BAY COUNTY BOARD OF COUNTY COMMISSIONERS

PURCHASING DEPARTMENT
840 WEST 11th STREET
SUITE 2500
PANAMA CITY, FLORIDA 32401

INVITATION TO BID

SOUTHPORT FIRESTATION #8 RELOCATION
FEMA HURRICANE MICHAEL DR-4399

THIS BID MAY BE SUBMITTED ELECTRONICALLY THROUGH OPENGOV PROCUREMENT

THOSE BIDDERS WISHING TO SUBMIT A PAPER BID MAY CONTACT THE PURCHASING DEPARTMENT

ITB No. 26-52

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INSTRUCTIONS TO BIDDERS
Some of the instructions below may not apply to all projects.
The scope of work/specifications shall control any conflicting provisions

INTRODUCTION

The Bay County Board of County Commissioners is seeking Bids from Qualified subcontractors on the relocation of Bay County Fire Station #8 located at 2115 County Road 2321, Panama City, Florida 32409. The new location will be the old Southport baseball fields located at 2120 Ball Park Road, Southport, FL 32409.

Work improvements included are generally described as Concrete slab, Sprung Unit, Mechanical, Electrical, Plumbing, Wooden Deck/Walkway. Trade contractors may bid one or multiple divisions of work.

The project may be reimbursed by the Federal Emergency Management Agency (FEMA) as part of Disaster Recovery from Hurricane Michael FEMA Grant tag GRNT-2019-11*County 2019-11-Co, DR4399. It is imperative that Respondents examine and become familiar with the Public Assistance Program established by the Federal Emergency Management Agency (FEMA). Funding for the project may be made possible through this grant and is contingent on strict conformance to the guidelines set forth by Florida Department of Emergency Management (FDEM) and FEMA. Respondents will comply with the Supplemental General Conditions FEMA shown at **Exhibit 2**. A third party consultant may be utilized to provide Construction Engineering and Inspection Services to ensure compliance with Federal Requirements.

QUALIFICATIONS

Mechanical, Electrical, and Plumbing contractors shall be Florida licensed mechanical, electrical, or plumbing contractors. All subcontractors must meet Bay County Insurance requirements. All subcontractors shall have the proper licenses to submit for permits and pay necessary fees per division of work awarded.

Vendors shall be licensed in trades where licenses are required in accordance with Florida law. Vendors shall identify subcontractors that are providing services requiring a license under Florida law. Bids may be deemed nonresponsive if not accompanied by proof of any required State of Florida license.

Bids may be deemed nonresponsive if not accompanied by proof of appropriate State of Florida Contractor's License.

MANