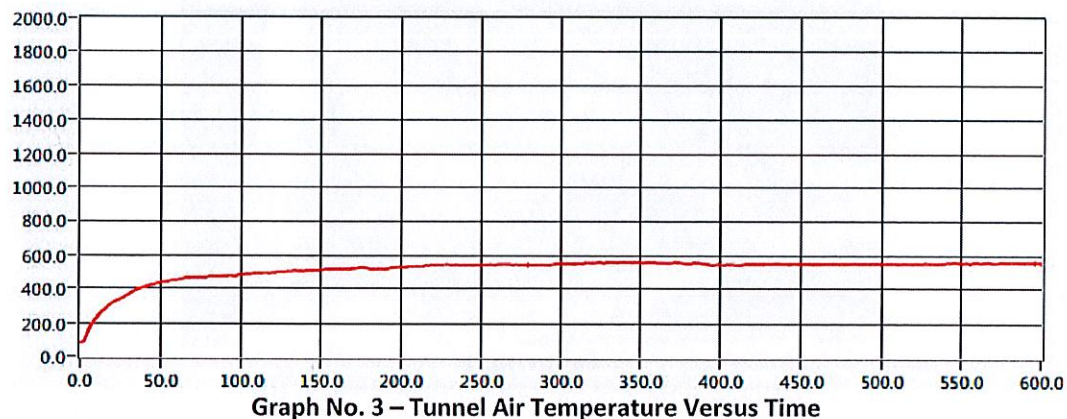
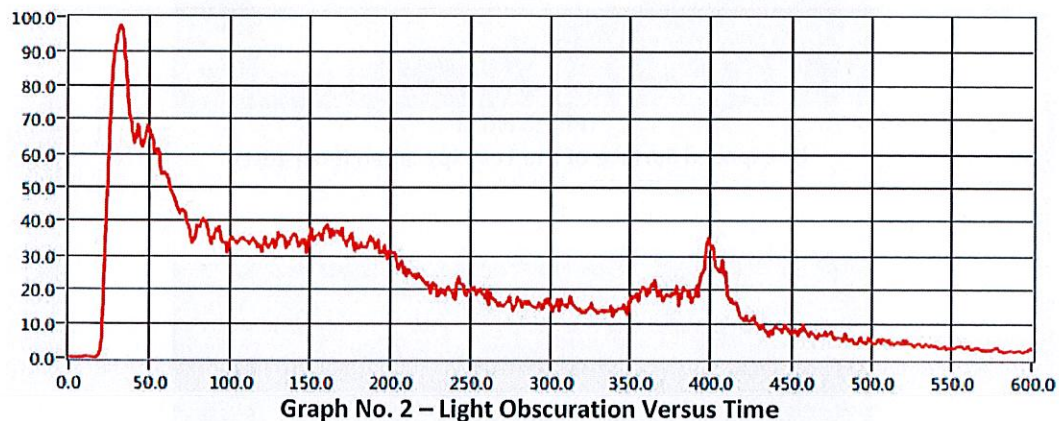
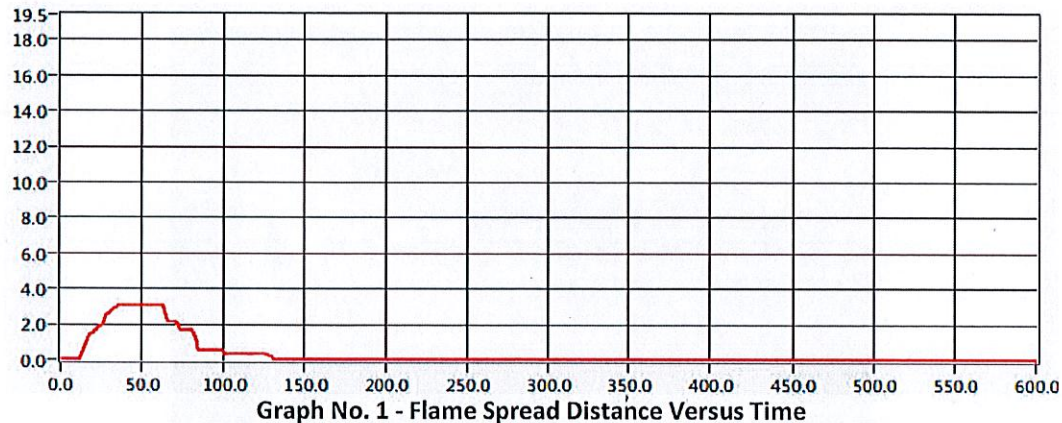
TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

SECTION 10

GRAPHS



TEST REPORT FOR SEAMAN CORPORATION

Report No.: 103680724SAT-002

Date: 10/3/18

SECTION 11

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	10/3/18	11	Original Report Issue

CANADIAN FIRE TESTING

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Testing, calibrating, advising

CAN/ULC-S102 Surface Burning Characteristics of "8324 FRLTC" PVC Coated Fabric

A Report To:	Seaman Corporation 1000 Venture Blvd. Wooster, OH 44691 USA
Phone:	+1 330-202-4474
Attention:	Joanne Pasho
E-mail:	jpasho@seamancorp.com
Submitted by:	Exova Warringtonfire North America
Report No.	18-002-589(A) 6 Pages
Date:	October 5, 2018

ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine Flame Spread Rating and Smoke Developed Classification based upon triplicate testing conducted in accordance with CAN/ULC-S102-2018, as per Seaman Corporation reference Purchase Order No. 43908 Revision 1, and Exova Warringtonfire North America Quotation No. 18-002-574,247 dated September 24, 2018.

SAMPLE IDENTIFICATION (Exova sample identification number 18-002-S0589)

PVC coated fabric, approximately 0.7 mm in thickness, identified as:
"8324 FRLTC"

TEST PROCEDURE

The method, designated as CAN/ULC-S102-2018, "*Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies*", is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results of less than three identical specimens are expressed in terms of Flame Spread Value (FSV) and Smoke Developed Value (SDV). Results of three or more replicate tests on identical samples produce average values expressed as Flame Spread Rating (FSR) and Smoke Developed Classification (SDC).

Although the procedure is applicable to materials, products and assemblies used in building construction for development of comparative surface spread of flame data, the test results may not reflect the relative surface burning characteristics of tested materials under all building fire conditions.

SAMPLE PREPARATION

Each test specimen consisted of one continuous section of material approximately 0.7 mm in thickness by 533 mm in width by 7315 mm in length. Prior to testing, the specimens were conditioned to constant mass at a temperature of $23 \pm 3^{\circ}\text{C}$ and a relative humidity of $50 \pm 5\%$. During testing, each specimen was supported over its full surface area by 50 mm hexagonal wire mesh and was further supported across its width by 6 mm steel rods spaced nominally at 610 mm intervals.

Testing was performed on: Test #1: 2018-10-04 Test #2: 2018-10-04 Test #3: 2018-10-05

SUMMARY OF TEST PROCEDURE

The tunnel is preheated to 85°C , as measured by the backwall-embedded thermocouple located 7090 mm downstream of the burner ports, and allowed to cool to 40°C , as measured by the backwall-embedded thermocouple located 4000 mm from the burners. At this time the tunnel lid is raised and the test sample is placed along the ledges of the tunnel so as to form a continuous ceiling 7315 mm long, 305 mm above the floor. The lid is then lowered into place.

SUMMARY OF TEST PROCEDURE (continued)

Upon ignition of the gas burners, the flame spread distance is observed and recorded every second. Flame spread distance versus time is plotted. Calculations ignore all flame front recessions and the Flame Spread Values (FSV) are determined by calculating the total area under the curve for each test sample. If the total area under the curve (AT) is less than or equal to 29.7 m·min, $FSV = 1.85 \cdot AT$; if greater, $FSV = 1640 / (59.4 - AT)$.

The Smoke Developed Value is determined by comparing the area under the obscuration curve for the test sample to that of inorganic reinforced cement board and red oak, established as 0 and 100, respectively. The Smoke Developed Value (SDV) is determined by dividing the total area under the obscuration curve by that of red oak and multiplying by 100.

TEST RESULTS

SAMPLE: "8324 FRLTC"

Test	Approx. Time to Ignition (s)	Maximum Flame Front Distance (m)	Time to Maximum Flame Front (s)	Maximum Air Temperature (°C)	Flame Spread Value (FSV)	Smoke Developed Value (SDV)
1	18	0.69	35	285	12	275
2	12	1.06	68	289	19	176
3	14	0.99	72	277	17	286
Average:					16	246
Rounded Average Flame Spread Rating (FSR):					15	-
Rounded Average Smoke Developed Classification (SDC):					-	245

Observations of Burning Characteristics

The specimens ignited approximately 12 to 18 seconds after exposure to the test flame.

Results Interpretation

CAN/ULC-S102 contains no performance criteria of its own. The National Building Code of Canada (NBCC) or other jurisdictional documentation should be referenced to determine the FSR and/or SDC performance criteria that is applicable to the material, for the intended application.



Francis Williams,
Technician.



Ian Smith,
Technical Manager.

Note: This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.

Test 1 of 3

Sample: "8324 FRLTC"

Chart 1. FLAME SPREAD (Specimen #1)

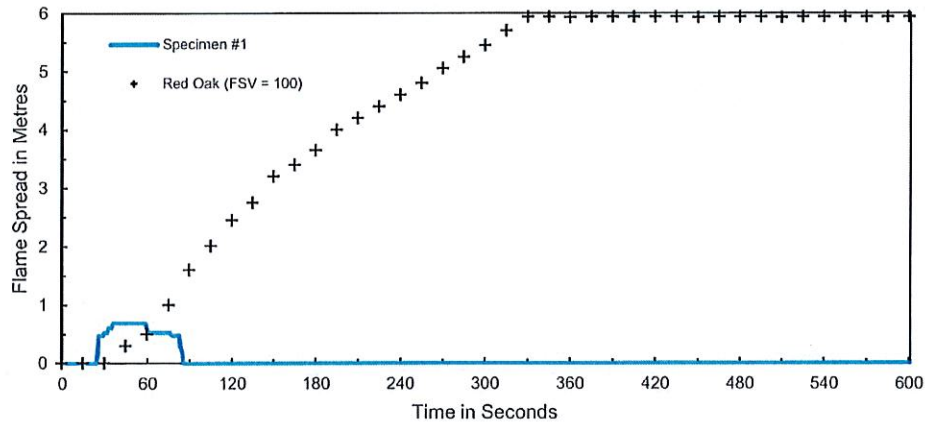


Chart 2. SMOKE DEVELOPED (Specimen #1)

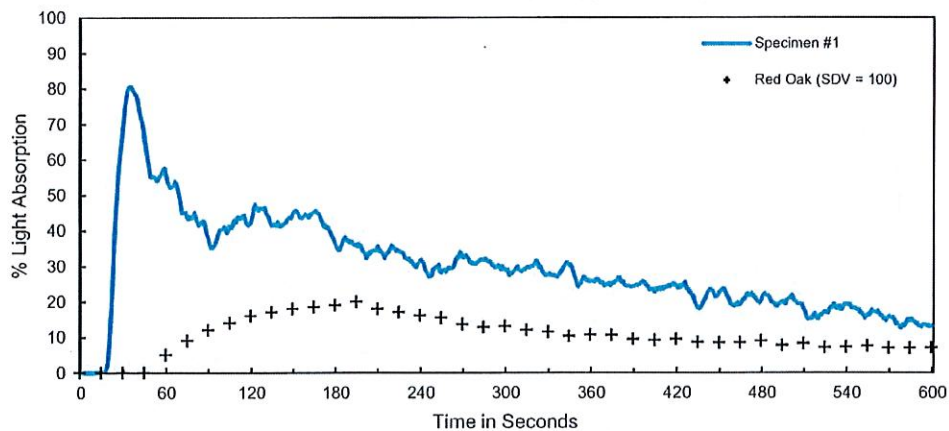
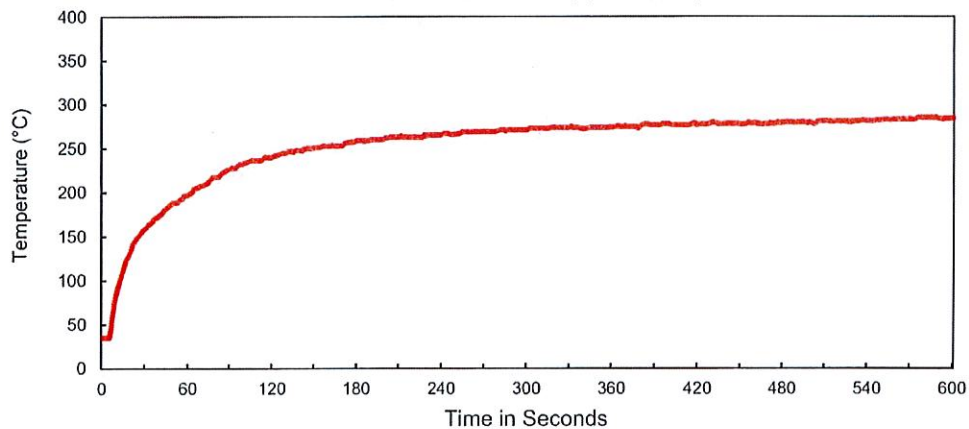


Chart 3. TEMPERATURE (Specimen #1)



Flame Spread
Value (FSV)
12

Smoke Developed
Value (SDV)
275

Maximum Air
Temperature (°C)
285

Test 2 of 3

Sample: "8324 FRLTC"

Chart 4. FLAME SPREAD (Specimen #2)

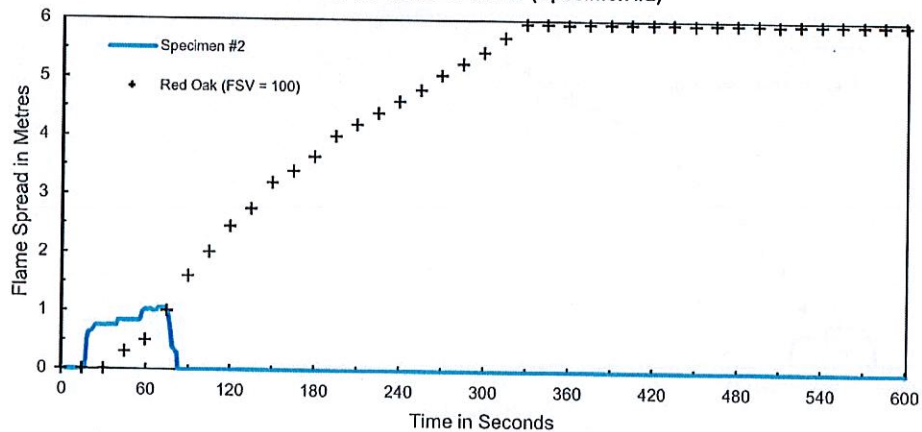


Chart 5. SMOKE DEVELOPED (Specimen #2)

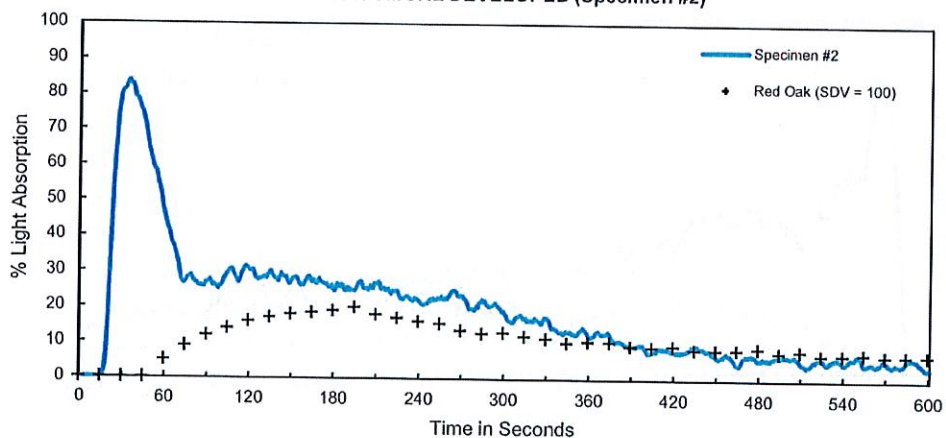
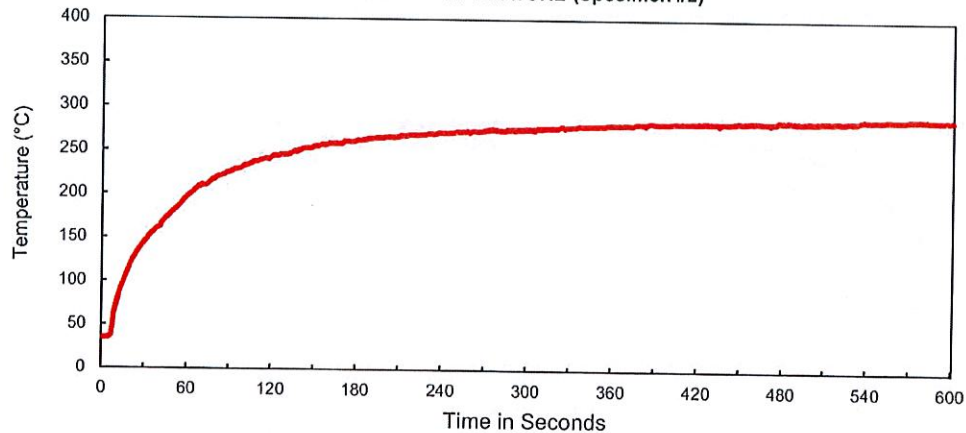


Chart 6. TEMPERATURE (Specimen #2)

Flame Spread
Value (FSV)

19

Smoke Developed
Value (SDV)

176

Maximum Air
Temperature (°C)

289

Test 3 of 3

Sample: "8324 FRLTC"

Chart 7. FLAME SPREAD (Specimen #3)

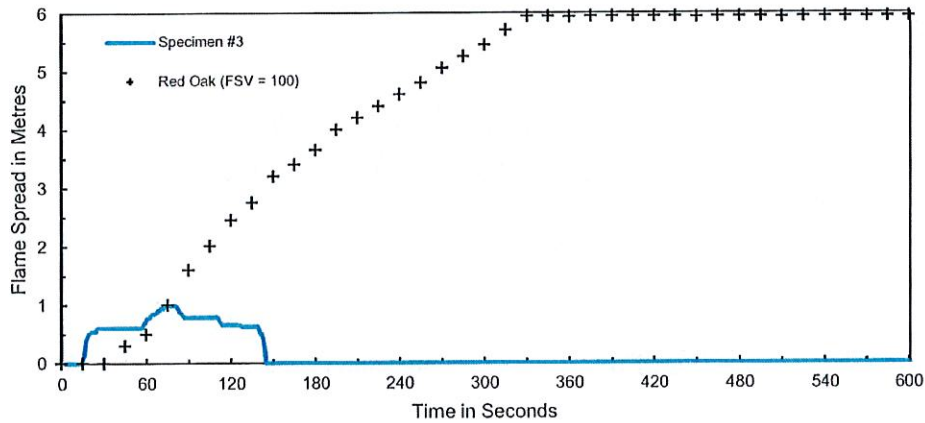


Chart 8. SMOKE DEVELOPED (Specimen #3)

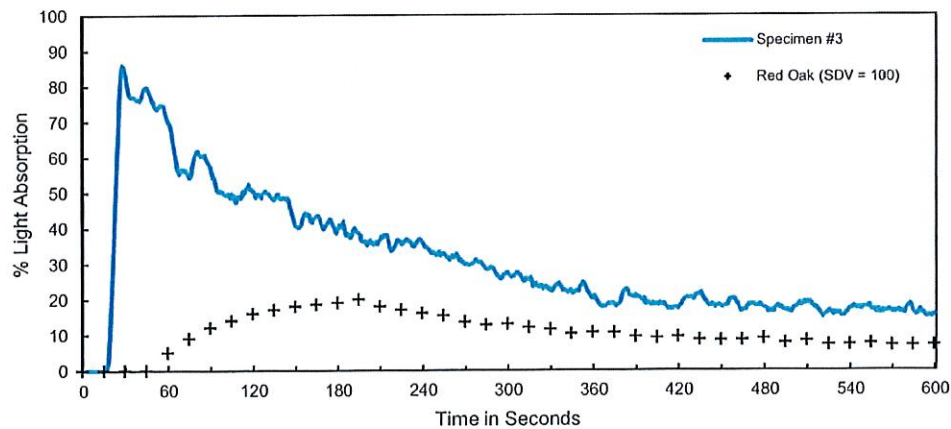
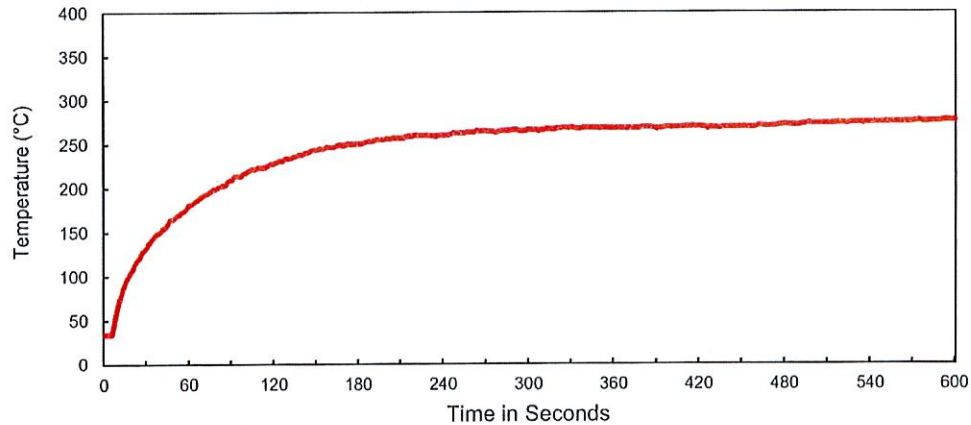


Chart 9. TEMPERATURE (Specimen #3)

Flame Spread
Value (FSV)

17

Smoke Developed
Value (SDV)

286

Maximum Air
Temperature (°C)

277

Exova
2395 Speakman Dr
Mississauga
Ontario
Canada
L5K 1B3

T +1 (905) 822-4111
F +1 (905) 823-1446
E sales@exova.com
W www.exova.com



Testing, calibrating, advising

CAN/ULC-S109 Flame Resistance of "8324 FRLTC" PVC Coated Fabric

A Report To:	Seaman Corporation 1000 Venture Blvd. Wooster, OH 44691 USA
Phone:	+1 330-202-4474
Attention:	Joanne Pasho
E-mail:	jpasho@seamancorp.com
Submitted by:	Exova Warringtonfire North America
Report No.	18-002-589(B) 3 pages + Appendix
Date:	October 26, 2018

ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine flame resistance in accordance with CAN/ULC-S109-14 Small-Flame and Large-Flame Tests, as per Seaman Corporation reference Purchase Order No. 43908 Revision 1, and Exova Warringtonfire North America Quotation No. 18-002-574,247 dated September 24, 2018.

SAMPLE IDENTIFICATION (Exova sample identification number 18-002-S0589)

PVC coated fabric, approximately 0.7 mm in thickness, identified as:
"8324 FRLTC"

TEST RESULTS

CAN/ULC-S109-14 Small-Flame Test

Standard Methods of Tests for Flame-Resistant Textiles and Films

Test Specimen	Damaged Length (mm)	Afterflame Time (s)	Flaming Dripping (s)	Result
Long Direction 1:	80	0.0	0.0	Pass
" 2:	80	0.0	0.0	Pass
" 3:	100	0.0	0.0	Pass
" 4:	75	0.0	0.0	Pass
" 5:	90	0.0	0.0	Pass
Cross Direction 6:	70	0.0	0.0	Pass
" 7:	70	0.0	0.0	Pass
" 8:	90	0.0	0.0	Pass
" 9:	80	0.0	0.0	Pass
" 10:	70	0.0	0.0	Pass
Average:	81	0.0	-	Pass
Maximum Specified Average:	165	-	-	-
Maximum Specified Individual:	190	-	2.0	-

Test Notes: Specimens were cut from a supplied roll, and were tested "as-received"
Measured Fabric Weight: 902 g/m²

TEST RESULTS (continued)

CAN/ULC-S109-14 Large-Flame Test

Standard Methods of Tests for Flame-Resistant Textiles and Films

Test Specimen	Damaged Length (mm)	Afterflame Time (s)	Flaming Dripping (s)	Result
Long Direction 1:	170	0.0	0.0	Pass
" 2:	165	0.0	0.0	Pass
" 3:	170	0.0	0.0	Pass
" 4:	240	0.0	0.0	Pass
" 5:	200	0.0	0.0	Pass
Cross Direction 6:	175	0.0	0.0	Pass
" 7:	140	0.0	0.0	Pass
" 8:	150	0.0	0.0	Pass
" 9:	115	0.0	0.0	Pass
" 10:	165	0.0	0.0	Pass
Maximum Specified Individual:	250	-	2.0	-

Test Notes: Specimens were cut from a supplied roll, were tested "as-received" and in flat sheet configuration
Measured Fabric Weight: 902 g/m2

CONCLUSIONS

When tested "as-received", the material identified in this report meets the flame resistance requirements of CAN/ULC-S109-14.



Robert A. Carleton,
Technician.



Ian Smith,
Technical Manager.

Note: This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.

APPENDIX

(1 Page)

Summaries of Test Procedures

CAN/ULC-S109-14**Standard Methods of Tests for Flame-Resistant Textiles and Films****Small-Flame Test**

10 specimens, each 70 mm x 250 mm are cut, with 5 in the warp (machine) direction and 5 in the weft (cross) direction, where applicable. The specimens are conditioned for 30 minutes at 105°C, or if they melt or distort at these temperatures, they are conditioned at 18 to 22°C and 50% R.H. for at least 12 hours, or by drying in an oven for 1 hour at 60°C.

Each specimen is removed from the conditioning chamber individually, clamped in a U-shaped metal holder and suspended in a specified cabinet. The free edge of the specimen is positioned 20 mm above the tip of a gas burner which has been adjusted to yield a flame height of 40 mm. Flame exposure time is 12 seconds. Char length and afterflame time are measured.

Flame Resistance Requirements (Reference: Clause 6.2)

Maximum Average Damaged Length or Destroyed Material (10 specimens)	Maximum Damaged Length or Destroyed Material for any Individual Specimen	Maximum Flaming Time for Residue on Floor of Tester
165 mm	190 mm	2.0 seconds

Large-Flame Test

If the material can be hung in natural folds, 4 specimens, each 625 mm wide x 750 mm long are cut, with 2 in the warp (machine) direction and 2 in the weft (cross) direction, where applicable. If the material cannot be folded, or otherwise does not meet the criteria to be tested in folds, then 10 specimens, each 125 x 750 mm are cut, with 5 in the warp (machine) direction and 5 in the weft (cross) direction.

Specimens are conditioned at 105 ± 2°C for 30 minutes or, if distortion or melting occurs at these temperatures, then they are conditioned at 20 ± 2°C, and at 25 - 50% relative humidity for at least 12 hours, or by drying in an oven for 1 hour at 60°C.

The specimens are removed from the conditioning chamber and suspended in the test apparatus, which is comprised of a 310 mm square by 2130 mm high steel stack. The stack is open at the top and bottom and is supported 300 mm above the floor. For conducting flame tests on fabrics hung in folds, each specimen is folded longitudinally to form four folds. For conducting flame tests on flat sheets, each specimen is hung so that the widest surface faces the test flame.

In either configurations, the lower edge of the specimen is positioned 100 mm above the top of a gas burner which is inclined at 25° to the vertical. The burner, which has been adjusted to yield a flame 280 mm in height is ignited and inserted directly beneath the specimen for a period of 2 minutes. Char length is measured from the tip of the flame, upwards.

Flame Resistance Requirements (Reference Clause 6.3):

	Maximum Char Length or Damaged Material Length (mm)	Maximum Flaming Time for Residue on Floor of Tester (s)
Folded	635	2.0
Single sheets	250	2.0

Flame-resistant fabrics and films shall comply with the performance requirements of both the Small-Flame and the Large-Flame Test.



FH2G EXPRESS 2 GEAR DRYER
INSTALLATION, OPERATION AND MAINTENANCE MANUAL

REVISION 1 • 2019
www.ReadyRack.com
(800)-991-2120



Features of the 2 Gear Dryer Cabinet

- Simple to use, NFPA 1851 compliant controls.
- Rugged and durable galvanized steel components.
- Drying with ambient or heat air, up to 1500W of heating capacity.
- Three heavy duty slide out galvanized wire racks, with adjustable positions.
- Capable of vented and unvented operation.



WARNING

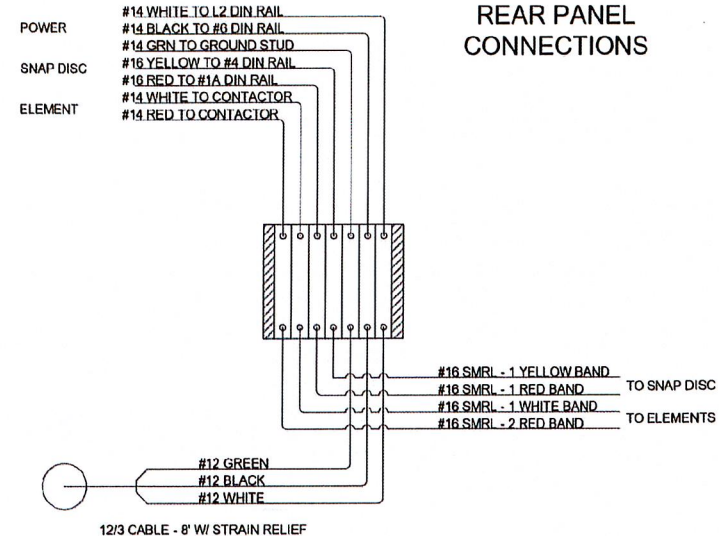
**DISCONNECT POWER TO DRYING CABINET BEFORE SERVICING TO
PREVENT ELECTRICAL SHOCK OR BODILY INJURY**

Unpacking the Express Dryer – FH2G (Two Gear)

- Remove shipping crate sides and set aside, taking care not to damage dryer when removing steel corners.
- Carefully inspect dryer for shipping damages prior to proceeding.
- Open cabinet and remove shelves and hangers.
- Remove ¼-20 lag bolts and washers connecting cabinet to pallet.
- Carefully remove the dryer from the pallet and locate near installation area.

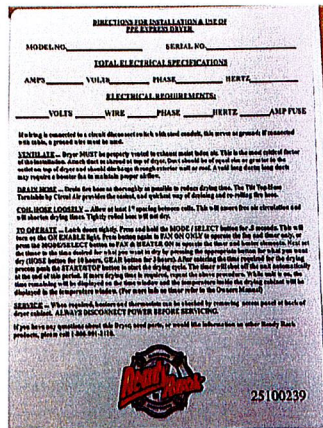


REFERENCE SCHEMATICS



- The dryer is provided with (4) adjustable feet. These feet can be adjusted using a standard adjustable wrench. If the foot retaining nut or top nut have loosened, they can be re-secured using a 15/16" wrench and 15/16" deep socket.
- The cabinet will "twist" during levelling. Confirm the proper alignment of the door in the frame during levelling. The door should not bind or swing on its own when the cabinet is properly levelled.
- Door alignment will vary from the pallet to the floor and small adjustments in the feet will effect the final level of the door.

The drying cabinet is shipped pre-configured for the expected power supply. Look for the placard inside the door of the cabinet to determine the configuration of the cabinet.



It is important to correctly match the power supply to cabinet specifications otherwise damage or injury may result.



Post-Drying:

- Ensuring that the gear is properly stored is important to maintaining clean and dry and protected. Utilizing a duty gear hanger or locker will ensure the gear is protected from dirt and debris, as well as preventing mildew build-up.



MONTHLY INSPECTION

- Clean and remove all debris and dust from inside the cabinet. Remove plenum from floor and clean underneath.
- Check for missing screws or guards.
- Check unit for level and adjust feet as necessary.
- Check the shelves and sliders for burrs and wear. Check that the sliders are secure.
- Check all hanging rails supports for security.



Converting the Dryer to external Ducting:

Drying cabinets work best when the moisture laden air is moved away from the vicinity of the unit. This can be through an external wall or into a larger apparatus bay with suitable air make-up or dehumidification.

- The unit is provided with a galvanized fan cover for un-ducted applications.
- Lock-out the unit or unplug from the power supply.
- Remove the (4) #12 self tapping screws and take the cover off the unit dryer roof.
- The venturi outlet for the fan is 12 3/8" diameter. A standard 14" to 12" or 14" to 10" collar transition may be used. The collar should be fixed vertically into the roof of the cabinet, avoiding the fan blade inside the cabinet.

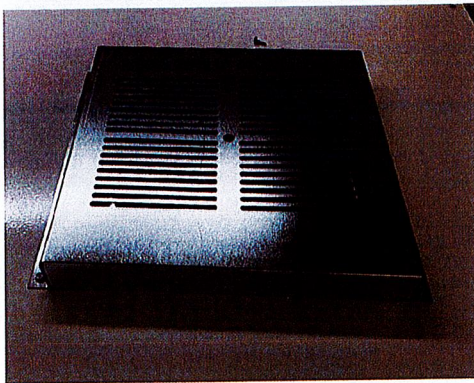


Figure – Top Duct Guard



STEP TWO

- Hold MODE/SELECT for up to 5 seconds to turn on panel. ON ENABLE light will turn Green.
- Press MODE/SELECT once to turn FAN ON ONLY. FAN ON ONLY light will turn Yellow.
- Press MODE/SELECT once more to turn FAN & HEATER ON. FAN & HEATER light will turn Red.
- Pressing one final time will turn panel OFF.

STEP THREE

- Select the desired equipment to be dried.
 - HOSE comes with a pre-set time of 10 Hours
 - GEAR comes with a pre-set time of 3 Hours

STEP FOUR

- Adjust time (if necessary) by pressing HOURS or MIN button.
- Use ARROW UP or ARROW DOWN to adjust time.

STEP FIVE

- Start drying by pressing START/STOP BUTTON.
- Unit will automatically turn off at end of cycle.

MAINTAINING DUTY GEAR

Your new drying cabinet is a key part in meeting the NFPA 1851: Standard on Selection Care and Maintenance of Structural Firefighting Protective Ensembles.

Proper drying is critical for the maintenance and longevity and safety of duty gear. By properly preparing and utilizing the Firehouse Express Dryer, it is possible to return gear to service quicker and in better condition than other methods.

Preparation:

- Ensure that the gear has been properly cleaned of all contaminants through the proper selection and use of detergent and PPE washing systems. Contact Ready Rack for more information regarding total cleaning cycle products.



TROUBLESHOOTING

ISSUE

Panel will not power-up

Check connection plug / disconnect for damage and connection
Ensure MODE/START button is being held for at least 3-5 seconds
Check cord termination point inside rear access cover
Check 5.0A Fuse behind main control panel

No Heating

Ensure that FAN and HEATING is selected
If ambient is >90F, unit may self limit heating operations to ensure total heat is <105F
Check for "Thump" of heating contactor pulling in when START/STOP is pressed indicating contactor is closed. (See Contactor)
Open rear tunnel cover and check for damaged wiring or damaged copper strips
Check continuity of snap disc. "OL" indicates break

Limited Heating / Excessive Dry Time

Unit may have high ambient temperature.
Unit may have gear loaded unevenly or with very high water content. Check that cleaning process or extractor is working correctly.
Check rear panel with IR Gun to determine if cold spots exist across elements. May indicate burnt or damaged element.
Remove rear panel and individual check resistance reading (ohms) of each element. Original reading is marked on element. Should be between 48-58 ohm.
Check ducting, plenums and inlets for blockages.

Contactor Not Closing

Check connection (Blue and White Wires) to pull down and check for +12V between terminals when active. May indicate control board relay failure
Press contactor button to determine is circuit will close manually. May indicate either control board relay or if the contactor will not manually close, a failure of the contactor

No Fan

Check that FAN ONLY or FAN AND HEATING are selected
Check that fan is not jammed. If jammed look for screws in venturi touching fan. Look for debris in fan housing
Check the 4.5A fuse behind the main control panel. This fuse can fail due to impact to fan blades or resistance
Check wire tightness behind main control panel
Advanced: Check motor continuity by electrician

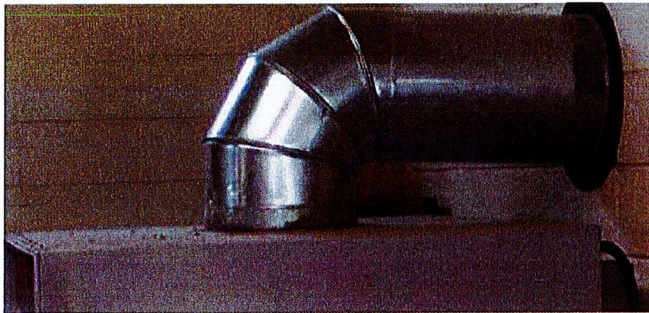


Figure – Top Duct Guard

- The diameter of the ducted tube should not be restricted less than 10" in diameter.
- Runs longer than 10' may require the use of a booster fan (not included) to ensure pressure losses are overcome.
- An external self-closing louver should be utilized to keep out pests and rain water.
- The use of legacy "square or rectangle" ducting is permitted, considering a minimum dimension of 8" x 16".

OPERATING THE DRYING CABINET

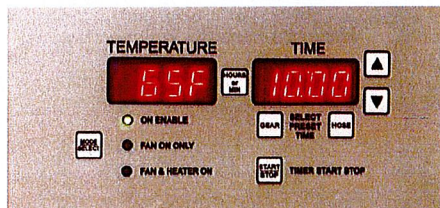


FIGURE: CONTROL PANEL

STEP ONE

- Load gear or hose into the dryer.
- Close door(s) and secure latch.



- Boots, gloves and hoods can be placed on either hangers or directly on the mesh shelving units. Ensure each item is straightened and not twisted.
- For simple drying activities where the gear has not been soaked or rinsed, pants, jackets and liners can be hung as a set. The Firehouse Express dryer will process the equipment as-is. Examples of this can include non-hazardous response calls where simple sweat or humidity is introduced to the gear. Allowing moisture to remain can cause steam burns should a rapid heat up of the gear occur.
- Where equipment is very wet or has been separated for mechanical washing, hang the pants and jackets, with the liners separate. For single or double sets of gear, separating will reduce the overall cycle time to complete drying.



Drying:

Proper drying relies on a number of conditions, many of which are under the users control. The dryer controls will ensure that the equipment is not overheated, the operator can choose to use ambient or heated air depending on the conditions within the firehouse.

- Ensure the gear is organized in the cabinet when loading.
- Check that the doors(s) are correctly closed and the seals are in good working condition.
- Balance the amount of gear to be dried to the conditions. A warm humid station will take longer to dry than a dry station.
- Using a proper extractor will require less moisture to be removed by the cabinet.



RR-120-1 → 120V / 1 PH / 60 hZ

The FH2G dryer is not configurable as a 208 or 240 supplied unit. For 208 or 240 applications contact Ready Rack for information on FH6G, models RR2401, RR2083 or RR2081 units.

Wiring

- The two gear dryer is shipped with a standard 120V, 3 prong grounded plug. This can be utilized with any 15A circuit.
- If required, the cabinet can be permanently wired into a station power supply by the following steps by a licenced electrician:
 - Remove rear access panel (4 x #12 hex self tapping screws).
 - Disconnect 12/3 cable from din rail terminal block and release from strain relief.
 - Reconnect electrical supply, with a recommended 20A supply for permanent supply.
 - Reconnect rear cover.

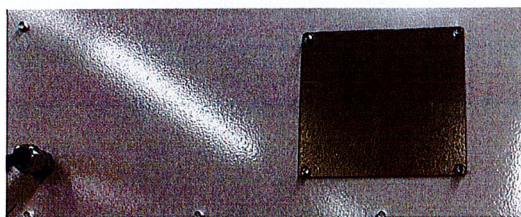


Figure – Rear Access and Strain Relief

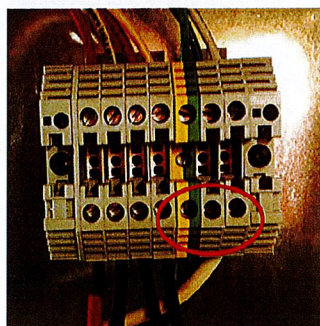


Figure – Rear Terminal Block



- Check the door operation for latching and sealing as well as free motion.
- Test the heating and cooling cycle. Recommend 15 min FAN AND HEATING (+8-10 F) and 10 min FAN ONLY (-8-10F drop).
- Wipe down the interior with a non-caustic solution to remove any residue from washed equipment.
- Check the power connections for frays for damages.

ANNUAL INSPECTION FOR HIGHER VOLUME OPERATIONS (QUALIFIED PERSONNEL)



Properly lock out / tag out power supply.

- Disconnect duct and move unit away from the wall.
- Remove and inspect inlet covers and heating duct covers.
- Clean and remove all debris, dust or cobweb build-up from the heating tunnels.
- Check for tightness of all electrical components and fittings. DO NOT OVERTIGHTEN HEATING STRIP TERMINAL STUDS.
- Check unit for level and adjust feet as necessary.
- Check the shelves for damage or burrs from wear. Confirm sliders are secure.
- Check hanging rail supports for security.
- Wipe down the interior with a non-caustic solution to remove any residue from washed equipment.

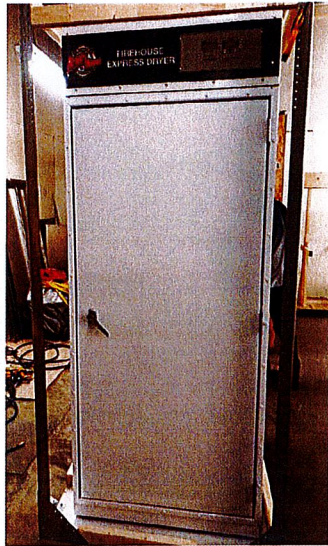
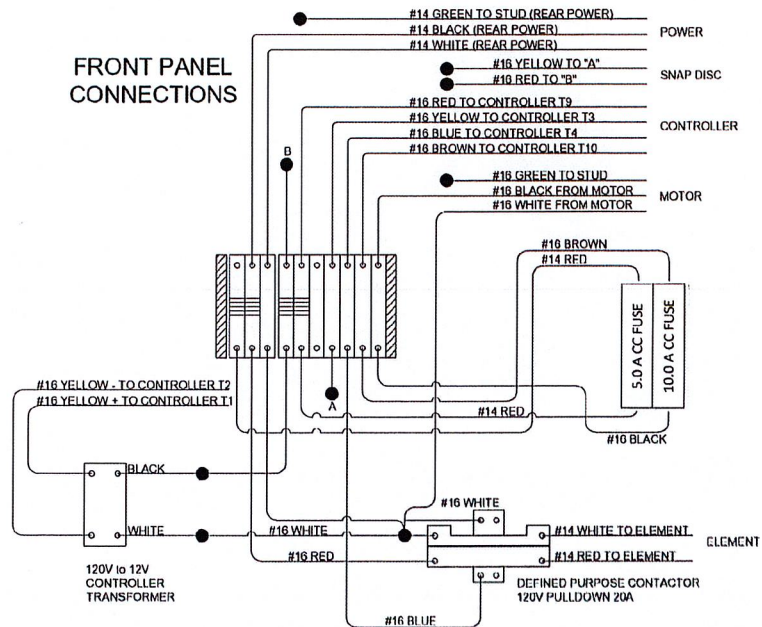


Figure – Uncrating Dryer

Selecting a Location

- The two-station dryer should not be located in basements, outdoors or unheated rooms. If adequate air circulation in the space is not available, the unit should be converted to ducted operation. **Placement in unvented or sub-grade internal rooms with limited air movement can create mold or mildew conditions.**
- The drying cabinet can be located within 1-2" of a wall, provided that 10-12" of clearance is available on the sides to open the door fully.
- Position the dryer on a level floor.



Reference Fuses:

Mersen CC Fuses:

ADTR5 – 5.0 AMP 600V
ATDR10 – 10.0 AMP 600V

Bussmann CC Fuses:

LP-CC-5.0 – 5.0 AMP 600V
LP-CC-10.0 – 10.0 AMP 600V

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BUILDING CODES

1. 2017 FLORIDA BUILDING CODE, SIXTH EDITION

2. 2014 NATIONAL ELECTRICAL CODE, 2017 ed.

3. 2017 FLORIDA PLUMBING CODE, SIXTH EDITION

4. 2017 FLORIDA MECHANICAL CODE, SIXTH EDITION

5. 2017 FLORIDA ACCESSIBILITY CODE, SIXTH EDITION

6. 2017 FLORIDA ENERGY CONSERVATION CODE, SIXTH EDITION

7. "FAC RULE 61-G20-3"

OCCUPANCY — R-2

CONSTRUCTION TYPE — VB

FLOOR LIVE LOAD — 50 PSF

ROOF LIVE LOAD — 20 PSF

CORRIDOR LIVE LOAD — 100 PSF

WIND LOAD — 139 MPH @ 3-SECOND GUSTS

WIND COMPONENT & CLADDING — (-)32psf/+26.4psf (ASD)

SEISMIC DESIGN — CATEGORY B

SITE DESIGN CLASSIFICATION — D

RISK CATEGORY — =II

MANUFACTURE & ADDRESS

ATCO STRUCTURES & LOGISTICS USA INC.

1106 NORTH TEMPLE DRIVE

DIBOLL, TEXAS 75941

DRA AGENCY

PYRAMID 1

P.O. BOX 463

19260 COUNTY ROAD 46

NEW PARIS, INDIANA 46553

SPECIAL CONDITIONS AND / OR LIMITATIONS

1. BUILDING DESIGNED TO BE 10'-0" MIN FROM PROPERTY OR LOT LINE & 20'-0" FROM ADJACENT BUILDING PER TABLE 602 OF THE 2015 IBC

2. STAIRS, RAMPS, ETC. AT ALL EXTERIOR DOORS ON SITE BY OTHERS

3. GROUNDING OF BUILDING AND ALL ITEMS PART OF, FROM ATCO SUPPLIED DISTRIBUTION TRANSFORMER ON DOWN IS BY ATCO. GROUNDING TIE-INS OF LIGHTNING MASTS, ANTENNA MAST AND NEUTRAL POINT OF TRANSFORMER SHALL BE DONE BY ATCO AT SITE. TIE-IN POINTS FOR THESE ITEMS SHALL BE PROVIDED BY THE SITE CONTRACTOR.

4. REQUIRED VENTILATION OF ATTIC SHALL BE INSPECTED & APPROVED BY LOCAL JURISDICTION HAVING AUTHORITY.

5. THE FOUNDATION VENTILATION AS PER SECTION 1203.4.1 OF THE 2017 IBC, AS REQUIRED

6. MINIMUM CLEAR AISLE WIDTH SHALL NOT BE LESS THAN REQUIRED FOR CORRIDORS AS PER SECTION 1020.2 & 1005.1 OF THE 2017 IBC

7. ADDITIONAL PLUMBING FIXTURES AS REQUIRED BY THE 2017 IPC TABLE 403.1 SHALL BE LOCATED IN ANOTHER BUILDING ON THE INSTALLATION SITE BY OTHERS

8. WATER HEATER SHALL COMPLY WITH 2017 IECC SECTION C404.

9. THIS BUILDING SHALL ONLY BE PLACED IN AREAS THAT ARE CONSISTENT W/ WIND EXPOSURE CATEGORY B AS DESCRIBED IN SECTION 26.7.3 OF ASCE 7-10.

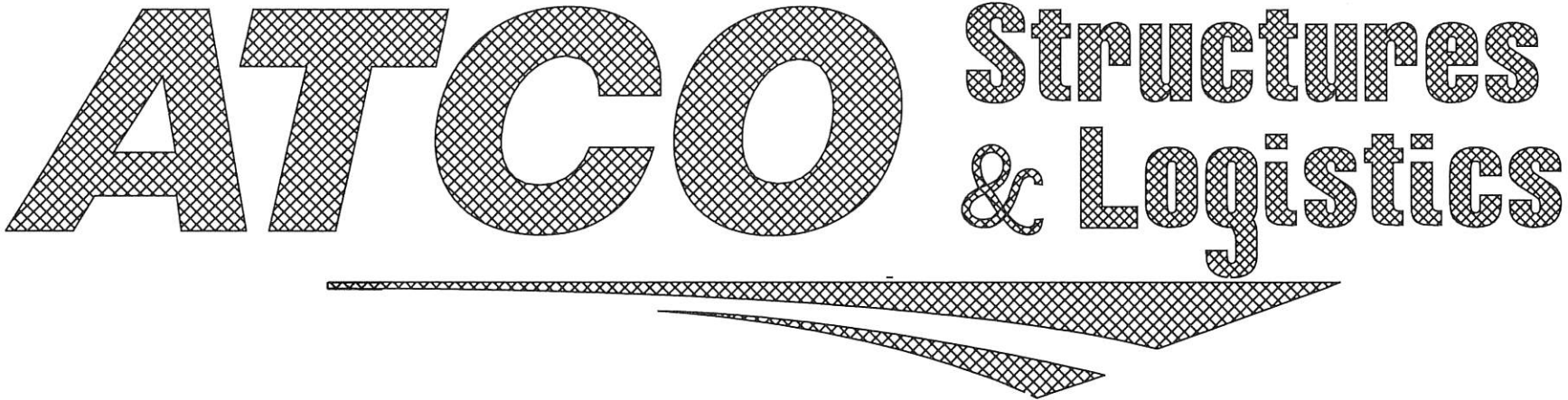
10. FOUNDATION PLAN BY OTHERS. NOTE: BOTTOM OF WOOD FLOOR SYSTEM MUST BE A MINIMUM OF 18" ABOVE EXPOSED GROUND OR CRAWL SPACE.

11. THIS BUILDING CANNOT BE PLACED IN FLOOD HAZARD AREA'S.

12. PLUMBING DRAINS TO BE STUBBED BELOW FLOOR WITH MULTIPLE DROPS FOR SITE CONNECTIONS BY OTHERS

13. PER SECTION 1028.1 OF THE 2017 IBC, EXITS SHALL DISCHARGE DIRECTLY TO THE EXTERIOR OF THE BUILDING. THE EXIT DISCHARGE SHALL BE AT GRADE OR SHALL PROVIDE DIRECT ACCESS TO GRADE. THE EXIT DISCHARGE SHALL NOT REENTER A BUILDING.

14. STATE LABEL AND DATA PLATES ARE LOCATED ON THE INSIDE COVER OF THE ELECTRICAL PANEL.



By Yuri at 9:56:06 AM, 3/18/2020

WCC SERVICES

Panama City – FL

(Wind-Borne Debris Region)

13'X64' TOOL PUSH

PROJECT # 96005

SQUARE FOOTAGE: 832

OCCUPANT LOAD: 7

ENERGY DESIGN INFORMATION

CLIMATE ZONE: 2A

HDD: 943

U-FACTORS: WINDOW — .30
STEEL DOORS — 0.38
GLASS DOORS — 0.29

SHGC: WINDOW — .23
SHGC: GLASS DOOR — .25
SWITCHING SCHEMES: PER ELECTRICAL PLAN

FIXTURE TYPES: 2x4 LED PANEL 40 WATT

HVAC EFFICIENCIES: MUST COMPLY WITH SECTION C403.2.3 OF THE 2017 IECC

HVAC EER RATING: 9.0 MINIMUM

THERMOSTAT: MUST COMPLY WITH SECTION C403.2.4.1 OF THE 2017 IECC

DUCT INSULATION: MUST COMPLY WITH SECTION C403.2.9 OF THE 2017 IECC

DUCT SEALING: MUST COMPLY WITH SECTION 603.9 OF THE 2017 IMC

WATER HEATERS: MUST COMPLY WITH SECTION C404 OF THE 2017 IECC

MATERIALS ARE COMPLYING WITH "FAC RULE 61-G20-3"
FL-APPROVED PRODUCT AND MATERIALS

EXTERIOR DOORS: WIND RATING—TELSTAR DOORS. FL# (FL9277)
EXTERIOR SIDING: LP SMART SIDE STRAND SUBSTRATE—38 FL# (9190.1)
ROOFING: TPO—c. MEMBERANE NOA#: 18-0109.09
& ROOFING APPLICATION STANDARD (RAS) NO. 117
WINDOWS: —KERESTMARK 4000—4750 VINYL TILT SH SINGLE HUNG VERTICAL
FL# 12398—R6
—KERESTMARK 4000 VINYL HORIZONTAL SLIDER— HS IMPACT R50
FL# 13418—R4

Listing Agency Approval

PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type VB

Occupancy Classification: R-2

Allowable # of Floors: 1

Wind Velocity: 139 m.p.h.

Fire Rating (ext.walls): 0 hr.

Floor Load: 40 p.s.f.

Date of Review: March 18, 2020

Manufacturer: ATCO Structures

High Velocity Hurricane Zone: NO

Plan Design # 20-0225
Date March 18, 2020
Approved By Andrew R. Carlson
Modular Buildings Plans Examiner
Florida License No. SMP-0000032

Andrew R. Carlson

DRAWING INDEX

CS	COVER SHEET
AAO1	EQUIPMENT PAGE
AO1	CONSTRUCTION PAGE
A02	RAISED FLOOR, COUNTERTOP, & CABINET DETAILS
DO1	CROSS SECTION
DO2	FASTENING SCHEDULE & DETAILS
DO3	ROOFING FASTENING PATTERN
DO4	SIDING FASTENING PATTERN
EO1	ELECTRICAL LAYOUT
EO2	ELECTRICAL LEGEND, CALCS, & PANEL SCHEDULE
MO1	HVAC LAYOUT
MO2	SUPPLY & DRAINAGE PLUMBING LAYOUT
MO3	SUPPLY & DRAINAGE PLUMBING SCHEMATICS
FO1	SUGGESTED FOUNDATION PLAN & DETAILS

REV	DATE	DESCRIPTION	BY
-	-	- ITP 26-52 Southport Fire Station #8 Relocation	BP
-	28JAN28	ISSUE FOR AWARDS	BP

NOTES:
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CUSTOMER ACCEPTANCE

- ☐ - ACCEPTANCE AS DRAWN
☐ - ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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ALL RIGHTS RESERVED

DRAWN BY: TT

CHECKED BY: BS

DATE: 07FEB2020

SCALE: 3/16"=1'-0"

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
2400 BURKBURNETT ROAD
WICHITA FALLS, TEXAS 76306

PROJECT:

WCC SERVICES
13' X 64'
TOOL PUSH

SPECIFICATION NUMBER

719107.02

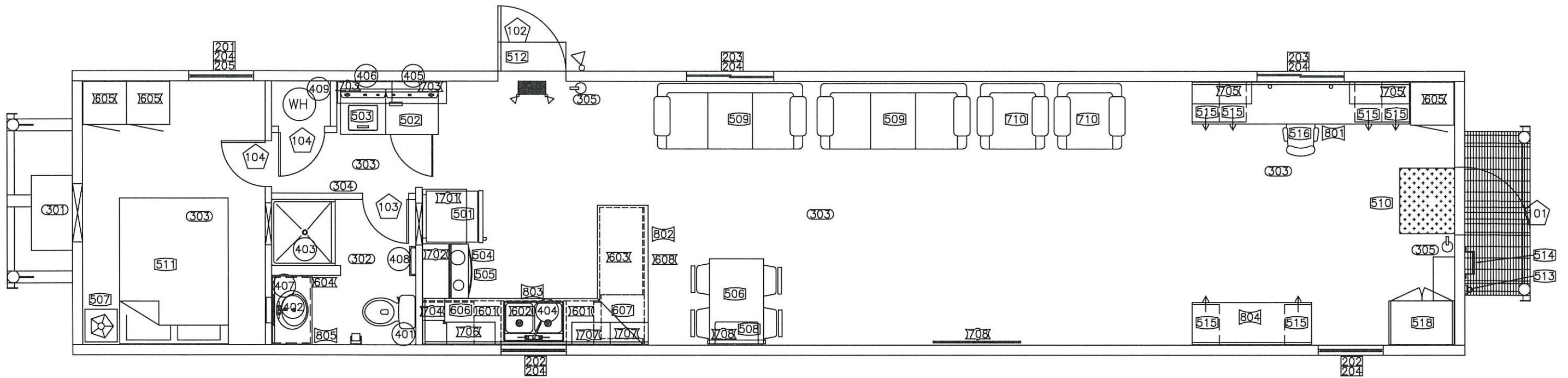
DRAWING TITLE:

COVER SHEET

DRAWING NO:

96005-01-CS





	NO.	QTY.	SIZE	ITEM	DESCRIPTION		NO.	QTY.	SIZE	ITEM	DESCRIPTION
DOORS	101	1	36x80	EXTERIOR	20 GA. PRE-HUNG STEEL DOOR W/ 10"x10" V/P-T HARDWARE: DEADBOLT, CHECK CHAIN, KASON,GATE PULL-TELL	FURNISHINGS	507	1	-	NIGHT STAND	NIGHT STAND
	102	1	36X80	EXTERIOR	20 GA. PRE-HUNG STEEL DOOR W/BLANK FACE-T HARDWARE: DEADBOLT, CHECK CHAIN, KASON,GATE PULL-TELL		508	1	42"	TV	LCD TV
	103	3	24X80	INTERIOR	PRE-FINISHED H.C. DOOR W/METAL FRM HARDWARE: (2) PASSAGE, (1) PRIVACY-TELL		509	1	-	SOFA	SOFA W/FOLD DOWN TABLE
WINDOWS	201	1	36X60	WINDOW	INSULATED ARGON LOW-E, V.S. VINYL W/SCRN-EGRESS	500	710	2	-	SOFA RECLINER	SOFA SINGLE RECLINER
	202	2	36X36	WINDOW	INSULATED ARGON LOW-E, H.S. VINYL W/SCRN		510	1	36X31	ENTRY PLATE	ALUMINUM ENTRY PLATE W/DRAIN PAN
	203	2	48X36	WINDOW	INSULATED ARGON LOW-E, H.S. VINYL W/SCRN		511	1	QUEEN	BED	QUEEN BED
	204	5	-	BLINDS	VINYL MINI BLINDS		512	1	-	STEP	PULL OUT STEP
	205	1	-	SHADE	BLACK OUT SHADE		513	1	-	POLE	STEEL TELESCOPING SATELLITE POLE
MECHANICAL	301	1	3.0 TON	HVAC	WALL HUNG, 3 TON COOLING, 15 KW HEAT, FIBERGLASS S/A DUCTWORK W/4 WAY GRILLES, GRILLES OVER DOORS	BASE CABINETS	514	1	-	LADDER	STEEL LADDER- TUBULAR IRON
	302	1	75 CFM	FAN	EXHAUST FAN LIGHT COMBO		515	6	-	FILE CABINET	2-DRAWER METAL FILING CABINET
	303	4	120V	DETECTORS	SMOKE DETECTORS W/ BATTERY BACKUP		516	1	-	CHAIR	SWIVEL TILT CHAIR W/ARMS & CHAIR MAT
	304	1	9V	DETECTORS	CARBON MONOXIDE DETECTOR		517	1	4X4	BOARD	MARKER BOARD
	305	2	5#	EXTINGUISHER	FIRE EXTINGUISHER		518	1	36"	CABINET	METAL STORAGE CABINET
PLUMBING	401	1	-	WATER CLOSET	STANDARD WATER CLOSET W/TOILET PAPER HOLDER	WALL CABS.	601	2	-	B15	BASE CABINET
	402	1	-	LAVATORY	COUNTER MOUNTED LAVATORY		602	1	-	SB36	BASE CABINET
	403	1	36"	SHOWER	36" NON-ADA SHOWER		603	1	-	B48	BASE CABINET
	404	1	-	SINK	DOUBLE COMPARTMENT STAINLESS STEEL SINK 8" DEEP		604	1	-	VSB36	VANITY BASE CABINET
	405	1	-	VENT	DRYER VENT		605	3	-	U24	UTILITY CABINET
	406	1	-	OUTLET BOX	WASHER OUTLET BOX W/VALVES		606	1	-	PERPLY335	STOVE CABINET
	407	1	-	CABINET	RECESSED MEDICINE CABINET		607	1	-	B24	BASE CABINET
	408	1	18"	BAR	18" CHROME PLATE TOWEL BAR		608	1	-	PP9635	BASE CABINET FILLER
	409	1	40 GAL.	WATER HEATER	ELECTRIC WATER HEATER W/ ANTI SCALD VALVE, HEAT TRAPS & EXPANSION TANK		701	1	-	RW3018	FRIDGE CABINET
500	501	1	18 CU.FT.	FRIDGE	TOP FREEZER REFRIGERATOR	700X	702	1	-	W301815	MICROWAVE CABINET
	502	1	-	DRYER	ELECTRIC DRYER		703	2	-	W3024	WALL CABINET
	503	1	-	WASHER	AUTOMATIC WASHING MACHINE		704	1	-	W1230	WALL CABINET
	504	1	30"	RANGE	4-BURNER ELECTRIC RANGE		705	2	-	W3330	WALL CABINET
	505	1	-	MICROWAVE	W/VENT HOOD		706	1	-	W2730	WALL CABINET
	506	1	36X48	TABLE	DINING TABLE W/ 4 CHAIRS		707	2	-	W2130	WALL CABINET
800						C-TOPS	708	1	-	24"	CUSTOM WALL SHELVES FOR TV
							709	1	-	-	65" TV TO BE MOUNTED AND INSTALL
											CAM LOCK THUMB LATCH TO ALL CABINETS
							801	1	10'-0"	COUNTERTOP	OFFICE COUNTERTOP
							802	1	6'-4 1/4"	COUNTERTOP	KITCHEN COUNTERTOP
800						800	803	1	10'-4"	COUNTERTOP	KITCHEN COUNTERTOP
							804	1	5'-6"	COUNTERTOP	OFFICE COUNTERTOP
							805	1	3'-1 1/4"	COUNTERTOP	VANITY COUNTERTOP

Listing Agency Approval
PYRAMID1, INC.

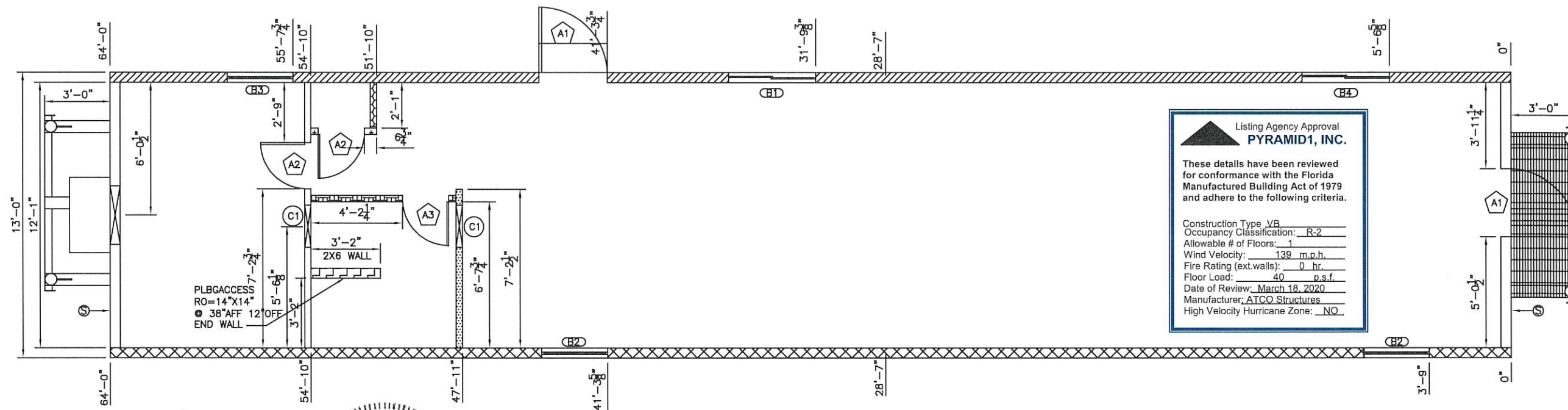
These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



By Yuri at 9:56:08 AM, 3/18/2020
(Structural Aspects Only)

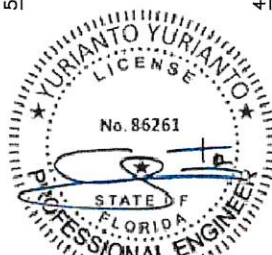
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ITB 26-52 Southport Fire Station #8 Relocation		BP									
28JAN28		ISSUE FOR AWARDS									



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By Yuri at 9:56:10 AM, 3/18/2020

WALL LEGEND

- WALL HEIGHT TO BE 8'-10"
- WALL HEIGHT TO BE 9' 1-1/4"
- WALL HEIGHT TO BE FROM 8'-10" TO 9' 1-1/4"
- WALL HEIGHT TO BE FROM 8'-10" TO 9'-0"
- WALL HEIGHT TO BE 8'-11 7/8"
- WALL HEIGHT TO BE 8' 2-7/8"
- WALL HEIGHT TO BE FROM 9'-1 1/4" TO 9'-0 5/8"
- WALL HEIGHT TO BE 9'-0 5/8"

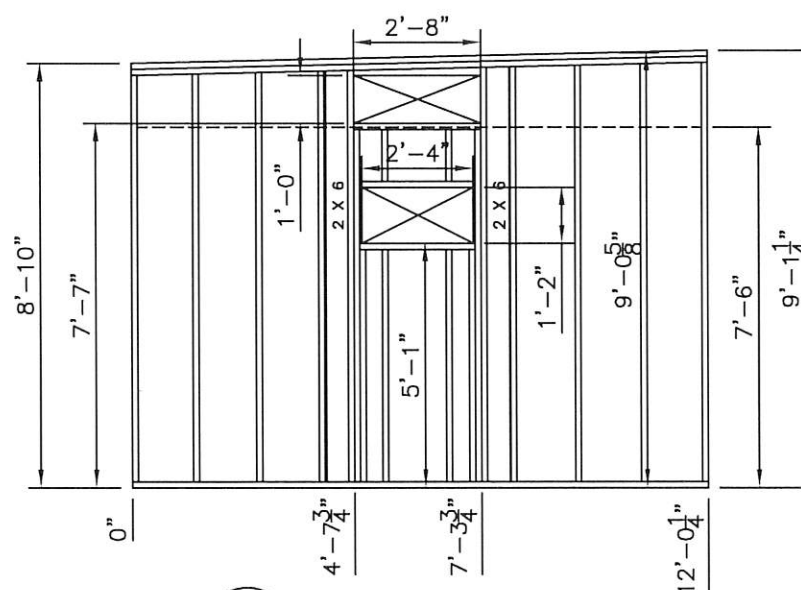
NOTES:

- ALL MEASUREMENTS ARE FROM RAW FRAMING MEMBER TO RAW FRAMING MEMBER, EXCEPT WHEN FINISHED I.D. IS CALLED OUT.
- ALL EXTERIOR WALLS ARE DRAWN AT 5-1/2". INTERIOR WALLS ARE 3-1/2".
- ALL DOOR JAMBS ARE 4" AWAY FROM WALL UNLESS OTHERWISE NOTED.
- ALL WALLS TO HAVE FIRE BLOCKING @ FINISHED CEILING HEIGHT, UNLESS VCG IS A FULL SHEET FROM BOTTOM PLATE TO THE TOP PLATE.

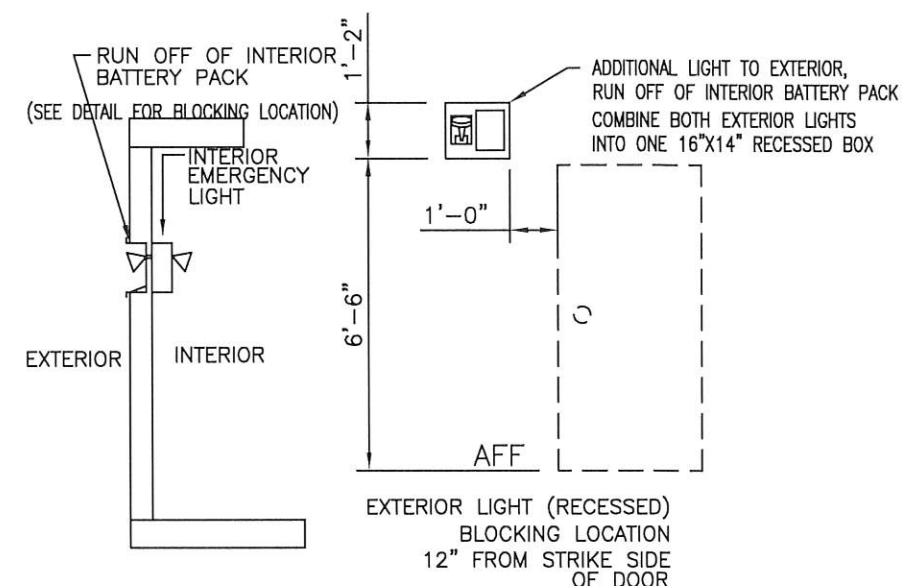
- ⑤ - INDICATES SHEAR WALLS LOCATIONS
SHEAR WALLS TO BE SHEATHED FULL HEIGHT BOTH SIDES TO BOTTOM OF RAFTERS & BLOCKING INSTALLED IF NOT CONTINUOUS.

NOTES ON SHEAR WALLS:

- EXTERIOR OF SHEAR WALL TO BE COVERED WITH 1/2" PLYWOOD
- INTERIOR OF SHEAR WALL, IF WITHIN A PLENUM, TO BE COVERED W/ 3/8" PLAIN GYPSUM.
- INTERIOR OF SHEAR WALL, WITHOUT A PLENUM, TO BE COVERED W/ 3/8" VCG.



EW1 END WALL DETAIL
A01 SCALE AS NOTED



ELD RECESSED EXTERIOR LIGHT DETAIL
A01 SCALE AS NOTED

RO SCHEDULES	DOORS	NO. QTY. RO SILL HEIGHT			
		A1	2	36"x80"	N/A
WINDOWS	B	A2	2	25-1/4"x81"	N/A
		A3	1	25-1/4"x89"	7-1/4"
MECH	C	B1	1	47 1/2"x35 1/2"	44"
		B2	2	35 1/2"x35 1/2"	42"
		B3	1	35 1/2"x59 1/2"	20"
		B4	1	47 1/2"x35 1/2"	37"
		C1	2	22"x11"	91"

REV	DATE	DESCRIPTION	BY
-	-	TTB-26-52 Southport Fire Station #8 Relocation	BP
-	28JAN28	ISSUE FOR AWARDS	BP

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CUSTOMER ACCEPTANCE

- ACCEPTANCE AS DRAWN
- ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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DRAWN BY: TT

CHECKED BY: BS

DATE: 07FEB2020

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

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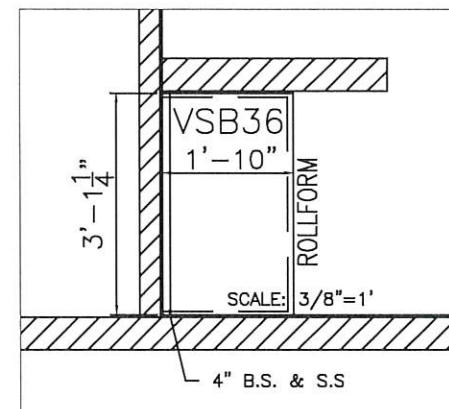
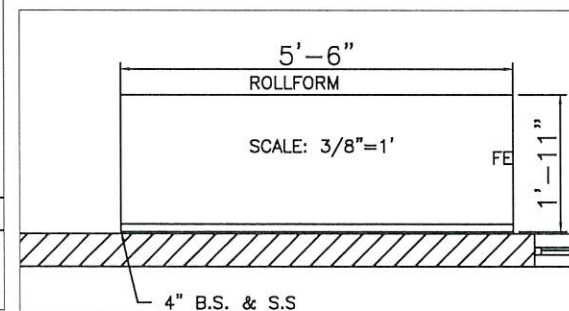
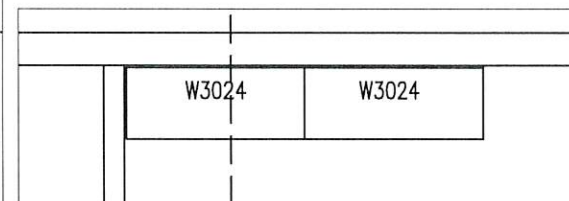
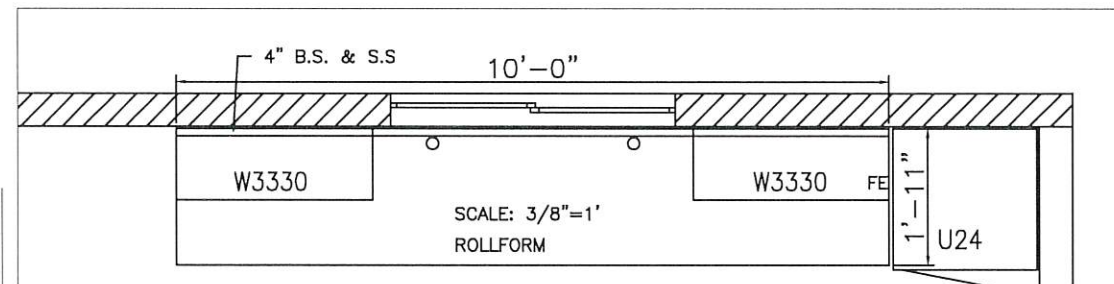
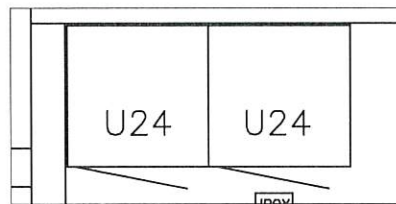
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CONSTRUCTION PAGE

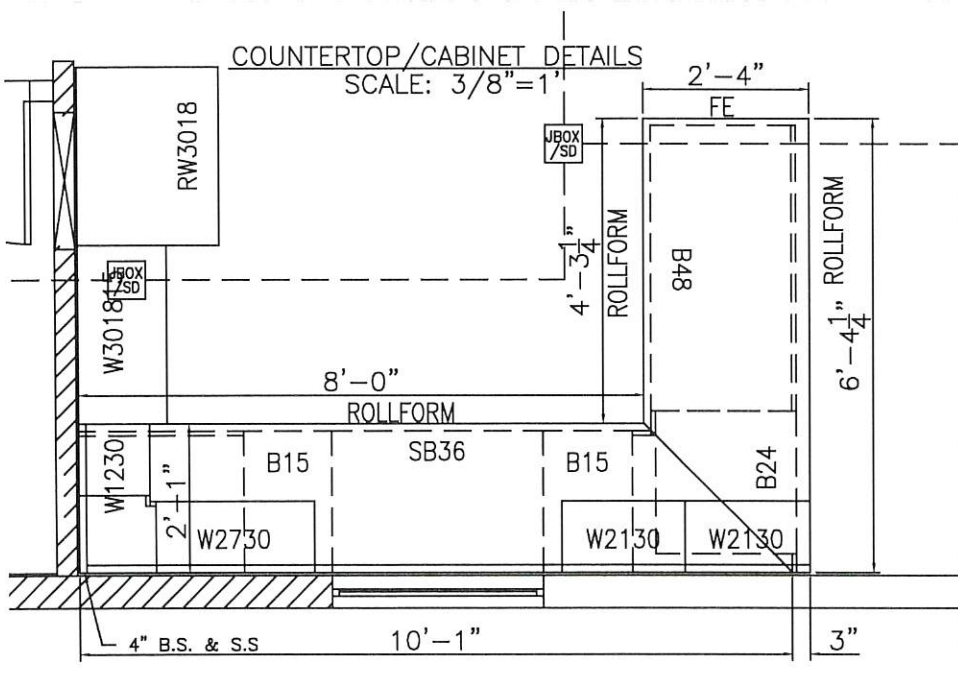
DRAWING NO:

96005-01-A01

ATCO Structures & Logistics



(Structural Aspects Only)



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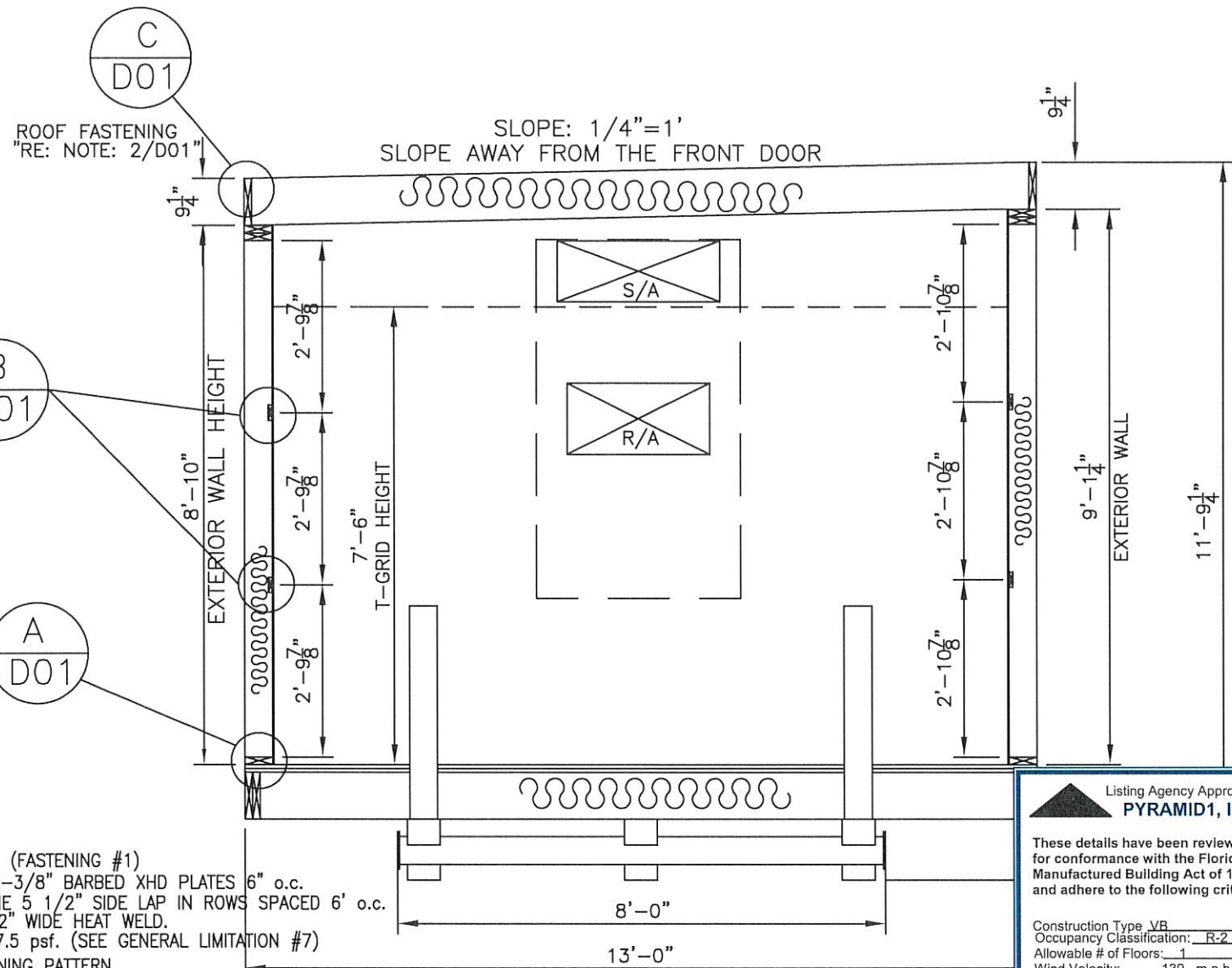
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-	-	-	ITB-26-52 Southport Fire Station #8 Relocation	BP						
-	28JAN28		ISSUE FOR AWARDS	BP						

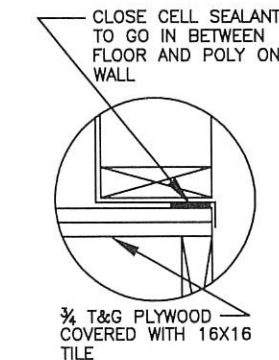


By Yuri at 9:56:14 AM, 3/18/2020

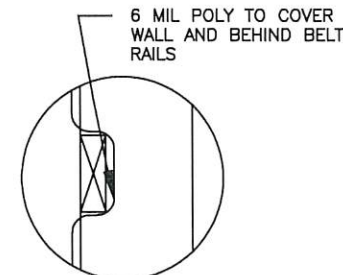


NOTE 2:
* FASTENER FOR TPO-c ROOFING: (FASTENING #1)
OMG XHD FASTENERS W/ OMG 2-3/8" BARBED XHD PLATES 6" o.c.
THROUGH THE MEMBERANE IN THE 5 1/2" SIDE LAP IN ROWS SPACED 6' o.c.
FOLLOWED BY APPLYING A 1 1/2" WIDE HEAT WELD.
MAXIMUM DESIGN PRESSURE -67.5 psf. (SEE GENERAL LIMITATION #7)
* RE: D03 FOR DENSEDECK FASTENING PATTERN
NOTE 3: FOR WALL SIDING FASTENING SIZES AND PATTERNS (RE: D04)

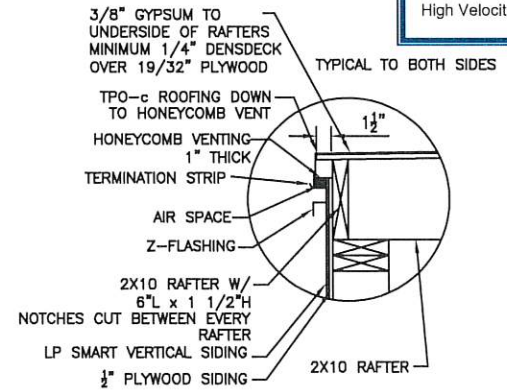
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A POLY APPLICATION DETAIL
SCALE: NTS



B POLY APPLICATION DETAIL
SCALE: NTS



C ROOF VENTING DETAIL
SCALE: NTS

FRAME	
FRAME:	12" 3-RUNNER 26# SKID FRAME W/ 3' EXTENTIONS TO BOTH ENDS 3/16" PAINTED DIAMOND PLATE TO DOOR END, PULL OUT STEP, STEEL SATELLITE POLE, TUBULAR LADDER
FLOORS	
FLOOR JOIST:	2 x 10 @ 16" o/c #2 SYP W/ DOUBLE RIM JOISTS
INSULATION:	R-30 UN-FACED
SUBFLOOR:	DOUBLE LAYER 3/4" T & G
FLOOR COVERING:	16" DECORATOR TILE
RAISED FLOOR:	2X8 RAISED FLOOR TO RESTROOM
UNDERSHEATHING:	30 GAUGE METAL BELLY PAN W/ 3/8" OSB
EXTERIOR WALLS	
WALL FRAMING:	2 x 6 SYP #2 @16" O.C.
BOTTOM PLATE:	SINGLE
TOP PLATE:	DOUBLE
INSULATION:	R-21 KRAFT-FACED
EXT. SHEATHING:	1/2" PLYWOOD
BUILDING WRAP:	BUILDING WRAP
EXT. SIDING:	LP SMARTSIDE 38 SERIES STRAND SUBSTRATE VERTICAL SIDING
Vapor Barrier:	6-MIL POLY
INTERIOR:	3/8" VINYL COVERED GYPSUM W/ BATTENS
BASE:	4" VINYL COVE BASE
INTERIOR WALLS	
WALL FRAMING:	2 x 4 SYP #2 @16" O.C.
BOTTOM PLATE:	SINGLE
TOP PLATE:	SINGLE
INSULATION:	R-11 UN-FACED
INTERIOR:	3/8" VINYL COVERED GYPSUM W/ BATTENS
FRP:	ABOVE SHOWER
BASE:	4" VINYL COVE BASE
PLENUM WALL:	-
ROOFS	
CEILING:	2 X 4 T-GRID SUSPENDED CEILING W/ ACOUSTIC STANDARD TILES & MOISTURE RESISTANT TILES IN RESTROOM
ROOF FINISH:	3/8" GYPSUM TO UNDERSIDE OF RAFTERS
ROOF FRAMING:	2 X 10 #2 SYP @ 16" O.C.
INSULATION:	R-30 INSULATION W/NETTING
ROOF DECKING:	19/32" PLYWOOD
INSULATION LAYER:	1 1/2" MULE-HIDE POLY ISO 1
ROOF BARRIER:	1/4" DENSEDECK
ROOF COVER:	"TPO-c" MEMBERANE

- NOTE 1:
1. ROOF INSULATION TO HAVE 1" CLEARANCE BETWEEN INSULATION & ROOF SHEATHING.
 2. 5/16"x3 1/2" LAG SCREW EVERY 48" O.C. FROM STUD TO FLOOR TO ROOF CONNECTIONS.
 3. RAFTER CONNECTION: 7-0.131"x3" NAILS FROM RIM RAIL TO RAFTERS.
 4. FRAME TO FLOOR CONNECTION: 3/8"x3" LAG FROM OUTRIGGER TO FLOOR IN EACH OUTRIGGER @ 48" O.C.

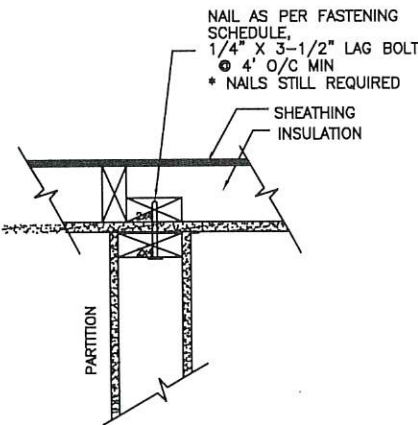
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FASTENING SCHEDULE FOR PANELING, SHEATING, & TRIMS

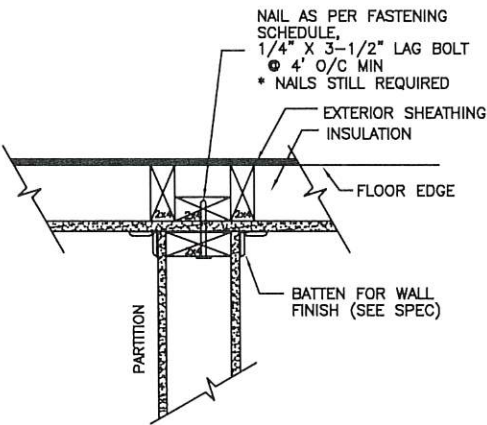
FASTENING SCHEDULE			FASTENER		SPACING OF FASTENERS o/c (*P=Perimeter, F=Field)					
DESCRIPTION	COMMENTS	SIZE	TYPE	FLOOR		WALL/PARTITION		ROOF		
				"P"	"F"	"P"	"F"	"P"	"F"	
3/8 OSB/PLYWOOD		1/2 x 1-3/4	44G BAB STAPLE	4	8	4	8	3	6	
3/8 PLYWOOD UNDERLAY (TOP LAYER)	DOUBLE FLOORING	1/2 x 1-3/4	44G BAB STAPLE	4	8					
7/16 OSB		1/2 x 1-3/4	44G BAB STAPLE	4	8	4	8			
1/2 OSB/PLYWOOD (BOTTOM LAYER)		1/2 x 1-3/4	44G BAB STAPLE	4	8	4	8	3	6	
5/8 T & G PLYWOOD		1/2 x 2-1/2	63G BAB STAPLE	4	8	16	16	6	12	
3/4 T & G PLYWOOD		1/2 x 2-1/2	63G BAB STAPLE	4	8	16	16	6	12	
1 1/8 T & G PLYWOOD	FASTENING TO METAL FLOOR JOIST	8d RING SHANK 12242-1/2" SCREW	HARDENED NAIL SELF-DRILLING METAL SCREW	6	8					
3/8 V.C. DRYWALL		1 x 1-1/4 1-1/4	31G BAB STAPLE FOAM ADHESIVE			8		24		
1/2 PLAIN DRYWALL		5/8 x 1-1/4 5/8	DRYWALL SCREW DRYWALL SCREW			12	12	12	12	
1/2 V.C. DRYWALL		1 x 1-1/2 5/8	38G BAB STAPLE FOAM ADHESIVE			8		8	24	
5/8 PLAIN DRYWALL		5/8 x 1-5/8	DRYWALL SCREW			12	12	12	12	
5/8 V.C. DRYWALL		1 x 1-1/2 5/8	38G BAB STAPLE FOAM ADHESIVE			8		8	24	
3/8 FRP BOARD		1/2 x 1-1/4 1/4 x 1	31G BAB STAPLE NYLON TAP INS			10		10	24	
5.2mm LUAN PANNELLING	STUD 16 o/c	7/32 x 1	351G BAB BROWN STAPLE			6	12			
3.2mm LUAN PANNELLING	STUD 16 o/c	7/32 x 5/8	355BG BROWN STAPLE			6	12			
1/4 V.C. LUAN PANNELLING	STUD 16 o/c	7/32 x 1 1-1/4	351G BABN WHITE STAPLE FOAM ADHESIVE			4		4	24	
1/2 CEILING BOARD	ROOF JOIST 16 o/c	1-1/4 x 1	31G BAB STAPLE					6	12	
1/2 INNER SEAL	STUD 16 o/c	.0915 x 2-1/8 1-1/4	EC22 ASB HOT NAIL RD 504 NAIL			6	12			
30 GA. ROOF EDGE		1/2 x 1-1/2	38G BAB STAPLE					2		
TERMINATION BAR		5/8 x 1-1/4	PAN HEAD SCREW					6		
BATTEN/BASEBOARD/CASING		.072 x 2	DA21 EPDN NAIL			12				
1/2 CANVEX / BOTTOM BOARD		1-1/4 x 1	31G BAB STAPLE	3						
7/16 SMARTSIDE PANEL SIDING *		.090 x 2	C6R90B0G NAIL			6	12			
26 GA. LOW RIB SIDING		5/8 x 1-1/2 5/14 x 7/8	WOOD SCREW LAP SCREW			12				

* FASTENER SPACING FOR SHEAR WALL PERIMETER TO BE 3" O/C
- WOOD TO WOOD ADHESIVES WILL/SHALL MEET AFG-10 REGULATIONS
- WALLBOARD ADHESIVES SHALL MEET ASTM C557 REQUIREMENTS
- STAPLES SHALL BE 16 GAUGE OR HEAVIER AS REQUIRED.

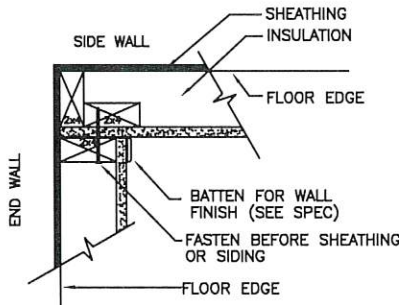
* FASTENER FOR TPO-c ROOFING:
(FASTENING #1)
OMG XHD FASTENERS W/ OMG 2-3/8" BARBED XHD PLATES 6" o.c.
THROUGH THE MEMBRANE IN THE 5 1/2" SIDE LAP IN ROWS SPACED 6' o.c.
FOLLOWED BY APPLYING A 1 1/2" WIDE HEAT WELD.
MAXIMUM DESIGN PRESSURE -67.5 psf. (SEE GENERAL LIMITATION #7)



D02 PARTITION WALL TO CEILING ATTACHMENT
SCALE: 1" = 1'-0"



D02 PARTITION WALL TO EXTERIOR WALL ATTACHMENT
SCALE: 1" = 1'-0"



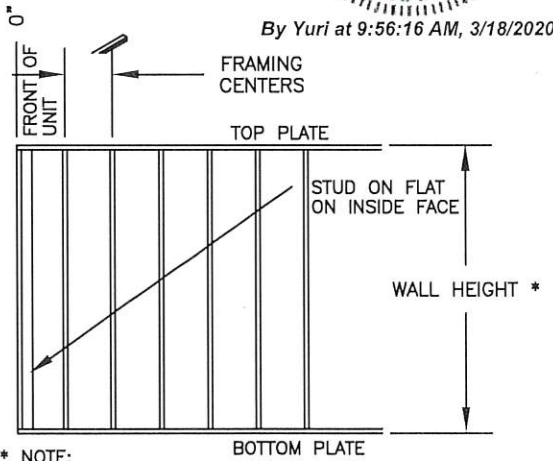
D02 END WALL ATTACHMENT
SCALE: 1" = 1'-0"

		FLOOR QTY	WALLS QTY	PARTITION QTY	ROOF QTY	SIZE OF NAIL OR STAPLE	TYPE	COMMENTS
2 x 4	TO PLATE	3	3	3	3	.131 x 3-1/4	S12D131 NAIL	MIN 3/4" FROM EDGE OF PLATES
2 x 6	TO PLATE	3	3	3	3			
2 x 8	TO PLATE	4	3	-	3			
2 x 10	TO PLATE	4	-	-	3			
2 x 12	TO PLATE	5	-	-	7			
2 x -	TO 2 x -	16" STGRD	16" STGRD	16" STGRD	16" STGRD	.131 x 3-1/4	S12D131 NAIL	DOUBLE OR TRIPLE PLATES, STUDS, JOISTS, CRIPPLES
2 x 4	HEADERS	-	12" o/c STGRD	12" o/c STGRD	-	.131 x 3-1/4	S12D131 NAIL	HEADERS ARE END NAILED THROUGH STUD W/ QTY. 5 NAILS (.131 X 3-1/4") EACH END
2 x 6	HEADERS	-	"	"	-			"
2 x 8	HEADERS	-	"	"	-			"
2 x 10	HEADERS	-	"	"	-			"
2 x 4 / 2 x 6	WALL TO	1 PER 4' 2/ STUD SPACE	16" o/c	16" o/c	1 PER 4' 2/ STUD SPACE	5/8 x 3-1/2" .131 x 3-1/4"	WOODSCREW S12D131 NAIL	STUDS AT 16" OR 24" o/c
2 x 4 / 2 x 6	PARTITION TO	16" o/c	16" o/c	16" o/c	16" o/c	0.131 X 2-1/2"	NAIL	
-	SEALTITE BTM SHEATHING	8" O.C.	-	-	-	31G BAB	STAPLE	
-	WALL BLOCKING TO STUD	1" O.C.	-	-	-	38GA BAB	STAPLE	STITCH ON SURFACE

* NOTE:
INTER CONNECTION OF ALL SIZES OF MULTIPLE MEMBERS ARE TO FOLLOW THE INTER CONNECTIONS as listed ABOVE (IN 2x4 to 2x4)

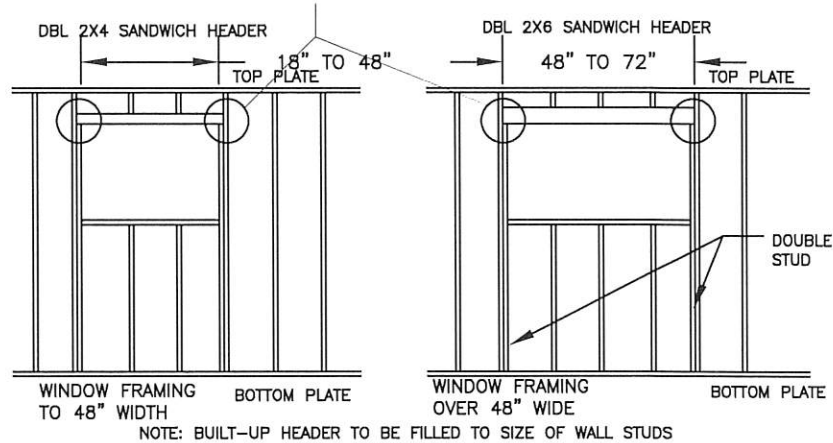


By Yuri at 9:56:16 AM, 3/18/2020



* NOTE:
SEE SCHEDULE FOR FASTENING.

D02 WALL FRAMING DETAIL
SCALE: 3/16" = 1'-0"



D02 WINDOW FRAMING DETAIL
SCALE: 3/16" = 1'-0"

Listing Agency Approval
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

2X4 DOUBLE TOP WALL PLATE

2x4 SINGLE BOTTOM WALL PLATE,

- NOTES:
- DOUBLE SIDE PLATE JOINTS TO BE SPACED WITH A MINIMUM OF 4' APART
 - USE GALV. STEEL 'CONNECTOR PLATE' GAUGE 20G. (EAGLE METAL-E20 STRUCTURAL CONNECTOR PLATE OR EQUAL)
 - PRESS PLATES TO CONNECT DIMENSIONAL LUMBER TO CREATE DESIRED PLATE LENGTH.
 - PLATES MAY BE INSTALLED WITH A 1/4" VARIANCE FROM CENTER OF JOINT.
 - NAILING THROUGH CONNECTOR PLATES INTO STUD END MEMBERS IS PERMISSIBLE.
 - DOUBLE TOP PLATES ARE FASTENING TOGETHER USING 3"x0.131" NAILS @ 8" O.C.

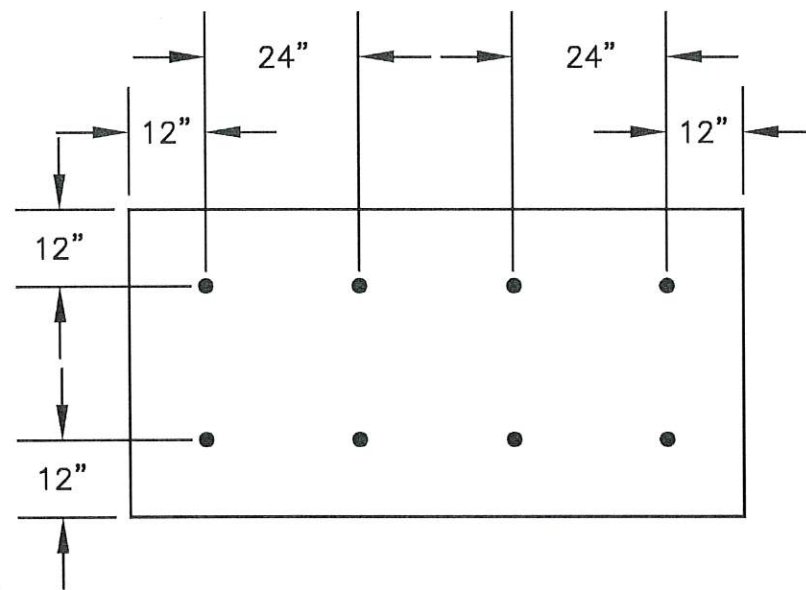
LUMBER CONNECTIONS
D02 SCALE: NTS

RO WIDTH	HEADER ASSEMBLY
18" to 48"	USE 2-2x4 HEADERS WITH CRIPLES
48" to 72"	USE 2-2x6 HEADERS WITH CRIPLES
72" to 120"	USE 2-2x8 HEADERS WITH CRIPLES

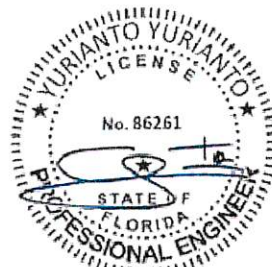
FOR HEADER TO JAMB STUDS FASTENING, SEE SCHEDULE

ATCO Structures & Logistics

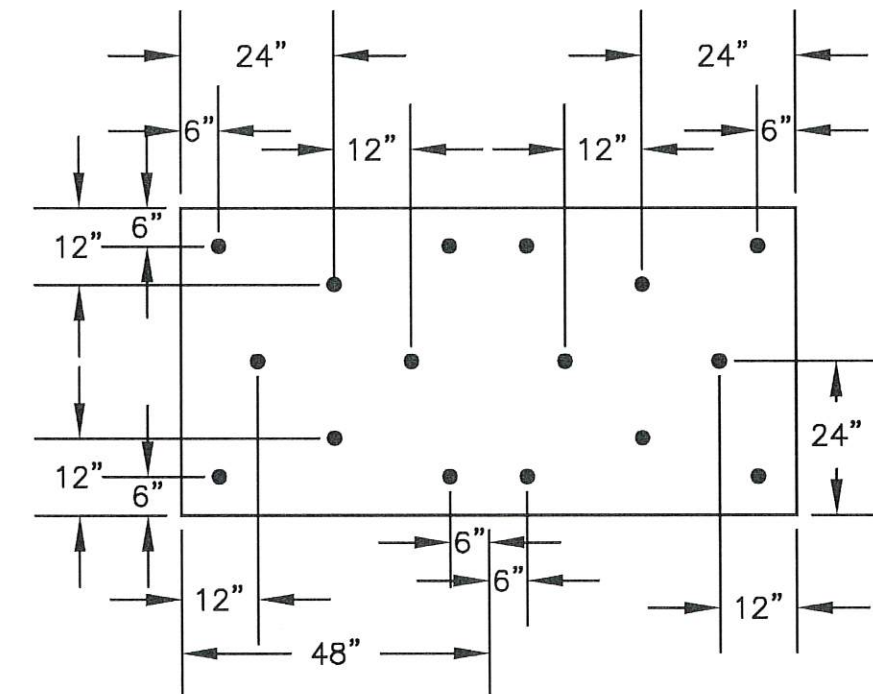
1. 8 FASTENERS PER 4' X 8' BOARDS (1 FASTENER EVERY 4 SQUARE FEET) IN THE FIELD IS APPROVED FOR INSULATIONS 2" OR MORE THICK WHEN USED AS THE TOP LAYER.
2. PERIMETER AND CORNER DIMENSIONS ARE TO BE A MINIMUM OF 8' WIDE UNLESS THE PROJECT REQUIRES FACTORY MUTUAL COMPLIANCE. CONTACT MULE-HIDE TECHNICAL DEPARTMENT FOR FACTORY MUTUAL REQUIREMENTS.
3. MULE-HIDE FASTENERS AND 3" STRESS PLATES MUST BE USED FOR INSULATION ATTACHMENT.
4. REFER TO MULE-HIDE WIND UPLIFT RATINGS FOR APPROPRIATE FASTENER DENSITY REQUIRED.
5. FASTENER DENSITY INCREASES BASED ON THE FOLLOWING:
 - 50% FOR PERIMETERS
 - 100% FOR CORNERS



FIELD (8)
1 FASTENER PER EVERY 4 SQ. FT.



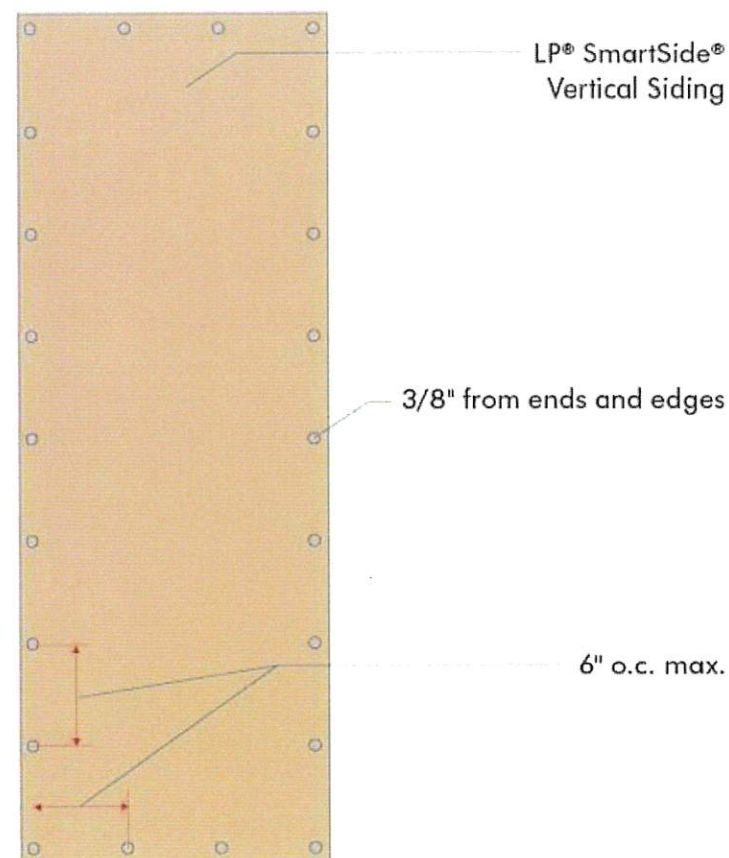
DENSEDECK FASTENING PATTERN



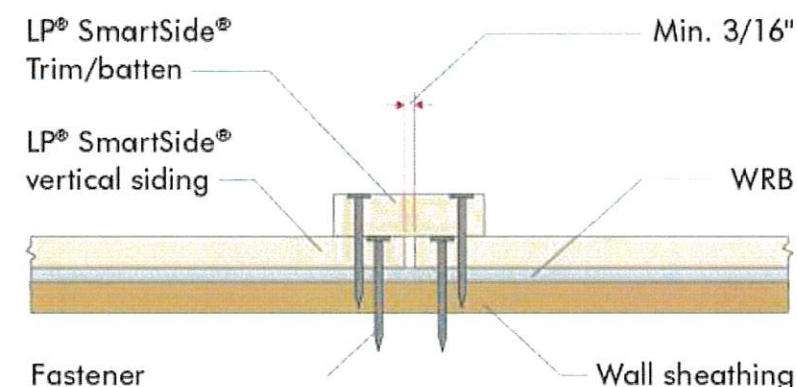
CORNERS (16)
1 FASTENER PER EVERY 2 SQ. FT.

2" OR THICKER INSULATION
ATTACHMENT 8 FASTENERS PER 4'
X 8' IN FIELD

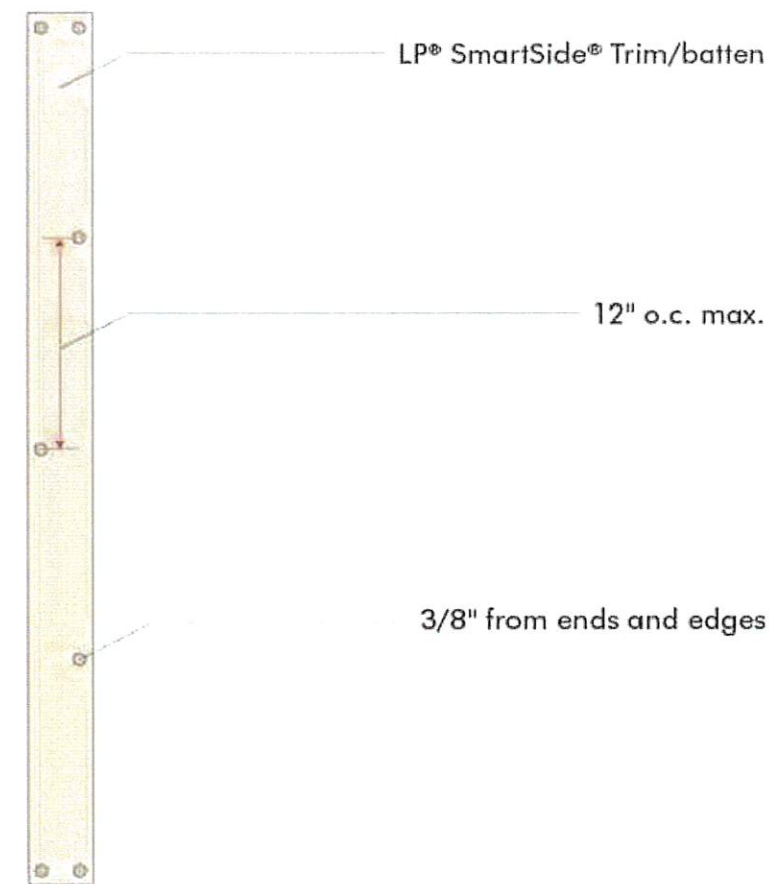
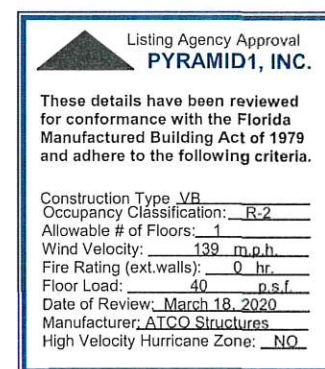
[illegible]



Vertical Siding



Vertical Siding attachment detail



LP SmartSide Trim/Batten

Table 3a. Panel Siding Installed Vertically with 0.113" Nails – **Max. Allowable Wind Speed, V_{asd}**

Performance Category	Max. Stud Spacing ⁽²⁾ (inches)	Fastener Spacing ⁽¹⁾ (inches o.c.)		Max. Allowable Wind Pressure (psf)	Max. Allowable Wind Speed, V _{asd} ⁽³⁾ (mph)		
		Edges	Field		Wind Exposure Category		
					B	C	D
3/8	16	6	12	43	130	110	100
			6	80	170	150	140
	24	6	12	29	105	90	-
			6	58	150	130	110
7/16	16	6	12	43	130	110	100
			6	80	170	150	140
	24	6	12	29	105	90	-
			6	58	150	130	110
19/32	16	6	12	43	130	110	100
			6	80	170	150	140
	24	6	12	29	105	90	-
			6	58	150	130	110

- FASTENING SPACING FOR LP-SMART VERTICAL PANELS

Technical Note No. 028

- Fastener Placement for Vertical Siding:
 - Maximum 3/8 inch from ends and edges
- Fastener Spacing for Vertical Siding:
 - Fastened a maximum of 6 o.c. along the perimeter



By Yuri at 9:56:20 AM, 3/18/2020

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa, 1 mph = 0.447 m/s.

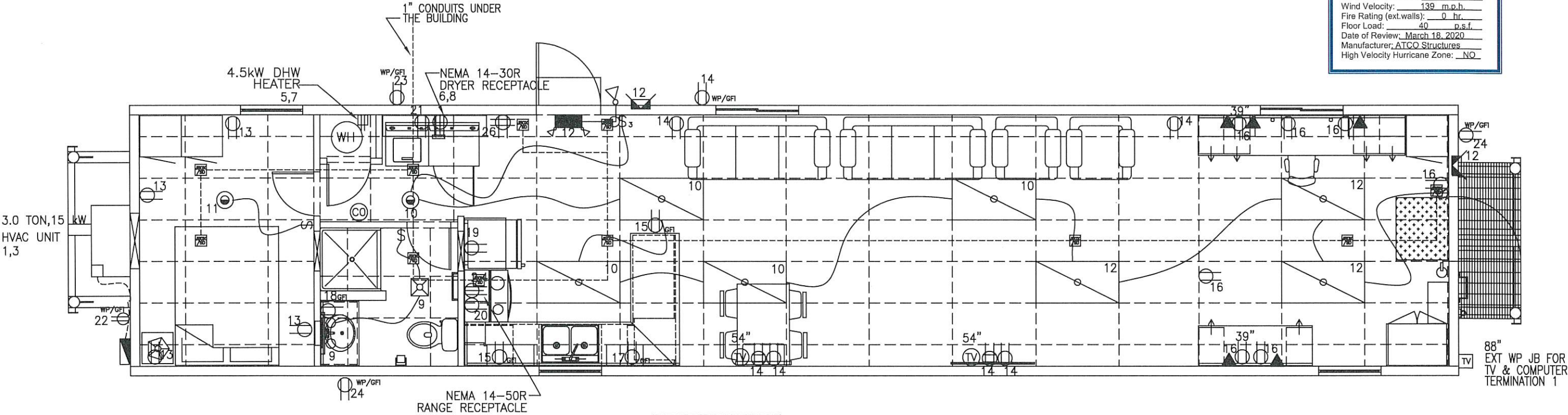
- Fasteners shall be a hot dipped galvanized plain (smooth) shank nail, with a minimum shank diameter of 0.113 inch, and long enough to penetrate structural framing or wood structural panels and structural framing a minimum of 2 inches.
- Wall studs must have a minimum specific gravity of 0.42.
- Three-second-gust; based on wind pressures acting toward and away from building surfaces, at 30-ft height in Zone 5 with smallest effective area in accordance with Chapter 6 of ASCE 7-05, Section R301.2.1 of the 2009 and 2012 IRC, and Section 1609.1.1 of the 2009 IBC.

NOTES: © 2014 ATCO STRUCTURES & LOGISTICS LTD. ALL RIGHTS RESERVED. THESE DRAWINGS CONTAIN THE CONFIDENTIAL INFORMATION, AND ARE THE PROPERTY OF ATCO STRUCTURES & LOGISTICS LTD., SHALL BE HELD IN STRICTEST CONFIDENCE, AND CANNOT BE USED, COPIED, REPRODUCED, DISCLOSED, PUBLISHED, DISTRIBUTED OR OTHERWISE EXPLOITED, IN ANY FORM OR MANNER, IN WHOLE OR IN PART, FOR ANY REASON OTHER THAN THE REASON FOR WHICH THEY WERE PROVIDED TO YOU BY ATCO STRUCTURES & LOGISTICS LTD., WITHOUT THE EXPRESS WRITTEN CONSENT OF ATCO STRUCTURES & LOGISTICS LTD.		CUSTOMER ACCEPTANCE ☐ - ACCEPTANCE AS DRAWN ☐ - ACCEPTANCE EXCEPT AS NOTED BY: _____ DATE: _____		© COPYRIGHT 2014 ALL RIGHTS RESERVED DRAWN BY: TT CHECKED BY: BS DATE: 07FEB2020 SCALE: NTS		ATCO STRUCTURES & LOGISTICS (USA) INC. 1106 NORTH TEMPLE DRIVE DIBOLL, TEXAS 75941 2400 BURKBURNETT ROAD WICHITA FALLS, TEXAS 76306 PROJECT: WCC SERVICES 13' X 64' TOOL PUSH		SPECIFICATION NUMBER 719107.02 DRAWING TITLE: SIDING FASTENING PATTERN DRAWING NO: 96005-01-D04			
REV	DATE	DESCRIPTION	BY								
-	28JAN28	ITB 26-52 Southport Fire Station #8 Relocation	BP								
-		ISSUE FOR AWARDS	BP								

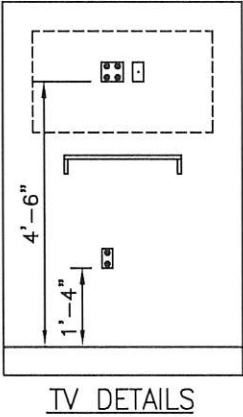
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Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



NOTE:
-SPRINKLER PLANS BY OTHERS.
-ATCO TO PROVIDE J-BOXES WITH PULL STRINGS AND 1" CONDUITS FOR FIRE ALARM SYSTEM INSTALL BY OTHERS ON SITE.



By Yuri at 9:56:21 AM, 3/18/2020
(Structural Aspects Only)

REV	DATE	DESCRIPTION
-	-	TTB 26-52 Southport Fire Station #8 Relocation
-	28JAN28	ISSUE FOR AWARDS

NOTES:
© 2014 ATCO STRUCTURES & LOGISTICS USA INC. ALL RIGHTS RESERVED. THESE DRAWINGS CONTAIN THE CONFIDENTIAL INFORMATION, AND ARE THE PROPERTY, OF ATCO STRUCTURES & LOGISTICS USA INC., SHALL BE HELD IN STRICTEST CONFIDENCE, AND CANNOT BE USED, COPIED, REPRODUCED, DISCLOSED, PUBLISHED, DISTRIBUTED, OR OTHERWISE EXPLOITED, IN ANY FORM OR MANNER, IN WHOLE OR IN PART, FOR ANY REASON OTHER THAN THE REASON FOR WHICH THEY WERE PROVIDED TO YOU BY ATCO STRUCTURES & LOGISTICS USA INC. WITHOUT THE EXPRESS WRITTEN CONSENT OF ATCO STRUCTURES & LOGISTICS USA INC.

CUSTOMER ACCEPTANCE

☐ - ACCEPTANCE AS DRAWN
☐ - ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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DRAWN BY: TT

CHECKED BY: BS

DATE: 07FEB2020

SCALE: NTS

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
2400 BURKBURNETT ROAD
WICHITA FALLS, TEXAS 76306

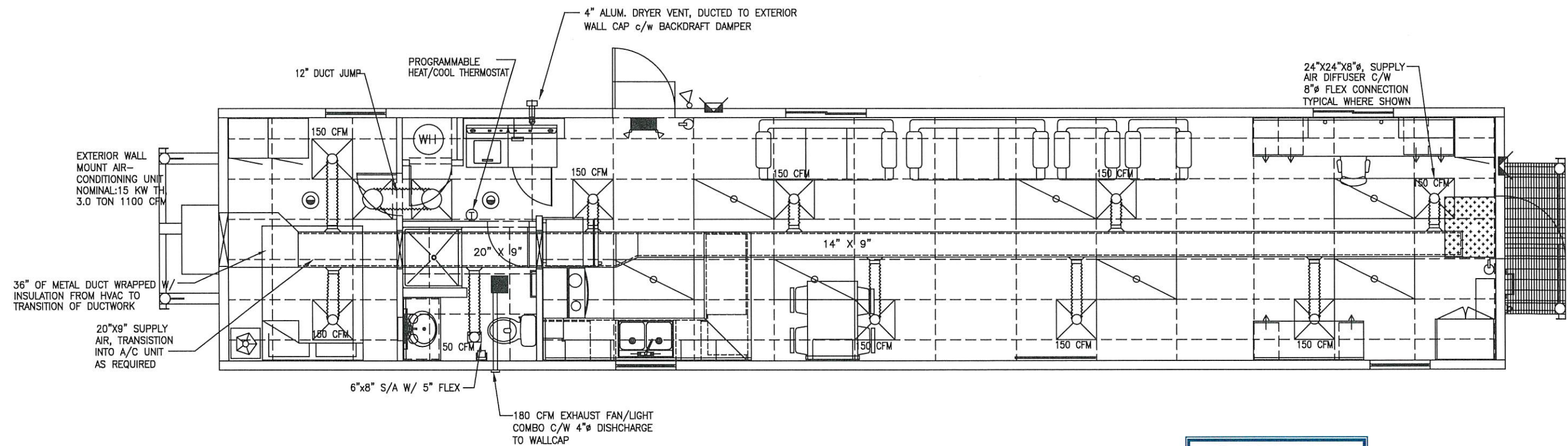
PROJECT:
WCC SERVICES
13' X 64'
TOOL PUSH

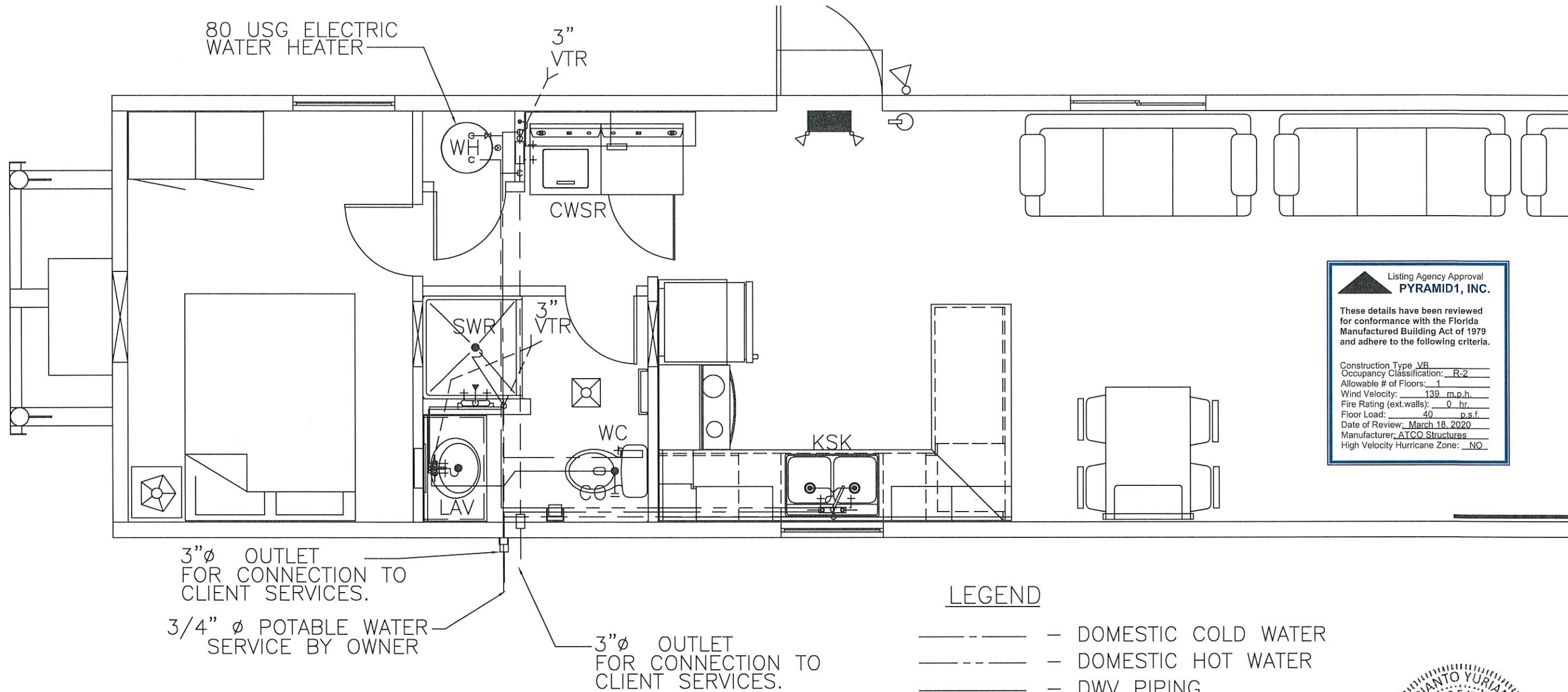
SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
-
ELECTRICAL LAYOUT
-

DRAWING NO:
96005-01-E01



[illegible]



Listing Agency Approval
PYRAMID1, INC.

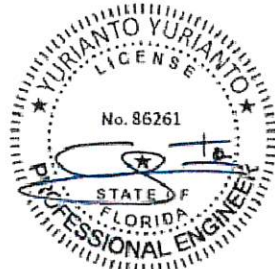
These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext. walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

LEGEND

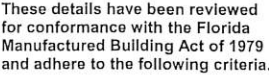
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- — — — — DOMESTIC HOT WATER
- — — — — DWV PIPING
- — — — — DWV PIPING UNDERFLOOR
- — — — — DWV VENT PIPING.

- WC — WATER CLOSET
- LAV — LAVATORY
- SWR — SHOWER
- CWSR — CLOTHES WASHER
- KSK — STAINLESS STEEL SINK
- VTR — VENT THROUGH ROOF
- AAV — AIR ADMITTANCE VALVE
- CO — CLEAN OUT



By Yuri at 9:56:23 AM, 3/18/2020
(Structural Aspects Only)

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Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext. walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



- HOT & COLD WATER LINES TO BE PEX.
- WITH SINGLE DROP FOR SITE CONNECTION
- ALL FIXTURES TO GET LOW POINT DRAINS
- NTS



- DRAIN LINES PVC
- ALL DRAIN LINES TO CONCEALED WHERE POSSIBLE

_____ - DOMESTIC COLD WATER
 _____ - DOMESTIC HOT WATER
 _____ - DWV PIPING
 _____ - DWV PIPING UNDERFLOOR
 _____ - DWV VENT PIPING.

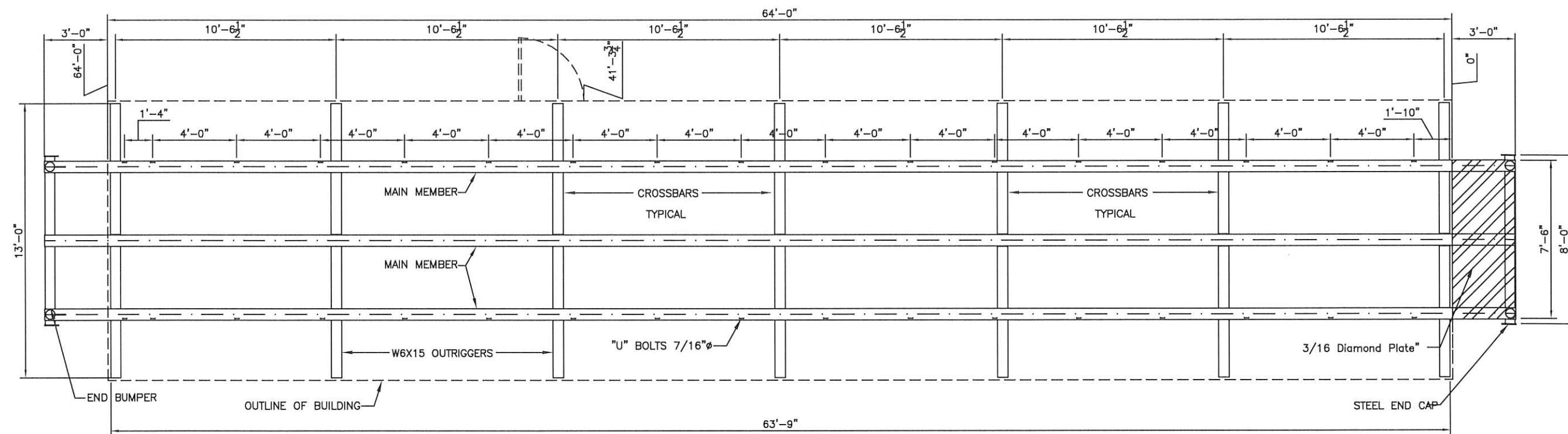
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LAV — LAVATORY
SWR — SHOWER
CWSR — CLOTHES WASHER
KSK — STAINLESS STEEL SINK
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AAV — AIR ADMITTANCE VALVE
CO — CLEAN OUT



By Yuri at 9:56:24 AM, 3/18/2020

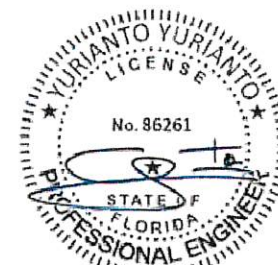
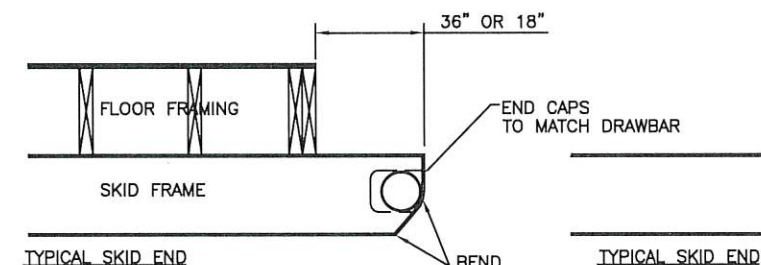
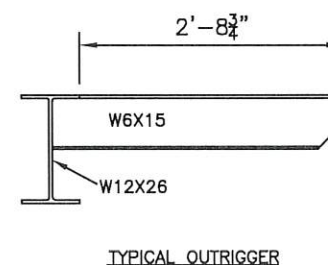
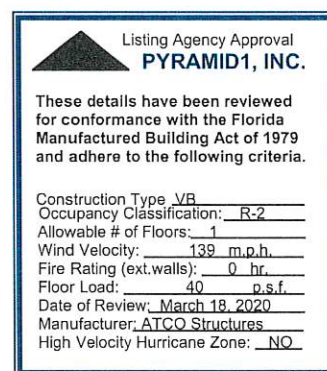
(Structural Aspects Only)

[illegible]



GENERAL NOTES

1. MAIN MEMBERS - 12" WF @ 26 lbs/ft (TYPICAL OF 3)
2. CROSSBARS - W6X15 WIDE FLANGE
3. OUTRIGGERS - W6X15 WIDE FLANGE
4. DRAWBARS - 5" SCH 80
5. BUMPER POSTS - 5" SCH 80 42" TALL
6. FLOOR BOLTING - EVERY 4'-0"
7. ALL SHARP EDGES TO BE ROUNDED OFF & GROUND SMOOTH
8. WELD ELECTRODES TO BE E7014 & E7018 FOR SMAW
9. REMOVE ALL FLUX, BURRS & SPATTER
10. WIRE BRUSH CLEAN, PRIME & APPLY (1) COAT BLACK ENAMEL.
11. ALL WELDS ARE "FILLED WELDS" W/ MINIMUM THICKNESS OF 1/4" ALL AROUND FULL LENGTH.



By Yuri at 9:56:24 AM, 3/18/2020

(Structural Aspects Only)

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FIRE ALARM BILL OF MATERIALS					
QTY.	SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION
1		PFC-40G4 FIRE ALARM CONTROL PANEL	1		BUTTERBALL TAMPER SWITCH (BBH5C502)
3		MHT-1 224W WHITE MINI HORN			
1		WATERFLOW			
1	75cd WP	H5LP-24WR-WP WALL MOUNTED OUTDOOR HORN/STROBE			
1		POTTER MBA-DC 6" 24VDC BELL			

== INPUT DEVICE CIRCUIT #1 - 16 GA 2 CONDUCTOR

== NAC 1 - 16 GA 2 CONDUCTOR

== NAC 2 - 16 GA 2 CONDUCTOR

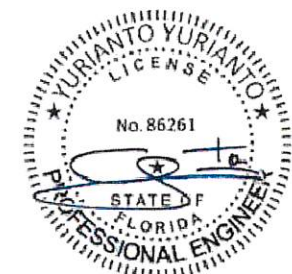
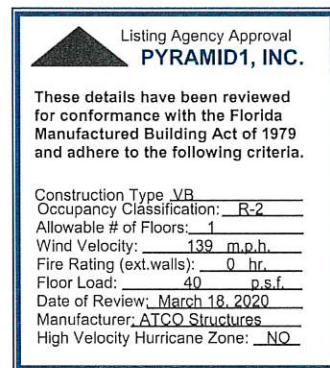
== 24VDC - 14 GA 2 CONDUCTOR

8 - TOTAL DEVICES

- FA1.0 - COVER PAGE
- FA1.1 - FIRE ALARM LAYOUT
- FA1.2 - FACP RISER
- FA1.3 - GENERAL DETAILS
- FA1.4 - PANEL-WATERFLOW CONNECTION

EVENT	TROUBLE ON PANEL	SUPERVISORY ON PANEL	GENERAL ALARM
GROUND FAULTS OPEN OR SHORTS	X		
WATER FLOW			X
TAMPER		X	

1. ANY SPRINKLER SYSTEM WATERFLOW DETECTED WILL RESULT IN A GENERAL ALARM.



(Structural Aspects Only)

ATCO
13'x64' TOOL PUSH
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
4 of 288
FA 1.0

[illegible]

INTEGRATED
SYSTEMS GROUP, INC.

946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 713-4897032 FAX: 713-4897032

[illegible]

ATCO
13'x64' TOOL PUSH
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
5 of 288
FA 1.1

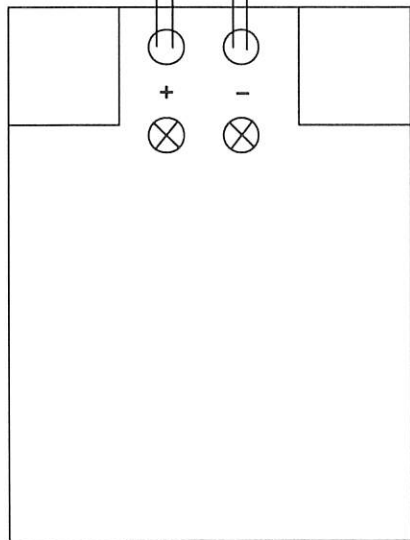


By Yuri at 9:56:27 AM, 3/18/2020

(Structural Aspects Only)

FROM FACP
OR PREVIOUS
DEVICE

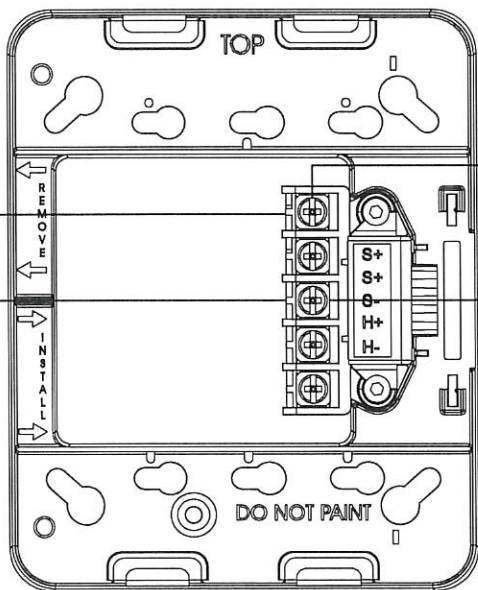
TO NEXT
DEVICE OR
EOLR



MHT-1224W -
MINI-HORN



FROM FACP
OR PREVIOUS
DEVICE



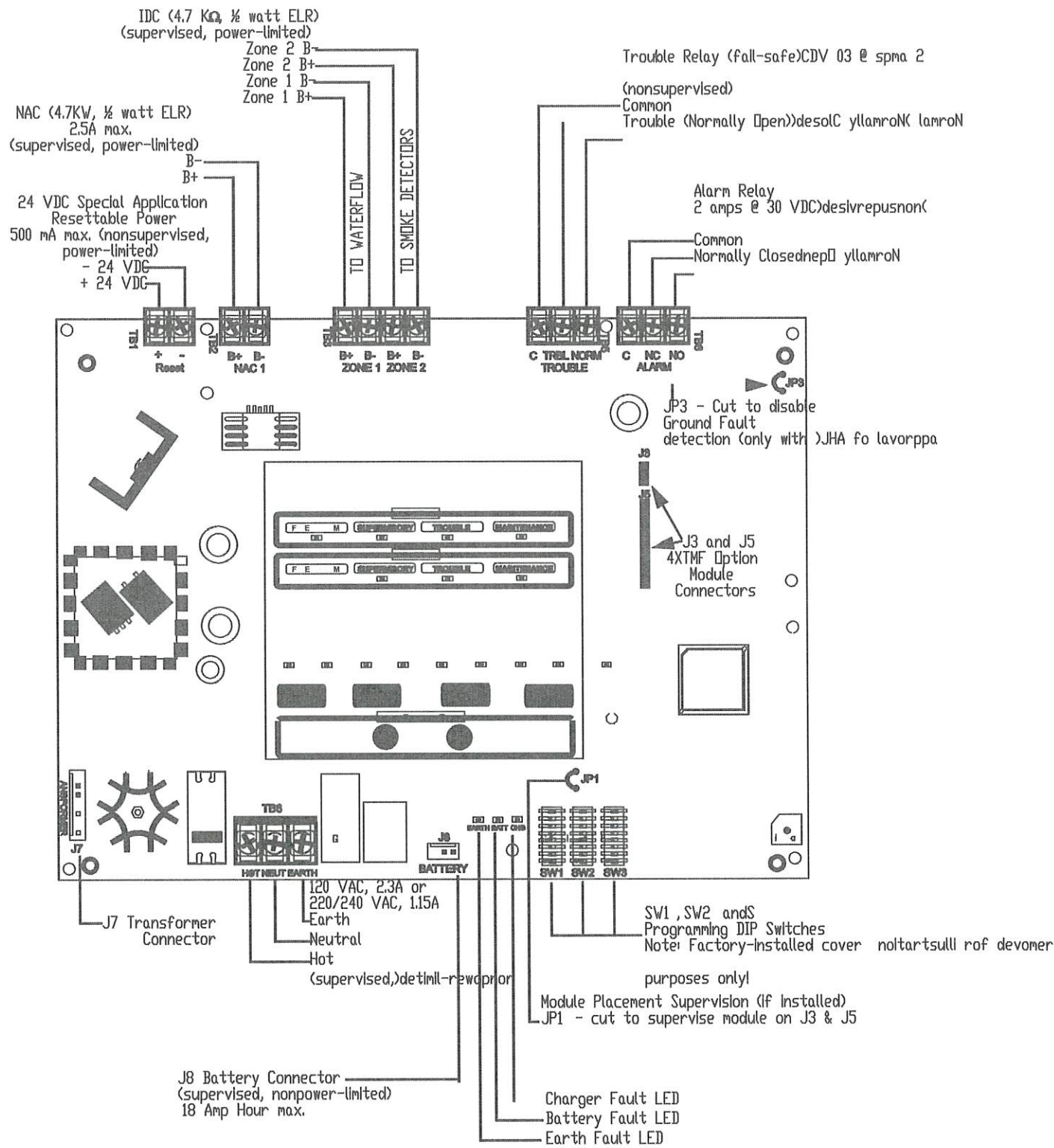
HORN STROBE



By Yuri at 9:56:30 AM, 3/18/2020

(Structural Aspects Only)

MS-2 Two Zone Main Circuit Board



REVISIONS

REV	DATE	DESCRIPTION	BY	CHKD	APPD
1	03/02/20	INITIAL			
2					
3					
4					
5					
6					
7					
8					
9					
10					

ATCO 13'x64' TOOL PUSH FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER

FA 1.3

 Listing Agency Approval
PYRAMID[®], INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
 Occupancy Classification: R-2
 Allowable # of Floors: 1
 Wind Velocity: 139 m.p.h.
 Fire Rating (ext.walls): 0 hr.
 Floor Load: 40 p.s.f.
 Date of Review: March 18, 2020
 Manufacturer: ATCO Structures
 High Velocity Hurricane Zone: NO



INTEGRATED
SYSTEMS GROUP, INC.

946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 713-4897032 FAX: 713-4897032

[illegible]

ATCO
13'x64' TOOL PUSH
FIRE ALARM SYSTEM DESIGN

2.2020

RAW ING BY
MMD

EET NUMBER

FA 1.4

ATCO

13'x64' TOOL PUSH

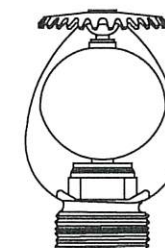
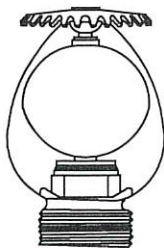
13D Fire Sprinklers System

GENERAL FIRE SPRINKLER SYSTEMS NOTES

Listing Agency Approval
PYRAMID1, INC.

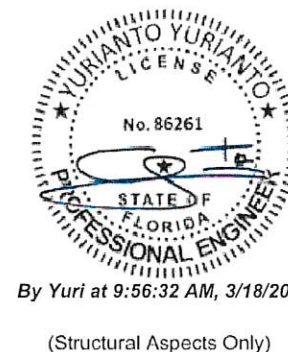
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Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext. walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



- ALL MATERIAL AND METHODS USED SHALL BE NEW AND OF CURRENT ISSUE, SHALL BE APPROVED BY UL (UNDERWRITERS LABORATORY) AND OR F.M. (FACTORY MUTUAL) AND BE IN CONFORMANCE WITH THE APPLICABLE REQUIREMENTS OF NFPA 13D AND THE AUTHORITY HAVING JURISDICTION.
- ALL FIRE RATED PENETRATIONS SHALL BE FIRE STOPPED USING AN APPROVED AND EQUALLY RATED MATERIAL. (BY OTHERS)
- POINT OF CONNECTION SHALL BE THE DEDICATED WATER SUPPLY LINE .
- PIPING SHALL BE DESIGNED AND INSTALLED CONFORMING TO NFPA 13D STANDARDS.
- SYSTEM SHALL BE A WET PIPE SYSTEM.
- DEFLECTOR DISTANCE SHALL BE IN ACCORDANCE WITH THE ADOPTED EDITION OF NFPA 13D AND LOCAL CODES.
- OBSTRUCTIONS TO ANY FIRE SPRINKLER SHALL BE FIELD VERIFIED FOR COMPLIANCE WITH NFPA 13D AND MANUFACTURERS GUIDELINES.
- PIPING SHALL BE INSTALLED TO DRAIN COMPLETELY. INSTALL AUXILIARY DRAINS WITH DRAIN VALVE WHERE NECESSARY.
- HANGER AND BRACING LOCATIONS ARE APPROXIMATE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA-13D AND MANUFACTURERS GUIDELINES.
- CENTER LINES FOR THE INSTALLATION OF SPRINKLER PIPING SHALL BE LOCATED AS CLOSE AS POSSIBLE AS SHOWN ON DRAWINGS. ELEVATIONS MEASURED UP FROM THE SURFACE OF THE TOP OF THE CEILING OR OPEN AREA HARD LID AND ARE SET TO ALLOW AS MUCH DRAINAGE OF WATER FROM PIPING AS POSSIBLE.
- ALL HYDROSTATIC TESTING AND OR FLUSHING SHALL BE PREFORMED IN STRICT ACCORDANCE WITH THE LATEST ADOPTED EDITION OF NFPA 13D AND BE WITNESSED BY A REPRESENTATIVE OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- COORDINATE SPRINKLER SYSTEM TAMPER AND FIRE ALARM SUPERVISION WIRING AND THE WIRING WITH FIRE ALARM INSTALLATION PERSONNEL.
- ELECTRICAL WIRING 48 VOLT AND LARGER BY OTHERS.
- IT IS THE RESPONSIBILITY OF THE OWNER TO MAINTAIN THE INTEGRITY OF THE FIRE ALARM AND SPRINKLER SYSTEM.
- THIS CONTRACT DOES NOT INCLUDE ANY MATERIAL OR DEVICE TO IMPROVE THE STRUCTURAL INTEGRITY OF THE BUILDING AND ITS ABILITY TO CARRY THE LOAD OF THE SPRINKLER SYSTEM.
- THE FIRE SPRINKLER SYSTEM AND FIRE ALARM SYSTEM ARE FOR LIFE SAFETY PURPOSES AND ARE DESIGNED AS PERFORMANCES BASE SYSTEMS TO MEET THE REQUIREMENTS OF THE THE PROJECT AND THE INTENT OF THE APPLICABLE FIRE AND BUILDING CODES.
- A STOCK OF SPARE FIRE SPRINKLERS OF EACH TYPE AND TEMPERATURE ALONG WITH SPRINKLER WRENCHES, SHALL BE LOCATED AT THE MAIN RISER.
- FOR THIS SYSTEM TO WORK WHEN ALL 4 HEADS ACTIVATED A MINIMUM OF 32GPM @ 15PSI IS REQUIRED
- EACH SPRINKLER HEAD REQUIRES 8GPM @ 7.1PSI.

AUTOMATIC SPRINKLER INFORMATION									
QTTY.	SYMBOL	SIZE	TYPE	MAKE	COLOR	SERIES	TEMP.	K-FACTOR	MODEL #
5		1/2"	SEMI-RECESSED REDSIDENTIAL PENDENT	TYCO	WHITE	LFII	155°	3.0	TY1234
5	TOTAL SPRINKLERS								



By Yuri at 9:56:32 AM, 3/18/2020

(Structural Aspects Only)

HYDRAULIC DESIGN DATA			
13'x64' TOOL PUSH			
Hazard Class.	Light Hazard		
NFPA 13D	13D		
System Type	WET		
Density	0.1		
Calculated Area	2 Heads		
Area per Sprinkler	144 sq.ft Max		
Safety Factor	 PSI		
Demand	8 PSI, 18 GPM		
Water Supply:Static, Residual, GPM		Date:	
** Calculated Flowing 2 Heads		Time:	

FIRE SPRINKLER SYSTEM SYMBOLS LEGEND:	
SYMBOL	DESCRIPTION
[7-6]	Elevation from Ceiling to Centerline of Pipe
8'-0"	Elevation - Above Finished Floor to of Pipe
(X)	Hydraulic Reference Point
/	Approximate Hanger Location (See details)
⊗	Fire Sprinkler Riser
	CHECK VALVE
	CONCEALED CPVC PIPE
	EXPOSED BLACK STEEL PIPE

SHEET INDEX	
DWG #	DRAWING NAME
FS1.00	-COVER SHEET
FS1.01	-FIRE SPRINKLER SYSTEM LAYOUT
FS1.02	-GENERAL DETAILS

REVISIONS

ATCO
13'x64' TOOL PUSH
FIRE SPRINKLERS SYSTEM

DATE
02.27.2020

DRAWN BY
MMD

SHEET NUMBER
FS1.00

INTEGRATED
SYSTEMS GROUP, INC.
946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 7134897032 FAX: 7134897032

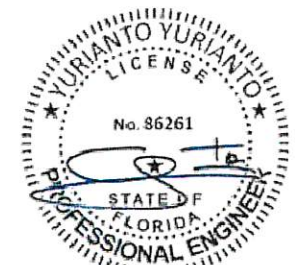
INTEGRATED
SYSTEMS GROUP, INC.

946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 713/4897032 FAX: 713/4897032

REVISIONS				
NO.	DATE	BY	DESCRIPTION	APPROVED
1	02.27.201		01.02.2017	
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ATCO
13'x64' TOOL PUSH
FIRE SPRINKLERS SYSTEM

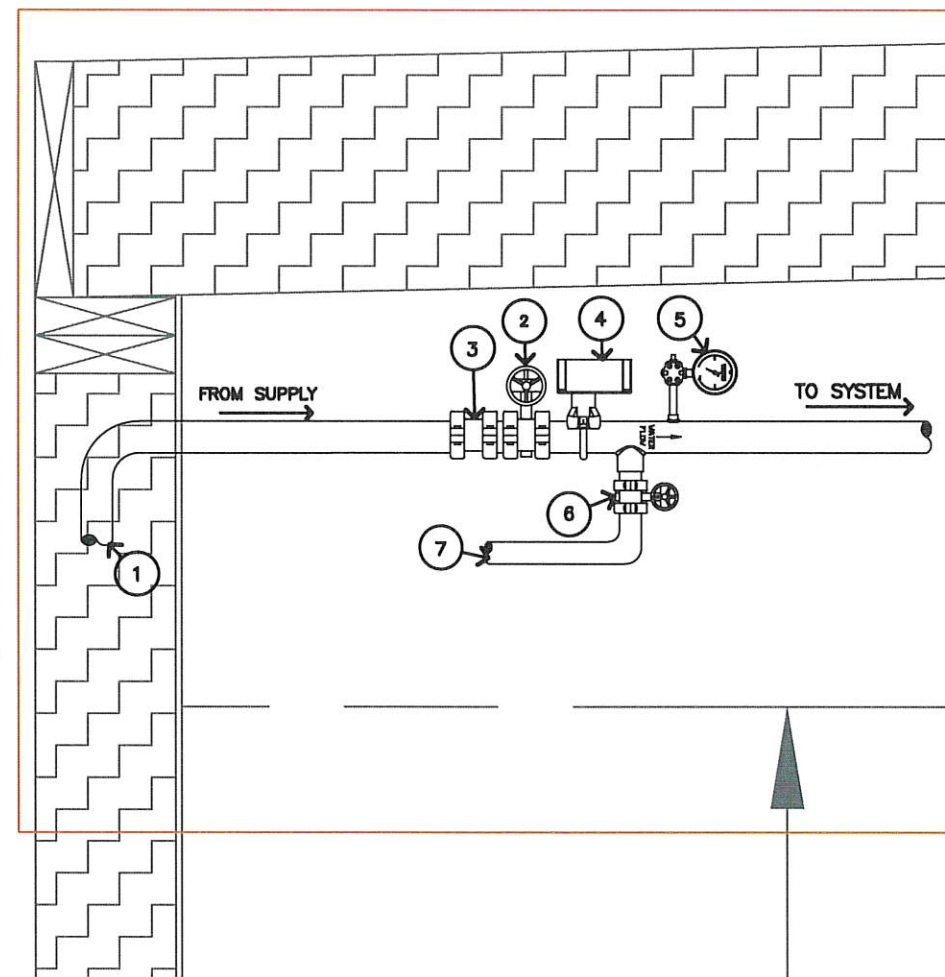
DATE	02.27.2020
DRAWING BY	MMD
SHEET NUMBER	0 of 288



By Yuri at 9:56:33 AM, 3/18/202
(Structural Aspects Only)

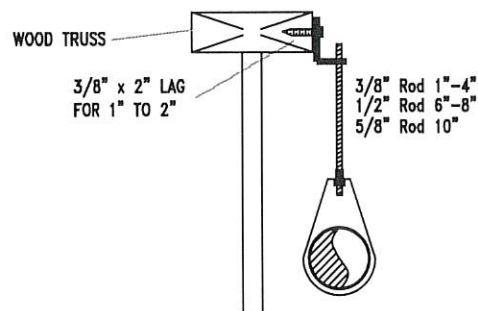
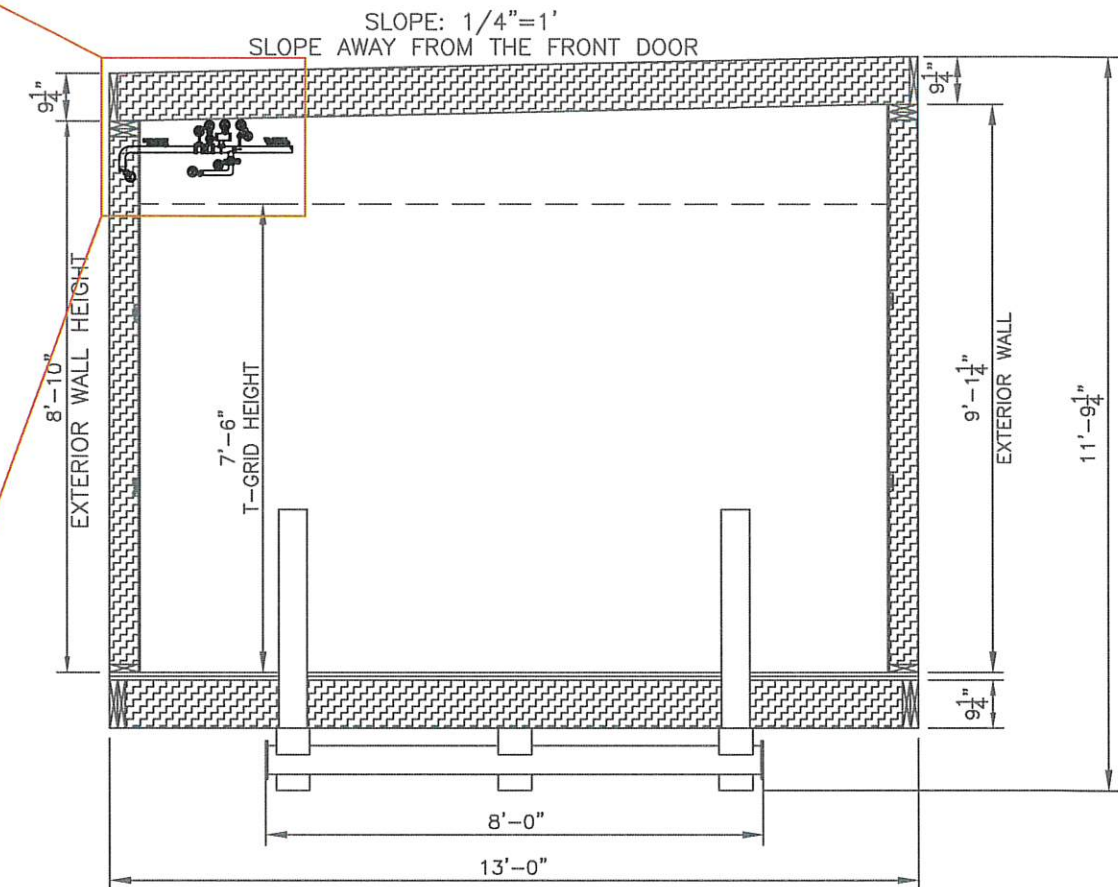
RISER LEGEND

1. CONNECTION TO POTABLE WATER LINE
2. 1" BUTTERFLY VALVE WITH TAMPER (BUTTERBALL BBHSCS02)
3. 1" CHECK VALVE WITH RUBBER GASKET RATED FOR POTABLE WATER USAGE.
4. 1" WATER FLOW SWITCH.
5. PRESSURE GAUGE.
6. 1" BALL VALVE LOCKED AT CLOSED POSITION
7. 1" MAIN DRAIN AND TEST, ROUTE TO OUTSIDE OF BUILDING



A CROSS SECTION

SCALE: NTS

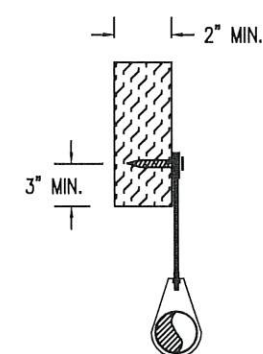
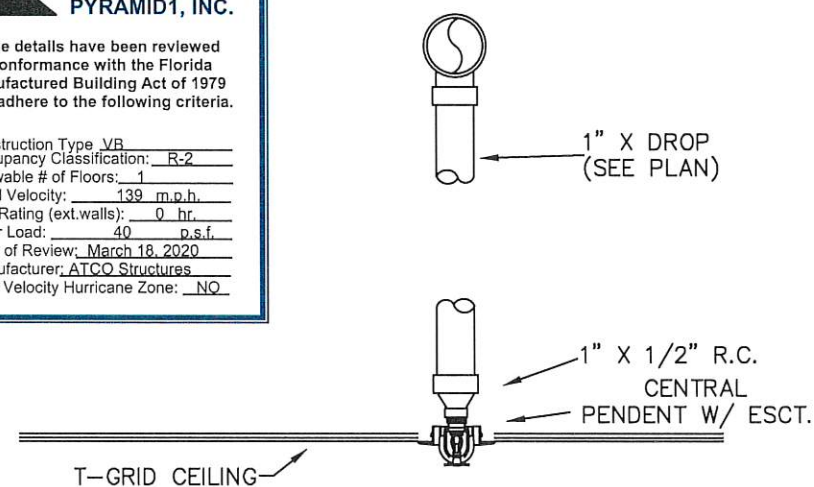
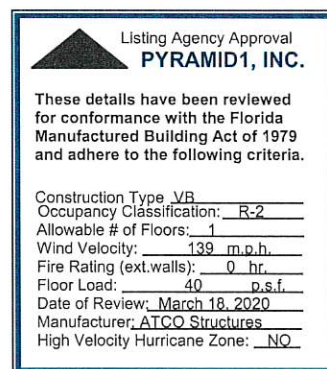


2 1/2" TO 4" PIPE

- 1 -- 1/2" SIDE BEAM CONNECTOR
- 1 -- 1/2" x 3" LAG SCREW
- 1 -- PIPE RING

SIDE BEAM

NO SCALE



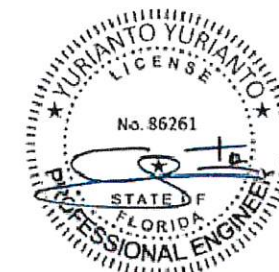
TYPICAL #06 HANGER
NO SCALE

- 1 -- All Thread Rod
- 1 -- Ring
- 1 -- Eye Socket
- 1 -- Drive Screw for 1" to 2" Pipe or Lag Bolt for 2 1/2" to 8" Pipe



TYPICAL HANGER
NO SCALE

- 1 -- Pipe Clip
- 2 -- #18 Wood Screws



By Yuri at 9:56:35 AM, 3/18/2020

(Structural Aspects Only)

ATCO
13'x64' TOOL PUSH
FIRE SPRINKLERS SYSTEM

DATE
02.27.2020

DRAWING BY
MMD

SHEET NUMBER

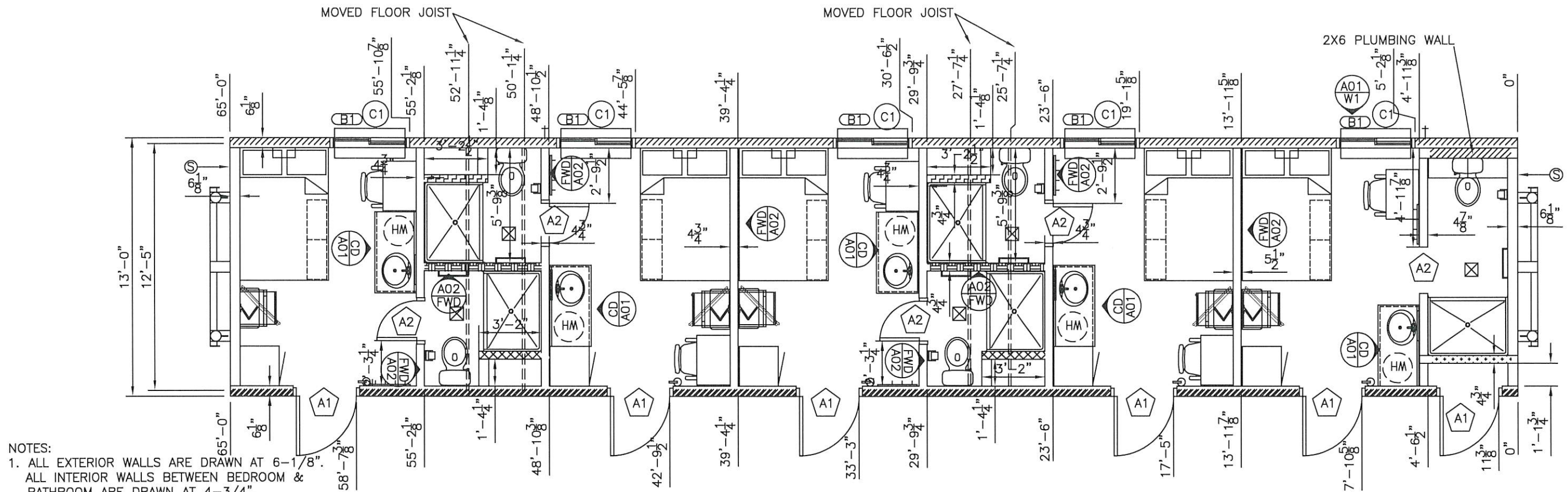
FS1.02

REVISIONS

DATE	BY	DESCRIPTION
02.27.2020	MMD	13'x64' TOOL PUSH FIRE SPRINKLERS SYSTEM

INTEGRATED
SYSTEMS GROUP, INC.

946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 713-4897032 FAX: 713-4897032

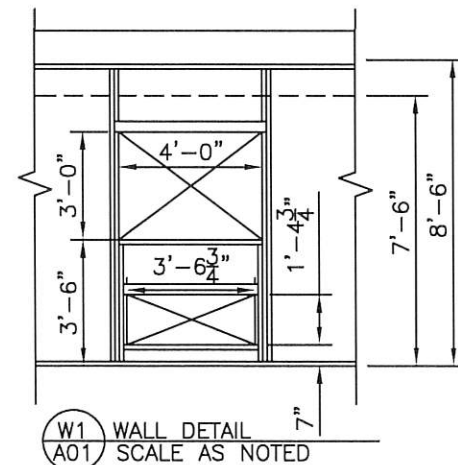


- NOTES:
- ALL EXTERIOR WALLS ARE DRAWN AT 6-1/8".
ALL INTERIOR WALLS BETWEEN BEDROOM & BATHROOM ARE DRAWN AT 4-3/4".
ALL WALLS BETWEEN BEDROOMS ARE DRAWN AT 4-3/4".
ALL BATHROOM CROSS WALLS ARE DRAWN AT 4-3/4".
ALL SHOWER WALLS ARE DRAWN AT 4-3/4".
ALL PLUMBING WALLS ARE DRAWN AT 6-1/8".
UNLESS OTHERWISE NOTED ON THE DRAWING.
 - ALL DOOR JAMBS ARE 3" AWAY FROM WALL UNLESS OTHERWISE NOTED.
 - ALL WALLS TO HAVE FIRE BLOCKING @ FINISHED CEILING HEIGHT, UNLESS VCG IS A FULL SHEET FROM BOTTOM TO TOP PLATE.
 - SEE A02 FOR FIRE WALL DETAILS AND NOTES.
 - ALL MEASUREMENTS ARE FROM RAW FRAMING MEMBER TO RAW FRAMING MEMBER, EXCEPT WHEN FINISHED I.D. IS CALLED OUT.

- Ⓢ INDICATES SHEAR WALLS LOCATIONS
SHEAR WALLS TO BE SHEATHED FULL HEIGHT BOTH SIDES TO BOTTOM OF RAFTERS
AND BLOCKING INSTALLED IF NOT CONTINUOUS.
- NOTES ON SHEAR WALLS:
- EXTERIOR OF SHEAR WALL TO BE COVERED WITH 1/2" CDX
 - INTERIOR OF SHEAR WALL, IF WITHIN A PLENUM, TO BE COVERED WITH 1/2" PLAIN GYPSUM.
 - INTERIOR OF SHEAR WALL, WITHOUT A PLENUM, TO BE COVERED WITH 5/8" VCG



By Yuri at 9:36:30 PM, 3/17/2020



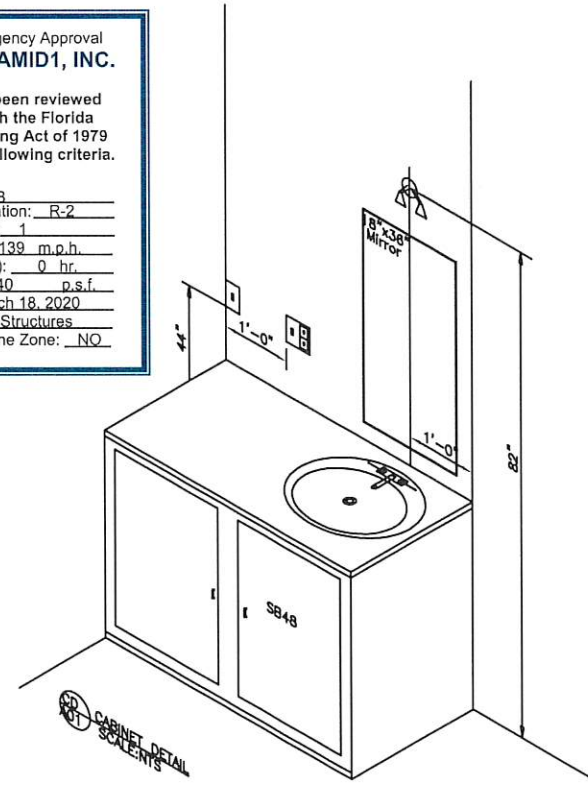
WALL LEGEND			
	-WALL HEIGHT TO BE	8'-6"	
	-WALL HEIGHT TO BE	8'-9 1/2"	
	-WALL HEIGHT TO BE	8'-7 7/8"	
	-WALL HEIGHT TO BE	8'-10"	
	-WALL HEIGHT TO BE	8'-6 1/2"	
	-WALL HEIGHT TO BE	8'-9 3/8"	
	-WALL HEIGHT TO BE	8'-6" TO 8'-10"	

RO SCHEDULES	A	DOORS			
		NO.	QTY.	RO	SILL HEIGHT
		A1	6	36"x80"	N/A
		A2	5	25 1/4"x81"	N/A
	B	WINDOWS			
		NO.	QTY.	RO	SILL HEIGHT
		B1	5	48"x36"	42"
C	MECH				
		NO.	QTY.	RO	SILL HEIGHT
		C1	5	42 3/4"x16 3/4"	7"

Listing Agency Approval
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



1 HOUR FIRE WALL NOTES:
GA FILE NO. WP 3514

- ALL PARTITION WALLS BETWEEN THE UNITS ARE 1-HOUR FIRE RATED.
- ALL INTERIOR DOORS ARE 20 MINUTES FIRE RATED
- RE: A02 FOR DETAILS AND NOTES

REV	DATE	DESCRIPTION	BY
-	-	TTB 26-52 Southport Fire Station #8 Relocation	-
-	28JAN20	ISSUE FOR AWARDS	GA

CUSTOMER ACCEPTANCE

☐ - ACCEPTANCE AS DRAWN
☐ - ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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ALL RIGHTS RESERVED

DRAWN BY: TT

CHECKED BY: BS

DATE: 07FEB2020

SCALE: 3/16"=1'-0"

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
3370 POLE LINE RD. BLD. #36
POCATELLO, IDAHO 83201

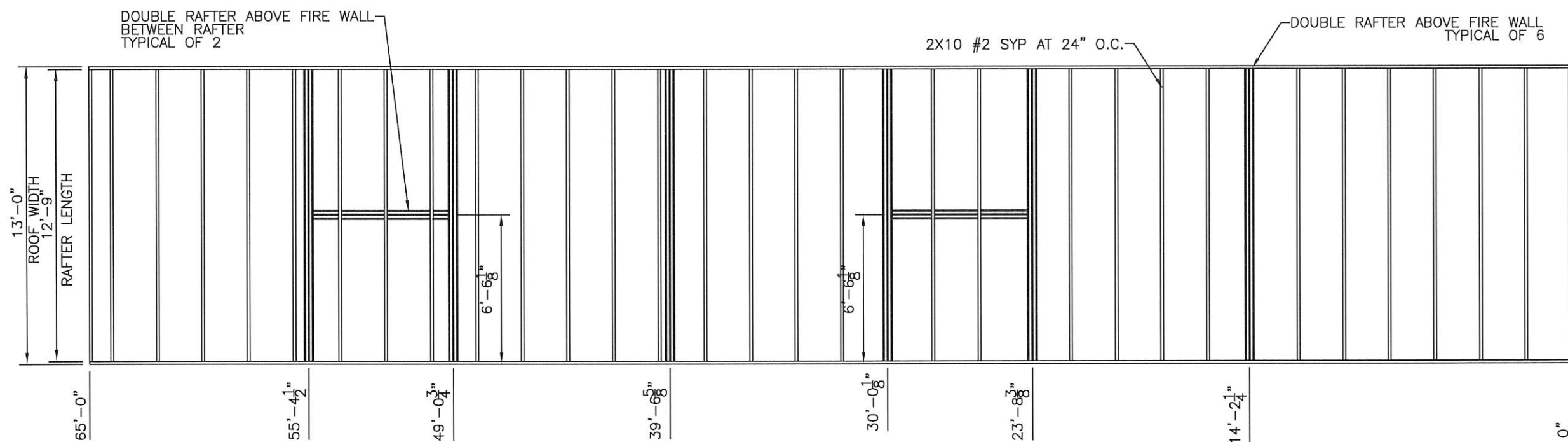
PROJECT: WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
CONSTRUCTION PAGE

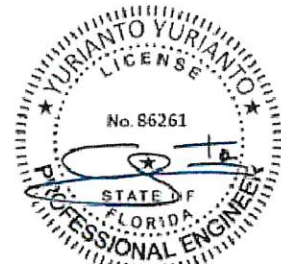
DRAWING NO:
96002-01-A01





DOUBLE RAFTER LOCATIONS

SCALE: 3/16"=1'-0"

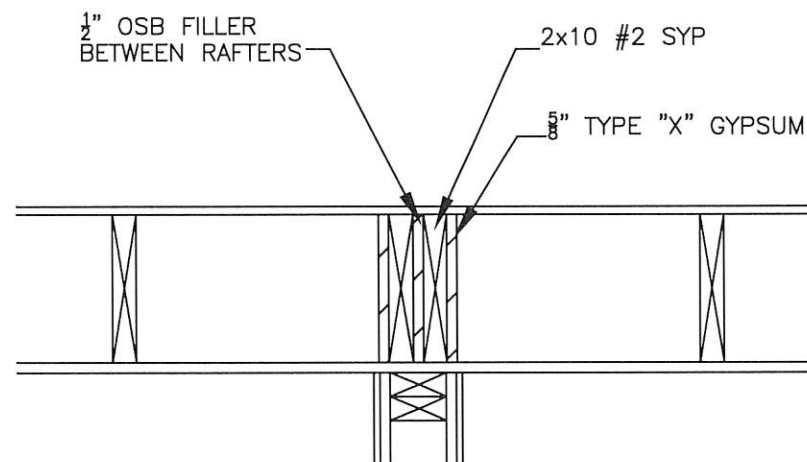


By Yuri at 9:36:45 PM, 3/17/2020

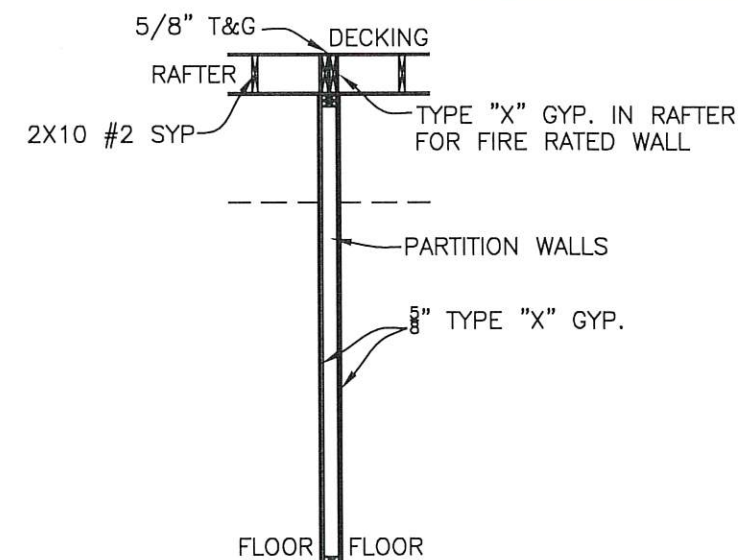
1 HOUR FIRE WALL NOTES:

GA FILE NO. WP 3514

1. ALL PARTITION WALLS BETWEEN THE UNITS ARE 1-HOUR FIRE RATED.
2. ALL INTERIOR DOORS ARE 20 MINUTES FIRE RATED
3. ONE LAYER 5/8" TYPE X GYPSUM WALLBOARD OR GYPSUM VENEER BASE APPLIED PARALLEL OR AT RIGHT ANGLES TO EACH SIDE OF 2X4 WOOD STUDS 16" O.C. WITH 1 1/4" TYPE W DRYWALL SCREWS 12" O.C.
4. JOINTS STAGGERED 16" ON OPPOSITE SIDES.
5. ALL JOINTS & PENETRATIONS TO FIRE RATED WALLS MUST BE FIRE CAULK.



RD A02 RAFTER DETAIL AT FIRE WALL
SCALE AS NOTED



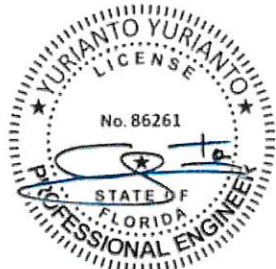
FWD A02 1 HOUR FIRE WALL DETAIL
SCALE AS NOTED

Listing Agency Approval
PYRAMID1, INC.

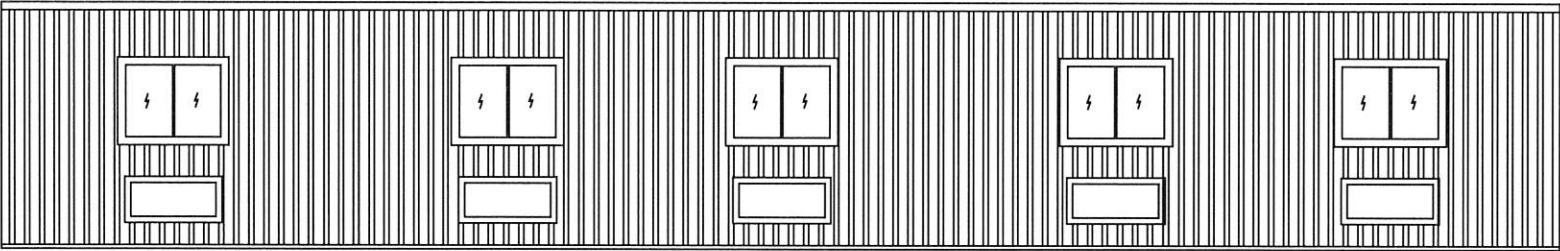
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High Velocity Hurricane Zone	NO

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By Yuri at 9:36:50 PM, 3/17/2020



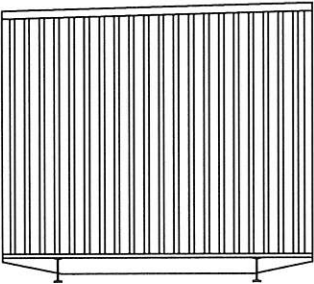
BACK VIEW

Listing Agency Approval

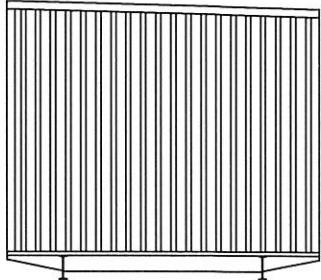
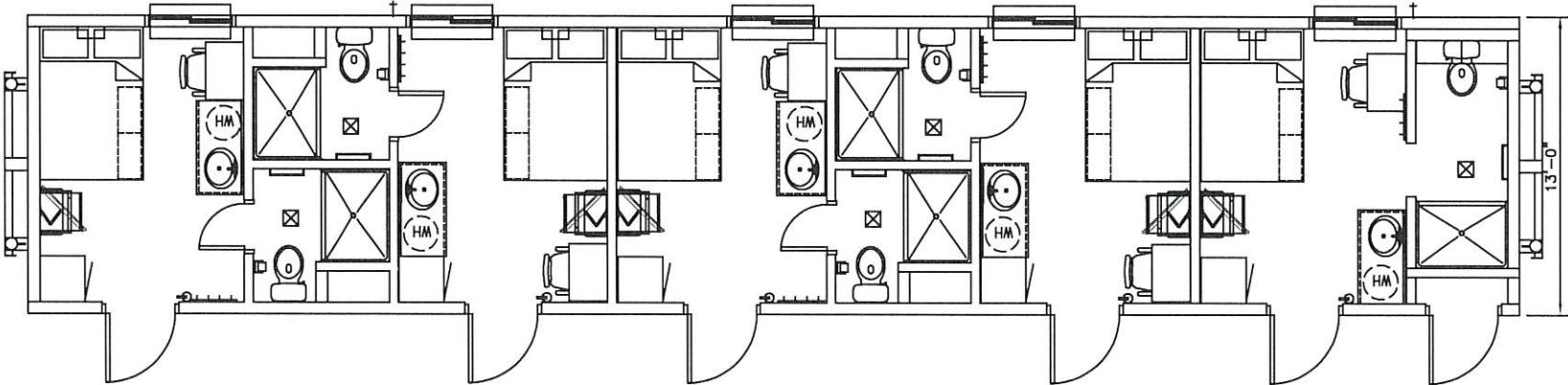
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

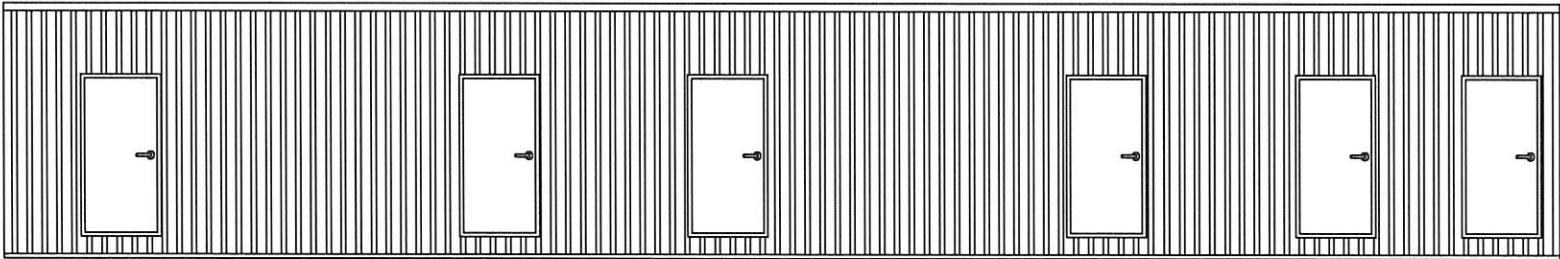
Construction Type	VB
Occupancy Classification	R-2
Allowable # of Floors	1
Wind Velocity	139 m.p.h.
Fire Rating (ext.walls)	0 hr.
Floor Load	40 p.s.f.
Date of Review	March 18, 2020
Manufacturer	ATCO Structures
High Velocity Hurricane Zone	NO



LEFT SIDE VIEW



RIGHT SIDE VIEW



FRONT VIEW

REV	DATE	DESCRIPTION	BY
-	-	ITB 26-52 Southport Fire Station #8 Relocation	-
-	28JAN20	ISSUE FOR AWARDS	GA

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CUSTOMER ACCEPTANCE

☐ - ACCEPTANCE AS DRAWN
☐ - ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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DRAWN BY: GS

CHECKED BY: BS

DATE: 07FEB2020

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

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
3370 POLE LINE RD. BLD. #36
POCATELLO, IDAHO 83201

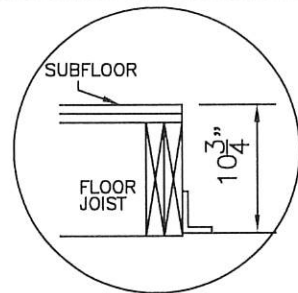
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
-
EXTERIOR ELEVATIONS
-

DRAWING NO:
96002-01-A03





B ANGLE IRON DETAILS
D01 SCALE: 3/4"=1'-0"

2X6 #2 SYP @ 16" O.C.
R-21 KRAFT-FACED
1/2" PLYWOOD
DOUBLE TOP PLATE
3/8" VINYL COVERED GYPSUM
4" VINYL COVE BASE
WEYERHAUSER (EQUAL OR BETTER) BUILDING WRAP
LP SMARTSIDE 38 SERIES STRAND SUBSTRATE VERTICAL SIDING

3/8" GYPSUM TO
UNDERSIDE OF RAFTERS
MINIMUM 1/4" DENSEDECK
OVER 19/32" PLYWOOD
TYPICAL TO BOTH SIDES

TPO-c ROOFING DOWN
TO HONEYCOMB VENT

HONEYCOMB VENTING
1" THICK

TERMINATION STRIP

AIR SPACE

Z-FLASHING

2X10 RAFTER W/
6"L x 1 1/2"H
NOTCHES CUT BETWEEN EVERY
RAFTER

LP SMART VERTICAL SIDING

1/2" PLYWOOD SIDING

TO BOTH LONG SIDES OF ROOF

A ROOFING VENTING DETAIL
D01 SCALE: AS NOTED

NOTE 1:

1. ROOF INSULATION TO HAVE 1" CLEARANCE BETWEEN INSULATION & ROOF SHEATHING.
2. 5/16"x3 1/2" LAG SCREW EVERY 48" O.C. FROM STUD TO FLOOR TO ROOF CONNECTIONS.
3. RAFTER CONNECTION: 7-0.131"x3" NAILS FROM RIM RAIL TO RAFTERS.
4. FRAME TO FLOOR CONNECTION: 3/8"x3" LAG FROM OUTRIGGER TO FLOOR IN EACH OUTRIGGER @ 48" O.C.

NOTE 2:

- * FASTENER FOR TPO-c ROOFING: (FASTENING #1)
OMG XHD FASTENERS W/ OMG 2-3/8" BARBED XHD PLATES 6" o.c.
THROUGH THE MEMBERANE IN THE 5 1/2" SIDE LAP IN ROWS SPACED 6' o.c.
FOLLOWED BY APPLYING A 1 1/2" WIDE HEAT WELD.
MAXIMUM DESIGN PRESSURE -67.5 psf. (SEE GENERAL LIMITATION #7)

- * RE: D03 FOR DENSEDECK FASTENING PATTERN

NOTE 3: FOR WALL SIDING FASTENING SIZES AND PATTERNS (RE: D04)

MIN. SLOPE: 1/4" 12

RE: A/D01
ROOF FASTENING
RE: NOTE: 2/D01

12'-9"
RAFTER LENGTH

9 1/4"

A
D01

2X4 FIRE BLOCKING

8'-10"
STRUCTURAL WALL HEIGHT

2X4 #2 SYP @ 16" O.C.
R-11 UN-FACED
5/8" TYPE "X" GYPSUM FOR FIRE RATED WALLS W/ 3/8" V.C.G.
3/8" V.C.G. TO REMAINDER
3/8" TYPE "X" MR GYP BEHIND SHOWERS
FRP FULL HEIGHT TO RESTROOMS
4" VINYL COVE BASE

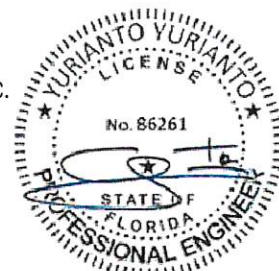
7'-6"
FINISHED CEILING HEIGHT

12'-6"
FLOOR JOIST LENGTH

13'-0"
UNIT WIDTH

12" JR. I-BEAM OUTRIGGER FRAME

2X10 #2 SYP @ 16" O.C.; DOUBLE RIM JOIST
R-30 KRAFT-FACED
DOUBLE LAYER 3/4" T&G PLYWOOD
7/16" OSB W/ 30 GAUGE METAL BELLY PAN
16"x16" DESIGNER TILE



By Yuri at 9:36:52 PM, 3/17/2020

FRAME

FRAME: 12" 26# 3 RUNNER SKID W/ 2' EXTENSION ON ONE END & 1' EXT. ON THE OTHER END, STEEL LADDER, PULL OUT STEPS, FALL RESTRAINT SATELLITE POLE

FLOORS

FLOOR JOIST: 2 x 10 @ 16" O/C W/ DOUBLE RIM JOISTS
UNDERSHEATHING: 30 GAUGE METAL BELLY PAN OVER 3/8 OSB
RAISED FLOOR: 2X8 TO RESTROOM
INSULATION: R-30 UN-FACED
SUBFLOOR: DOUBLE 3/4" T & G
FLOOR COVERING: 1/8" VINYL DESIGNER TILE

EXTERIOR WALLS

WALL FRAMING: 2X6 SYP #2 @16" O.C.
BOTTOM PLATE: SINGLE
TOP PLATE: DOUBLE
INSULATION: R-21 KRAFT-FACED (16")
EXT. SHEATHING: 1/2" PLYWOOD
BUILDING WRAP: WEYERHAUSER BUILDING WRAP OR EQUAL
EXT. SIDING: LP SMARTSIDE 38 SERIES STRAND SUBSTRATE VERTICAL SIDING
INTERIOR: 3/8" VINYL COVERED GYPSUM W/BATTENS
FRP: ABOVE SHOWERS
BASE: 4" VINYL COVE BASE

INTERIOR WALLS

WALL FRAMING: 2X4 SYP #2 @16" O.C.
PLENUM WALLS: 2X4 SYP #2 @16" O.C.
BOTTOM PLATE: SINGLE
TOP PLATE: SINGLE
INSULATION: R-11 UN-FACED TO PARTITIONS
INTERIOR: 5/8" VINYL COVERED GYPSUM TYPE X
FRP: FRP OVER 3/8" MOISTURE RESISTANT GYPSUM
BASE: 4" VINYL COVE BASE

ROOFS

CEILING: 2 X 4 T-GRID SUSPENDED CEILING W/ ACOUSTIC STANDARD TILES & MOISTURE RESISTANT TILES IN RESTROOM
ROOF FINISH: 3/8" GYPSUM TO UNDERSIDE OF RAFTERS
ROOF FRAMING: 2 X 10 #2 SYP @ 16" O.C.
INSULATION: R-30 INSULATION W/NETTING
ROOF DECKING: 19/32" PLYWOOD
INSULATION LAYER: 1 1/2" MULE-HIDE POLY ISO 1
ROOF BARRIER: 1/4" DENSEDECK
ROOF COVER: "TPO-c" MEMBERANE

NOTE: VENTING PER DETAIL



REV	DATE	DESCRIPTION	BY
-	-	ITB 26-52 Southport Fire Station #8 Relocation	-
-	28JAN20	ISSUE FOR AWARDS	GA

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☐ - ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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DRAWN BY: GS

CHECKED BY: BS

DATE: 07FEB2020

SCALE: 3/8"=1'-0"

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
3370 POLE LINE RD. BLD. #36
POCATELLO, IDAHO 83201

PROJECT:

WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER

719119.02

DRAWING TITLE:

CROSS SECTION

DRAWING NO:

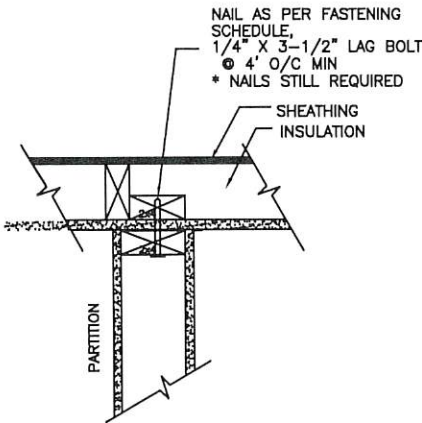
96002-01-D01



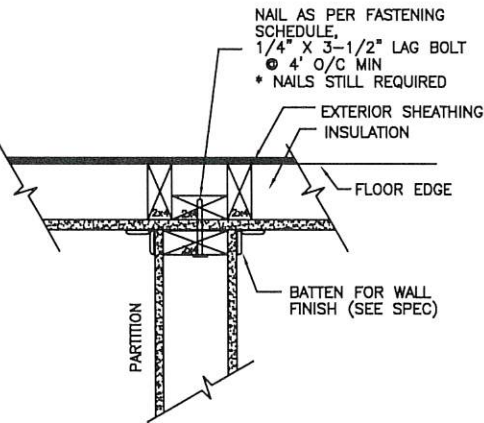
FASTENING SCHEDULE FOR PANELING, SHEATING, & TRIMS

FASTENING SCHEDULE			FASTENER		SPACING OF FASTENERS o/c (*P=Perimeter, *F=Field)					
DESCRIPTION	COMMENTS	SIZE	TYPE	FLOOR		WALL/PARTITION		ROOF		
				"P"	"F"	"P"	"F"	"P"	"F"	
3/8 OSB/PLYWOOD		1/2 x 1-3/4	44G BAB STAPLE	4	8	4	8	3	6	
3/8 PLYWOOD UNDERLAY (TOP LAYER)	DOUBLE FLOORING	1/2 x 1-3/4	44G BAB STAPLE	4	8					
7/16 OSB		1/2 x 1-3/4	44G BAB STAPLE	4	8	4	8			
1/2 OSB/PLYWOOD (BOTTOM LAYER)		1/2 x 1-3/4	44G BAB STAPLE	4	8	4	8	3	6	
5/8 T & G PLYWOOD		1/2 x 2-1/2	63G BAB STAPLE	4	8					
		5/8 x 1-3/4	LOW ROOT WOOD SCREW	4	16			6	12	
3/4 T & G PLYWOOD		1/2 x 2-1/2	63G BAB STAPLE	4	8					
		5/8 x 1-3/4	LOW ROOT WOOD SCREW	4	16			6	12	
1 1/8 T & G PLYWOOD	FASTENING TO METAL FLOOR JOIST	8d RING SHANK 1/2x2-1/2" SCREW	HARDENED NAIL SELF-DRILLING METAL SCREW	8	6					
3/8 V.C. DRYWALL		1 x 1-1/4 1-1/4	31G BAB STAPLE FOAM ADHESIVE			8				
1/2 PLAIN DRYWALL		5/8 x 1-1/4 5/8 x 1-5/8	DRYWALL SCREW DRYWALL SCREW			12	12		12	12
1/2 V.C. DRYWALL		1 x 1-1/2 5/8 x 1 5/8	38G BAB STAPLE FOAM ADHESIVE			8		8		24
5/8 PLAIN DRYWALL		5/8 x 1-5/8	DRYWALL SCREW			12	12	12	12	
5/8 V.C. DRYWALL		1 x 1-1/2 5/8 x 1 5/8	38G BAB STAPLE FOAM ADHESIVE			8		8		24
3/8 FRP BOARD		1/2 x 1-1/4 1/4 x 1	31G BAB STAPLE NYLON TAP INS			10		10		24
5.2mm LUAN PANNELLING	STUD 16 o/c	7/32 x 1	351G BAB BROWN STAPLE			6	12			
3.2mm LUAN PANNELLING	STUD 16 o/c	7/32 x 5/8	355/8G BROWN STAPLE			6	12			
1/4 V.C. LUAN PANNELLING	STUD 16 o/c	7/32 x 1 1-1/4	351G BARN WHITE STAPLE FOAM ADHESIVE			4		4		24
1/2 CEILING BOARD	ROOF JOIST 16 o/c	1-1/4 x 1	31G BAB STAPLE					6	12	
1/2 INNER SEAL	STUD 16 o/c	.0915 x 2-1/8 1-1/4	EC22 ASB HOT NAIL RD 504 NAIL			6	12			
30 GA. ROOF EDGE		1/2 x 1-1/2	38G BAB STAPLE						2	
TERMINATION BAR		5/8 x 1-1/4	PAN HEAD SCREW						6	
BATTEN/BASEBOARD/CASING		.072 x 2	DA21 EPDN NAIL			12				
1/2 CANVEX / BOTTOM BOARD		1-1/4 x 1	31G BAB STAPLE	3						
7/16 SMARTSIDE PANEL SIDING *		.090 x 2	C6R90BDG NAIL			6*	12			
26 GA. LOW RIB SIDING		5/8 x 1-1/2 1/4 x 7/8	WOOD SCREW LAP SCREW				12			

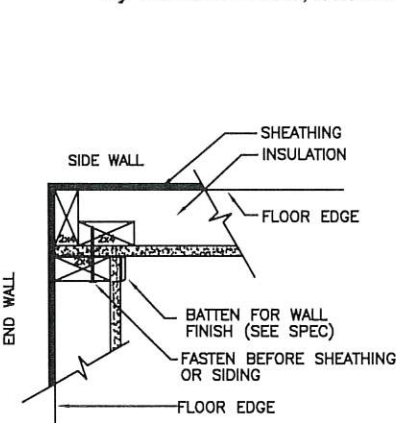
* FASTENER SPACING FOR SHEAR WALL PERIMETER TO BE 3" O/C
- WOOD TO WOOD ADHESIVES WILL/SHALL MEET AFG-10 REGULATIONS
- WALLBOARD ADHESIVES SHALL MEET ASTM C557 REQUIREMENTS
- STAPLES SHALL BE 16 GAUGE OR HEAVIER AS REQUIRED.



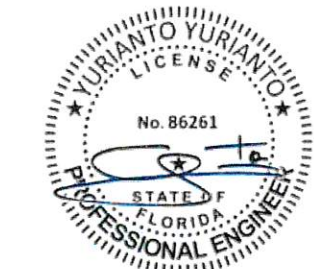
D02 PARTITION WALL TO CEILING ATTACHMENT
SCALE: 1" = 1'-0"



D02 PARTITION WALL TO EXTERIOR WALL ATTACHMENT
SCALE: 1" = 1'-0"



D02 END WALL ATTACHMENT
SCALE: 1" = 1'-0"



By Yuri at 9:36:54 PM, 3/17/2020

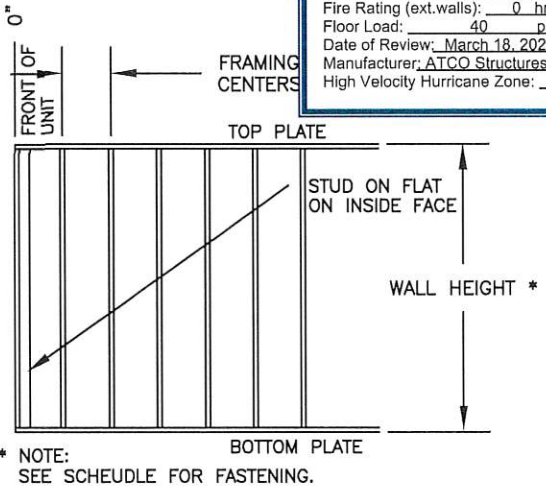
		FLOOR QTY	WALLS QTY	PARTITION QTY	ROOF QTY	SIZE OF NAIL OR STAPLE	TYPE	COMMENTS
2 x 4	TO PLATE	3	3	3	3	.131 x 3-1/4	S12D131 NAIL	MIN 3/4" FROM EDGE OF PLATES
2 x 6	TO PLATE	3	3	3	3			
2 x 8	TO PLATE	4	3	-	3			
2 x 10	TO PLATE	4	-	-	3			
2 x 12	TO PLATE	5	-	-	7			
2 x -	TO 2 x -	16" STGRD	16" STGRD	16" STGRD	16" STGRD	.131 x 3-1/4	S12D131 NAIL	DOUBLE OR TRIPLE PLATES, STUDS, JOISTS, CRIPPLES
2 x 4	HEADERS	-	12" o/c STGRD	12" o/c STGRD	-	.131 x 3-1/4	S12D131 NAIL	HEADERS ARE END NAILED THROUGH STUD W/ QTY. 5 NAILS (.131 X 3-1/4") EACH END
2 x 6	HEADERS	-	"	"	-			"
2 x 8	HEADERS	-	"	"	-			"
2 x 10	HEADERS	-	"	"	-			"
2 x 4 / 2 x 6	WALL TO	1 PER 4' 2/ STUD SPACE	16" o/c	16" o/c	1 PER 4' 2/ STUD SPACE	5/8 x 3-1/2" .131 x 3-1/4	WOODSCREW S12D131 NAIL	STUDS AT 16" OR 24" o/c
2 x 4 / 2 x 6	PARTITION TO	16" o/c	16" o/c	16" o/c	16" o/c	0.131 X 2-1/2"	NAIL	
-	SEALTITE BTM SHEATHING	8" O.C.	-	-	-	31G BAB	STAPLE	
-	WALL BLOCKING TO STUD	1" O.C.	-	-	-	38GA BAB	STAPLE	STITCH ON SURFACE

* NOTE: INTER CONNECTION OF ALL SIZES OF MULTIPLE MEMBERS ARE TO FOLLOW THE INTER CONNECTIONS as listed ABOVE (IN 2x4 to 2x4)

Listing Agency Approval
PYRAMID1, INC.

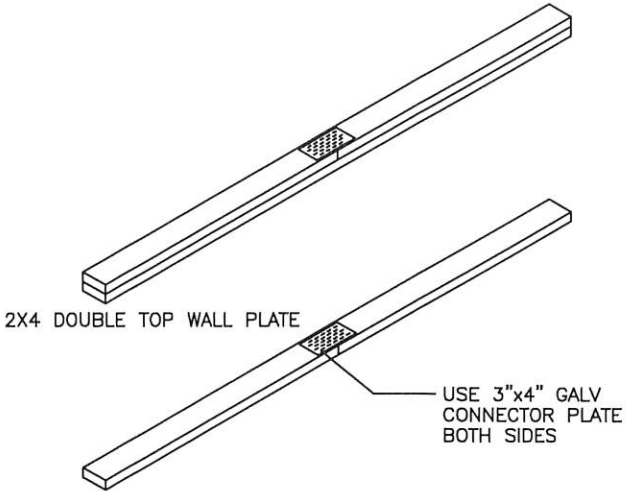
These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type:	VB
Occupancy Classification:	R-2
Allowable # of Floors:	1
Wind Velocity:	139 m.p.h.
Fire Rating (ext.walls):	0 hr.
Floor Load:	40 p.s.f.
Date of Review:	March 18, 2020
Manufacturer:	ATCO Structures
High Velocity Hurricane Zone:	NO



* NOTE: SEE SCHEDULE FOR FASTENING.

D02 WALL FRAMING DETAIL
SCALE: 3/16" = 1'-0"

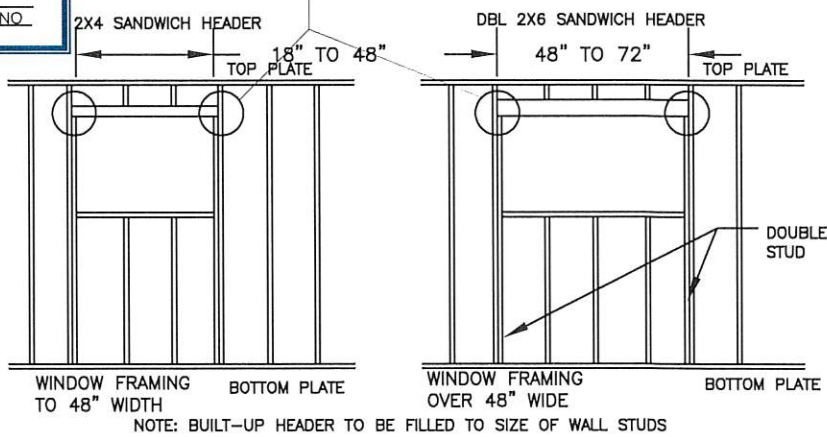


- NOTES:
- DOUBLE SIDE PLATE JOINTS TO BE SPACED WITH A MINIMUM OF 4' APART
 - USE GALV. STEEL 'CONNECTOR PLATE' GAUGE 20G. (EAGLE METAL-E20 STRUCTURAL CONNECTOR PLATE OR EQUAL)
 - PRESS PLATES TO CONNECT DIMENSIONAL LUMBER TO CREATE DESIRED PLATE LENGTH.
 - PLATES MAY BE INSTALLED WITH A 1/4" VARIANCE FROM CENTER OF JOINT.
 - NAILING THROUGH CONNECTOR PLATES INTO STUD END MEMBERS IS PERMISSIBLE.
 - DOUBLE TOP PLATES ARE FASTENING TOGETHER USING 3"x0.131" NAILS @ 8" O.C.

D02 LUMBER CONNECTIONS
SCALE: NTS

RO WIDTH	HEADER ASSEMBLY
18" to 48"	USE 2-2x4 HEADERS WITH CRIPLES
48" to 72"	USE 2-2x6 HEADERS WITH CRIPLES
72" to 120"	USE 2-2x8 HEADERS WITH CRIPLES

FOR HEADER TO JAMB STUDS FASTENING, SEE SCHEDULE



D02 WINDOW FRAMING DETAIL
SCALE: 3/16" = 1'-0"

REV	DATE	DESCRIPTION	BY
-	-	1TB 26-52 Southport Fire Station #8 Relocation	-
-	28JAN20	ISSUE FOR AWARDS	GA

NOTES:
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BY: _____
DATE: _____

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DRAWN BY: GS
CHECKED BY: BS
DATE: 07FEB2020
SCALE: AS NOTED

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
3370 POLE LINE RD. BLD #36
POCATELLO, IDAHO 83201
PROJECT: WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02
DRAWING TITLE:
HEADER SCHEDULE,
FASTENING DETAILS, &
FASTENING SCHEDULE
DRAWING NO:
96002-01-D02

NOTES:

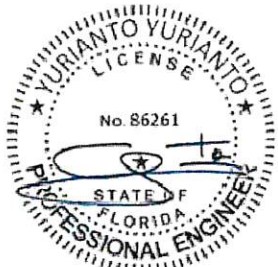
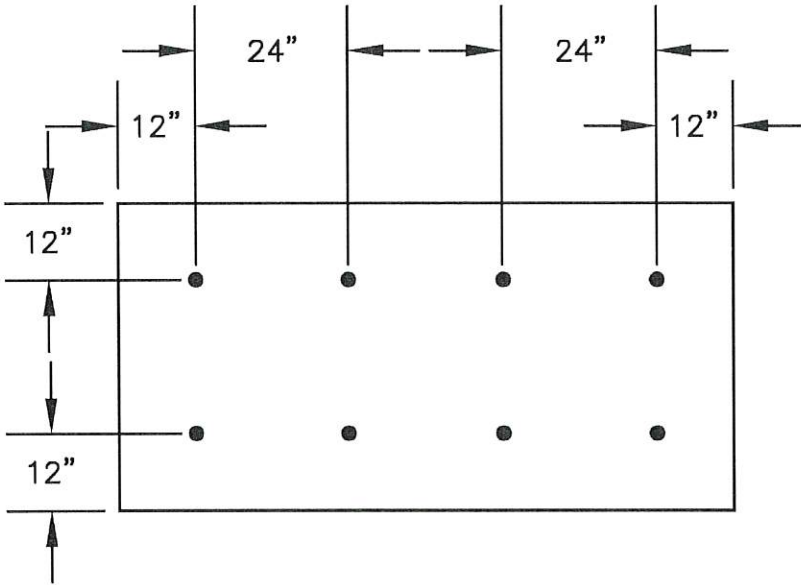
1. 8 FASTENERS PER 4' X 8' BOARDS (1 FASTENER EVERY 4 SQUARE FEET) IN THE FIELD IS APPROVED FOR INSULATIONS 2" OR MORE THICK WHEN USED AS THE TOP LAYER.
2. PERIMETER AND CORNER DIMENSIONS ARE TO BE A MINIMUM OF 8' WIDE UNLESS THE PROJECT REQUIRES FACTORY MUTUAL COMPLIANCE. CONTACT MULE-HIDE TECHNICAL DEPARTMENT FOR FACTORY MUTUAL REQUIREMENTS.
3. MULE-HIDE FASTENERS AND 3" STRESS PLATES MUST BE USED FOR INSULATION ATTACHMENT.
4. REFER TO MULE-HIDE WIND UPLIFT RATINGS FOR APPROPRIATE FASTENER DENSITY REQUIRED.
5. FASTENER DENSITY INCREASES BASED ON THE FOLLOWING:
 - 50% FOR PERIMETERS
 - 100% FOR CORNERS

Listing Agency Approval
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

POLY ISO BOARD FASTENING PATTERN

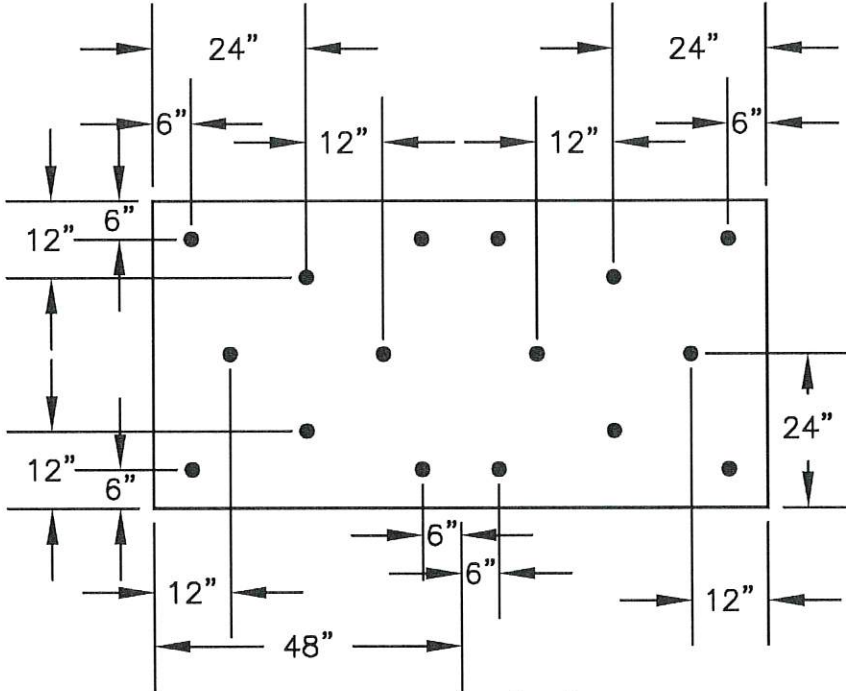


By Yuri at 9:36:55 PM, 3/17/2020

2" OR THICKER INSULATION
ATTACHMENT 8 FASTENERS PER 4'
X 8' IN FIELD

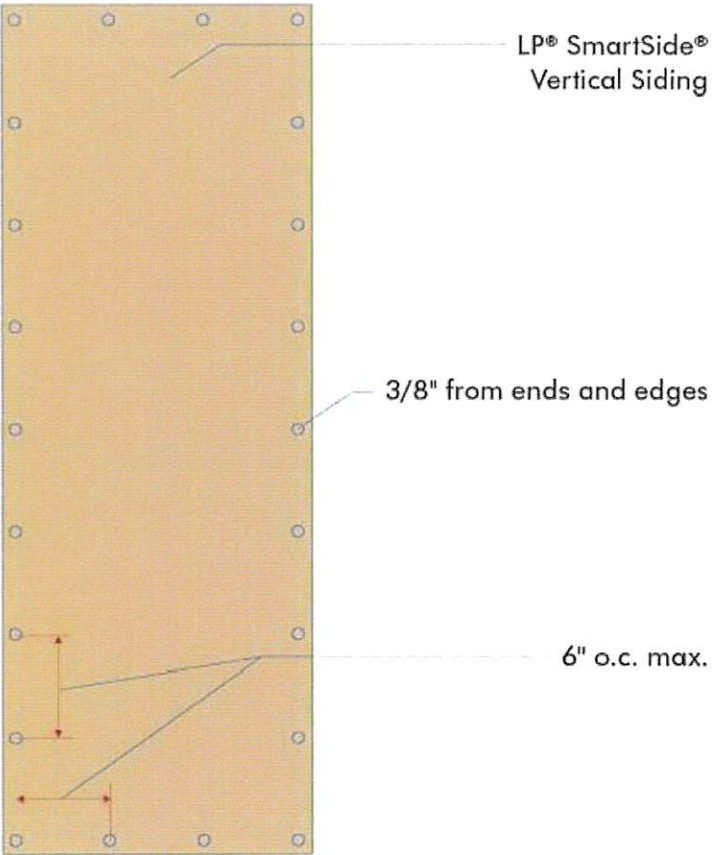
FIELD (8)
1 FASTENER PER EVERY 4 SQ. FT.

DENSEDECK FASTENING PATTERN



CORNERS (16)
1 FASTENER PER EVERY 2 SQ. FT.

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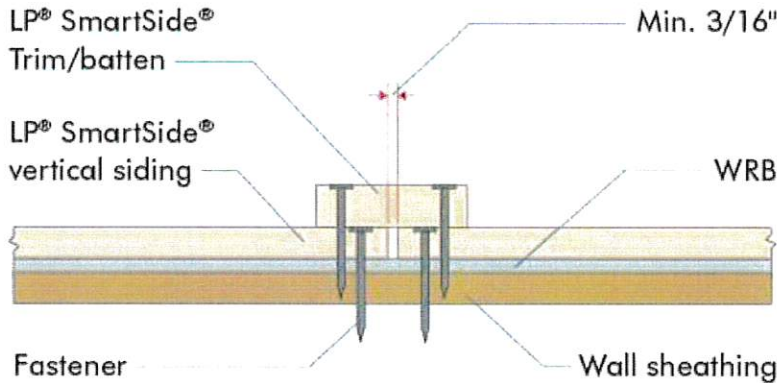


Vertical Siding

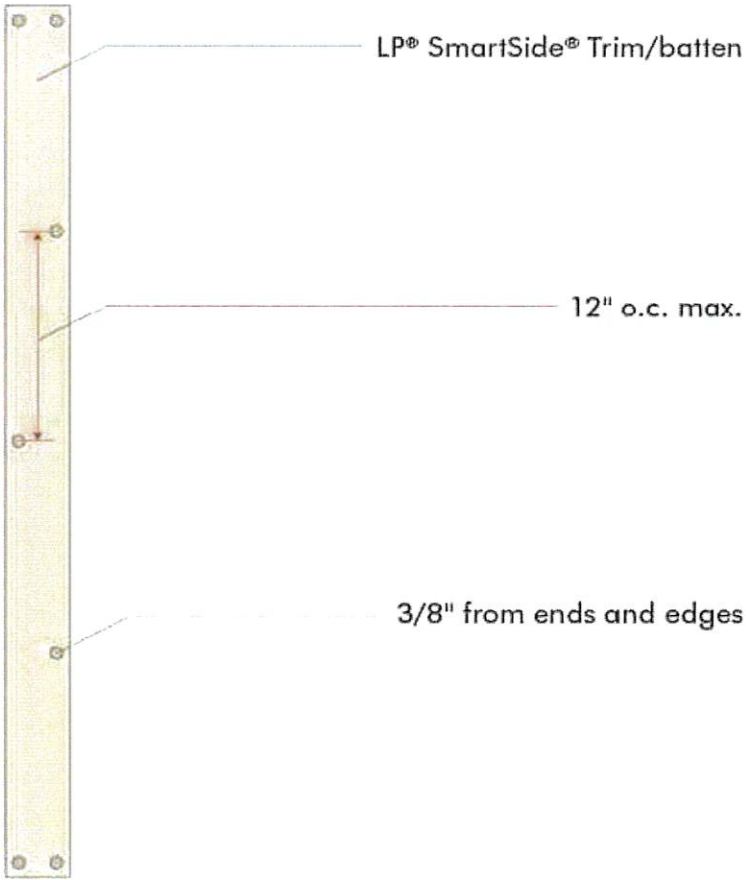
Listing Agency Approval
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



Vertical Siding attachment detail



LP SmartSide Trim/batten

Table 1a Panel Siding installed vertically @ 10.113" o.c. - Max. Allowable Wind Speed, V_{asd}

Performance Category	Max Stud Spacing ⁽¹⁾ (inches)	Fastener Spacing ⁽¹⁾ (inches o.c.)		Max Allowable Wind Pressure (psf)	Max Allowable Wind Speed ⁽²⁾ (mph)		
		Edges	Field		Wind Pressure Category		
					I	C	D
1	12"	6"	12"	15	15	15	15
	16"	6"	12"	15	15	15	15
	24"	6"	12"	15	15	15	15
2	12"	6"	12"	15	15	15	15
	16"	6"	12"	15	15	15	15
	24"	6"	12"	15	15	15	15
3	12"	6"	12"	15	15	15	15
	16"	6"	12"	15	15	15	15
	24"	6"	12"	15	15	15	15
4	12"	6"	12"	15	15	15	15
	16"	6"	12"	15	15	15	15
	24"	6"	12"	15	15	15	15

- FASTENING SPACING FOR LP-SMART VERTICAL PANELS

Technical Note No. 028

- Fastener Placement for Vertical Siding:
 - Maximum 3/8 inch from ends and edges
- Fastener Spacing for Vertical Siding:
 - Fastened a maximum of 6 o.c. along the perimeter



By Yuri at 9:36:56 PM, 3/17/2020

- Our SI units are in accordance with the International System of Units (SI). The units are in parentheses after the units in the text.
- (1) Fasteners shall be a hot dipped galvanized plain (steel) steel nails with a minimum diameter of 1/4 inch and shall penetrate structural members and structural members a minimum of 1 inch.
- (2) All studs must have a minimum specific gravity of 0.50.
- (3) The fasteners must be based on wind pressures acting on the windward and leeward building surfaces at the design wind speed and the smallest effective area in accordance with Chapter 16 of the ASCE Section 6.2.1.1 and 6.2.1.2 and Section 6.2.1.3 of the ASCE 7-10.

REV

DATE

DESCRIPTION

BY

1

28JAN20

ISSUE FOR AWARDS

GA

2

1TB 26-52 Southport Fire Station #8 Relocation

NOTES:

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CUSTOMER ACCEPTANCE

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BY: _____

DATE: _____

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DRAWN BY: GS

CHECKED BY: BS

DATE: 07FEB2020

SCALE: 3/16"=1'-0"

ATCO STRUCTURES & LOGISTICS (USA) INC.

1106 NORTH TEMPLE DRIVE

DIBOLL, TEXAS 75941

3370 POLE LINE RD. BLD. #36

POCATELLO, IDAHO 83201

PROJECT:

WCC SERVICES

13'X65'

5 MAN SLEEPER

SPECIFICATION NUMBER

719119.02

DRAWING TITLE:

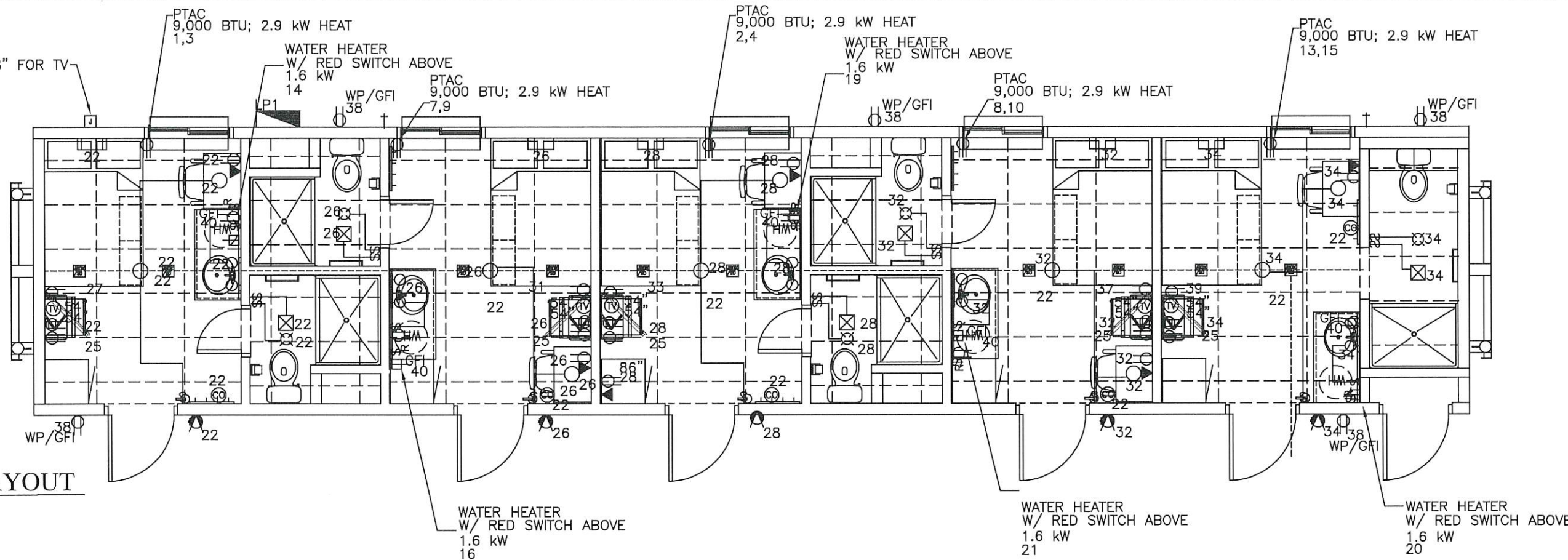
SIDING FASTENING PATTERN

DRAWING NO:

96002-01-D04

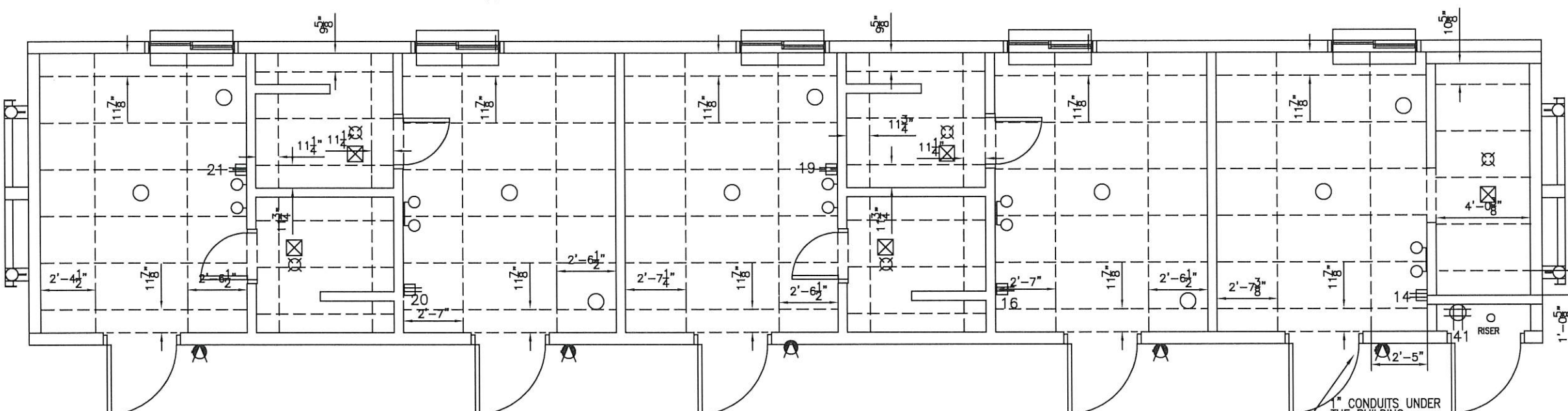
ATCO Structures & Logistics

239 of 288



ELECTRICAL LAYOUT

SCALE: 3/16"=1'-0"



CEILING GRID LAYOUT

SCALE: 3/16"=1'-0"

Listing Agency Approval
PYRAMID1, INC.

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Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

NOTE:
-SPRINKLER PLANS BY OTHERS.
-ATCO TO PROVIDE J-BOXES AND 1" CONDUITS FOR FIRE ALARM SYSTEM INSTALL BY OTHERS.

NOTES:
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CUSTOMER ACCEPTANCE

☐ - ACCEPTANCE AS DRAWN
☐ - ACCEPTANCE EXCEPT AS NOTED

BY: _____
DATE: _____

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DRAWN BY: GS
CHECKED BY: BS
DATE: 07FEB2020
SCALE: 3/16"=1'-0"

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
3370 POLE LINE RD. BLD. #36
POCATELLO, IDAHO 83201

PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
ELECTRICAL LAYOUT &
CEILING GRID LAYOUT

DRAWING NO:
96002-01-E01

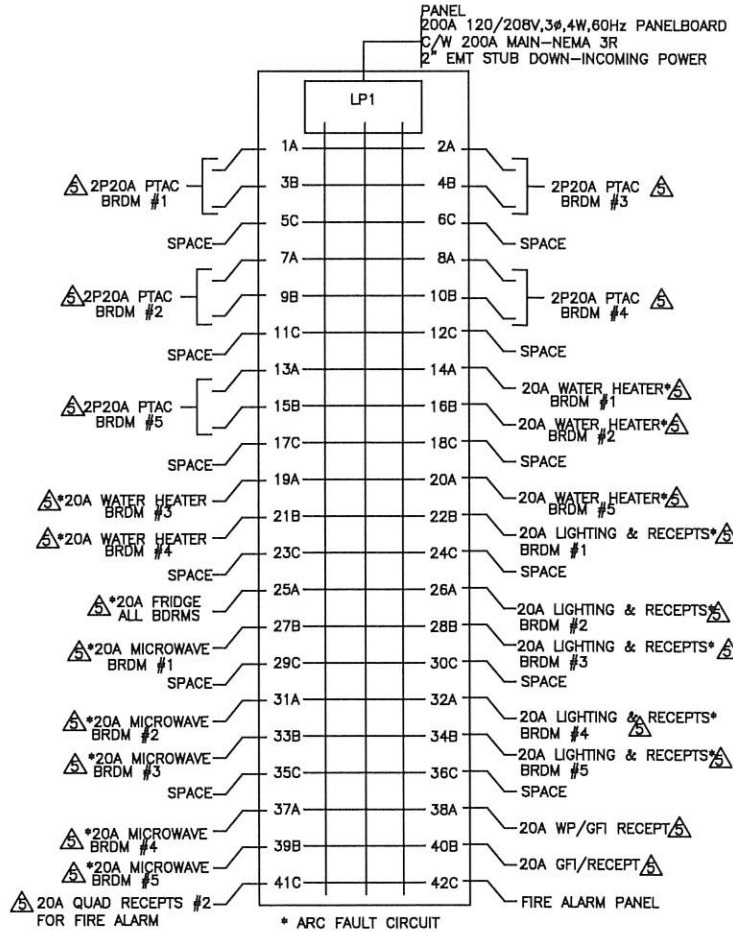
REV	DATE	DESCRIPTION	BY
-	-	†TB 26-52 Southport Fire Station #8 Relocation	-
-	28JAN20	ISSUE FOR AWARDS	GA

SYMBOL LEGEND & LOADS					
SYMBOL	DESCRIPTION	LOAD	AMPS	LUMENS	EFFICACY LUMENS/WATT
	2-BULB NICKEL VANITY LIGHT	39W	.32A	2900	85.29
	RECESSED CAN LIGHT W/ 13W LAMP	13W	0.10A	N.A.	N.A
	EXTERIOR FLOURESCENT PORCH LIGHT W/ PHOTOCELL CONTROL	70W	0.58A	N.A.	N.A
	PERSONAL SHELF/LIGHT COMBO W/ RECEPTACLE	60W	0.5A	N.A.	N.A
	6" GLOBE LIGHT W/ INCANDESCENT LIGHT VAPOR PROOF	60W	0.5A	N.A.	N.A
	EMPTY J-BOX FORSMOKE DETECTOR	-	-	-	-
	120V CO DETECTOR W/ BATTERY BACKUP	-	-	-	-
	80 CFM EXHAUST FAN	-	1.5A	N.A.	N.A.
	POWER PANEL - NEMA3R	-	-	-	-
	20A/125V SINGLE POLE SWITCH	-	-	-	-
	20A/125V SINGLE POLE SWITCH-RED FOR WATER HEATER	-	-	-	-
	20A/125V DUPLEX RECEPTACLE	180W	1.5A	-	-
	20A/125V GFCI RECEPTACLE	180W	3.0A	-	-
	20A/125V GFCI RECEPTACLE-W.R.	180W	1.5A	-	-
	20A/208V RECEPTACLE	-	-	-	-
	20A/125V QUAD RECEPTACLE	360W	3.0A	-	-
	TELE/DATA OUTLET C/W 3/4" FLEX STUB DOWN	-	-	-	-
	TV OUTLET RG59 C/W QUAD RECEPTACLE	-	-	-	-
	JUNCTION BOX SIZED TO NEC FOR CONDUCTOR FILL	-	-	-	-
	HARD WIRE CONNECTION	-	-	-	-
N.A.	PTAC UNIT 240V	2.9kW	12.08A	-	-
N.A.	20 GALLON WATER HEATER 120V	1.6kW	13.75A		

NOTES:
1. WIRING METHOD TO BE MC CABLE, COPPER, MINIMUM #12AWG. AS PER ARTICLE 330 OF THE 2017 NEC.
2. BLANK SPACES IN PANEL MAY BE OMITTED TO MAKE USE OF SMALLER PANELS. BREAKER SIZE AND QUANTITY SHALL REMAIN THE SAME.
3. TELE/DATA OUTLETS ARE TO HAVE A 3/4" FLEXIBLE CONDUIT STUBBED DOWN BELOW FLOOR UNLESS NOTED.
4. ALL EMT CONDUIT TO CONTAIN AN INSULATED GROUND CONDUCTOR SIZED AS REQUIRED BY TABLE 250.122 OF THE 2017 NEC; MINIMUM #14 AWG.
5. ALL WIRING IN RETURN AIR PLENUMS SHALL MEET RATING REQUIREMENTS OF ARTICLE 300.22 (C)2017 N.E.C..
6. MOUNTING HEIGHTS FOR ALL WALL MOUNTED DEVICES SHALL BE FROM FINISHED FLOOR TO BOTTOM OF DEVICE BOX.
7. ALL 125 VOLT, 15 & 20 AMP RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES(2017-NEC, ART.406-12)
8. SMOKE ALARMS & CO DETECTORS TO BE INTERCONNECTED.

WIRING LEGEND

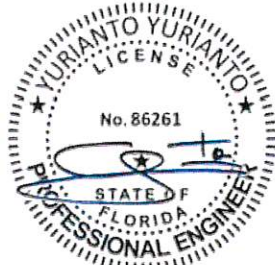
- △ - 4 AWG THHN WIRE
△ - 6 AWG THHN WIRE
△ - 8 AWG THHN WIRE
△ - 10 AWG THHN WIRE
△ - 12 AWG THHN WIRE
△ - 14 AWG THHN WIRE



STANDARD OUTLET MOUNTING HEIGHTS height in inches to bottom of box unless otherwise noted	
ELECTRICAL BOX TYPE	MOUNTING HEIGHT
RECEPTACLE	16
SWITCH	44
MICROWAVE RECEPTACLE	75
TV (top of box)	54
ANTENNA BOX	88
COUNTERTOP RECEPTACLE	44
STOVE	16
TELE/DATA	16
WATER HEATER	48
EXTERIOR LIGHT	78
EXTERIOR RECEPTACLE	16
WASHER	36
DRYER	36
THERMOSTAT(to centreline)	60

LOAD CALCULATION TOTAL COMPLEX

LP-1
LIGHTING LOAD = 845sqft x 3.0VA
2 535 VA X 125% = 3 169 VA
RECEPTACLE LOAD = 10 440 VA
PTAC LOAD 5 @ 2 900VA = 14 500 VA
WATER HEATER 5 @ 1 650VA LOAD = 8 250 VA
COMPLEX TOTAL LOAD = 36359 VA
MINIMUM SERVICE SIZE
36 359 VA/208V = 174.80A



By Yuri at 9:37:00 PM, 3/17/2020

(Structural Aspects Only)

Listing Agency Approval
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

REV	DATE	DESCRIPTION	BY
-	28JAN20	TTB 26-52 Southport Fire Station #8 Relocation	GA
-		ISSUE FOR AWARDS	

NOTES:
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CUSTOMER ACCEPTANCE

- ☐ - ACCEPTANCE AS DRAWN
☐ - ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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DRAWN BY: GS

CHECKED BY: BS

DATE: 07FEB2020

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

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
3370 POLE LINE RD. BLD. #36
POCATELLO, IDAHO 83201

PROJECT:

WCC SERVICES
13'X65'
5 MAN SLEEPER

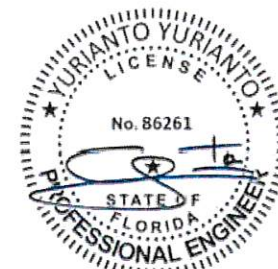
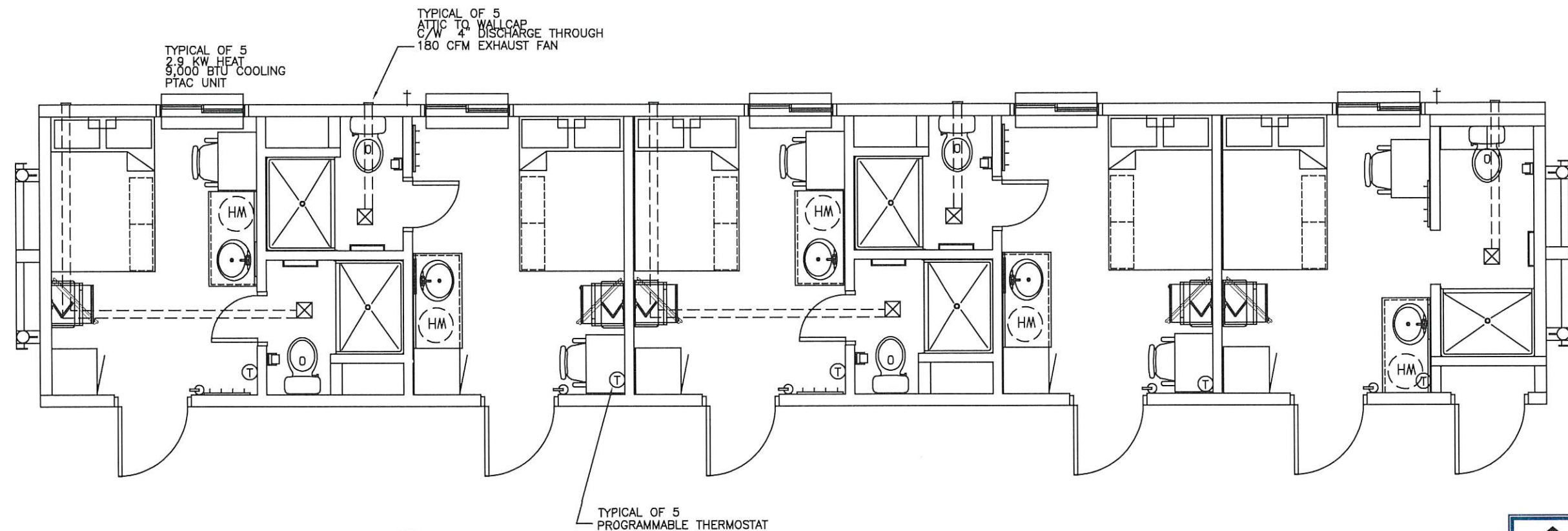
SPECIFICATION NUMBER

719119.02

DRAWING TITLE:
ELECTRICAL LEGEND,
CALCULATIONS, & PANEL
SCHEDULE

DRAWING NO:
96002-01-E02

ATCO Structures & Logistics



By Yuri at 9:37:01 PM, 3/17/2020
(Structural Aspects Only)

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 CHECKED BY: BS
 DATE: 07FEB2020
 SCALE: 3/16"=1'-0"

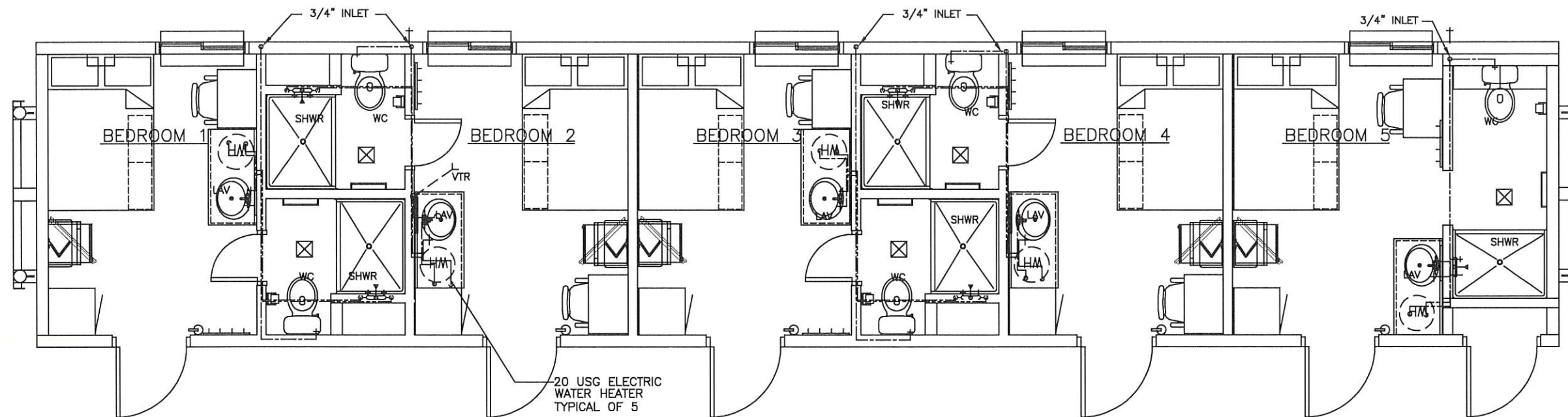
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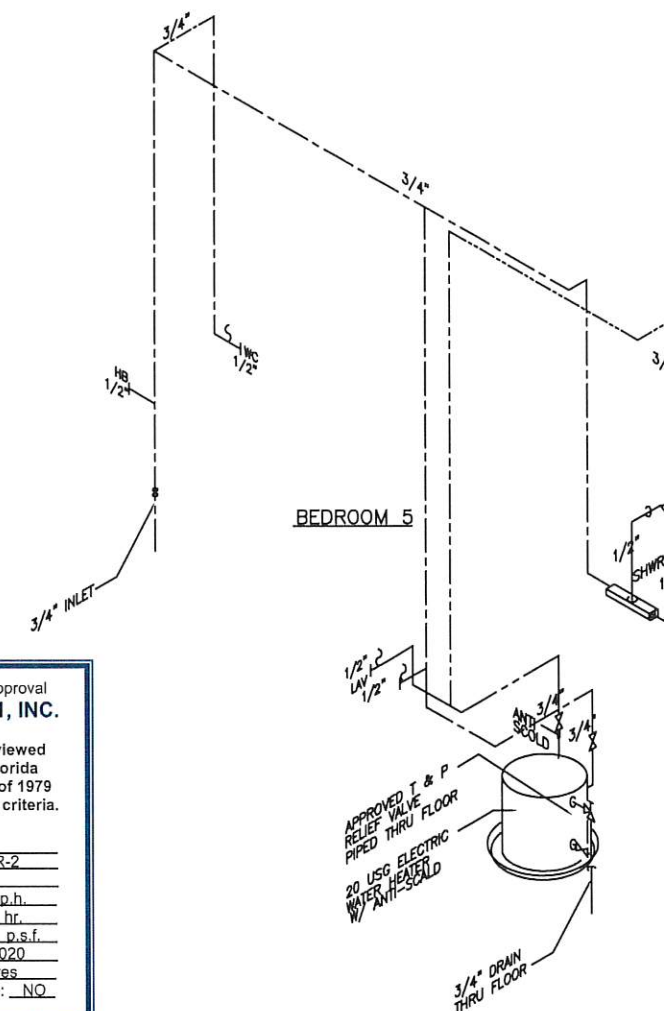
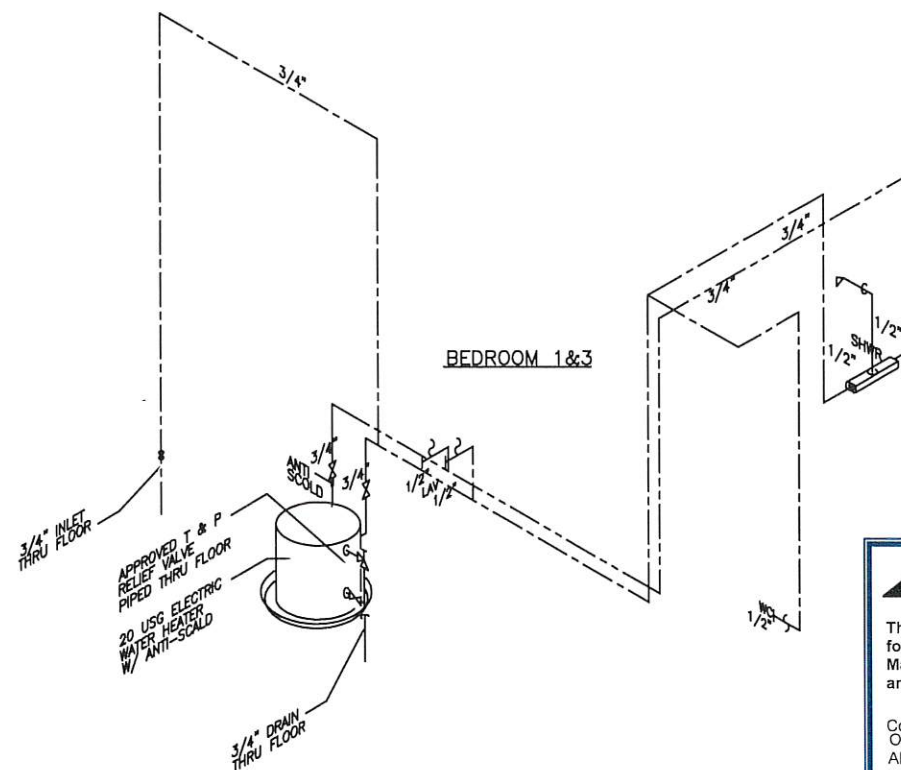
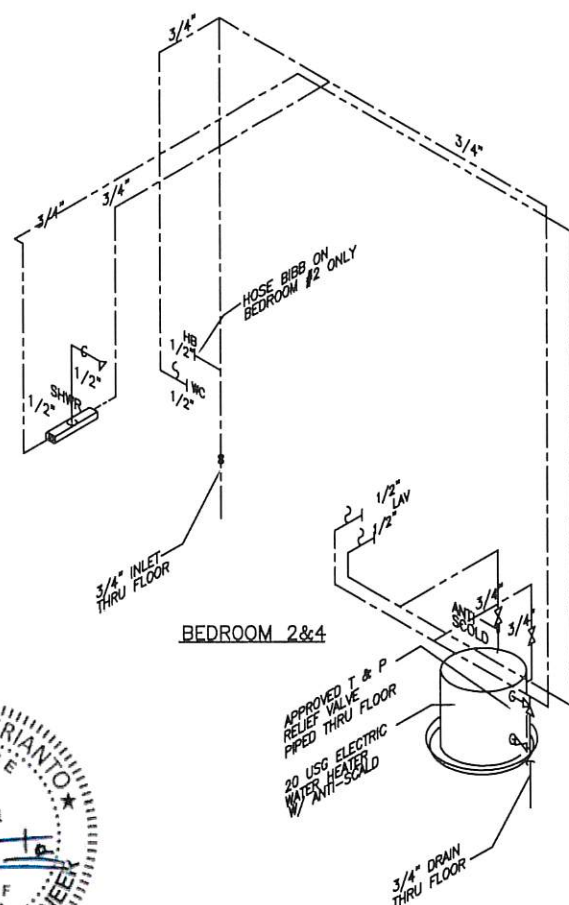
SPECIFICATION NUMBER
 719119.02

DRAWING TITLE:
 HEATING, VENTILATING,
 & AIR CONDITIONING
 LAYOUT

DRAWING NO:
 96002-01-M01



- LEGEND**
- DOMESTIC COLD WATER
 - DOMESTIC HOT WATER
 - DWV PIPING
 - DWV VENT PIPING.
- WC --- WATER CLOSET
 LAV --- LAVATORY
 VTR --- VENT THROUGH ROOF
 WH --- WATER HEATER
 SHWR --- SHOWER
 HB --- HOSE BIBB



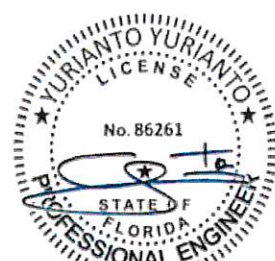
WATER PIPING SCHEMATIC

- SUPPLY LINES & FITTINGS TO BE PEX
- STUBBED THROUGH FLOOR W/ MULTIPLE INLETS
- STUBBED BELOW STRUCTURAL FLOOR FOR SITE CONNECTION
- LOW POINT DRAINS TO ALL FIXTURES
- NTS

Listing Agency Approval
PYRAMID1, INC.

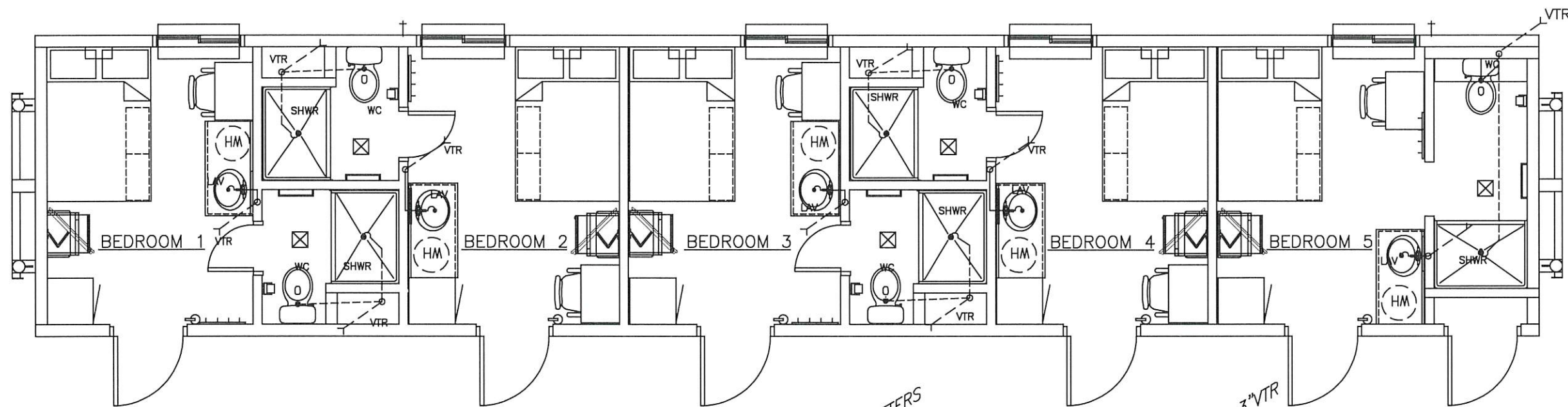
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 Manufacturer: ATCO Structures
 High Velocity Hurricane Zone: NO



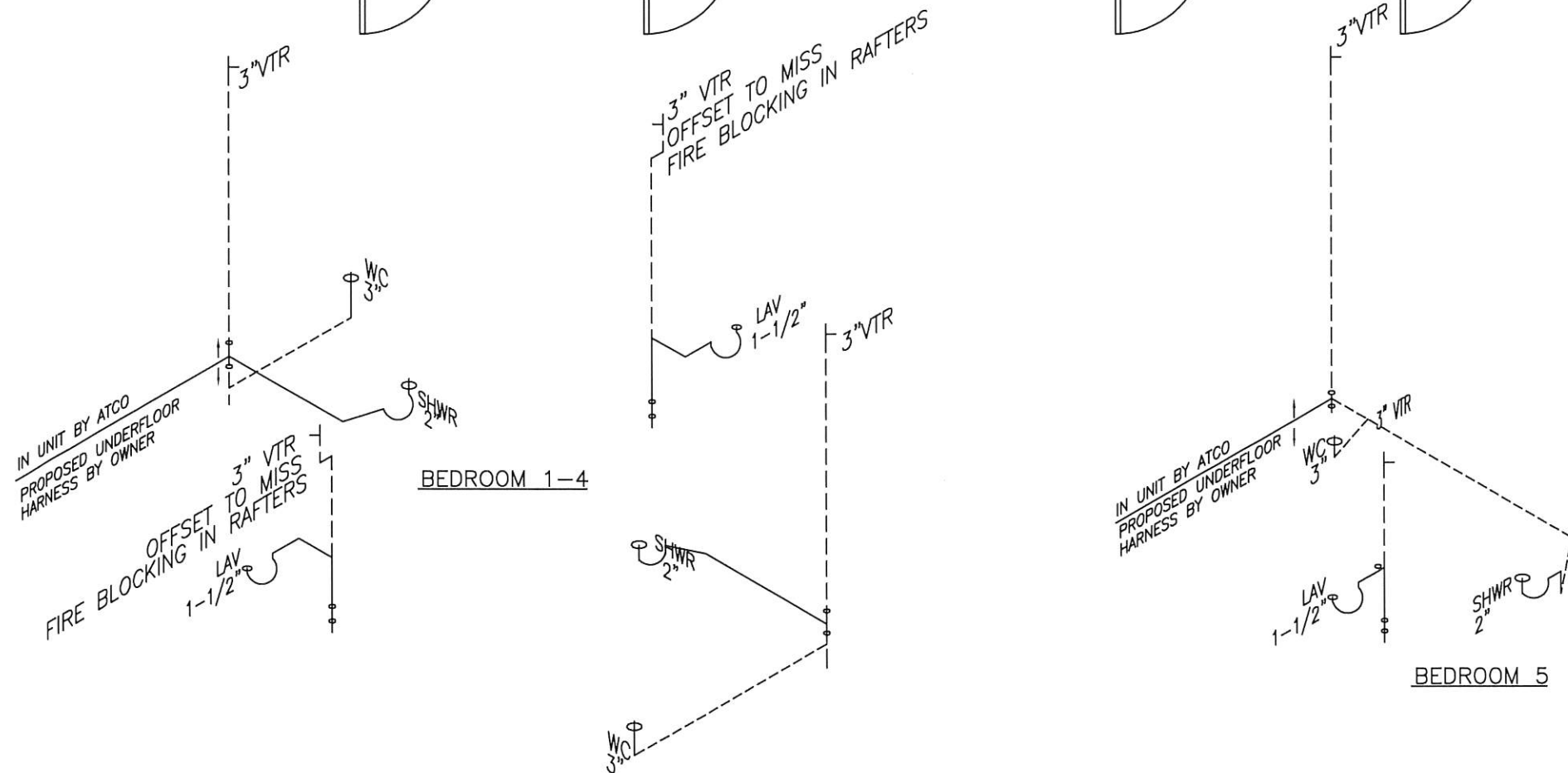
By Yuri at 9:37:03 PM, 3/17/2020
 (Structural Aspects Only)

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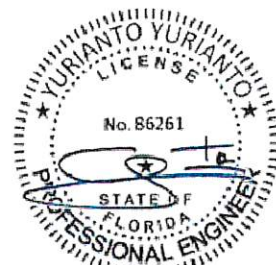
LEGEND

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- DWV VENT PIPING.
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DRAINAGE PIPING SCHEMATIC

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By Yuri at 9:37:03 PM, 3/17/2020

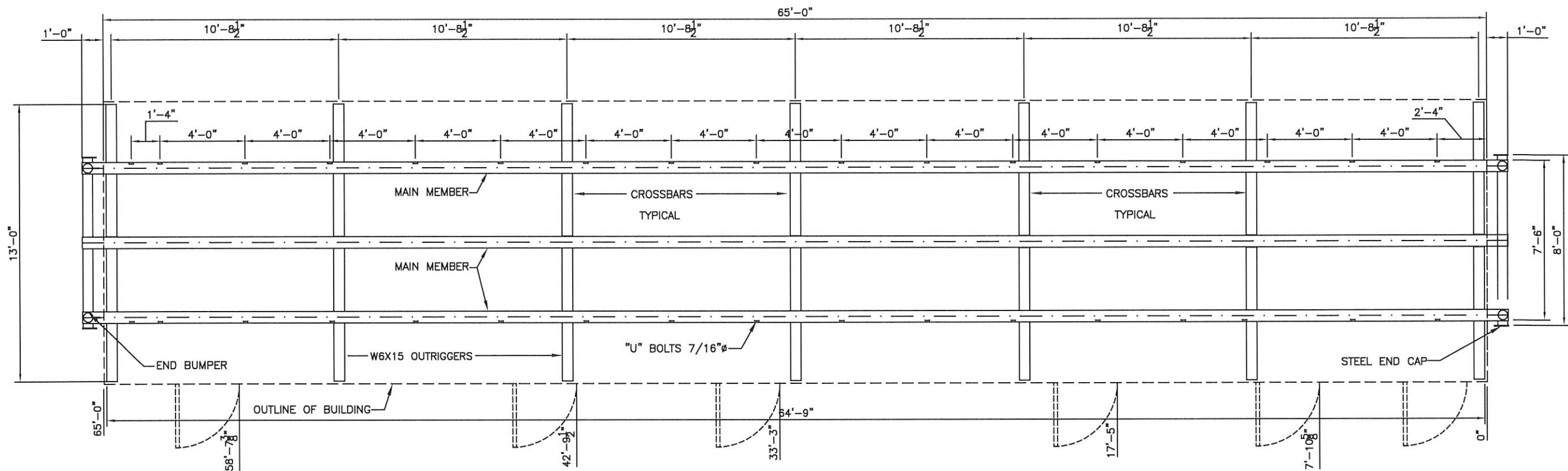
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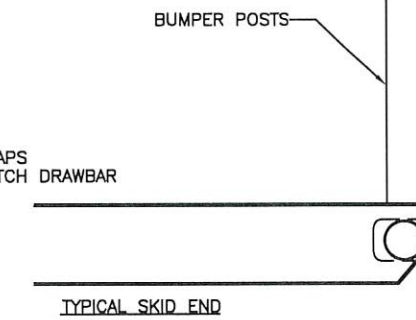
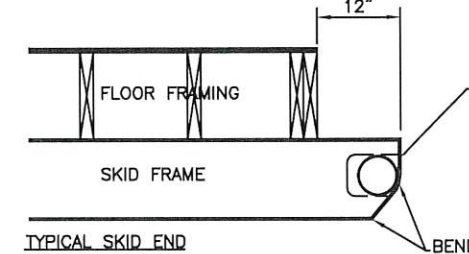
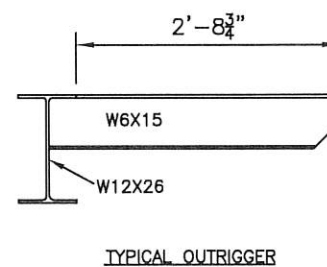
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Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



GENERAL NOTES

1. MAIN MEMBERS - 12" WF @ 26 lbs/ft (TYPICAL OF 3)
2. CROSSBARS - W6X15 WIDE FLANGE
3. OUTRIGGERS - W6X15 WIDE FLANGE
4. DRAWBARS - 5" SCH 80
5. BUMPER POSTS - 5" SCH 80 42" TALL
6. FLOOR BOLTING - EVERY 4'-0"
7. ALL SHARP EDGES TO BE ROUNDED OFF & GROUND SMOOTH
8. WELD ELECTRODES TO BE E7014 & E7018 FOR SMAW
9. REMOVE ALL FLUX, BURRS & SPATTER
10. WIRE BRUSH CLEAN, PRIME & APPLY (1) COAT BLACK ENAMEL.
11. ALL WELDS ARE "FILLED WELDS" W/ MINIMUM THICKNESS OF 1/4" ALL AROUND FULL LENGTH.



Listing Agency Approval PYRAMID1, INC.	
These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.	
Construction Type	VB
Occupancy Classification	R-2
Allowable # of Floors	1
Wind Velocity	139 m.p.h.
Fire Rating (ext.walls)	0 hr.
Floor Load	40 p.s.f.
Date of Review	March 18, 2020
Manufacturer	ATCO Structures
High Velocity Hurricane Zone	NO

REV	DATE	DESCRIPTION	BY
1	30JAN20	ISSUE FOR PRODUCTION	JLG
ITB 26-52 Southport Fire Station #8 Relocation			

NOTES:
© 2019 ATCO STRUCTURES & LOGISTICS USA INC. ALL RIGHTS RESERVED. THESE DRAWINGS CONTAIN THE CONFIDENTIAL INFORMATION, AND ARE THE PROPERTY, OF ATCO STRUCTURES & LOGISTICS USA INC., SHALL BE HELD IN STRICTEST CONFIDENCE, AND CANNOT BE USED, COPIED, REPRODUCED, DISCLOSED, PUBLISHED, DISTRIBUTED, OR OTHERWISE EXPLOITED, IN ANY FORM OR MANNER, IN WHOLE OR IN PART, FOR ANY REASON OTHER THAN THE REASON FOR WHICH THEY WERE PROVIDED TO YOU BY ATCO STRUCTURES & LOGISTICS USA INC. WITHOUT THE EXPRESS WRITTEN CONSENT OF ATCO STRUCTURES & LOGISTICS USA INC.

CUSTOMER ACCEPTANCE

- ☐ - ACCEPTANCE AS DRAWN
☐ - ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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ALL RIGHTS RESERVED

DRAWN BY: GS

CHECKED BY: BS

DATE: 07FEB2020

SCALE: NTS

ATCO STRUCTURES & LOGISTICS (USA) INC.
1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
3770 POLE LINE ROAD BLDG. 36
POCATELLO, IDAHO 83201

PROJECT:

WCC SERVICES
13'x65'
5 MAN SLEEPER

SPECIFICATION NUMBER

719119.02

DRAWING TITLE:
SUGGESTED FOUNDATION
PLAN & DETAILS

DRAWING NO:
96002-01-F01

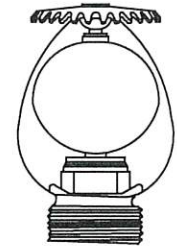
ATCO Structures & Logistics

ATCO

13'x65' 5 PERSON SLEEPER

13D Fire Sprinklers System

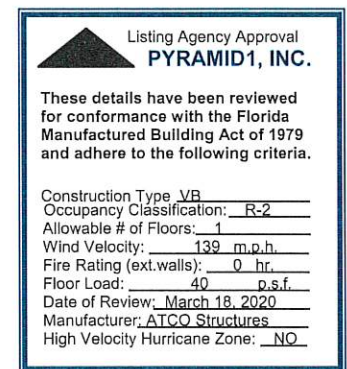
GENERAL FIRE SPRINKLER SYSTEMS NOTES



- ALL MATERIAL AND METHODS USED SHALL BE NEW AND OF CURRENT ISSUE, SHALL BE APPROVED BY UL (UNDERWRITERS LABORATORY) AND OR F.M. (FACTORY MUTUAL) AND BE IN CONFORMANCE WITH THE APPLICABLE REQUIREMENTS OF NFPA 13D AND THE AUTHORITY HAVING JURISDICTION.
- ALL FIRE RATED PENETRATIONS SHALL BE FIRE STOPPED USING AN APPROVED AND EQUALLY RATED MATERIAL. (BY OTHERS)
- POINT OF CONNECTION SHALL BE THE DEDICATED WATER SUPPLY LINE .
- PIPING SHALL BE DESIGNED AND INSTALLED CONFORMING TO NFPA 13D STANDARDS.
- SYSTEM SHALL BE A WET PIPE SYSTEM.
- DEFLECTOR DISTANCE SHALL BE IN ACCORDANCE WITH THE ADOPTED EDITION OF NFPA 13D AND LOCAL CODES.
- OBSTRUCTIONS TO ANY FIRE SPRINKLER SHALL BE FIELD VERIFIED FOR COMPLIANCE WITH NFPA 13D AND MANUFACTURERS GUIDELINES.
- PIPING SHALL BE INSTALLED TO DRAIN COMPLETELY. INSTALL AUXILIARY DRAINS WITH DRAIN VALVE WHERE NECESSARY.
- HANGER AND BRACING LOCATIONS ARE APPROXIMATE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA-13D AND MANUFACTURERS GUIDELINES.
- CENTER LINES FOR THE INSTALLATION OF SPRINKLER PIPING SHALL BE LOCATED AS CLOSE AS POSSIBLE AS SHOWN ON DRAWINGS. ELEVATIONS MEASURED UP FROM THE SURFACE OF THE TOP OF THE CEILING OR OPEN AREA HARD LID AND ARE SET TO ALLOW AS MUCH DRAINAGE OF WATER FROM PIPING AS POSSIBLE.
- ALL HYDROSTATIC TESTING AND OR FLUSHING SHALL BE PREFORMED IN STRICT ACCORDANCE WITH THE LATEST ADOPTED EDITION OF NFPA 13D AND BE WITNESSED BY A REPRESENTATIVE OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- COORDINATE SPRINKLER SYSTEM TAMPER AND FIRE ALARM SUPERVISION WIRING AND THE WIRING WITH FIRE ALARM INSTALLATION PERSONNEL.
- ELECTRICAL WIRING 48 VOLT AND LARGER BY OTHERS.
- IT IS THE RESPONSIBILITY OF THE OWNER TO MAINTAIN THE INTEGRITY OF THE FIRE ALARM AND SPRINKLER SYSTEM.
- THIS CONTRACT DOES NOT INCLUDE ANY MATERIAL OR DEVICE TO IMPROVE THE STRUCTURAL INTEGRITY OF THE BUILDING AND ITS ABILITY TO CARRY THE LOAD OF THE SPRINKLER SYSTEM.
- THE FIRE SPRINKLER SYSTEM AND FIRE ALARM SYSTEM ARE FOR LIFE SAFETY PURPOSES AND ARE DESIGNED AS PERFORMANCES BASE SYSTEMS TO MEET THE REQUIREMENTS OF THE THE PROJECT AND THE INTENT OF THE APPLICABLE FIRE AND BUILDING CODES.
- A STOCK OF SPARE FIRE SPRINKLERS OF EACH TYPE AND TEMPERATURE ALONG WITH SPRINKLER WRENCHES, SHALL BE LOCATED AT THE MAIN RISER.
- FOR THIS SYSTEM TO WORK WHEN ALL 4 HEADS ACTIVATED A MINIMUM OF 32GPM @ 15PSI IS REQUIRED
- EACH SPRINKLER HEAD REQUIRES 8GPM @ 7.1PSI.

AUTOMATIC SPRINKLER INFORMATION

QTTY.	SYMBOL	SIZE	TYPE	MAKE	COLOR	SERIES	TEMP.	K-FACTOR	MODEL #
5		1/2"	SEMI-RECESSED REDSIDENTIAL PENDENT	TYCO	WHITE	LFII	155°	3.0	TY1234
5	TOTAL SPRINKLERS								



By Yuri at 9:37:06 PM, 3/17/2020

(Structural Aspects Only)

HYDRAULIC DESIGN DATA

13'x65' 5 PERSON SLEEPER	
Hazard Class.	Light Hazard
NFPA 13D	13D
System Type	WET
Density	0.1
Calculated Area	2 Heads
Area per Sprinkler	144 sq.ft Max
Safety Factor	 PSI
Demand	8 PSI, 18 GPM
Water Supply:Static, Residual, GPM	Date:
** Calculated Flowing 2 Heads	Time:

FIRE SPRINKLER SYSTEM SYMBOLS LEGEND:

SYMBOL	DESCRIPTION
[7-6]	Elevation from Ceiling to Centerline of Pipe
8'-0"	Elevation - Above Finished Floor to of Pipe
(X)	Hydraulic Reference Point
/	Approximate Hanger Location (See details)
	Fire Sprinkler Riser
	CHECK VALVE
	CONCEALED CPVC PIPE
	EXPOSED BLACK STEEL PIPE

SHEET INDEX

DWG #	DRAWING NAME
FS1.00	-COVER SHEET
FS1.01	-FIRE SPRINKLER SYSTEM LAYOUT
FS1.02	-GENERAL DETAILS

ATCO
13'x65' 5 PERSON SLEEPER
FIRE SPRINKLERS SYSTEM

DATE
02.28.2020

DRAWN BY
MMD

SHEET NUMBER

FS1.00

INTEGRATED
SYSTEMS GROUP, INC.

946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 713-4897032 FAX: 713-4897032

REVISIONS

REV.	DATE	DESCRIPTION	BY	CHKD.	APP'D.

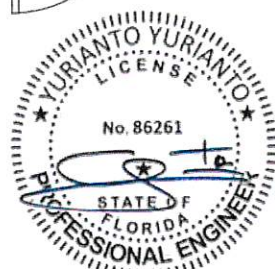
[illegible]

ATCO
13'x65' 5 PERSON SLEEPER
FIRE SPRINKLERS SYSTEM

DATE
02.28.2020

DRAWING BY
MMD

SHEET NUMBER
247 of 288
FS1.01



By Yuri at 9:37:07 PM, 3/17/2020

(Structural Aspects Only)

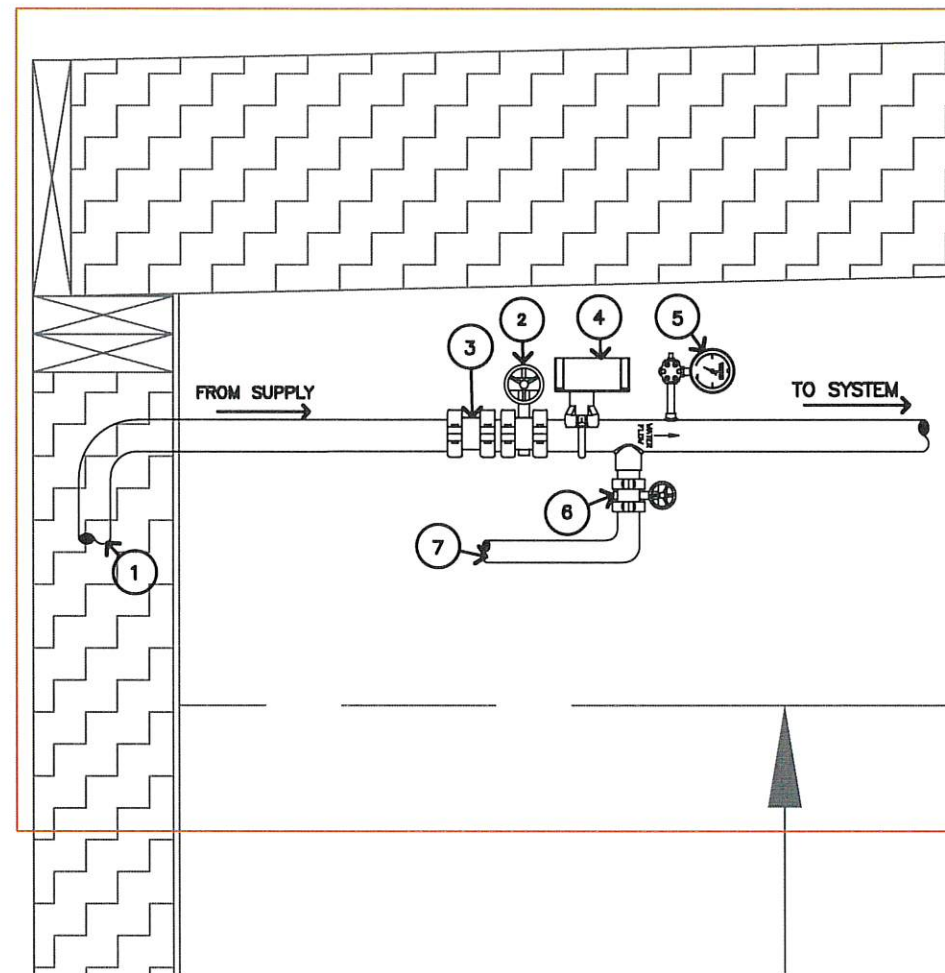
ITB 26-52 Southport Fire Station #8 Relocation

FIRE SPRINKLERS SYSTEM LAYOUT

247 of 288

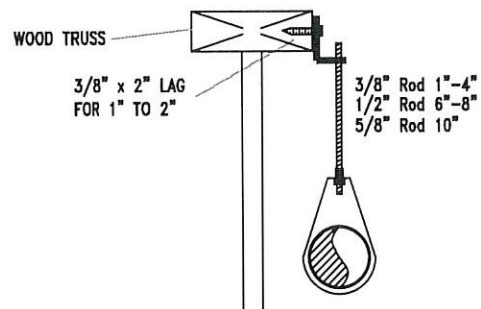
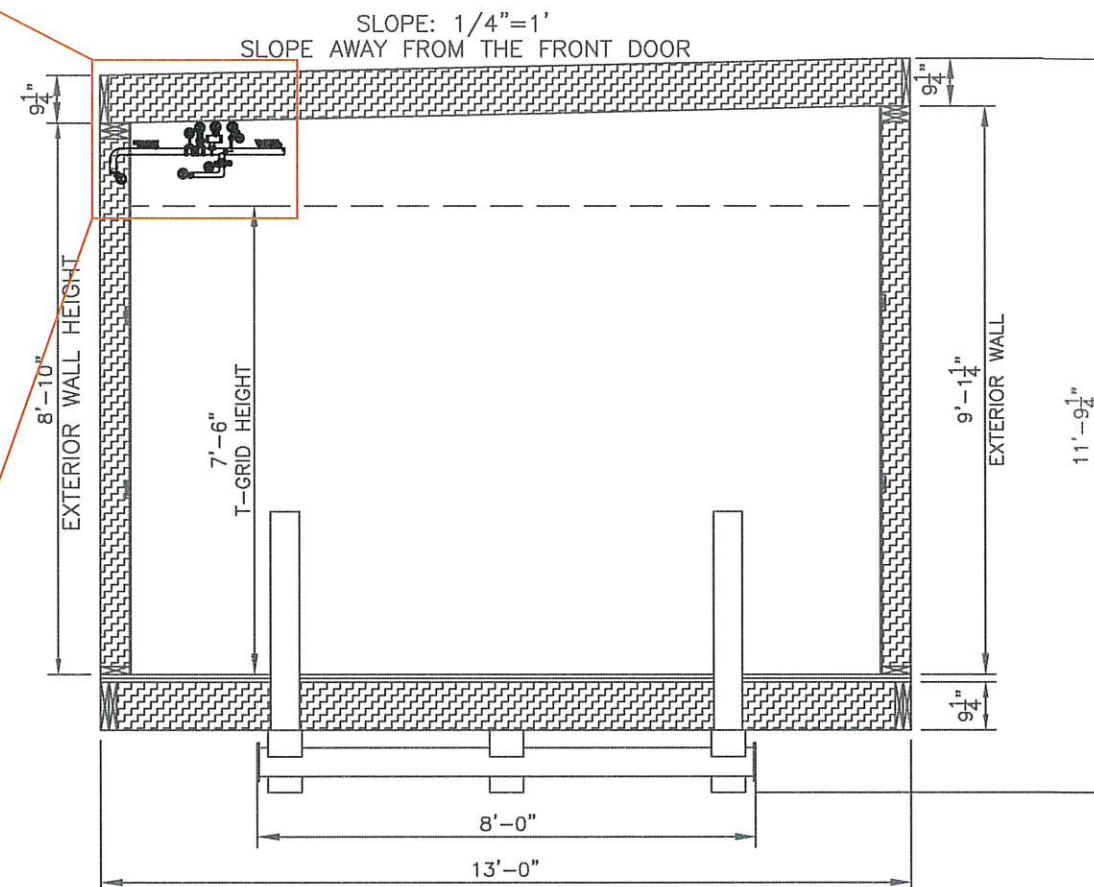
RISER LEGEND

1. CONNECTION TO POTABLE WATER LINE
2. 1" BUTTERFLY VALVE WITH TAMPER (BUTTERBALL BBHSCS02)
3. 1" CHECK VALVE WITH RUBBER GASKET RATED FOR POTABLE WATER USAGE.
4. 1" WATER FLOW SWITCH.
5. PRESSURE GAUGE.
6. 1" BALL VALVE LOCKED AT CLOSED POSITION
7. 1" MAIN DRAIN AND TEST, ROUTE TO OUTSIDE OF BUILDING



A CROSS SECTION

SCALE: NTS

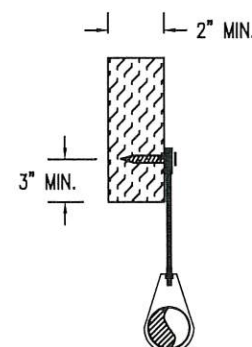
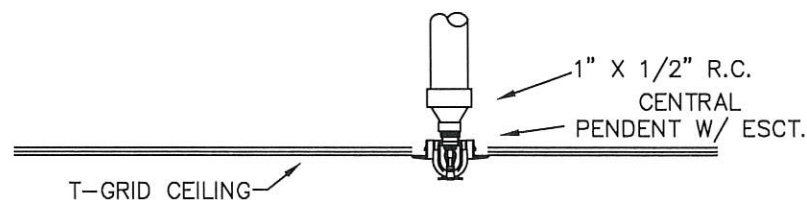
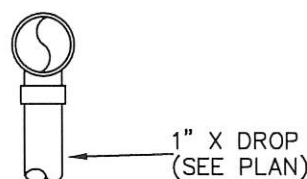


2 1/2" TO 4" PIPE

- 1 -- 1/2" SIDE BEAM CONNECTOR
- 1 -- 1/2" x 3" LAG SCREW
- 1 -- PIPE RING

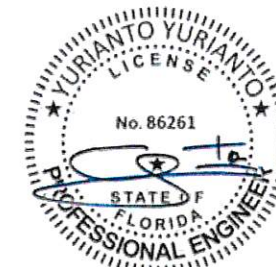
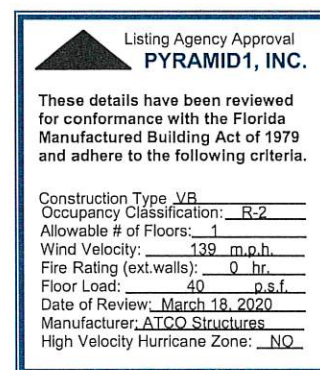
SIDE BEAM

NO SCALE



TYPICAL #06 HANGER
NO SCALE

- 1 -- All Thread Rod
- 1 -- Ring
- 1 -- Eye Socket
- 1 -- Drive Screw for 1" to 2" Pipe or Lag Bolt for 2 1/2" to 8" Pipe



By Yuri at 9:37:10 PM, 3/17/2020

(Structural Aspects Only)



TYPICAL HANGER
NO SCALE

- 1 -- Pipe Clip
- 2 -- #18 Wood Screws

REVISIONS

NO.	DATE	BY	CHK	APP	DESCRIPTION
1	02/28/20	MMD			ISSUED FOR PERMIT

ATCO
13'x65' 5 PERSON SLEEPER
FIRE SPRINKLERS SYSTEM

DATE
02.28.2020

DRAWING BY
MMD

SHEET NUMBER

248 of 288

FS1.02

INTEGRATED
SYSTEMS GROUP, INC.

946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 713-4897032 FAX: 713-4897032

FIRE ALARM BILL OF MATERIALS					
QTY.	SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION
1	FACP	FIRE LITE M5-2 FIRE ALARM CONTROL PANEL	1	T	BUTTERBALL TAMPER SWITCH (BBH5CS02)
5	⊗	MHT-1 224W WHITE MINI HORN			
1	W	WATERFLOW			
1	⊗ 75cd WP	SYSTEM SENSOR P2RK WALL MOUNTED OUTDOOR HORN/STROBE			
1	⌒	POTTER MBA-DC 6" 24VDC BELL			
= INPUT DEVICE CIRCUIT #1 - 16 GA 2 CONDUCTOR = NAC 1 - 16 GA 2 CONDUCTOR = NAC 2 - 16 GA 2 CONDUCTOR = 24VDC -14 GA 2 CONDUCTOR 10 - TOTAL DEVICES					

SEQUENCE OF EVENTS:
1. ANY SPRINKLER SYSTEM WATERFLOW DETECTED WILL RESULT IN A GENERAL ALARM.



By Yuri at 9:37:11 PM, 3/17/2020
(Structural Aspects Only)

SHEET INDEX	
FA1.0	- COVER PAGE
FA1.1	- FIRE ALARM LAYOUT
FA1.2	- FACP RISER
FA1.3	- GENERAL DETAILS
FA1.4	- PANEL-WATER FLOW CONNECTION

CAUSE AND EFFECT MATRIX

EVENT	TROUBLE ON PANEL	SUPERVISORY ON PANEL	GENERAL ALARM
GROUND FAULTS OPEN OR SHORTS	✗		
WATER FLOW			✗
TAMPER		✗	

Listing Agency Approval
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 713-4897032 FAX: 713-4897032

REVISIONS

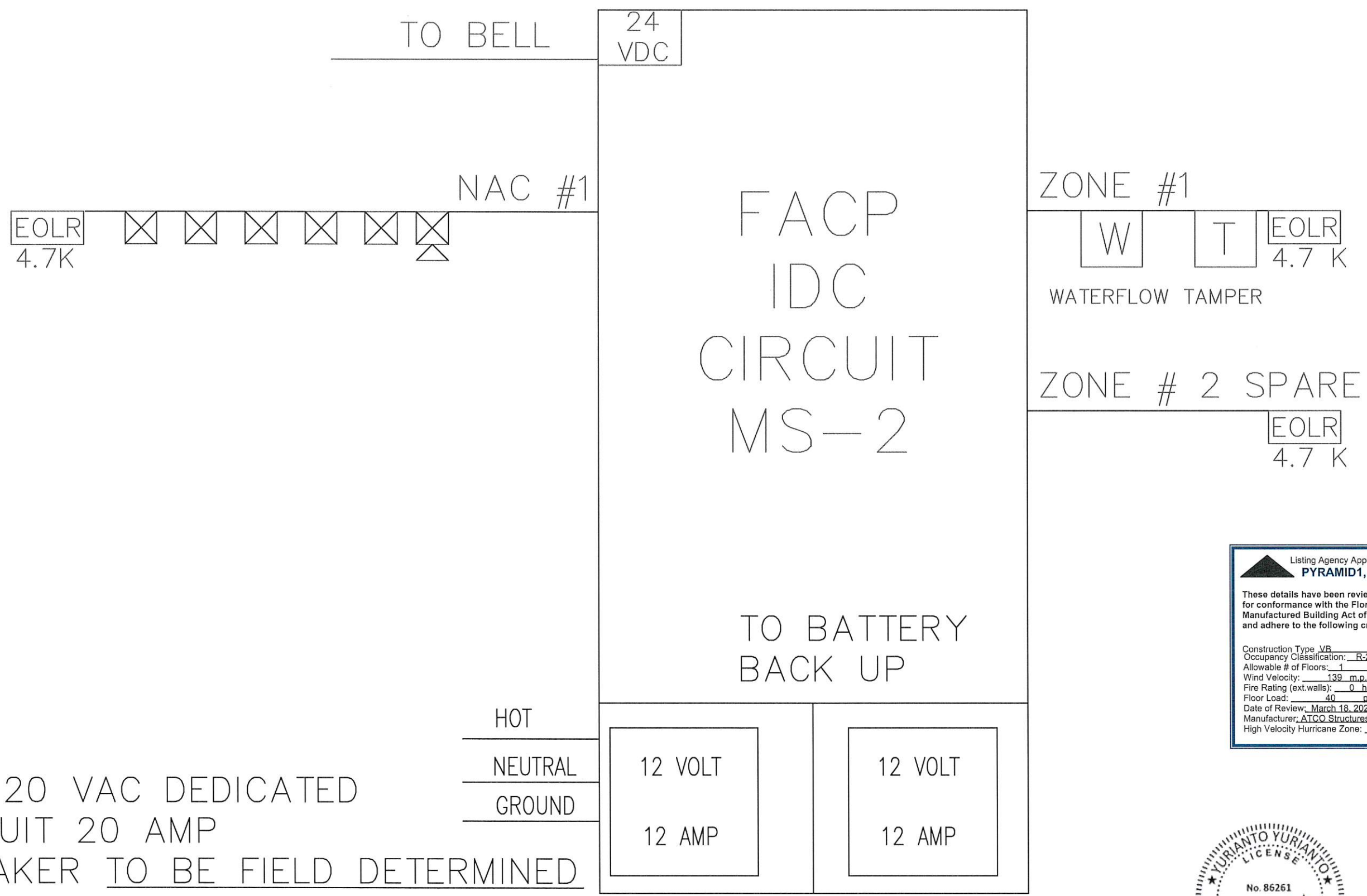
REV	DATE	COMMENTS	DESIGN	DATE	REV	DATE	COMMENTS
0	03.02.20	SUBMITTAL					

ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
FA 1.0



Listing Agency Approval
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext. walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



By Yuri at 9:37:14 PM, 3/17/2020
(Structural Aspects Only)

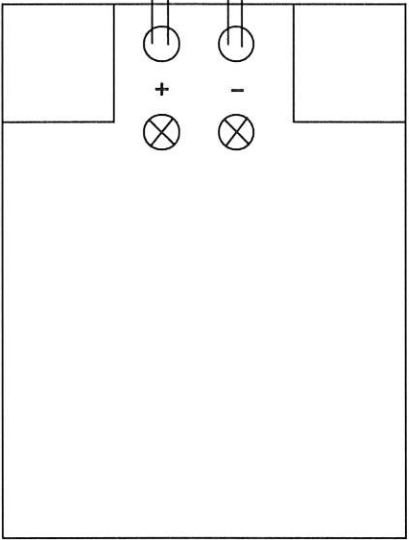
REVISIONS				
REV	DATE	COMMENTS	DRWN	DESIGN
0	03/02/20	SUBMITTAL	M.D.	E.G.

ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020
DRAWING BY
MMD
SHEET NUMBER
FA 1.2

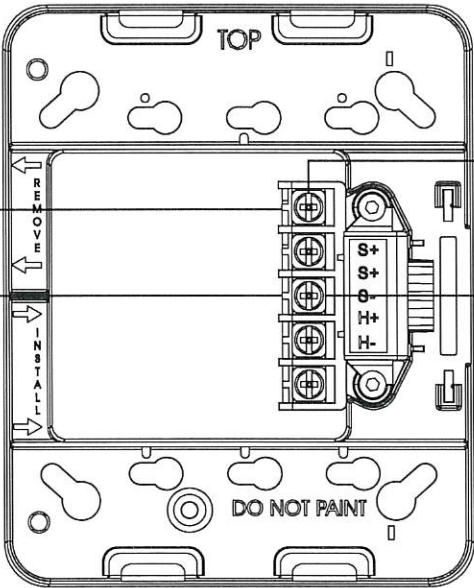
FROM FACP
OR PREVIOUS
DEVICE

TO NEXT
DEVICE OR
EOLR



MHT-1224W —
MINI-HORN

FROM FACP
OR PREVIOUS
DEVICE

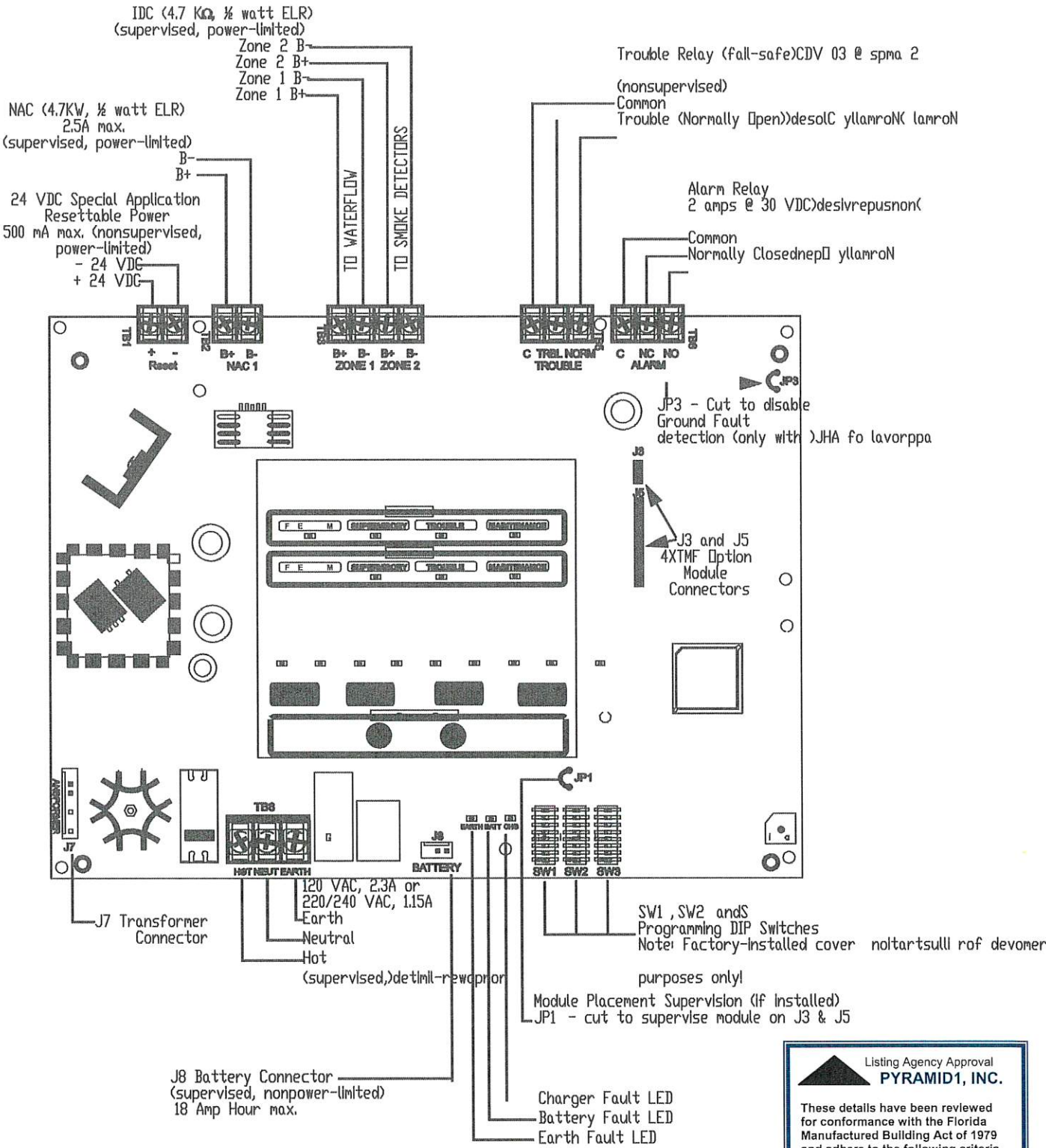


HORN STROBE



By Yuri at 9:37:15 PM, 3/17/2020
(Structural Aspects Only)

MS-2 Two Zone Main Circuit Board



Listing Agency Approval
PYRAMID1, INC.

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Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

INTEGRATED
SYSTEMS GROUP, INC.

946 LONG REACH DRIVE
GALVESTON, TEXAS 77554
PH: 7134897032 FAX: 7134897032

REVISIONS

REV	DATE	DESCRIPTION	BY	CHKD	APP'D
1	05/02/20	SUBMITTAL	EJC		

ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER

INTEGRATED
SYSTEMS GROUP, INC.

REVISIONS

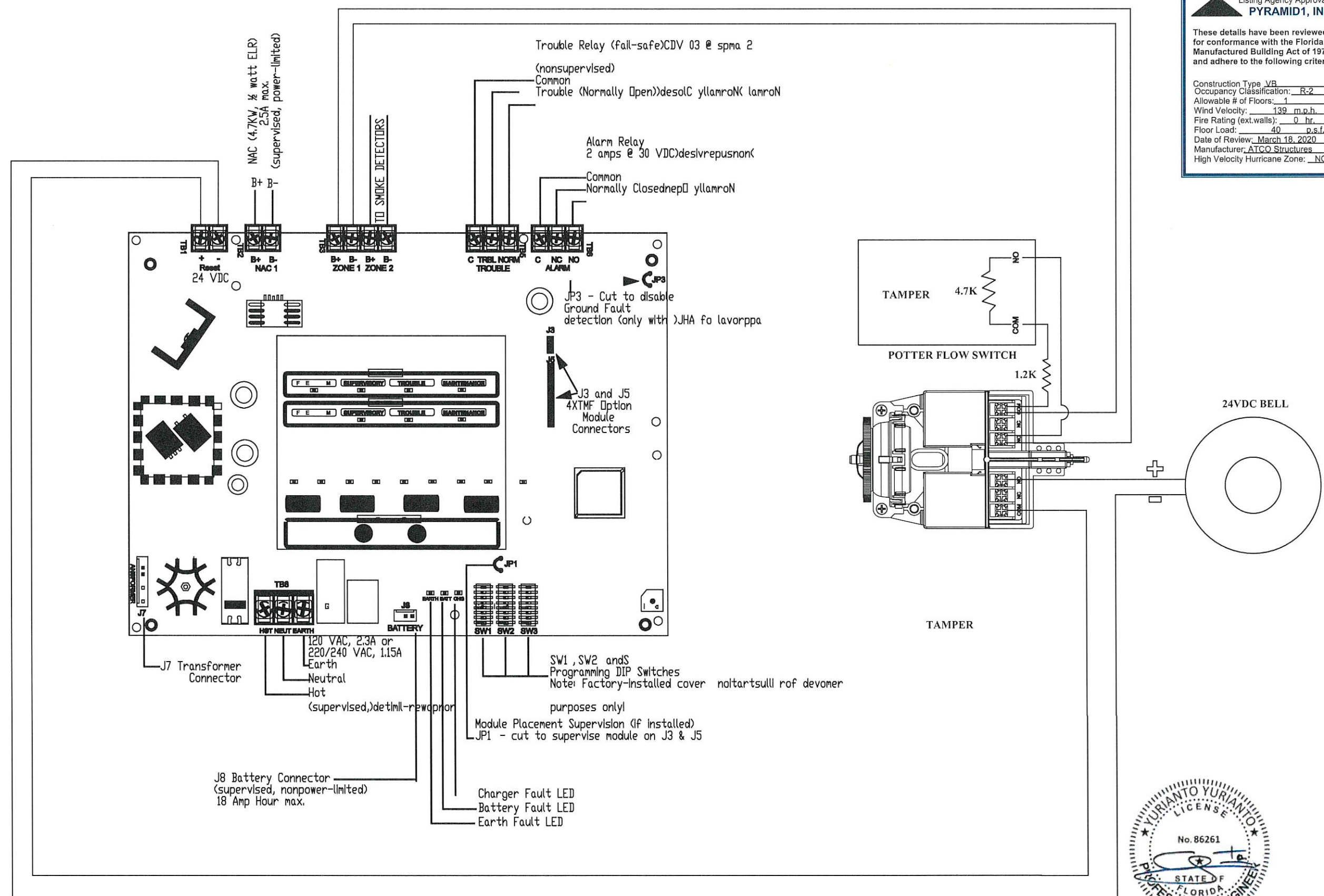
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ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN

DATE
.02.2020

DRAWING BY
MMD

SHEET NUMBER

⁸⁸FA 1.4

Listing Agency Approval
PYRAMID1, INC.

These details have been reviewed for conformance with the Florida Manufactured Building Act of 1979 and adhere to the following criteria.

Construction Type VB
 Occupancy Classification: R-2
 Allowable # of Floors: 1
 Wind Velocity: 139 m.p.h.
 Fire Rating (ext.walls): 0 hr.
 Floor Load: 40 p.s.f.
 Date of Review: March 18, 2020
 Manufacturer: ATCO Structures
 High Velocity Hurricane Zone: NO



By Yuri at 9:37:17 PM, 3/17/2020
(Structural Aspects Only)

PANEL-WATERFLOW CONNECTION

253 of 288



WD Series

Pre-Assembled 8" Loudspeaker, Transformer, Surface Baffle



Features

- Loudspeaker/Transformer/Baffle Packages are Convenient and Cost Effective
- Attractive Design is Suitable for Use in a Variety of Surface-Mount Applications
- 9.5° Sloped Design Offers Directional Sound Projection
- Includes High-Quality 8" Loudspeaker with Line Transformer
- Available in 25V and Dual-Voltage Models with Knob/ Screwdriver-Adjust Volume Control Option

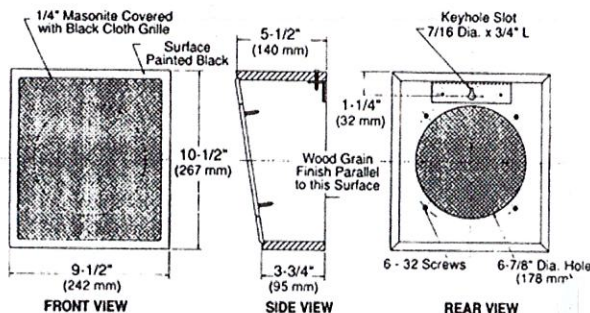
Application

Utilize Atlas Sound WD Series slope-front loudspeaker/baffle packages for a wide variety of surface-mount applications where aesthetics and high-quality sound reproduction are primary concerns. This attractive model series has been installed in offices, conference centers, reception areas, classrooms, lecture halls, and retail outlets.

General Description

WD Series. These loudspeaker/baffle packages feature a walnut grain wall baffle/enclosure with an attractive black fabric grille (Atlas Sound Model 417-WD). Baffles are designed with a 9.5° slope to provide directional sound dispersion offset in the direction of radiation. Units are constructed of durable particle board and finished with a walnut grain vinyl covering.

Each package contains a high-quality 8" dia. loudspeaker with a 5-ounce ceramic magnet and exhibits a wide frequency response with low distortion. A pre-assembled transformer is available in 25V and dual-voltage (25V/70.7V) versions with four power taps (refer to model/package descriptions below). Each package is also available with a 50Ω pot volume control for individual loudspeaker adjustment (specify models with "V" suffix). Knob may be removed and volume adjusted with a screwdriver to provide additional security if required.



MODEL / PACKAGE DESCRIPTION

WD417-25	8" Loudspeaker with 25V transformer
WD417-72	8" Loudspeaker with 25V/70.7V transformer
WD417-72V	Model WD417-72 plus 50Ω Pot Volume Control

MODEL / PACKAGE DESCRIPTION

WD417-25	8" Loudspeakers with 25V transformer	WD417-72V	Model WD417-72 PLUS 50Ω pot volume control
WD417-72	8" Loudspeakers with 25V/70.7V transformer	417-8WD	Enclosure Only (Unloaded)

BAFFLE / ENCLOSURE SPECIFICATIONS

ALL WD SERIES MODELS		ENCLOSURE DIMENSIONS			
INCLUDE BAFFLE MODEL	SLOPE	WIDTH	HEIGHT	PROJECTS, TOP	PROJECTS, BOTTOM
417-8WD	9.5°	9-1/2" (242 mm)	10-1/2" (267 mm)	5-1/2" (140 mm)	3-3/4" (95 mm)

LOUDSPEAKER SPECIFICATIONS

SIZE	8"
MAGNET	5.0 oz. (132g) Ceramic
V.C. DIAMETER	1" (25mm)
V.C. IMPEDANCE	8Ω
FLUX DENSITY	9,200 Gauss
SENSITIVITY	96dB @ 1W/1M
WATTS (PROGRAM)	15
FREQUENCY RESPONSE	50Hz - 15kHz

TRANSFORMER SPECIFICATIONS

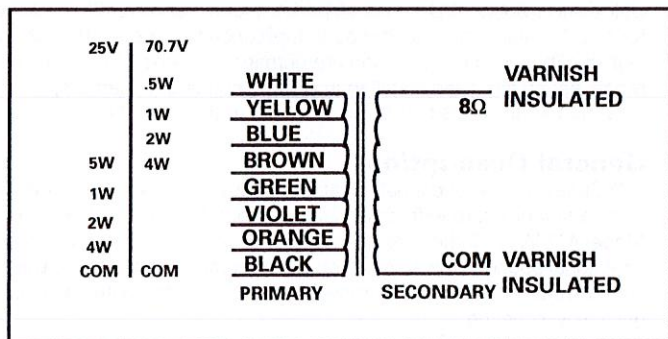
MODEL	25 VOLT	25V/70.7V
PRIMARY VOLTS	25	25/70.7
SECONDARY	8Ω	8Ω
CORE SIZE	1/2" x 5/8" (13 x 16 MM)	1/2" x 5/8" (13 x 16 MM)
TAPS	C, 1/2, 1, 2, 5	C, 1/2, 1, 2, 5
POWER	5 Watts	4 Watts
LEADS	Color Coded, Stripped & Tinned	

Architect & Engineering Specifications

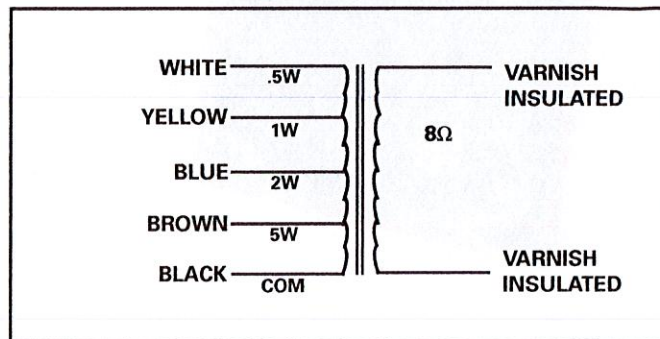
WD Series. The loudspeaker/transformer/baffle package shall be Atlas Sound WD Series Model _____. Loudspeaker shall be an 8" (203mm) dia. cone type with a 5-ounce (132g) ceramic magnet. Frequency response shall be 50Hz-15kHz with a sensitivity of 96dB at 1 watt, 1 meter. Voice coil diameter shall be 1" (25mm) with an 8Ω impedance. Power handling capacity shall be 15 watts program. The transformer shall have a 1/2" x 5/8" core with primary taps of 1/2, 1, 2 and 5 watts or 1/2, 1, 2, and 4 watts. The transformer voltage shall be ____ (25V or 25V/70.7V). Baffle (Atlas Sound Model 417-8WD) shall slope 9.5° offset in the direction of radiation and be of particle board construction covered with a walnut laminate and black cloth grille. Baffle shall measure 9-1/2" (242 mm) wide and 10-1/2" (267mm) high with a projection of 5-1/2" (140mm) at the top and 3-3/4" (95mm) at the bottom.

TRANSFORMER COLOR CODE DIAGRAMS

WD417-72(V)



WD417-25





AP-15/AP-15T(C)

Omni-Purpose® 15 Watt Horn Loudspeakers



AP-15 Series

Specifications

Models	AP-15, AP-15T(C)
Power Rating	15 Watts Continuous
Frequency Response	400 - 14,000 Hz (Nominal) 500 Hz - 6000 Hz (± 5 dB)
Sensitivity	120dB at 15 Watts (Peak) 116dB at 15 Watts/1 Meter (Avg) 500 - 6000 Hz 106dB at 1 Watt/1 Meter (Avg) 500 - 6000 Hz
Dispersion Angle	70° (-6dB, 2000 Hz Octave Band)
Weight	AP-15: 3.5 lbs (1.6kgs) AP-15T: 4 lbs (1.8kgs)
Finish	Baked Epoxy
Dimensions	H 8 $\frac{3}{4}$ " x W 7 $\frac{7}{8}$ " x D 9 $\frac{9}{16}$ "
Temperature Range	-40°C - 70°C

Architect and Engineer Specifications

Loudspeakers shall be Atlas Sound Model _____ (AP-15, AP-15C, AP-15T, AP-15TC) or approved equal. Each loudspeaker unit shall be supplied with integral compression driver and shall be constructed of structural aluminum and ABS plastic with double re-entrant acoustic path and exponentially-flared square bell. The weather-resistant unit shall have a continuous audio power rating of 15 watts. Frequency response range shall be 400-14,000 Hz (Nominal), 500-6000 Hz (± 5 dB). Sound pressure level shall be 116dB (15W/1M), 106dB (1W/1M). Sound dispersion shall be 70 degrees (-6dB, 2000 Hz octave band). Mounting bracket shall allow vertical and horizontal adjustment and include provisions for surface mounting, banding or strapping. Loudspeaker shall have impedance selection, via seven-position switch of 5000, 2500, 1300, 666, 333, 89 and 45 ohms. Power taps shall be available at .48, .94, 1.8, 7.5, and 15 watts for 25V line, 1, 2, 3.8, 7.5, and 15 watts for 70.7V line and 2, 4, 8 and 15 watts for 100V line. Wiring terminals shall be enclosed for security and weather protection. Finish shall be grey or beige (C) baked epoxy as indicated. Dimensions shall be H 8 $\frac{3}{4}$ " x W 7 $\frac{7}{8}$ " x D 9 $\frac{9}{16}$ ".

Features

- Superior Intelligibility for Voice and Tone Signaling
- High-Efficiency Driver with Proven Performance Reliability
- Transformer (T) Equipped Version for Versatile 25, 70.7, or 100V Line Applications
- Omni-Purpose® Bracket for Precise Positioning
- Environment Resistant for Outdoor and Indoor Use
- U.S. Trademark Design is World Recognized for Quality and Dependability
- Available in Grey or Beige (C) Finish

Applications

AP-15 and AP-15T environment-resistant loudspeakers are the world standard for high-intelligibility voice and signal transmission in medium-power indoor and outdoor public address, intercom, security and industrial-signal-system applications. Cost effective, 15-watt units incorporate high-efficiency compression drivers to project sound over long distances or wide areas with fewer loudspeakers. The AP-15 Series is recognized throughout the world as "the performance standard" for commercial sound, intercom and protective-signaling systems. Units are commonly installed in commercial buildings, distribution centers, factories, schools, public access areas, civic centers and recreational facilities.

Description

The 8 Ohm Model AP-15 and the transformer-equipped Model AP-15T are double re-entrant loudspeakers which deliver 15 Watts of continuous power handling, superior intelligibility and unparalleled efficiency. The AP-15 Series operates within a nominal frequency response range of 400-14,000 Hz and offers a sensitivity of 120dB at rated power to provide clear voice and signal communication.

Transformer-equipped Model AP-15T includes a versatile, 3-way, 25, 70.7, 100V line transformer to meet a variety of distributed system needs. The transformer is adjustable using Atlas Sound's exclusive Vari-Tap® Connect Center which features a 7-position, watts/impedance selection switch. The labor-saving Vari-Tap® switch is screwdriver adjustable and includes a protective cover with built-in cable strain relief.

The trademarked squared-bell design signifies Atlas Sound quality and reliability. The Omni-Purpose® mounting bracket (supplied on all models) achieves precise positioning in the vertical and horizontal planes with a single adjustment and includes provisions for loudspeaker installation on conventional surfaces as well as for strap-mounting on I-beams or pillars. AP Series loudspeakers are U.S. made to assure superior service reliability. Weather-resistant construction is metal and matching ABS plastic with metal components finished in grey epoxy (standard) or beige epoxy (Model AP-15TC).

The AP-15 Series also includes a 45-ohm Model AP-15-45 and a 4 ohm Model AP-15-4 which are designed respectively for intercom and CB/auxiliary radio applications. (See SL2-1567).

Accessories

BX-2A

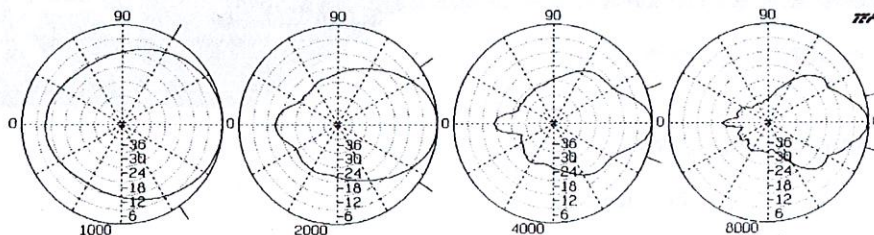


Vandal resistant cover plate for armored cable and conduit connection. Constructed of cast aluminum.

APXBK-N

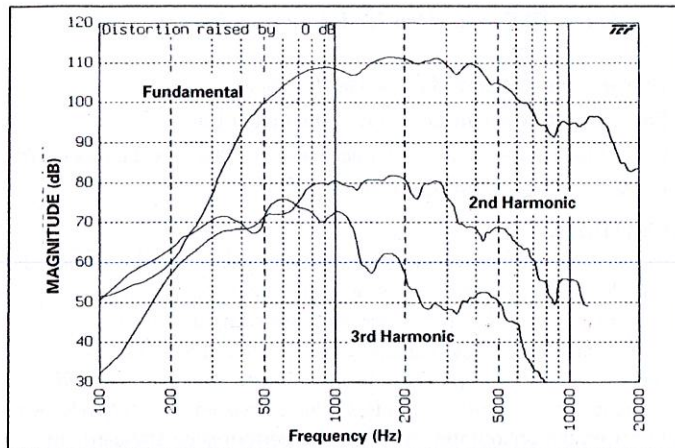


Optional Mounting Base



Polars Are Normalized To Zero On Axis

Frequency (Hz)	Q	Di	Beamwidth (Degrees)
1000	5.15	7.12	115
2000	13.90	11.43	70
4000	32.20	15.08	40
8000	39.90	16.01	30



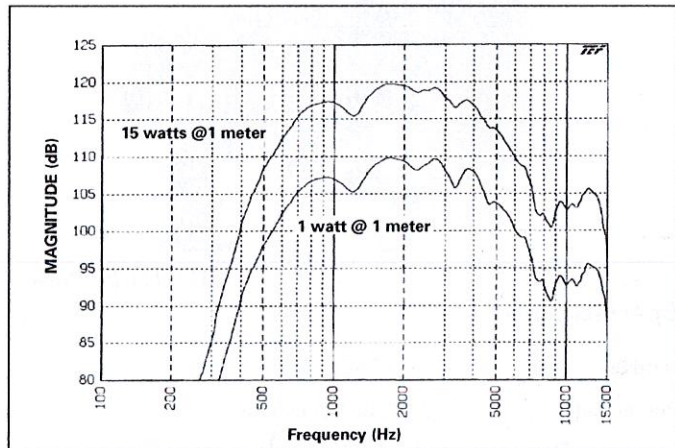
AP-15(T) (Harmonic Distortion - 1.5 watts @ 1 meter)

DRIVER PROTECTION: The horn loudspeaker should not be operated at frequencies outside the specified range, especially below horn cut-off. It is suggested that any program material be high-passed at 300 Hz with a 6dB per octave filter. This can be done by a low level filter at the amplifier input or by a series capacitor at each loudspeaker. Electrolytic capacitors can be used but they must be non-polarized (See Typical Capacitor Values Chart).

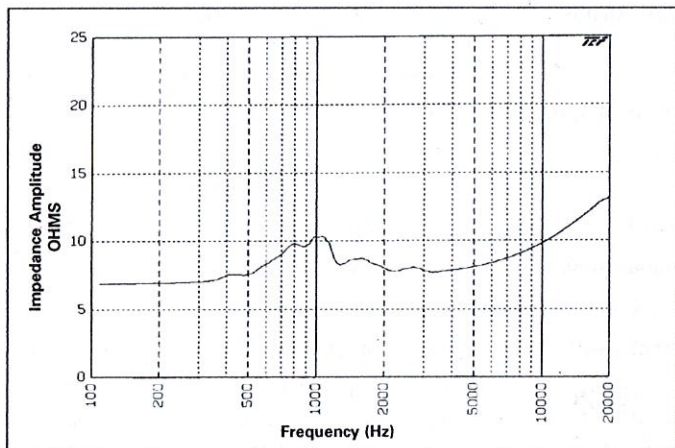
Typical Capacitor Values			
8 Ohm Driver	25 Volt Line	70 Volt Line	100 Volt Line
70 mfd	15 mfd	2 mfd	1 mfd

AP-15T Vari-Tap® Control Connect Center Xfmr. Power Taps				
Switch Position	Impedance (Ohms)	Watts @ 25V	Watts @ 70.7V	Watts @ 100V
1	5000	—	1	2
2	2500	—	2	4
3	1300	.48	3.8	8
4	666	.94	7.5	15
5	333	1.8	15	X*
6	89	7.5	X*	X*
7	45	15	X*	X*

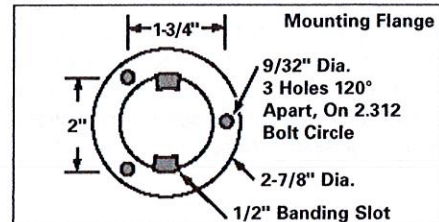
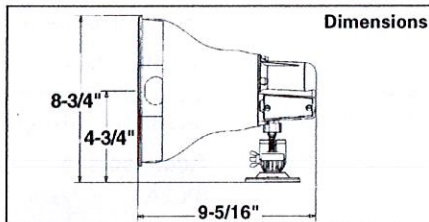
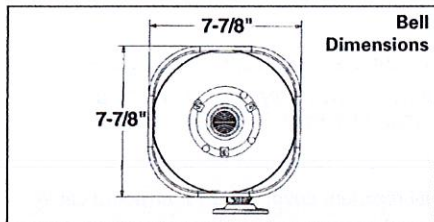
* Do Not Use



AP-15(T) Frequency Response



AP-15 (Impedance Sweep)



Atlas Sound products are designed and tested in our well-equipped research laboratory which contains a fully anechoic chamber, complete analog Bruel & Kjaer measurement equipment and Techtron® TEF 20® audio analyzer. Atlas Sound is proud to be a beta site for TEF software.

INSTALLATION AND OPERATIONS MANUAL

SPRING OPERATED TUBING STORAGE REEL

MODEL TSR-S



CAR-MON

PRODUCTS, INC.

1225 Davis Road Elgin, IL 60123
Phone (847) 695-9000 Fax (847) 695-9078

Please note: The operation instructions in this manual applies only to reels manufactured January 2006 or later.

TSRS1007

LIMITED WARRANTY

Car-Mon Products, Inc. shall replace or repair at its discretion any products or components sold or manufactured which prove to be defective in workmanship or materials within 1 year from date of shipment.

The foregoing is in lieu of all warranties, expressed or implied, and all other obligations or liabilities on behalf of the company, regarding products it may manufacture or sell. Except as otherwise provided herein, the purchaser accepts the product "as is".

No warranty is made regarding the suitability or compatibility of any Car-Mon product for a particular application or purpose unless specifically stated. The Customer is responsible for the final selection and utilization of Car-Mon products for their use. The Customer assumes all liability for the consequences of performance, application, use and/or misuse by employees of products purchased from Car-Mon Products, Inc.

In no event shall Car-Mon Products, Inc. be liable for consequential or special damages; for transportation, labor, or other charges for adjustment, replacement, installation, incorrect electrical connections, overloading of motor, performance at low voltage, or other alterations which may be performed in connection with such products. The warranty specified herein is waived in the event that the Distributor, Contractor, or Purchaser perform any unauthorized repairs or modifications to the product.

With regard to products or components which are furnished by Car-Mon, Inc. but not manufactured by Car-Mon, Inc., the warranty obligation of Car-Mon shall be limited to and be the same as that of its supplier.

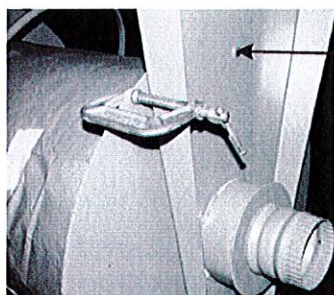
SPRING OPERATED TUBING STORAGE REEL

INSPECTION AND PREPARATION

1. Check each unit to see that it is complete. The components of the system include:
 - A. Tubing Storage Reel (Reel may have attached CMW Exhaust Fan.)
 - B. Tubing assembly consisting of tubing with flange at one end, and exhaust adapter other end.
2. Check for any damage that may have been caused by shipping. If concealed damage is found, report it to the carrier immediately. Car-Mon cannot be responsible for any damage not reported to the carrier in a timely manner.
3. Review the installation procedure thoroughly before proceeding.

REEL INSTALLATION

1. Tubing storage reels may be ceiling or wall mounted. Make sure the mounting surface is level and plumb and able to support the weight and stress of the reel and tubing which can weigh up to 200 lbs. Use all four mounting holes and make sure the bolts are suited for the weight of the reel. After mounting, make sure the reel is level. Hanging by threaded rods is not acceptable, vibration isolators are not necessary.
2. **CAUTION! FOLLOW THIS STEP CAREFULLY. THIS OPERATION SHOULD BE DONE BY TWO PERSONS.** The spring reel is shipped from the factory with tension applied to the spring mechanism. This is done by securing the reel in place with a bolt, marked in red, located about 10" above the discharge on the reel. (See photo at right.) BEFORE removing this bolt, the tube assembly must be attached. Place a clamp or vice grip on the discharge end side of the drum directly beneath the bearing mounting bar in the front to prevent the reel from any rotation. (See photo 2 below) Failure to hold the reel in place could cause damage to the reel or pose a hazard to the installer. If you have any questions on this procedure, please call the factory.
3. Attach the tubing assembly by using the bolts and gasket provided. Attach the flanged end of the tubing to the flange pocket, using the gasket in between the flanges. Attach securely bolting the flanges together. (See photo 3 below)
- 3a. After reel is secure and tube assembly is attached, remove the locking bolt.
4. It is now time to release the tension on the reel and wind on the tubing. Grasp and hold the end of the tubing assembly (See photo 4) before releasing the clamp or vise grip. While holding the tubing, release the grip-the reel will start to pull the tubing assembly onto the reel. Slowly guide the tubing onto the reel from left to right, making sure there are no gaps between the wraps of the tubing. The tension pulling the tubing on the reel will subside as the tubing wraps on the drum. There will be some tube that will not wrap onto the tubing drum. This is normal. (Note: Some reels may be equipped with a longer than normal length of tubing, and may have over 5' of tube hanging off the reel.)
5. Attach the pull down cable to the ring on the exhaust adapter. Adjust the length so that the operator can reach the cable pull down ring at floor level.
6. Test the reel from ground level to make sure it unwraps and wraps correctly. Units were preadjusted at the factory. NOTE: When retracting tubing onto reel, always hang onto cable and "control" the speed of retraction. Never let go of the cable and let the tubing to wind on the reel uncontrolled. If your reel does not unwind or retract properly, a spring tension adjustment will be necessary. See pages 3 & 4.



LOCKING
BOLT

PHOTO 2



PHOTO 3

Make sure
gasket is
in place
between
tube and
reel flange

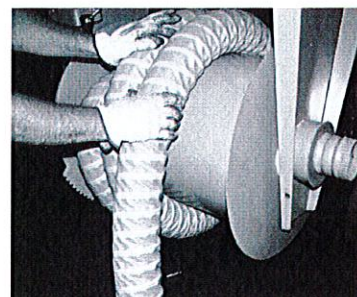


PHOTO 4

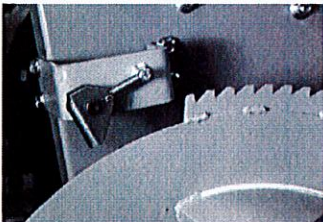
7. If tubing storage reel is equipped with attached CMW-F fan, it should now be wired and tested. Please refer to operation instructions that were included for fan. If reel is duct connected, make sure all connections are made to central fan.

OPERATION

1. Using the pull down cable extend the tubing to the desired length. You will note an audible "click" as the tubing is extended. This is a normal sound of the ratchet mechanism. For the ratchet to hold the tube in an extended position, it is necessary to stop the drum within one of the ratchet gear ranges. The ratchet will automatically engage, holding the tubing in position. The tubing must be fully extended when the reel is in use. Leaving wraps on the reel while the fan is running and the tubing connected to the exhaust will impede air flow and possibly overheat and damage the system.
2. Attach the exhaust adapter to vehicle exhaust pipe-vehicle should not be running while this is being done. Before starting the vehicle, make sure the fan to the reel is in operation. NEVER start or run a vehicle when the system is connected and the fan is not running.
3. After servicing vehicle, turn vehicle off and leave tube connected and fan running for a few minutes to clear any exhaust in system and allow for exhaust adapter to cool. To retract the tube assembly, it is necessary to extend the tube a little further so that the drum rotates past the ratchet gear range. The ratchet will release and allow the gear to slide past the ratchet as the tube retracts. **Guide the tubing back onto the reel by holding the pull-down cable. Do not let the tube assembly rewind "wildly" by itself.**

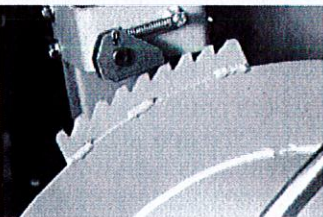
NOTE: SEE PAGE 7 FOR ADDITIONAL INSTALLATION PHOTOS.

RATCHET AND DRUM POSITIONS



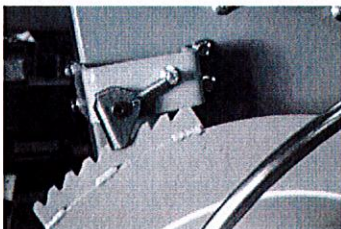
FULLY RETRACTED STOP POSITION

This is the position the drum and reel stop is in when the tubing is in the fully wound and up position.



FORWARD ROTATION POSITION

This is the position the reel stop mechanism is in as the tubing is being pulled of the reel.



DESIRED LENGTH STOP POSITION

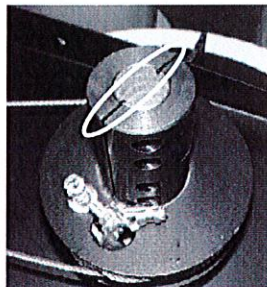
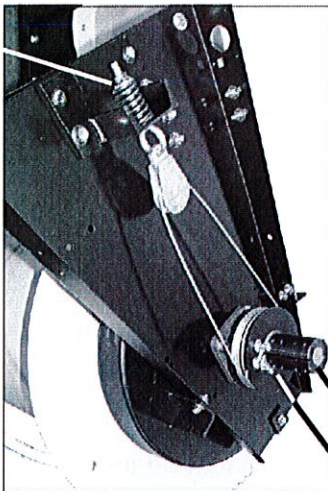
The position the reel stop mechanism is in when the tubing is in the extended down and locked position.

PROCEDURE TO ADD TENSION TO SPRING OPERATED TUBING STORAGE REEL

NOTE: REELS ARE FACTORY ADJUSTED TO THE LENGTHS OF HOSE THAT ARE TO BE WOUND ON THE REEL AND WILL NORMALLY HAVE 5-7' OF HOSE HANGING DOWN WHEN THE HOSE IS FULLY RETRACTED. DO NOT MAKE ANY ADJUSTMENTS TO TRY TO WIND THIS PORTION OR DAMAGE TO THE HOSE MAY OCCUR.

1. With the tubing completely in the down position on the reel, clamp the drum end plate to the frame on the discharge end of the reel with a clamp or vise grip to prevent rotation of the reel. Remove the hose from the reel flange pocket.
2. Remove the protective cover over the spring mechanism end.
3. Reference the position collar and drum shaft by marking a line across the two. This will help in determining one complete revolution when tensioning.
4. Using a torque wrench loosen all 8 bolts on the clamping collar equally.
5. CAREFULLY loosen the clamp on the reel and the frame (it will have tension on it) Wind the reel in a clockwise (when looking at shaft end) direction one full turn. The mark you made on the shaft and collar should line up in the position you marked it. Only the shaft should turn, the collar should not. Re-clamp the reel to the frame.
6. Tighten the bolts on the clamping collar to 14.5 lbs torque. ALL BOLTS MUST BE SET THE SAME.
7. Re-attach hose to the reel, making sure the gasket is in place between the hose and the reel pocket.
8. Replace cover over spring mechanism.

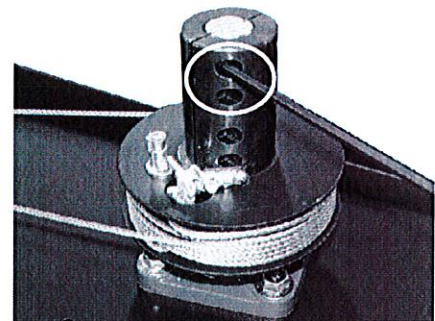
SPRING
LOADED
NUT



Mark the collar and
shaft so you have a
reference point for
a full revolution.

CLAMPING COLLAR

REEL
BRAKE
MECHANISM



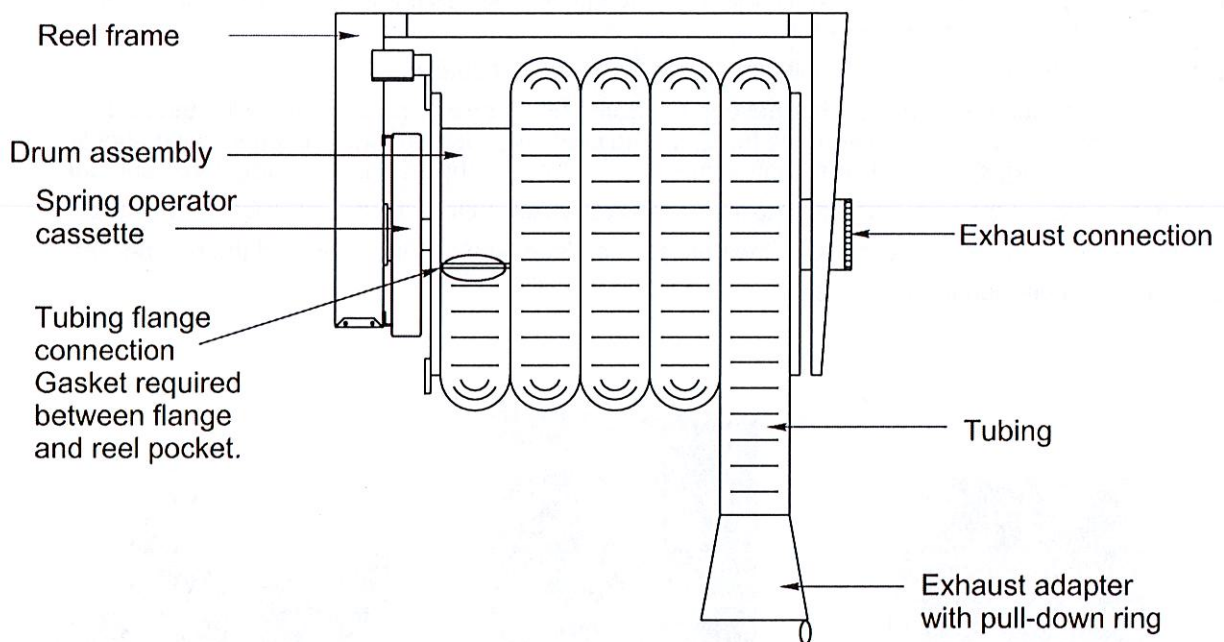
Loosen bolts on clamping collar
to rotate drum on reel. After
adjustment is made, all 8 bolts
must be tightened to 14.5 lbs of
torque.

INSTALLATION - OPERATION - MAINTENANCE

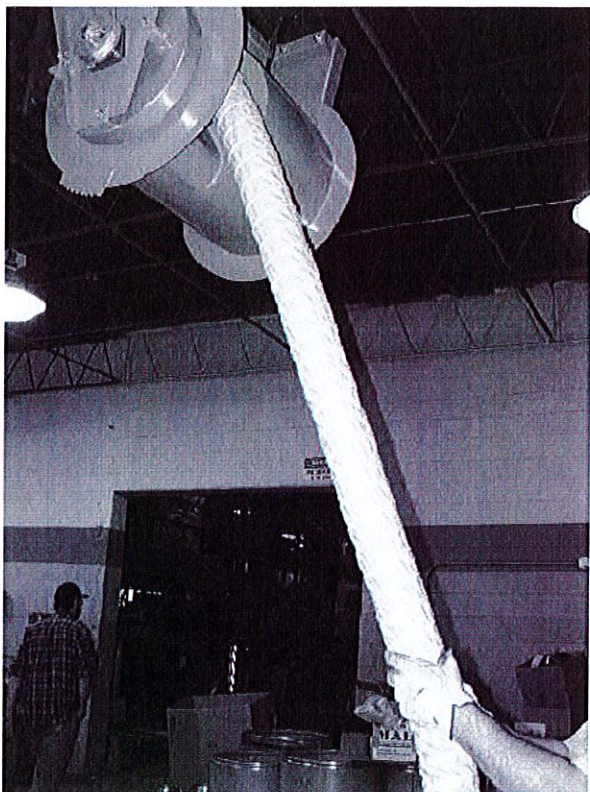
MAINTENANCE

1. Periodically check and lubricate the discharge duct bearing with a lithium based grease.
2. The heavy duty cast steel flange bearing should be checked and greased periodically.
3. Periodically wipe any excess dirt or grease from exhaust adapter and outside of tubing.
4. Follow maintenance procedures for fan.

SERIES TSR-S REEL PARTS LIST



The above parts guide is given only as a reference to identify any problems that may develop. Due to the type of construction, most of the parts are not replaceable by the user. The reel is designed for heavy duty use and the main components including frame, drum assembly, and spring operator are designed to last for the life of the equipment. Replaceable parts may include tubing assembly and exhaust adapter



VERY IMPORTANT! When retracting the tubing grasp the tubing and guide it up onto the reel, making sure that the tubing does not overlap. After the tube starts to make the last wrap on the reel, let go of the tubing



When the tubing is fully retracted on to the spring reel. Approximately 5-7' of tube will hang down. This is normal to protect the tubing and adapter from being damaged.

LUBRICATION

MOTORS

Motors are ball bearing motors and have been given any lubrication, if necessary, at the factory before the test run. No lubricant is necessary unless the motor has not been used over a year. (please note that some smaller Baldor motors up to ¼ HP, may not require any lubrication.

Type of Grease

A high grade ball and roller bearing grease. Recommended greases for standard service are:

RELUBRICATION SCHEDULE

NEMA (IEC) FRAME SIZE	RATED SPEED - RPM		
	3600	1800	1200
Up to 210 including (132)	5500 hrs.	12000 hrs.	18000 hrs.
Over 210 to 2890 including (150)	3600 hrs.	9500 hrs.	15000 hrs.

Above table is for standard conditions. For Severe conditions, multiply above hours by .5. For Extreme conditions, multiply by .1

SERVICE CONDITIONS

STANDARD	40°C Maximum temperature, Clean Area, Little Corrosion Motors with Deep Groove Ball Bearing
SEVERE	50°C Maximum temperature, Moderate Dirt & Corrosion Motors with Ball Thrust, Roller Bearing
EXTREME	>50°C or Class H Insulation, Severe Dirt, Dust, or Abrasive Atmosphere-Motors with all Bearings. (Note for temperature of over 50°C, high temp grease must be used.)

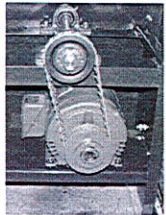
BEARINGS



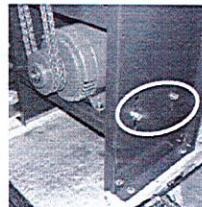
Bearings are greased at factory before the fan is tested. Under normal use, bearings need not be greased at regular intervals, but if needed, use a high quality bearing grease and grease at points indicated.

PHOTOS IN THIS SECTION APPLY TO CMB AND BXI SERIES ONLY

CHANGING FAN BELTS



Under normal use, fan belts may last for years, however they should be checked annually for wear. Disconnect power from fan, remove belt cover, and check both belts carefully.

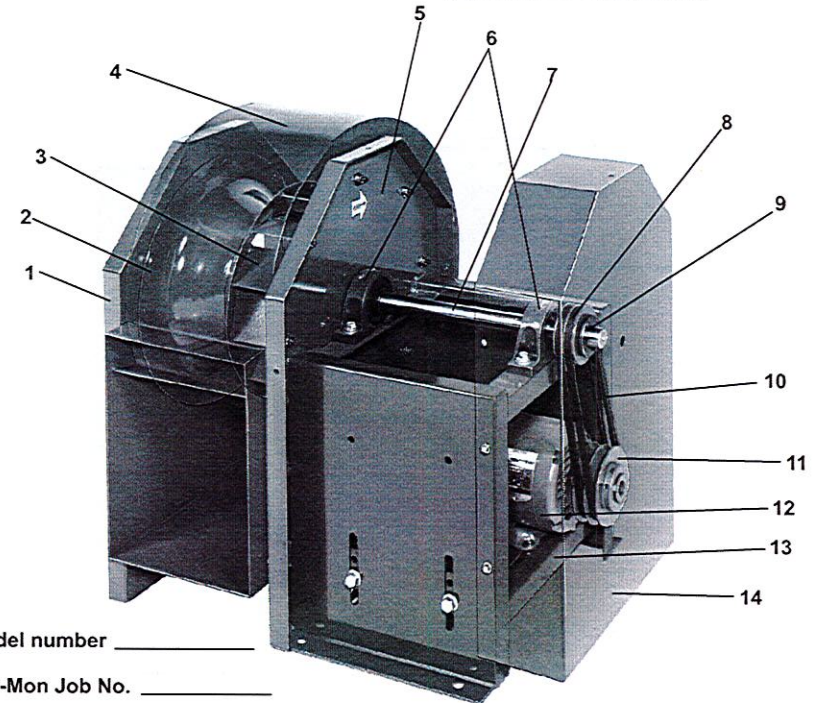


To change the fan belts, loosen the bolts on both sides of the motor base, raise base up several inches until belts are clear of drives. Remove old belts and install new belts. Untighten motor base and drop until tight. Make sure that belts are tight and aligned.

To get parts information from factory, you must reference the serial number on the Car-Mon label attached to the fan. See Page 2.

CMB Series Fans Parts Guide

NOTE: Since BXI fans are similar in construction, parts will be noted with this illustration.



Model number _____

Car-Mon Job No. _____

Tag # _____

Fan performance set at _____

1. Inlet support
2. Inlet spinning
3. Wheel
4. Housing
5. Fan Frame
6. Shaft bearings (Consult Factory)
7. Shaft
8. Shaft sheave* _____

9. Split tapered bushing
10. Pulley belts* _____
11. Motor sheave* _____
12. Motor* _____
13. Motor base
14. Belt Guard

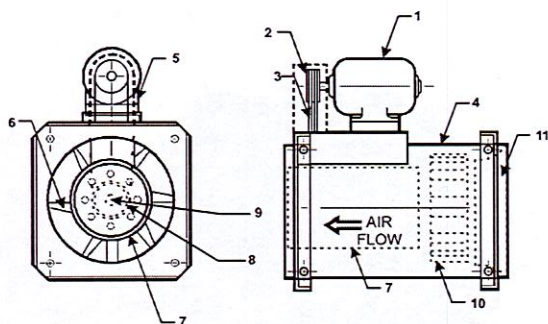
Weather cover not shown

*Indicates recommended spare parts

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CMSL FAN PARTS LIST



MODEL # _____ SL CAR-MON # _____

1. MOTOR* _____
2. MOTOR SHEAVE* _____
3. BELTS* (2 REQUIRED)* _____
4. HOUSING & SUPPORTS _____
5. BELT GUARDS _____
6. LOUVERS _____
7. DRIVE TUNNEL & COVER _____
8. SHAFT SHEAVE* _____
9. SHAFT _____
10. FAN WHEEL _____
11. INLET SPINNING _____

*Indicates replaceable parts

SAFETY PRECAUTIONS

Any piece of machinery should be treated with respect and not over confidence. Over confidence usually leads to carelessness and carelessness leads to injury. Following is a list of safety DO'S and DON'TS.

DO

1. On a belt drive unit, fan should be equipped with either a belt guard or a weather hood.
2. If there is no inlet duct work, fan should be equipped with an inlet screen.
3. If there is no outlet duct work, fan should be equipped with an outlet screen.
4. Make sure fan is stopped and electrical power locked out before putting hands into fan inlet or outlet opening or near belt drive. We suggest a warning sign on START SWITCH cautioning not to start when fan is being serviced and a padlock on the disconnect.

DO NOT

1. Put hands near or allow loose and hanging clothing to be near belts, sheaves, couplings or cooling wheels while fan is running.
2. Put hands into inlet or outlet while fan is running.

It is sometimes difficult to tell whether or not a fan is running. BE SURE it is not running and cannot be operated before any inspection.

ADDITIONAL SAFETY PRACTICES

For additional safety practices on installation and operation, please consult AMCA Publication 410-96 "Safety Practices For Users and Installers of Industrial and Commercial Fans" A copy of this should be enclosed in the packet with these instructions. If copy was missing or you require extras, please contact Car-Mon Customer Services.

MAINTENANCE & ADJUSTMENTS

A planned program of regularly scheduled maintenance will return dividends in averting a possible costly and unexpected period of down time. Following are some of the more important considerations:

1. Bearings are pre-lubricated at the factory. For grease recommendations see bearing manufacturer or consult factory.
2. Bolt and setscrew tightness. Check bolts and setscrews to assure they are still tight.
3. V belt drive, worn belts or sheaves, proper tension. Check periodically to see if these parts are showing excessive wear. If it is necessary to replace one belt on a multiple belt drive unit, replace all the belts with a matched set.
4. Wheel wear or material build up on wheel causing unbalance will quickly damage bearings or cause self destruction of the fan wheel. Check for any build up of foreign material.

MODIFYING FAN PERFORMANCE-BELT DRIVE FANS

If you want to raise or lower a belt drive fan's performance by opening or closing the adjustable sheave, it is highly recommended that before making these adjustments you consult the factory or the Car-Mon Fan Catalog to assure the motor horsepower is adequate for the new performance. If you need an additional sheave or another motor, please contact your local Car-Mon representative. Please note that changing performance, drives, or motors may void the original factory warranty.



The adjustable sheave is mounted on the motor. The fan's performance can be increased or decreased by opening or closing the sheave. Before making adjustments, please call the factory. Improper adjustment may seriously damage the motor and void the warranty of the fan.

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WIRING

Make sure that the fan is wired properly and the motor is running in the proper direction. Damage caused to motors by improper wiring will not be covered in the warranty. Wiring diagrams for most of the motors supplied on our fans are located on page in this manual. There should also be a wiring diagram on each motor plate. If you do not have the proper diagram, please contact the factory with the motor brand and model number and we will send a copy of the diagram to you.

PRE-OPERATION INSPECTION

With the fan mounted in operating position:

1. Lock out electrical power to prevent accidental fan operation.
2. Recheck tightness of foundation bolts, wheel setscrews, motor mounting bolts, bearing bolts and setscrews, coupling setscrews, access door bolts, etc. Tighten to proper torque values if necessary. NOTE: Fan hub setscrews should be tightened when vertically below the shaft.
3. Rotate wheel manually to make sure it runs freely without binding or striking the inlet or housing. If the wheel strikes the housing, the wheel may have to be moved on the shaft.
4. Check bearing alignment and make certain they are properly locked to the shaft and lubricated if applicable.
5. If fan is belt driven, check sheave alignment. Improper sheave alignment is one of the most frequent causes of excessive fan vibration. Check belt tension. Belt tension is the usual cause of shortened belt bearing life.
6. If equipped with inlet vanes and/or dampers, check for correct linkage operation. Make sure that the operator opens and closes these control devices to the proper position.
7. If this product was furnished with a motor mounted by the factory, refer to and observe the motor manufacturer's instructions attached to the fan before removing the electrical lockout of the power source.

START UP

Check the correct direction of rotation by "hitting" the ON button and then the OFF button. Correct the rotation if necessary and the unit can be put into service. Keep a close watch for any unusual vibration, noise, etc.

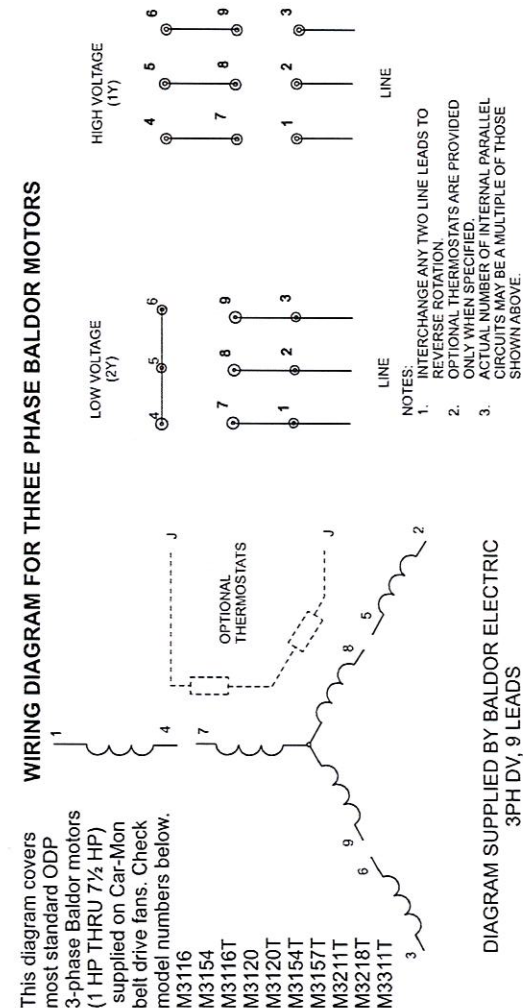
If you observe any unusual vibration or noise, stop and lockout the unit and recheck all items in the preoperation inspection check list above before requesting assistance from our factor representative.

After 24 hours of satisfactory operation, shut down the equipment and check all foundation bolts and setscrews for looseness, tightening where required.

SOME CAUSES OF VIBRATION

1. Bearings: Misaligned or worn loose bolts or setscrews.
2. Motor: Misaligned or unbalanced, worn bearings, loose bolts or setscrews.
3. Bent shaft: Equipment dropped during shipment or installation.
4. Coupling: Misaligned
5. Loose foundation mounting bolts.
6. Wheel: Loose setscrews, material accumulation or wear and erosion causing imbalance.
7. Fan inlet or outlet volume control devices completely closed off.
8. External source of transmitted vibration.

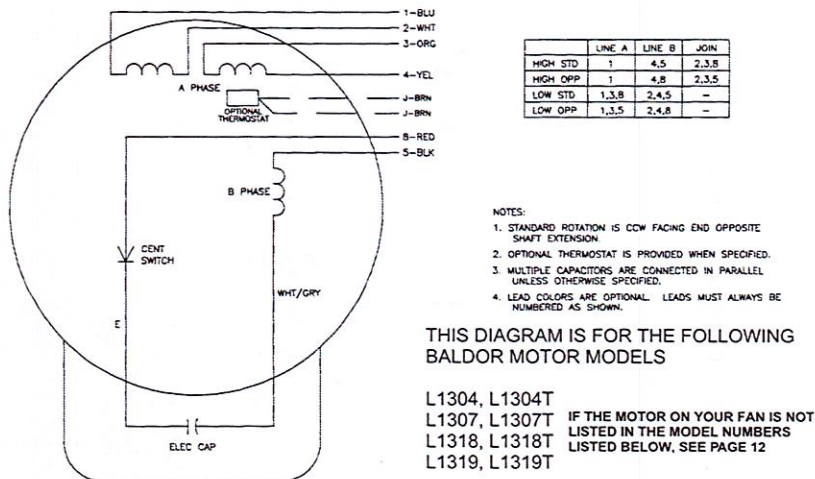
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Web Site: www.car-mon.com e-mail: info@car-mon.com



IF THE MOTOR ON YOUR FAN IS NOT LISTED IN THE MODEL NUMBERS LISTED BELOW, SEE PAGE 12. FOR SINGLE PHASE BALDOR MOTORS SEE PAGE 10.

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WIRING DIAGRAM FOR SINGLE PHASE BALDOR MOTORS



HANDLING

Fans should be hoisted with slings placed around the fan housing. When a single hoist is used, a "spreader" will keep the sling from slipping on the housing. If it is necessary to use hooks placed in lifting holes of fans, **CAREFUL NOT TO DISTORT OR BEND THE HOUSING.** Large units may have lifting lugs or holes which should be used in place of the sling.

Chain or wire slings should be well padded where they contact the fan, especially where special coatings and paints are involved. Rubber, phenolic enamels, etc. require special care as they may easily be damaged by contact in lifting. Even a small chip will destroy the corrosion prevention seal of the coating and allow corrosion to start. Always repair scratched surfaces with touch-up like coating prior to installation.

STORAGE

If the fan is to be stored for any length of time, appropriate care should be taken to protect bearings, shaft and finished surfaces from moisture, dirt, dust, etc. Do not store other products on top of fan equipment. Periodic inspections of the unit should be made until it is ready to be put into service. If fans are stored for a considerable period that may pass the time of the warranty agreement, the warranty will not apply.

FOUNDATIONS-GENERAL

A rigid level foundation is a must for every fan. It assures permanent alignment of fan and driving equipment and freedom from excess vibration, minimizing maintenance costs. Foundation must be cast separate from any adjacent floor structure and separated around edges by at least 3/4" tar felt to prevent transmission of vibration in either direction. The sub-foundation (soil, stone, rock, etc.) should be stable enough to prevent uneven settling of fan foundation. Car-Mon is not responsible for foundation design. The natural frequencies of the foundation must be sufficiently removed from the rotational frequency of the fan to avoid resonant conditions.

EQUIPMENT MOUNTED FANS

If the fan is mounted on equipment having parts which cause vibration, it is very important that the fan support is rigid enough to prevent such vibration being carried to the fan. The resonant frequency of the support should avoid the fan running speed by at least 20%. It may be advisable to use vibration isolators under the fan.

STRUCTURAL STEEL FOUNDATION

When a structural steel foundation is necessary, it should be sufficiently rigid to assure permanent alignment. It must be designed to carry, with minimum deflection, the weight of the equipment plus the loads imposed by the centrifugal forces set up by the rotating elements. We recommend welded, riveted, or suitably locked structural bolted construction to best resist vibration. In certain applications, it is recommended that vibration isolators, selected specifically for weight and span conditions, be installed.

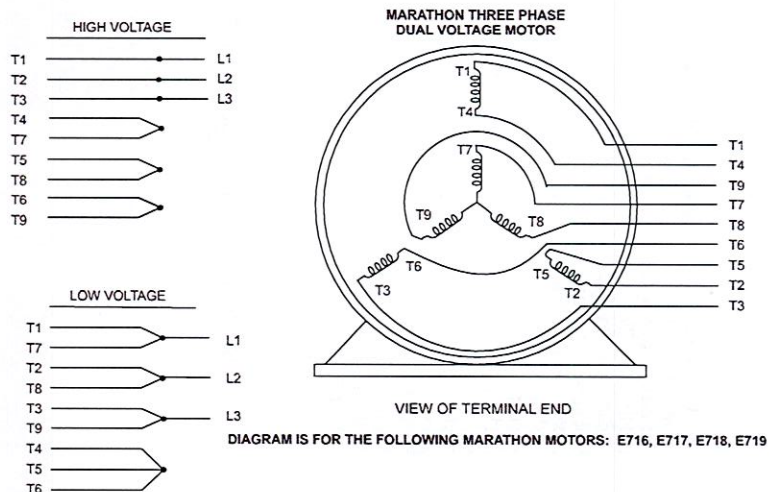
Fans installed above ground level should be located near to, or above a rigid wall or heavy column. An overhead platform or support must be rigidly constructed, level and sturdily braced in all directions.

POURED CONCRETE FOUNDATIONS RECOMMENDED

Poured concrete under the fan and all drive components is the best fan foundation. a generally accepted rule of thumb is that the weight of the concrete foundation be a least three (3) times the total weight of the equipment it will support. This weight acts as an inertia block to stabilize the foundation. Where the ground is soft the foundations should be flared or the footing course increased in size to resist settling. the top should extend at least size (6) inches outside the outline of the fan base and should be beveled on the edges to prevent chipping.

VIBRATION ISOLATION

Car-Mon recommends the use of vibration isolation. Rubber in shear (RIS) can be used with the fan mounted on grade with fan wheel diameters up to but not including 27 inches. At 27" and larger only spring isolation should be used. Other construction is available. On occasion it may be advisable to use an isolation base to better distribute the load to be isolated.



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GENERAL INFORMATION

RECEIVING & INSPECTION

When receiving fans, a thorough inspection of the fan must be made to assure no damage was incurred during shipment. Check fan completely for any dents or scratches. If any damage is found, report damage to carrier and notify factory immediately. Failure to report any shipping damage may result in additional costs to the customer. If possible, take pictures (preferably digital) of the damage. If there is minor damage and can be repaired at sight, contact factory for replacement parts or touch-up paint. Any damage to working parts of fan (wheel, shaft, motor,) may require a return to the factory. Call factory for a return goods authorization.

IDENTIFICATION INFORMATION

Every fan manufactured by Car-Mon products is thoroughly tested before it leaves the factory, and is assigned a manufacturing number.



Information on fan housing will include a rotation arrow, testing information, and fan identification tag. (see right)

CAR-MON		1225 Davis Road Elgin, IL 60123-1317 847-695-9000	
Model	1	Max. Fan RPM	4
No.	2	Max. Fan Temp	5
	3	Max. Fan SHP	6

WARNING: Do not install, operate or maintain this equipment unless you have read and understand the installation, operation and maintenance instructions and safety practices recommended for this equipment.

CAR-MON FAN IDENTIFICATION TAG

1. Fan model #
2. Factory order #
3. Tag# (Customer supplied.)
4. Phase
5. Voltage
6. Motor Horsepower, Motor RPM

When contacting factory on any information or when ordering replacement parts for the fan, it is necessary to have the factory order number found on the Car-Mon information label attached to the fan. (#2 on identification tag above)

WARRANTY INFORMATION

LIMITED WARRANTY

Car-Mon Products, Inc. shall replace or repair at its discretion any products or components sold or manufactured which prove to be defective in workmanship or materials within 1 year from date of shipment.

The foregoing is in lieu of all warranties, expressed or implied, and all other obligations or liabilities on behalf of the company, regarding products it may manufacture or sell. Except as otherwise provided herein, the purchaser accepts the product "as is".

No warranty is made regarding the suitability or compatibility of any Car-Mon product for a particular application or purpose unless specifically stated. The Customer is responsible for the final selection and utilization of Car-Mon products for their use. The Customer assumes all liability for the consequences of performance, application, use and/or misuse by employees of products purchased from Car-Mon Products, Inc.

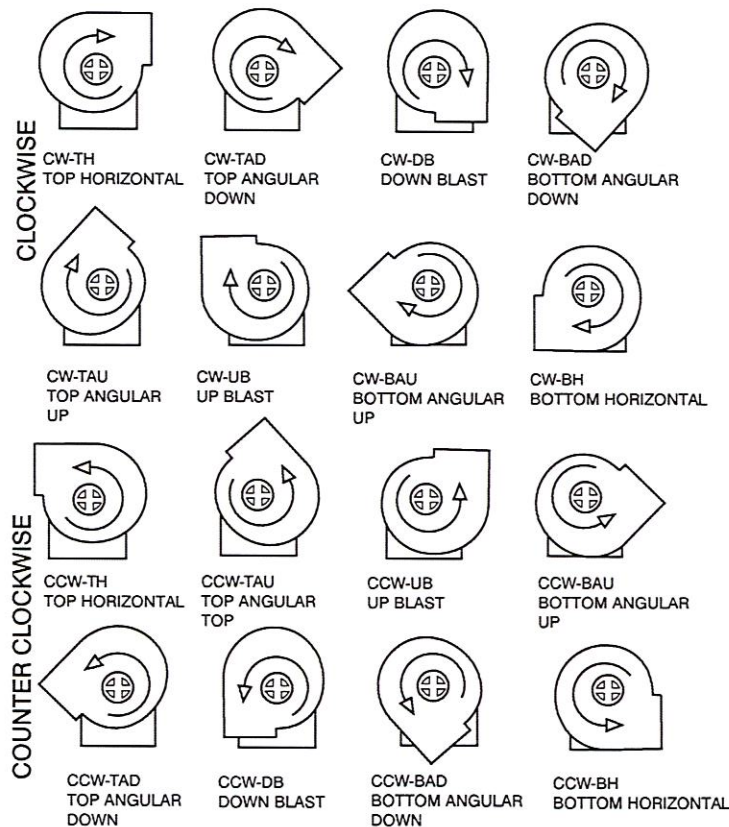
In no event shall Car-Mon Products, Inc. be liable for consequential or special damages; for transportation, labor, or other charges for adjustment, replacement, installation, incorrect electrical connections, overloading of motor, performance at low voltage, or other alterations which may be performed in connection with such products. The warranty specified herein is waived in the event that the Distributor, Contractor, or Purchaser perform any unauthorized repairs or modifications to the product.

With regard to products or components which are furnished by Car-Mon, Inc. but not manufactured by Car-Mon, Inc., the warranty obligation of Car-Mon shall be limited to and be the same as that of its supplier.

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ROTATION AND DISCHARGE GUIDE

When determining rotation and discharge, you will be looking at the fan from the MOTOR end.



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MOTOR WIRING GUIDES

If the motor on your fan does not match any of the wiring diagrams supplied, you may contact the factory or the motor manufacturer directly. All of the motor companies can be reached directly on the internet, with links to provide wiring diagrams. You may also contact them for the closest service center in the event you may need a warranty repair.

BALDOR MOTORS

www.baldor.com

Fax information to : 501-648-5791

MARATHON MOTORS

www.marathonelectric.com

LEESON MOTORS

www.leeson.com

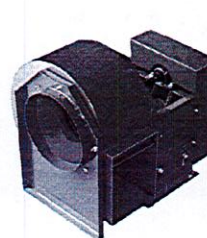
Phone: 262.377.8810

CAR-MON

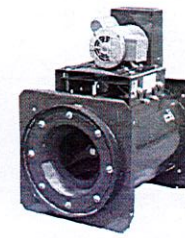
INSTALLATION, OPERATION, & MAINTENANCE FOR CAR-MON EXHAUST FANS SERIES CMB, SL, & BXi

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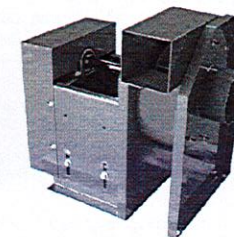
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Maintenance	Page 5
Safety Precautions	Page 5
Lubrication	Page 6
CMB Parts List	Page 7
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SERIES CMB



SERIES SL



SERIES BXi

This manual has been prepared to guide the users of Car-Mon fans in the proper installation, operation, and maintenance procedures to insure maximum equipment life with trouble free operation.

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PUBLICATION FOM413

TASKMASTER

5100 SERIES

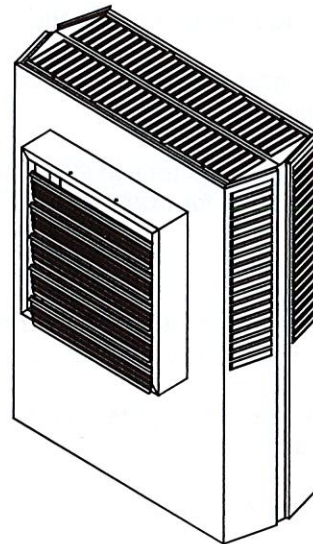
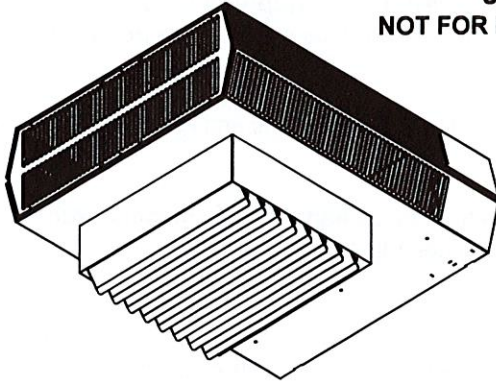
INSTALLATION INSTRUCTIONS & PARTS LIST



TPI Corporation
P.O. Box 4973
Johnson City, TN
37602-4973

America's Comfort Conditioning Company

Horizontal or Vertical Mounting
Industrial / Commercial
Unit Heater
NOT FOR RESIDENTIAL USE



ATTENTION: Read carefully before attempting to install, operate or service the TaskMaster Unit Heater. Retain these installation instructions for future use.

PRODUCT FEATURES

- Forced air electric unit heater available in 208, 240/208, 227, 480, 550 or 600 volt as standard.
- Ten standard heating capacities of 3.3 KW/11,260 BTUH thru 50.0 KW/170, 600 BTUH.
- 208 and 240/208 volt models are single phase field convertible to three phase on 3.3 thru 10.0 KW Models. (Single phase only available on 3.3, 5.0, 7.5 and 10 KW 277 volt models.
- Specially designed inlet louver allows the fan to pull cool air evenly across the high mass all-steel element.
- Outward drawn venturi and adjustable louver assembly further directs the outlet air in a uniform pattern to meet specific air pattern requirements in either the horizontal or vertical mounting position.
- Optional wall/ceiling or vertical mounting brackets (as required).
- Four position weld nuts supplied in case top and back for field mounting by threaded rods or eye bolt with chain. (Hardware supplied by others).
- Optional radial or anemostat diffusers lending air pattern versatility when mounted vertically.
- Modular control kits for field installation. Disconnect switch, thermostat, summer fan switch, heat recovery thermostat. All kits with spade terminals (Except disconnect switch).
- Single point terminal board wiring of integral control kits.
- 24 volt low voltage control circuit standard on all contactor and transformer models.
- Roomy control box with access door locked into position by two (2) 1/4 turn fasteners for ease of installation.

IMPORTANT: OWNER SHOULD RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electrical shock, and injury to persons, including the following:

1. Read all instructions before using this heater.

2. CAUTION: High temperatures. Keep cords and all other combustible material, such as furniture, papers, clothes and curtains away from the heater. For safe and efficient operation, keep an open space around heater of three feet in front and 12 inches at ends and rear.

ATTENTION: Les températures élevées. Gardez les cordons et tout autre matériau combustible, tels que les meubles, papiers, vêtements et rideaux à l'extérieur de l'appareil de chauffage. Pour un fonctionnement sûr et efficace, garder un espace ouvert autour de chauffage de trois pieds à l'avant et 12 pouces aux extrémités et à l'arrière.

3. Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.

4. Do not operate any heater after it malfunctions, has been dropped or damaged in any manner. Return heater to authorized service facility for examination, electrical or mechanical adjustment, or repair.

5. Do not use outdoors.

6. To disconnect heater, turn controls to off, and turn off power to heater circuit at main disconnect panel (or operate internal disconnect switch if provided).

7. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.

8. To prevent a possible fire, do not block air intakes or exhaust in any manner.

9. A heater has hot and arcing or sparking parts inside. **WARNING: Do not use it in area where gasoline, paint, or flammable liquids are used or stored.**

10. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.

11. This heater may include an audible or visual alarm to warn that parts of the heater are getting excessively hot. If the alarm sounds (or illuminates), immediately turn the heater off and inspect for any objects on or adjacent to the heater that may have blocked the airflow or otherwise caused high temperatures to have occurred.

DO NOT OPERATE THE HEATER WITH THE ALARM SOUNDING (OR ILLUMINATING)

12. SAVE THESE INSTRUCTIONS

Maintenance:

Caution: Make certain that the power source is disconnected before attempting to service or disassemble any component. If the power disconnect is out of the line of sight, lock it in the OPEN position and tag to prevent the application of power. Make sure the heater has cooled enough to safely handle.

Electrical:

Once a year inspect the control panel wiring to make certain insulation is intact and all connections are tight. Inspect all heater and relay contacts. If the contacts appear badly pitted or burned, replace the contactor/relay.

Cleaning:

Clean the unit casing, fan and motor once a year. A dirty motor will tend to run hot and eventually will be damaged internally. Use the crevice tool on a vacuum cleaner or a clean cloth to clear dust and dirt. Any rust spots on the casing should be cleaned and repainted.

Lubrication:

All units have fan motors that are permanently lubricated so that only occasional cleaning is required.

PROPER LOCATION INSTRUCTIONS

Once the total heating load is calculated, the quantity and capacity of the unit heaters must be determined. Because a large number of low-capacity heaters provides more uniform heat distribution. This approach is recommended when the area will be occupied by a relatively large number of sedentary personnel, (i.e. working on production lines and at benches.)

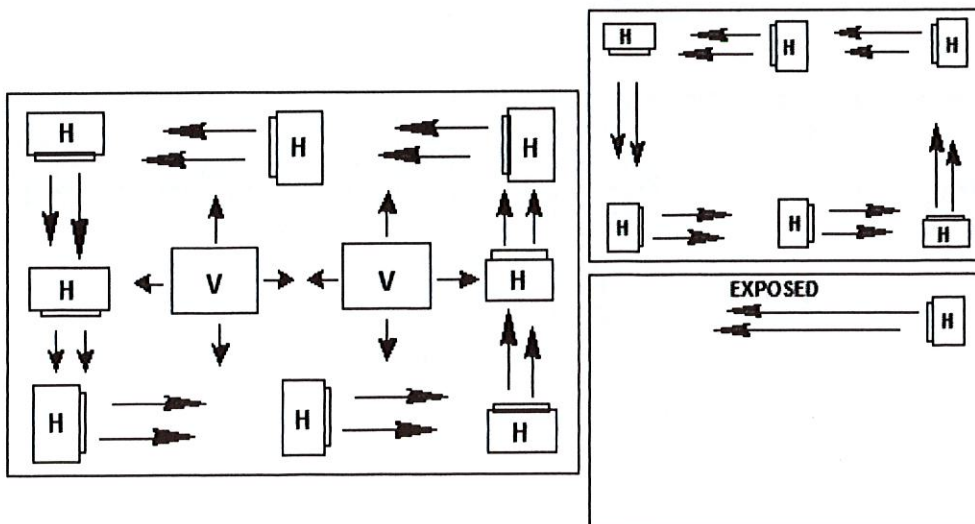
A large number of smaller capacity unit heaters tends to prevent hot drafts, reduces noise levels, and increases diversity of load to help reduce electrical demand and operating costs.

In warehouses where even heat distribution and constant temperatures are less important, a smaller number of high capacity units can be used -- in many cases reducing installation cost. To maintain reasonable heat distribution and reduce severe stratification even in lower bay areas, the total air volume of the space should pass through the unit heaters about three times per hour. (Take total cubic feet and divide by 20 in order to determine proper total heater CFM rating.)

It is important that the rated voltage of the heating equipment match the supply voltage. Supply voltage in excess of the heater rated voltage can damage equipment. Supply voltage lower than the rated heater voltage will decrease heater output as well as run the risk of damaging some components.

Horizontal unit heaters are recommended in low bay areas with maximum 15 to 18 foot ceilings. These should be concentrated along outside wall or other areas of greatest heat loss; spaced to set up a generally circular air movement, each heater supporting the air stream of the other. Additional vertical down below unit heaters with appropriate accessory diffusers can be located to counteract ceiling heat losses (see Figure 1 Location charts).

Figure 1



GENERAL SAFETY INFORMATION / CAUTION:

Follow all local electrical and safety codes, as well as the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

To avoid possible electrical shock, be sure the electrical current is turned off at the main switch prior to wiring or servicing of unit.

If the power disconnect is not integral and is out-of-sight, lock it in the open position and tag to prevent unexpected application of power prior to performing any service or maintenance of the unit.

The unit when installed must be electrically grounded in accordance with the National Electrical Code and standard industry practice.

Make certain that the power source conforms to the requirements of your equipment. See Table 2 on page 6 for wire and circuit size

Check heater voltage and phase on rating label to confirm that it matches the electric service supply.

Wiring diagrams of the heater and supply connections are permanently attached to the inside of the heater access door. All terminals are coded in accordance with the wiring diagram. Accessory wiring are shown on the unit wiring diagram and supporting literature.

The heater must be mounted at least 7' above the floor to prevent accidental contact with the fan blade which could cause injury. Install unit so there are no obstructions to the intake or discharge. Maintain clearances as shown on Table 1, 2, Fig. 1 & 2.

The wall/ceiling mounting structure and anchoring provisions must be on sufficient strength to support the combined weight of the heater and mounting bracket.

PRINCIPLES OF OPERATION

Upon a call for heat from the floor level or unit mounted optional accessory thermostat, the unit fan motor and heating elements shall be energized and remain ON until temperature reaches setting of thermostat; at which time the heating elements shall be deenergized.

The fan motor shall continue to run and purge heater casing of residual heat until setting of fan override is reached, then the fan motor shall be deenergized.

For those units with a factory installed two speed fan switch (25-50KW), the unit as shipped from the factory is set to "low" speed. Customer option to set to "high" speed. For those units available with subdivided circuits, the accessory two stage thermostat (optional) will, upon a call for heat, energize fan motor and the first stage heating element. Should temperature continue to fall, the thermostat shall energize the second stage heating element.

Upon a rise in space conditions towards setting of the thermostat, the two stages of heating elements shall be deenergized in reverse sequence.

The fan motor shall continue to run and purge heater casing of residual heat until setting of fan override is reached, then the fan motor shall be deenergized.

The accessory unit mounted stratification thermostat will energize the unit heater fan motor upon a rise in temperature above its setting.

When the unit mounted stratification thermostat closes on a temperature rise and at the same time the floor thermostat calls for heat, the motor shall be energized immediately and the heating element shall be energized, as previously described.

The automatic reset safety high limit shall deenergize the heating elements and control circuits should the temperature exceed the setting of this device. The fan safety override shall energize fan motor any time the setting of this device is exceeded so as to purge heater casing of excess residual heat.

When the accessory fan switch is placed in the ON position (for summer air circulation), the unit heater fan motor shall be energized.

NOTE: The wall thermostat is to be set to the OFF position during this mode of operation (units with contactors).

For those accessory thermostats equipped with an integral fan switch, place the switch in the HEAT, or AUTO position for operation of the fan and elements which shall then be under control of the thermostat as described above.

When switch is placed in the OFF position, the unit shall be deenergized. When switch is placed in the FAN position, elements shall be deenergized and fan shall be immediately energized.

VERTICAL DISCHARGE UNITS - AIR PATTERNS

															
Louver Diffuser (Standard)				General Distribution (No Diffuser)				Anemostat Diffuser (Optional)				Radial Diffuser (Optional)			

USED ON	MAX MTG. HEIGHT	A	B	STOCK NO.	MAX MTG. HEIGHT	A	MAX MTG. HEIGHT	A	STOCK NO.	STOCK NO.	MAX MTG. HEIGHT				A
											45°	OPEN	45°	OPEN	
3.3 & 5.0 Kw	9	20	10	STD	9	15	—	—	N/A	N/A	—	—	—	—	—
7.5 & 10.0 Kw	12	40	22	STD	12	30	10	30	AD5120	RD5120	0	14	36	30	—
15.0 & 20.0 Kw	18	52	30	STD	18	40	15	38	AD5120	RD5120	14	21	42	35	—
25.0 & 30.0 Kw	22	75	42	STD	22	55	17	50	AD5150	RD5150	20	30	62	44	—
40.0 & 50.0 Kw	24	84	47	STD	24	64	20	60	AD5150	RD5150	18	28	68	54	—

STD = Standard N/A = Not Applicable

Optional diffusers lend added air pattern versatility to individual vertical down blow installations as shown in above illustrations.

INSTALLATION INSTRUCTIONS **TASKMASTER -- 5100 SERIES UNIT HEATER**

ATTENTION: READ INSTRUCTION CAREFULLY

All electric unit heaters are shipped fully assembled. Installation includes hanging the unit, mounting the built-in and remote accessories, wiring of optional control devices, and electrical wiring to the unit.

To insure proper delivery of the heated air to desired areas, follow the mounting height and air projection tables include in these instructions. Follow Fig. 1 & 2 for minimum wall and ceiling clearances.

Heaters may be mounted in the horizontal or vertical air discharge configuration using factory optional supplied accessory mounting equipment or using special hardware facilities supplied by others.

After the installation is complete, replace the access panel.

Set the controls (thermostat, switch) at their desired control point and apply power to the unit.

Check correct operation.

MOUNTING
CLEARANCE

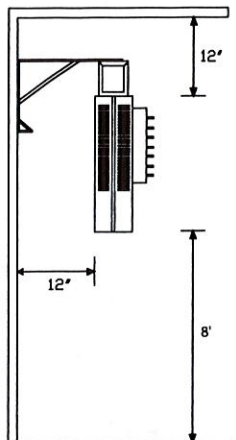


FIG. 1
HORIZONTAL DISCHARGE

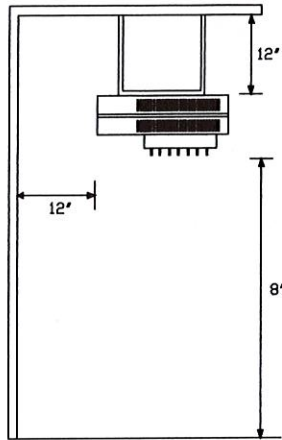
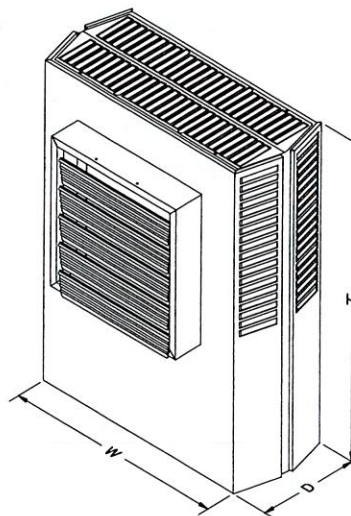


FIG. 2
VERTICAL DISCHARGE

DIMENSIONS



The wall and/or ceiling structure must be sufficient to support the combined weight of the heater and any mounting bracket and accessories.

Be sure power source is deenergized before installing heater. Check heater voltage and phase listed on heater date tape on back of unit to make sure they are the same as the electrical service supplied.

Certain units are convertible from single to three phase service. Follow instructions noted on the unit wiring diagram for this conversion. Units that carry a dual voltage rating (HF) require specific wiring changes when converting from 240 to 208 volt service supplied.

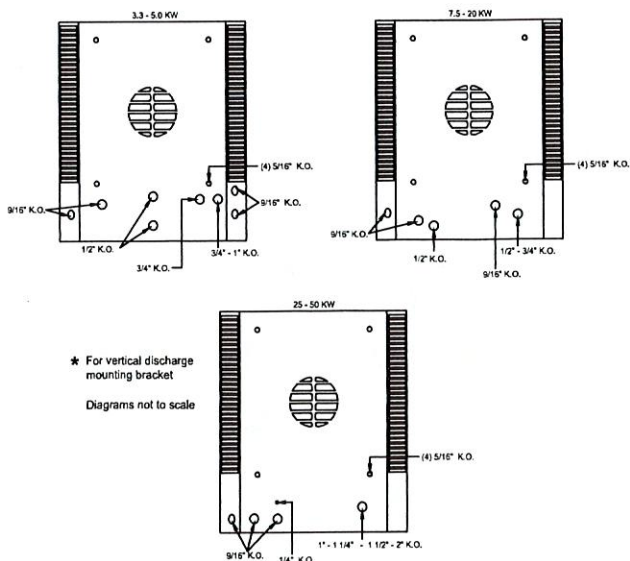
Open the access panel (2 1/4 turn fasteners).

Remove the desired knock-out(s) on back of the heater.

Install any optional accessories following their installation instructions before mounting unit. Following the correct unit/accessory wiring diagram, connect the power supply, electrical ground and accessories to the correct terminals or termination points using accepted practices.

DIMENSIONS (INCHES)			
Kw	H	W	D
3.3-5.0	17-3/4	14-15/32	6-1/2
7.5-10	24-5/16	21-1/2	6-1/2
15.0-20	28-11/16	21-1/2	6-1/2
25.0-50	34	29-1/4	10-1/16

NET JUNCTION BOX VOLUME		
Kw	CUBIC INCHES	CC
3.3-5	74.4	1219
7.5-10	19.8	3245
15.0-20	19.8	3245
25.0-50	34.1	5592



INSTALLATION INSTRUCTIONS **TASKMASTER -- 5100 SERIES UNIT HEATER (part 2)**

HORIZONTAL -- AIR DISCHARGE MOUNTING **SHOWN IN: FIGURE 5 & 6**

Swivel hanger brackets may be used to suspend unit heaters from either the wall (figure 5) or the ceiling (figure 6). Attach hanger base "A" to top of heater with the four 5/16 X 18 caps screws and lockwashers (provided in envelope).

Attach main hanger frame "B" to wall or ceiling in desired location using lag screws "C" or other suitable attachments (supplied by others).

Lift heater into position inserting stud "D" through hole in main hanger frame and attach lock nut "provided in envelope) "E" tightening to within two turns of being tight.

Swivel heater to desired position, tighten lock nut.

VERTICAL -- AIR DISCHARGE MOUNTING

Figure 5
WALL MOUNT
HORIZONTAL DISCHARGE

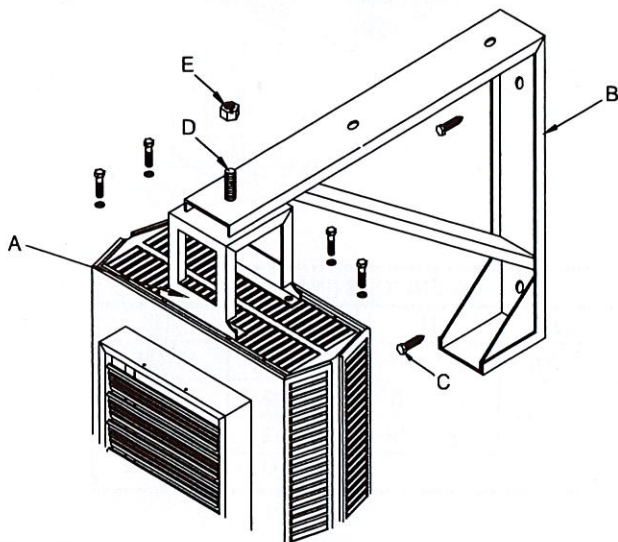
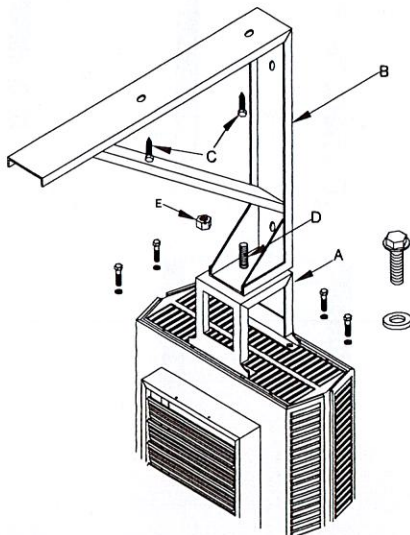


Figure 6
CEILING MOUNT
HORIZONTAL DISCHARGE



SHOWN IN: FIGURE 7

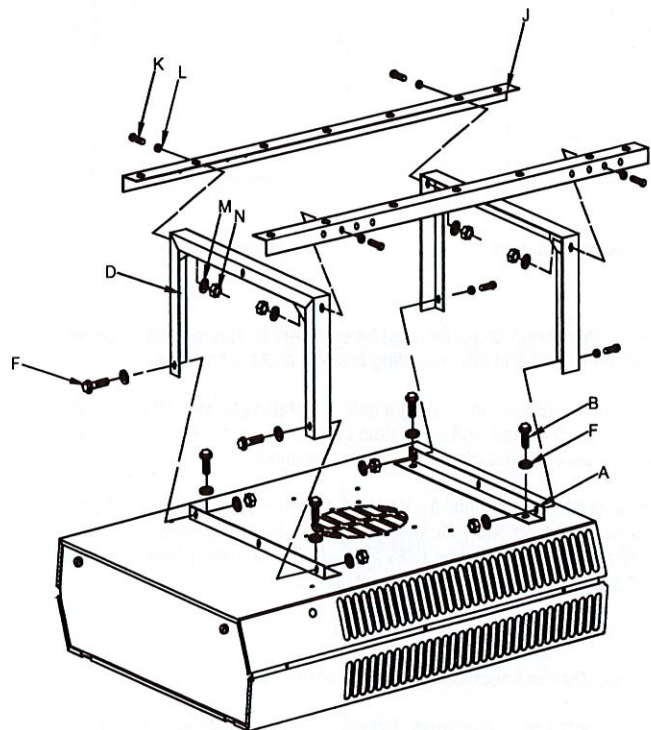
Attach short angle brackets "A" to back of heater with four 5/16 X 18 capscrews "B", lockwashers "F". Be sure vertical leg of angle brackets face top and bottom of heater.

Attach inverted U frames "D" to short angle brackets with four 5/16 X 18 capscrews "K", washers "L", lockwashers "M" and nuts "N".

Attach long angle brackets "J" to inverted frames "D" with four 5/16 X 18 capscrews "K", washers "L", lockwashers "M" and nuts "N".

Attach heater and bracket assembly to ceiling in desired location using customer supplied equipment sufficient to support the assembly.

Figure 7
CEILING MOUNT
VERTICAL DISCHARGE



NOTE: When mounting heater using 5/16" all thread rod (by others) do not screw the rod more than 1/2" beyond the inside of the case.

5100 SERIES UNIT HEATER ELECTRICAL DATA (Table 2)

Catalog Number	Kw	BTU/HR (000)	HEATER/MOTOR VOLTAGE	HEATER PHASE	CONTROL VOLTAGE	AMPS PER PHASE	BRANCH PROTECTION SIZE (A)	SUPPLY SIZE 60°C AWG. **
F1F5103	3.3	11.2	208	1	208	15.9	20	12
F2F5103	3.3	11.2	208	1	208	15.9	20	12
			208	3	208	9.2	15	14
HF1B5103	3.3/2.5	11.2/8.5	240/208	1	240/208	13.7/11.9	20/15	12/14
HF2B5103	3.3/2.5	11.2/8.5	240/208	1	240/208	13.7/11.9	20/15	12/14
			240/208	3	240/208	7.9/6.9	10/10	14/14
G1G5103	3.3	11.2	277	1	277	11.9	15	14
P3P5013CA1	3.3	11.2	480	3	24	4	15	14
F1F5105	5.0	17.1	208	3	208	24.1	35	8
F2F5105	5.0	17.1	208	1	208	24.1	35	8
F2F5105	5.0	17.1	208	1	208	24.1	35	8
			208	1	208	24.1	35	8
HF1B5105	5.0/3.7	17.1/12.8	240/208	1	240/208	20.9/18.1	30/25	10/10
HF2B5105	5.0/3.7	17.1/12.8	240/208	1	240/208	20.9/18.1	30/25	10/10
			240/208	3	240/208	12.1/10.4	20/15	12/14
G1G5105	5.0	17.1	277	1	277	18.1	25	10
P3P5105CA1	5.0	17.1	480	3	24	6.1	15	14
F2F5107CA1	7.5	25.6	208	1	24	36.1	50	6
HF25107CA1	7.5/5.6	25.6/19.2	208	3	24	20.8	30	10
			240/208	1	24	31.3/27.1	40/35	8/8
			240/208	3	24	18.1/15.6	25/20	10/12
G1G5107CA1	7.5	25.6	277	1	24	27.1	35	8
P3P5107CA1	7.5	25.6	480	3	24	9.1	15	14
			208	3	24	27.8	35	8
HF25110CA1	10.0/7.5	34.1/25.6	240/208	1	24	41.6/36.1	60/50	4/6
			240/208	3	24	24/20.8	30/30	8/10
G1G5110CA1	10.0	34.1	277	1	24	36.1	50	6
P3P5110CA1	10.0	34.1	480	3	24	12.1	20	12
F3F5115CA1	15.0	51.2	208	3	24	41.7	60	4
HF3B5115CA1	15.0/11.2	51.2/38.4	240/208	3	24	36.1/31.3	50/40	6/8
P3P5115CA1	15.0	51.2	480	3	24	18.1	25	10
HF3B5120CA1	19.5/14.6	67.2/50.5	240/208	3	24	47.8/41.1	60/60	4/6
P3P5120CA1	20.0	68.3	480	3	24	24.1	35	8
F3F5125CA1	25.0	83.3	208	3	24	69.5	90	2
HF3B5125CA1	25.0/18.7	85.3/64.0	240/208	3	24	60.2/52.1	80/70	3/4
P3P5125CA1	25.0	85.3	480	3	24	30.1	40	8
F3F5130CA1	30.0	102.4	208	3	24	83.4	110	2*
HF3B5130CA1	30.0/22.5	102.4/76.8	208/240	3	24	72.3/62.5	100/80	2/3
P3P5130CA1	30.0	102.4	480	3	24	36.2	50	6
F3F5140CA1	40.0	136.5	208	3	24	111.2	150	1/0*
HF3B5140CA1	40.0/30.0	136.5/102.4	240/208	3	24	96.4/83.4	124/110	1*/2*
P3P5140CA1	39.0	133.1	480	3	24	47	60	4
F3F5150CA1	49.6	169.9	208	3	24	139	175	2/0*
HF3B5150CA1	50.0/37.5	170.6/128.0	240/208	3	24	120.5/104.3	175/150	2/0* 1/0*
P3P5150CA1	50.0	170.6	480	3	24	60.3	80	3
U3H105CA4***	5.0	17.1	600/240	3	240	5.1	15	14
U3H5107CA4	7.5	25.6	600/240	3	240	7.7	15	14
U3H5110CA4	10.0	34.1	600/240	3	240	10.2	15	14
U3H5115CA4	15.0	51.2	600/240	3	240	15.5	20	12
U3H5120CA4	20.0	68.3	600/240	3	240	20.3	25	10
U3H5125CA4	25.0	85.3	600/240	3	240	24.5	30	8
U3H5130CA4	30.0	102.4	600/240	3	240	29.4	40	8
U3H5140CA4	40.0	136.5	600/240	3	240	39.8	50	6
U3H5150CA4	50.0	170.6	600/240	3	240	49.4	60	4
T3H5105CA4N	5.0	17.1	550/240	3	240	5.25	15	14
T3H5107CA4N	7.5	25.6	550/240	3	240	7.88	15	14
T3H5110CA4N	10.0	33.8	550/240	3	240	10.5	15	14
T3H5115CA4N	15.0	51.2	550/240	3	240	15.76	20	12
T3H5120CA4N	20.0	68.3	550/240	3	240	21.1	30	10
T3T5125CA4N	25.0	85.3	550	3	24	26.3	35	8
T3T5130CA4N	30.0	102.4	550	3	24	31.5	40	8
T3T5140CA4N	40.0	136.5	550	3	24	42	60	4
T3T5150CA4N	50.0	170.6	550	3	24	52.55	70	4

* Use 75 degree C Wire **Use Copper Conductors on all heaters

***This unit (only) built in 7.5 & 110KW case size.

5100 SERIES UNIT HEATER

AIR DELIVERY DATA			FAN MOTOR DATA					
CFM at WEIGHT OUTLET	FRM at OUTLET	TEMPERATURE RISE °F	HP	MOTOR RPM	MAX. MTG.		THROW	AIR LBS.
					HORIZONTAL	VERTICAL		
400	1030	26	1/125	1550	9	9	12 Ft.	25
400	1030	26	1/125	1550	9	9	12 Ft.	25
400	1030	26	1/125	1550	9	9	12 Ft.	25
400	1030	26	1/125	1550	9	9	12 Ft.	25
400	1030	26	1/125	1550	9	9	12 Ft.	25
400	1030	26	1/125	1550	9	9	12 Ft.	27
400	1030	40	1/125	1550	9	9	12 Ft.	25
400	1030	40	1/125	1550	9	9	12 Ft.	25
400	1030	40	1/125	1550	9	9	12 Ft.	25
400	1030	40	1/125	1550	9	9	12 Ft.	25
400	1030	40	1/125	1550	9	9	12 Ft.	25
400	1030	40	1/125	1550	9	9	12 Ft.	27
700	1000	34	1/50	1550	10	12	22 Ft.	50
700	1000	34	1/50	1550	10	12	22 Ft.	50
700	1000	34	1/50	1550	10	12	22 Ft.	50
700	1000	45	1/50	1550	10	14	22 Ft.	50
700	1000	45	1/50	1550	10	14	22 Ft.	50
700	1000	45	1/50	1550	10	14	22 Ft.	50
700	1000	45	1/50	1550	10	14	22 Ft.	50
700	1000	45	1/50	1550	10	20	22 Ft.	50
700	1000	45	1/50	1550	10	20	22 Ft.	50
1100	1580	43	1/20	1550	11	20	32 Ft.	65
1100	1580	43	1/20	1550	11	20	32 Ft.	65
1100	1580	43	1/20	1550	11	20	32 Ft.	65
1100	1580	43	1/20	1550	11	20	32 Ft.	65
1100	1580	57	1/20	1550	11	20	32 Ft.	65
1100	1580	57	1/20	1550	11	20	32 Ft.	65
2000/1800	1300/1100	40/44	1/12	1550/1250	12	22	45 Ft.	120
2000/1800	1300/1000	40/44	1/12	1550/1250	12	22	45 Ft.	120
2000/1800	1300/1000	40/44	1/15	1550/1250	12	22	45 Ft.	120
2000/1800	1300/1100	47/53	1/12	1550/1250	12	20	45 Ft.	120
2000/1800	1300/1000	47/53	1/12	1550/1250	12	20	45 Ft.	120
2000/1800	1300/1000	47/53	1/15	1550/1250	12	20	45 Ft.	120
3100/2800	2000/1800	40/45	1/4	1550/1310	15	25	55 Ft.	120
3100/2800	2000/1800	40/45	1/4	1550/1310	15	25	55 Ft.	120
3100/2800	2000/1800	40/45	1/4	1550/1310	15	25	55 Ft.	120
3100/2800	2000/1800	51/56	1/4	1550/1310	15	22	50 Ft.	120
3100/2800	2000/1800	51/56	1/4	1550/1310	15	22	50 Ft.	120
3100/2800	2000/1800	51/56	1/4	1550/1310	15	22	50 Ft.	120
558	929	30	1/125	1300	9	9	12 Ft.	50
700	1000	34	1/50	1550	10	12	22 Ft.	50
700	1000	45	1/50	1550	10	14	22 Ft.	50
1100	1580	43	1/20	1550	11	20	32 Ft.	65
1100	1580	43	1/20	1550	11	20	32 Ft.	65
2000/1800	1300/1100	40/44	1/12	1550/1250	12	22	45 Ft.	120
2000/1800	1300/1100	47/53	1/12	1550/1250	12	22	40 Ft.	120
3100/2800	2000/1800	40/45	1/4	1550/1310	15	25	55 Ft.	120
3100/2800	2000/1800	51/56	1/4	1550/1310	15	22	50 Ft.	120
680	971	25.1	1/125	1300	9	9	12 Ft.	50
680	971	37.6	1/50	1550	10	12	22 Ft.	50
680	971	50.2	1/50	1550	10	14	22 Ft.	50
1080	1542	47.4	1/20	1550	11	20	32 Ft.	65
1080	1542	63.2	1/20	1550	12	18	37 Ft.	65
1980/1780	1290/1150	43/48	1/12	1550/125	12	22	45 Ft.	120
1980/1780	1290/1150	52/58	1/12	1550/125	12	20	40 Ft.	120
2900/2650	1870/1160	47/52	1/4	1550/131	15	25	55 Ft.	120
2900/2660	1870/1160	59/66	1/4	1550/131	15	22	50 Ft.	120

5100 SERIES UNIT HEATER TROUBLE SHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Thermostat calls for heat, but heater does not function.	1. Open (blown) fuse 2. INCORRECT WIRING 3. Thermal cut-out open, de-energizing heater element and control circuit.	1. Replace fuses, check for cause. (see Replacement Parts List for fuse size) 2. CHECK WIRING CONNECTIONS 3. Check for the following: • Correct supply volts and phase • Correct control wiring (heater control must be thru thermostat control wiring section only). • Power interruption to heater during heater operation. • Restriction of air around heater 1-5 minute fan purge after thermostat off.
Fan motor runs "HOT"	1. Dust accumulation or excessive dirt on motor. 2. Dirt accumulation 3. Motor needs lubrication.	1. Clean fan motor and casing of grease and oil accumulation. 2. Clean louvers and between heating elements 3. See Maintenance.
Fan motor runs, but no heat.	1. Element contactor not operating correctly. 2. Element fuse blown.	1. Check wiring for open circuit. Replace contactor if defective 2. Replace fuses, check for cause. (see Replacement Parts List for fuse size)

MAINTENANCE

CAUTION: Make certain that the power source is disconnected before attempting to service or disassemble any component. If the power disconnect is out of the line of sight, lock it in the OPEN position and tag to prevent the application of power.

ELECTRICAL

Once a year inspect the control panel wiring to make certain insulation is intact and all connections are tight. Inspect all heater and relay contacts. If the contacts appear badly pitted or burned, replace the contactor / relay.

CLEANING

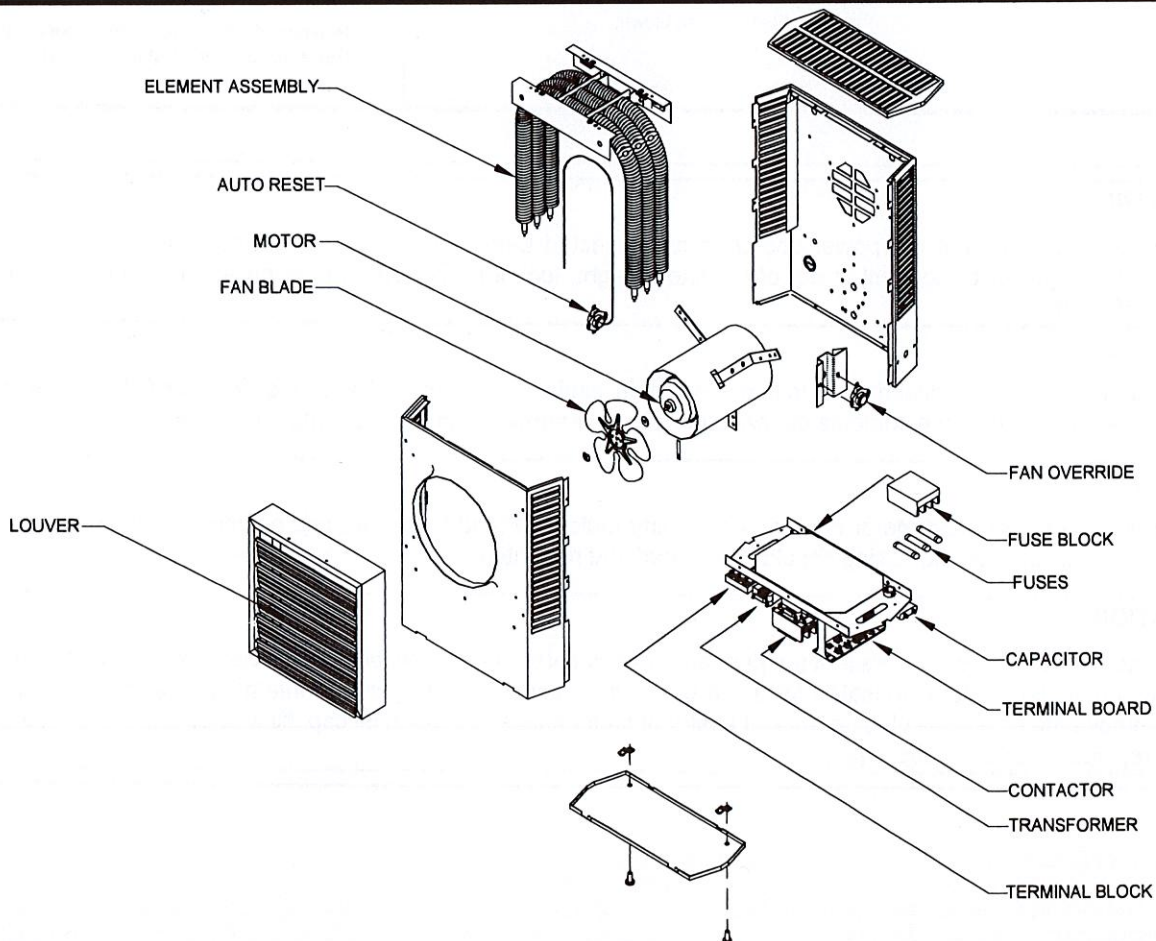
Clean the unit casing, fan and motor once a year. A dirty motor will tend to run hot and eventually will be damaged internally. Any rust spots on the casing should be cleaned and repainted.

LUBRICATION

All units up to 20KW have fan motors that are permanently lubricated so that only occasional cleaning is required. Units above 20KW have fan motors lubricated for 5 years of continuous duty or 10 years of intermittent operations. When required, remove the oil access plug on back of heater at motor intake grill, open oil cap, fill with S.A.E. No. 10 electric motor oil, replace plugs and access plug.

5100 SERIES UNIT HEATER WIRING DIAGRAM SCHEDULE

DIAGRAM NO.	MODEL CODE PREFIX	MODEL CODE SIZE AND CONTROL SYSTEM		
WD5101 WD5104 WD5106	F1F-G1G-HF1B G1G F2F-HF2B	5103N 5107CAIL 5103N	5105N 5110CAIL 5105N	
WD5113 WD5114 WD5138	F2F HF2B P3P	5107CAIL 5107CAIL 5103CAIL	5110CAIL 5110CAIL 5105CAIN	5107CAIN
WD5121 WD5122	P3P F3F HF3B	5110CAIN 5115CAIL 5115CAIL	5115CAIN 5120CAIL	5120CAIN
WD5125 WD5126	F3F F3F HF3B	5125CAIL 5125CAIL 5125CAIL	5130CAIL 5130CAIL	5140CAIL 5140CAIL
WD5139 WD5140	HF3B P3P, T3T P3P	5150CAIL 5125CAIN 5140CAIN	5130CAIN	
WD5141 WD5142	P3P U3H, T3H	5150CAIN 5105CA4N 5115CA4N	5107CA4N 5120CA4N	5110CA4N
WD5143 WD5144	U3H T3T	5125CA4N 5150CA4N 5140CAIN	5130CA4N 5150CAIN	5140CA4N



5100 SERIES UNIT HEATER PARTS LIST - CATALOG NUMBERS

HEATER MODEL	MOTOR	ELEMENT ASSEMBLY	AUTOMATIC RESET	FAN OVERRIDE	XMFR	CONTACTOR	POWER TERMINAL BLOCK
F1F5103N F25103N HF1B5103N	56562-012 56562-012 56562-017	60715-001 60715-011 60715-002	57640-006 57640-006 57640-006	28163-005 28163-005 28163-005			56815-001 56815-001 56815-001
HF2B5103N G1G5103N P3P5103CA1N	56562-017 56562-016 56562-018	60715-012 60715-007 60715-008	57640-006 57640-006 57640-006	28163-005 28163-005 56811-001	60719-006	58027-041	56815-001 56815-001 56815-001
F1F5105N F2F5105N HF1B5105N	56562-012 56562-012 56562-017	60715-003 60715-004 60715-005	57640-006 57640-006 57640-006	28163-005 28163-005 28163-005			56815-001 56815-001 56815-001
HF2B5105N G1G5105N P3P5105CA1N	56562-017 56562-016 56562-018	60715-006 60715-009 60715-010	57640-006 57640-006 57640-006	28163-005 28163-005 56811-001	60719-006	58027-041	56815-001 56816-001 56815-001
F2F5107CA1L HF2B5107CA1L G1G5107CA1L	56823-011 56823-012 56824-002	56954-004 56954-006 56954-001	57640-003 57640-003 57640-003	56811-001 56811-001 56811-001	60719-001 60719-001 60719-005	58027-031 58027-021 58027-021	56815-001 56816-001 56815-001
P3P5107CA1N F2F5110CA1L HF2B5110CA1L	56824-011 56823-011 56823-012	56954-002 56954-003 56954-004	57640-003 57640-003 57640-003	56811-001 56811-001 56811-001	60719-006 60719-001 60719-001	58027-041 58027-036 58027-036	56815-001 56816-001 56816-001
G1G5110CA1L P3P5110CA1N F3F5115CA1L	56824-002 56824-011 56825-001	56954-007 56954-008 56954-009	57640-003 57640-003 57640-003	56811-001 56811-001 56811-001	60719-005 60719-006 60719-001	58027-031 58027-041 58027-036	56816-001 56815-001 56816-001
HF3B5115CA1L P3P5115CA1N HF3B520CA1L	56825-002 56825-003 56825-002	56954-010 56954-011 56954-012	57640-004 57640-004 57640-004	56811-001 56811-001 56811-003	60719-001 60719-006 60719-001	58027-031 58027-041 58027-036	56816-001 56815-001 56816-001
P3P5120CA1N	56825-003	56954-013	57640-004	56811-003	60719-006	58027-041	56815-001

HEATER MODEL	MOTOR	ELEMENT ASSEMBLY	AUTO RESET	FAN OVERRIDE	XMFR	S.D. FUSE 6 RQD	S.D. FUSE 2 RQD	CONTACTOR 2 RQD	POWER TERMINAL BLOCK	FAN
F3F5125CA1L HF3B5125CA1L	56943-001 56943-002	56954-017 56954-018	57640-005 57640-005	56811-002 56811-002	60719-009 60719-009	50836-012 50836-012	41280-002 41280-007	50378-025 50378-025	57097-001 57097-001	57112-001 57112-001
P3P5120CA1N F3F5130CA1L	56944-001 56943-001	56954-019 56954-020	57640-005 57640-005	56811-002 56811-002	60719-012 60719-009	50836-003	41280-008	50378-016 50378-025	57098-001 57097-001	57090-001 57112-001
HF3B5130CA1L P3P5130CA1N	56943-002 56944-001	56954-021 56954-022	57640-005 57640-005	56811-002 56811-002	60719-009 60719-012	50836-012	41280-002	50378-025 50378-016	57097-001 57098-001	57112-001 57090-001
F3F5140CA1L HF3B5140CA1L	56945-001 56945-002	56954-023 56954-024	57640-005 57640-005	56811-002 56811-002	60719-009 60719-009	56803-003 50836-003	41280-004 41280-003	50378-025 50378-025	57097-001 57097-001	57112-001 57112-001
P3P5140CA1N F3F5150CA1L	56946-001 56945-001	56954-025 56954-026	57640-005 57640-005	56811-002 56811-003	60719-012 60719-009	50836-003	41280-005	50378-016 50378-034	57098-001 57097-001	57090-001 57112-001
HF3B5150CA1L P3P5150CA1N	56945-002 56946-001	56954-027 56954-028	57640-005 57640-005	56811-003 56811-003	60719-009 60719-012	50836-003 57110-001	41280-004 57111-008	50378-025 50378-016	57097-001 57097-001	57112-001 57090-001

KW	FAN BLADE	TERMINAL BOARD	GROUND CONN.	MOTOR CAPACITOR	LOUVER
3.3 - 5	56806-001	56809-001	1458	-	(5) 56986-001
7.5 - 10	50551-002	56809-001	1458	-	(7) 56986-003
15 - 20	56813-001	56809-001	1458	-	(7) 56986-003
25 - 30	57114-001	56809-001	3981	57100-001	(9) 56987-001
40 - 50	57115-001	56809-001	3981	57100-001	(9) 56987-001

**5100 SERIES UNIT HEATER
PARTS LIST - CATALOG NUMBERS - 600 VOLT MODELS**

	U3H5105CA4N	U3H5107CA4N	U3H5110CA4N	U3H5115CA4N	U3H5120CA4N
MOTOR	56592-017	56823-012	56823-012	56825-002	56825-002
ELEMENT ASS'Y.	56954-029	56954-030	56954-031	56954-032	56954-035
AUTO RESET LIMIT	57640-003	57640-003	57640-003	57640-004	57640-004
FAN OVERRIDE	56811-001	56811-001	56811-001	56811-001	56811-003
XMR	57641-003 (100VA)	57641-001 (150VA)	57641-001	57641-002 (300VA)	57641-002
CONTACTOR	58027-043	58027-043	58027-043	58027-043	58027-043
POWER TERM. BLK.	56817-001	56815-001	56815-001	56815-001	56815-001
FAN BLADE	51554-002	51554-002	51554-002	56813-001	56813-001
TERMINAL BLOCK	56809-001	56809-001	56809-001	56809-001	56809-001
GROUND CONN.	1458	1458	1458	1458	1458
LOUVER	56986-003 (7)	56986-003 (7)	56986-003 (7)	56986-003 (7)	56986-003 (7)
	U3H5125CA4N	U3H5130CA4N	U3H5140CA4N	U3H5150CA4N	
MOTOR	56943-002	56943-002	56943-002	56945-002	
ELEMENT ASS'Y.	56954-003	56954-003	56954-036	56954-037	
AUTO RESET LIMIT	57640-005	57640-005	57640-005	57640-005	
FAN OVERRIDE	56811-002	56811-002	56811-002	56811-003	
XMR	57641-001	57641-001	57641-004 (350VA)	57641-004	
CONTACTOR	58027-043 (2)	58027-043 (2)	58027-043 (2)	58027-043 (2)	
POWER TERM. BLK.	57098-001	57098-001	57098-001	57098-001	
FAN BLADE	57114-001	57114-001	57115-001	57115-001	
TERMINAL BLOCK	56809-001	56809-001	56809-001	56809-001	
GROUND CONN.	3981	3981	3981	3981	
LOUVER	56986-004 (9)	56896-004 (9)	56896-004 (9)	56896-004 (9)	
XFMR PRI FUSE BLK	57643-001	57643-001	57643-001	57643-001	
XFMR PRI FUSE (2)	57644-001 (2)	57644-001 (2)	57644-001 (2)	57644-001 (2)	
FAN SPEED SWITCH	57112-001	57112-001	57112-001	57112-001	
MOTOR CAPACITOR	57100-001	57100-001	57100-001	57100-001	
	T3H5105CA4N	T3H5107CA4N	T3H5110CA4N	T3H5115CA4N	T3H5120CA4N
MOTOR	56562-017	56823-012	56823-012	56815-002	56825-002
ELEMENT ASS'Y.	56954-061	56954-054	56954-055	56954-056	54929-006
FAN OVERRIDE	56811-001	56811-001	56811-001	56811-001	56811-001
XFMR	57641-003	57641-003	57641-001	57641-002	57641-002
CONTACTOR	58027-043	58027-043	58027-043	58027-043	58027-043
POWER TERM. BLK.	56815-001	56815-001	56815-001	56815-001	56815-001
FAN BLADE	51554-002	51554-002	51554-002	56813-001	56813-001
TERMINAL BOARD	56809-001	56809-001	56809-001	56809-001	56809-001
GROUND CONN.	1458	1458	1458	1458	1458
LOUVER	56986-003 (7)	56986-003 (7)	56986-003 (7)	56986-003 (7)	56986-003 (7)
	T3T5125CA1N	T3T5130CA1N	T3T5140CA1N	T3T5150CA1N	
MOTOR	56943-002	56943-002	56945-002	56945-002	
ELEMENT ASS'Y.	56954-057	56954-058	56954-059	56954-060	
AUTO RESET LIMIT	57640-005	57640-005	57640-005	57640-005	
FAN OVERRIDE	56811-002	56811-002	56811-002	56811-002	
XFMR	60719-018	60719-018	60719-018	60719-018	
CONTACTOR	58027-043 (2)	58027-043 (2)	58027-043 (2)	58027-043 (2)	
POWER TERM. BLK	57098-001	57098-001	57098-001	57098-001	
FAN BLADE	57114-001	57114-001	57114-001	57114-001	
TERMINAL BOARD	56809-001	56809-001	56809-001	56809-001	
GROUND CONN.	3981	3981	3981	3981	
LOUVER	56986-004 (9)	56986-004 (9)	56986-004 (9)	56986-004 (9)	
FAN SPEED SWITCH	57112-001	57112-001	57112-001	57112-001	
MOTOR CAPACITOR	57100-001	57100-001	57100-001	57100-001	

TASKMASTER

5100 SERIES

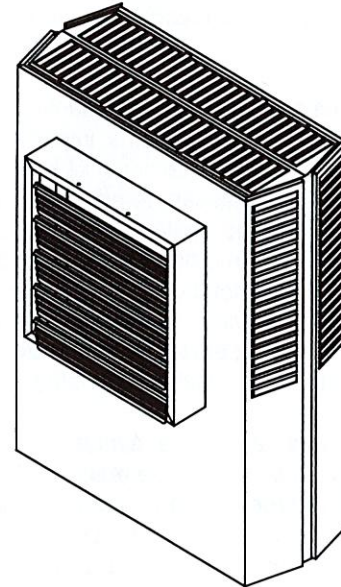
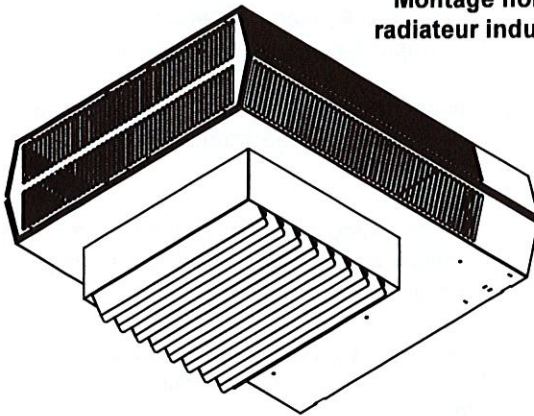
INSTALLATION INSTRUCTIONS & PARTS LIST



TPI Corporation
P.O. Box 4973
Johnson City, TN
37602-4973

America's Comfort Conditioning Company

Montage horizontal ou vertical radiateur industriel et commercial



ATTENTION: Lisez les instructions soigneusement avant de commencer l'installation, la mise en marche ou l'entretien du radiateur taskmaster. Gardez ces instructions pour utilisation ultérieure.

CARACTERISTIQUES

- Radiateur électrique ventilateur, disponible suivant les tensions standards de 208, 240/208, 277, 480 ou de 600 volts.
- Dix puissances de chauffage standard de 3.3 KW/11,260 BTUH jusqu'à 50.0 KW/170,600 BTUH.
- Les modèles unipolaires de 3.3 jusqu'à 10.0 Kw de 240/208 volts peuvent se transformer sur le chantier en modèle triphasé. (Les modèles unipolaires de 3.3, 5.0, 7.5 et 10 Kw de 277 volts ne peuvent être transformés).
- Le volet intérieur spécialement conçu permet au ventilateur d'appeler l'air uniformément à travers l'élément massif en acier.
- Le diffuseur conçu vers l'extérieur et les volets montés dirigent plus encore uniformément la propulsion de l'air afin de répondre aux exigences spécifiques du montage horizontal ou vertical de l'appareil.
- Supports de montage mur/plafond ou verticaux en option. (comme requis).
- Quatre écrous soudés sont disposés au dessus et à l'arrière du boîtier pour le montage de l'appareil au chantier avec des tiges filetées ou des boulons avec chaîne. (visserie fournie par d'autres).
- Diffuseur anemostat ou radial (en option), donnant une propulsion d'air diversifiée lors du montage vertical de l'appareil.
- Instruments de contrôle variés pour installation sur le chantier. Interrupteur, thermostat, interrupteur du ventilateur pour la saison estivale, thermostat pour récupération de chaleur. Tous ont leurs conducteurs équipés de serre-fils à lame. (à l'exception de l'interrupteur).
- Tableau de branchement de la filerie de tous les instruments de contrôle intégrés, en un seul endroit.
- Circuit de contrôle standard basse tension de 24 volts sur tous les modèles avec transformateur ou contracteur.
- Boîte de contrôle spacieuse ayant une porte d'accès fermée à l'aide de deux attaches 1/4 de tour pour rendre l'installation facile.

INSTRUCTIONS D'ENDROIT NÉCESSAIRES

Dès que la charge totale de chauffage est calculée, la quantité et la capacité des chauffages d'unité doivent être déterminés. parce qu'un grand nombre de chauffages de capacité basse fournit la distribution de chaleur plus uniforme. Cette approche est recommandée quand la région sera occupée par un relativement grand nombre de personnel sédentaire, (c'est-à-dire travaillant des chaînes de fabrication et aux bancs.)

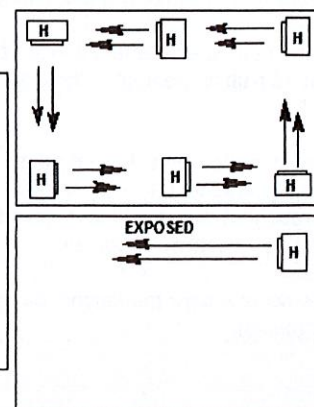
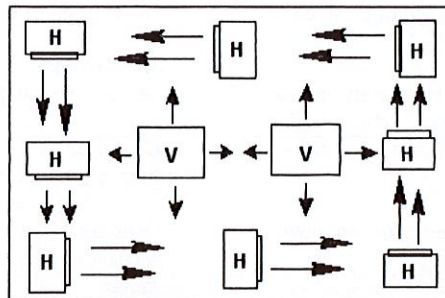
Un grand nombre de plus petits chauffages d'unité de capacité a tendance à prévenir des brouillons chauds, réduit des niveaux bruyants et augmente la diversité de charge pour aider à réduire la demande électrique et les frais d'exploitation.

Dans les magasins où chauffent même la distribution et les températures constantes sont moins importants, un plus petit nombre de hautes unités de capacité peut être utilisé - dans beaucoup de cas réduisant le prix d'installation. Pour maintenir la distribution de chaleur raisonnable et réduire la stratification sévère même dans les régions de baie plus basses, le volume aérien total de l'espace devrait traverser les chauffages d'unité environ trois fois par heure. (Prenez des pieds cubiques totaux et la division par 20 déterminent afin du chauffage total nécessaire l'estimation de CFM.)

Il est important que le voltage évalué de l'équipement chauffant correspond au voltage de réserves. Le voltage de réserves plus du voltage estimé du chauffage peut nuire à l'équipement. Le voltage de réserves plus bas que le voltage de chauffage évalué diminuera la production de chauffage aussi bien que courra le risque de nuire à quelques composantes.

Les chauffages d'unité horizontaux sont recommandés dans les régions de baie basses avec les plafonds de 15 à 18 pieds maximums. Ceux-ci devraient être concentrés le long du mur extérieur ou d'autres régions de la plus grande perte de chaleur; espacé monter un mouvement aérien généralement circulaire, chaque chauffage soutenant le courant atmosphérique de l'autre. Supplémentaire vertical en bas au-dessous des chauffages d'unité avec diffuseurs auxiliaire approprié peut être trouvé pour contrer des pertes de chaleur de plafond (voir le chiffre 1 des graphiques d'Endroit).

Instructions d'Endroit du chiffre 1



Général SAFETY INFORMATION / PRUDENCE :

Suivez tout l'habitant d'origine électrique et les codes de sécurité, aussi bien que le Code Électrique national (NEC) et l'acte de Santé et de Sécurité du Métier (OSHA).

Pour éviter le choc électrique possible, soyez sûrs que le courant électrique est éteint au changement principal avant de télégraphier ou assurer l'entretien de l'unité.

Si le pouvoir débranche n'est pas intrinsèque et est hors de vue, la serrure cela dans la position ouverte et l'étiquette pour prévenir l'application inattendue de pouvoir avant d'exécuter n'importe quel service ou maintenance de l'unité.

L'unité quand installé doit être électriquement fondée conformément à la pratique d'industrie Codée et standard Électrique nationale

Vérifiez que la source de pouvoir conforme aux exigences de votre équipement. Voir la Table 2 sur la page 6 pour la grandeur de circuit et le fil

Vérifiez le voltage de chauffage et la phase en estimation de l'étiquette pour confirmer qu'il correspond aux réserves de service électriques.

Les schémas de connexions du chauffage et des connexions de réserves sont attachés en permanence à l'intérieur de la bouche d'accès de chauffage. Tous les terminus sont codés conformément au schéma de connexions. L'installation électrique auxiliaire est montrée sur le schéma de connexions d'unité et la littérature de soutien.

Le chauffage doit être monté au moins 7' au-dessus de l'étage pour prévenir le contact accidentel avec la lame de fan qui pourrait provoquer la blessure. Installez l'unité ainsi il n'y a aucune obstruction pour la consommation ou le renvoi. Maintenez des déblayages comme montré sur la Table 1, 2, la Figure 1 et 2.

Le mur/plafond montant la structure et ancrant des provisions doit être sur la force suffisante pour soutenir le poids combiné du chauffage et du support de fixation.

PRINCIPES D'OPÉRATION

Sur une demande de la chaleur du niveau d'étage ou de l'unité est monté le thermostat auxiliaire optionnel, le moteur de fan d'unité et les éléments chauffants seront stimulés et rester SUR jusqu'au cadre de portées de température de thermostat; auquel chronomètrant les éléments chauffants sera deenergized.

Le moteur de fan continuera à courir et purger le chauffage casing de la chaleur restante jusqu'au cadre de fan ne passent outre est atteint, alors le moteur de fan sera deenergized.

Car ces unités avec une usine ont installé deux changement de fan de vitesse (25-50KW), l'unité comme expédié de l'usine est montrée à la vitesse "basse". L'option de client pour montrer "à la haute" vitesse. Pour ces unités disponibles avec les circuits subdivisés, le deux thermostat de stade auxiliaire la volonté (optionnelle), sur une demande de la chaleur, stimulent le moteur de fan et l'étape première chauffant l'élément. Si la température continue à tomber, le thermostat stimulera le deuxième stade chauffant l'élément.

Sur une augmentation dans les conditions spatiales vers le cadre du thermostat, les deux stades d'éléments chauffants seront deenergized dans l'ordre contraire.

Le moteur de fan continuera à courir et purger le chauffage casing de la chaleur restante jusqu'au cadre de fan ne passent outre est atteint, alors le moteur de fan sera deenergized.

L'unité auxiliaire est montée le thermostat de stratification stimulera le moteur de fan de chauffage d'unité sur une augmentation dans température au-dessus de son cadre.

Quand l'unité est montée des fins de thermostat de stratification sur une augmentation de température et en même temps le thermostat d'étage demande la chaleur, le moteur sera stimulé tout de suite et l'élément chauffant sera stimulé, comme auparavant décrit.

La sécurité de reconstruction automatique la haute limite ira faire deenergize les éléments chauffants et contrôler des circuits devrait la température excéder le cadre de cet artifice. La sécurité de fan passe outre stimulera le moteur de fan n'importe quel temps le cadre de cet artifice est excédé afin de purger le chauffage casing de l'excès la chaleur restante.

Quand le changement de fan auxiliaire est placé dans le SUR la position (pour la circulation aérienne d'été), le moteur de fan de chauffage d'unité sera stimulé.

NOTEZ : le thermostat mural doit être mis AU de la position pendant ce mode d'action (les unités avec contactors).

Pour ces thermostats auxiliaires équipés avec un changement de fan intégrant, placez le changement dans la CHALEUR, ou la position D'AUTO pour l'opération du fan et des éléments qui seront alors sous contrôle du thermostat comme décrit ci-dessus.

Quand le changement est placé dans LE de la position, l'unité sera deenergized. Quand le changement est placé dans la position de FAN, les éléments seront deenergized et le fan sera tout de suite stimulé.

UNITÉS DE RENVOI VERTICALES - DESSINS AÉRIENS

Jalousie Diffuser (Norme)

Général Distribution
(Aucun Diffuser)

Anemostat Diffuser
(Optionnel)

Radial Diffuser (Optionnel)

USED ON	MAX MTG. HEIGHT	A	B	STOCK NO.	MAX MTG. HEIGHT	A	MAX MTG. HEIGHT	A	STOCK NO.	STOCK NO.	MAX MTG. HEIGHT				A
											45°	OPEN	45°	OPEN	
3.3 & 5.0 Kw	9	20	10	STD	9	15	—	—	N/A	N/A	—	—	—	—	
7.5 & 10.0 Kw	12	40	22	STD	12	30	10	30	AD5120	RD5120	0	14	36	30	
15.0 & 20.0 Kw	18	52	30	STD	18	40	15	38	AD5120	RD5120	14	21	42	35	
25.0 & 30.0 Kw	22	75	42	STD	22	55	17	50	AD5150	RD5150	20	30	62	44	
40.0 & 50.0 Kw	24	84	47	STD	24	64	20	60	AD5150	RD5150	18	28	68	54	

STD = Standard N/A = Not Applicable

Diffusers optionnels prêtent l'adaptabilité de dessin aérienne ajoutée à l'individu vertical font en bas voler des installations comme montré dans le susdit illustrations.

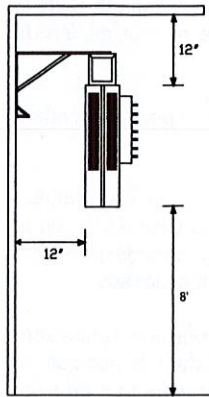
INSTRUCTIONS D'INSTALLATION TYRAN - 5100 CHAUFFAGE D'UNITÉ DE SÉRIE

ATTENTION : LISEZ L'INSTRUCTION SOIGNEUSEMENT

Tous les chauffages d'unité électriques sont expédiés complètement rassemblés. L'installation inclut l'accrochage de l'unité, en montant les accessoires intégrés et lointains, en télégraphiant des artifices de contrôle optionnels et de l'installation électrique électrique à l'unité.

Pour assurer la livraison nécessaire de l'air chauffé aux régions désirées, suivez la hauteur montante et les tables de projection aériennes incluent dans ces instructions. Suivez la Figure 1 et 2 pour les déblayages de plafond et de mur minimaux.

AUTORISATION
de montage



La FIGURE 1
RENOI HORIZONTAL

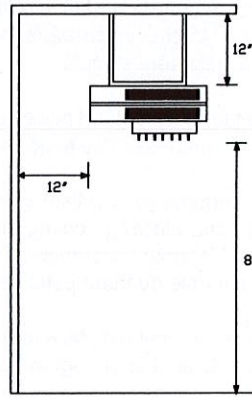


FIG. 2
RENOI VERTICAL

La structure de plafond et/ou de mur doit être suffisante de soutenir le poids combiné du chauffage et n'importe quel support de fixation et les accessoires.

Soyez sûrs que la source de pouvoir est deenergized avant le fait d'installer le chauffage. Vérifiez le voltage de chauffage et la phase énumérée sur la bande de date de chauffage sur le revers d'unité pour vous assurer qu'ils sont le même comme le service électrique fourni.

De certaines unités sont convertable de simple à trois service de phase. Suivez des instructions notées sur le schéma de connexions d'unité pour cette conversion. Les unités qui portent un voltage double évaluant (HF) exigent des changements d'installation électrique spécifiques en convertissant de 240 au service de 208 volts fourni.

Ouvrez le comité d'approche (2 fermetures de tour de 1/4).

Enlevez le knock-out () désiré sur le revers du chauffage.

Installez n'importe quels accessoires optionnels après leurs instructions d'installation avant l'unité montante. Après le schéma de connexions d'unité/complice correct, raccordez l'alimentation électrique, la terre électrique et les accessoires aux terminus corrects ou aux points de résiliation en utilisant des pratiques acceptées.

VOLUME DE BOÎTE DE DÉRIVATION NET		
Kw	POUCES CUBIQUES	CC
3.3-5	74.4	1219
7.5-10	198	3245
15.0-20	198	3245
25.0-50	341	5592

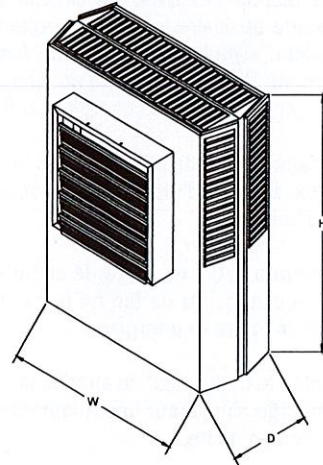
Les chauffages peuvent être montés dans la configuration de renvoi aérienne horizontale ou verticale en utilisant l'équipement montant auxiliaire fourni optionnel d'usine ou en utilisant l'équipement de matériel spécial fourni par d'autres.

Après que l'installation est complète, remplacer le comité d'approche.

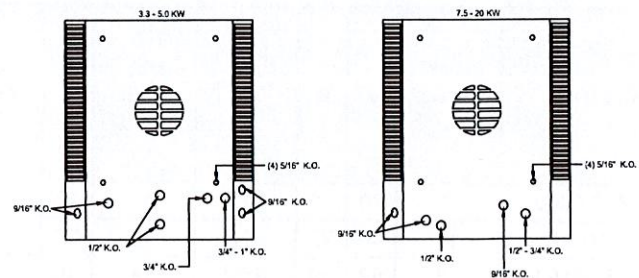
Mettez les commandes (le thermostat, le changement) à leur contrôle désiré montrent et appliquent le pouvoir de l'unité.

Vérifiez l'opération correcte.

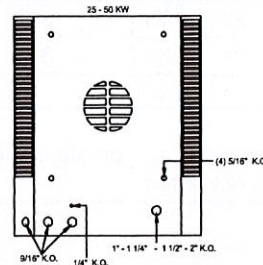
DIMENSIONS



DIMENSIONS (POUCES)			
Le Kw	H	W	D
3.3-5.0	17-3/4	14-15/32	6-1/2
7.5-10	24-5/16	21-1/2	6-1/2
15.0-20	28-11/16	21-1/2	6-1/2
25.0-50	34	29-1/4	10-1/16



★ For vertical discharge
mounting bracket
Diagrams not to scale



INSTRUCTIONS D'INSTALLATION

LE TYRAN - 5100 CHAUFFAGE D'UNITÉ DE SÉRIE (la partie 2)

HORIZONTAL - LE RENVOI AÉRIEN MONTANT MONTRÉ DANS : LA FIGURE 5 ET 6

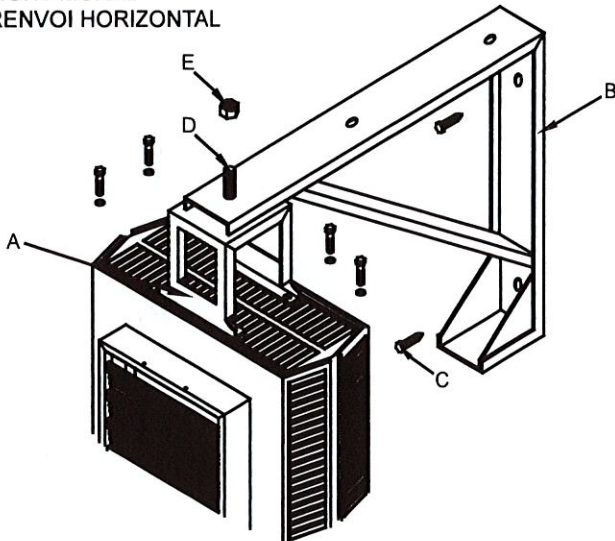
Pivotez les parenthèses de cintre peuvent être utilisées pour suspendre des chauffages d'unité du mur (la figure 5) ou du plafond (la figure 6). Faites partie le cintre basent "A" au haut de chauffage avec quatre 5/16 X 18 vis de bonnets et lockwashers (fourni dans l'enveloppe).

Attachez la charpente de cintre principale "B" au mur ou le plafond dans l'endroit désiré utilisant le décalage visse "C" ou d'autres attachements convenables (fourni par d'autres).

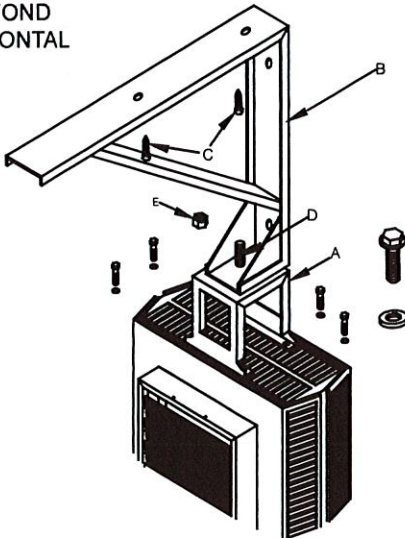
Le chauffage d'ascenseur dans la position insérant le clou "D" par le trou dans le cintre principal encadre et attache la noix de serrure "fourni dans l'enveloppe) "E" serrant à dans deux tours d'être serré.

Faites pivoter le chauffage à la position désirée, serrez la noix de serrure.

Le chiffre 5 MONT MURAL RENGOI HORIZONTAL



Le chiffre 6 MONT DE PLAFOND RENGOI HORIZONTAL

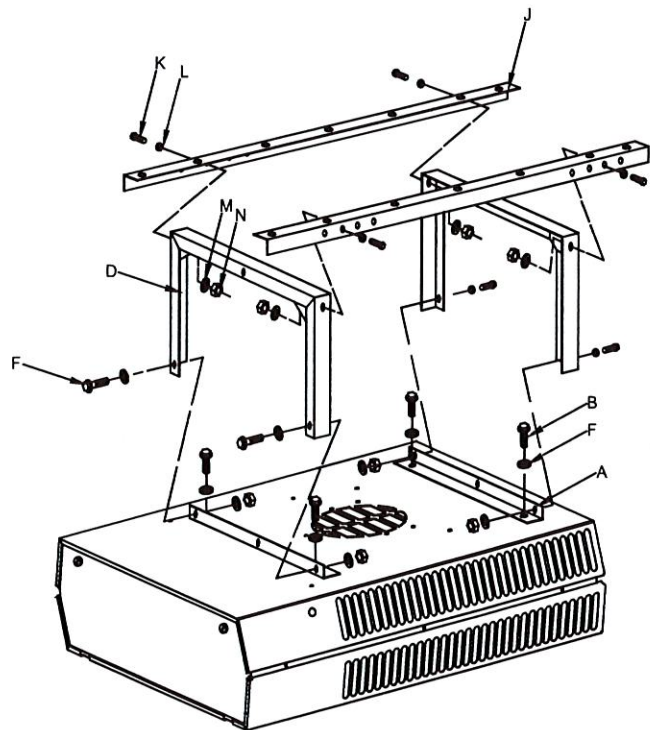


VERTICAL - LE RENVOI AÉRIEN MONTANT MONTRÉ DANS : LA FIGURE 7

Attachez des crochets courts "A" au revers de chauffage avec quatre 5/16 X 18 capscrews "B", lockwashers "F". Soyez sûrs la jambe verticale de haut de visage de crochets et de fond de chauffage.

Faites partie inversé U encadre "D" aux crochets courts avec quatre 5/16 X 18 capscrews "K", les machines à laver "L", lockwashers "M" et les noix "N".

Le chiffre 7 MONT DE PLAFOND RENGOI VERTICAL



NOTEZ : en montant le chauffage en utilisant 5/16" toute la baguette de fil (par d'autres) ne vissent pas la baguette plus que 1/2" au-delà de l'intérieur du cas.

Limited Warranty

TPI Corporation provides a limited warranty of materials and workmanship for a period of (i) ten (10) years for elements in 2900 Series baseboard heaters, (ii) two (2) years for Thermostats and Controls, (iii) five (5) years on HD and HDH series fans, (iv) three (3) years on UHP and IHP series fans, (v) and twelve (12) months for all other products, with the warranty period commencing on the original date of purchase. The TPI warranty is limited to materials manufactured and work performed by TPI Corporation, and does not include damage or failure caused by acts of God, abuse, misuse, connected to or placed on other than rated voltage, abnormal usage, faulty installation, failure to follow suggested maintenance procedures enclosed with the product, improper maintenance or any repairs other than those provided by an authorized TPI Corporation service center. For the name of your nearest authorized TPI Corporation service center, please write to TPI Corporation, P.O. Box 4973, Johnson City, Tennessee, 37602 or call 1-800-682-3398.

During the warranty period, TPI Corporation will, at its sole option, repair or replace any defective parts or products returned, freight prepaid, to the TPI Corporation factory or such other location as TPI Corporation may designate. No parts or products will be accepted for repair or replacement without prior authorization from TPI Corporation and a return merchandise authority (RMA) number issued by TPI Corporation. Returned products must be packaged carefully and TPI Corporation shall not be responsible for damage in transit. When returning parts, the owner must provide the model number of the product and nature of difficulty being experienced.

This warranty does not obligate TPI Corporation to bear the cost of labor in replacing any assembly, unit or component part thereof, nor does TPI Corporation assume any liability for secondary charges, expenses for installing or removal, freight or damages. There will be charges rendered for product repairs made after the warranty period has expired. Proof of purchase, including date, must accompany request for in-warranty service. This warranty gives you specific legal rights and you may have other rights, which may vary, from state to state.

Except for the limited warranty provided in the foregoing paragraph, all parts and products sold by TPI Corporation are sold 'as is', 'where is', and without any other warranty of any kind or nature, whether express, implied, or statutory and including, without limitation, any implied warranty of specific performance or merchantability.

Under no circumstances, even with respect to claims covered by the foregoing warranty, will TPI Corporation be responsible for any incidental, consequential, special, or punitive damages of any kind or nature arising from or related to the parts or products sold by TPI Corporation.

In any event, TPI Corporation's maximum liability shall not in any case exceed the purchase price for the part or product claimed to be defective.

You hereby expressly agree to waive any and all rights to a trial by jury with respect to any product manufactured or supplied by TPI Corporation.

Heating Products Warranty Coverage	
Elements in 2900 Series baseboards	10 Years
All other heating products	1 Year
Thermostats and controls	2 Years

Ventilation Products Warranty Coverage	
Series HD or HDH fans	5 Years
Series UHP or IHP fans	3 Years
All other ventilation products	1 Year



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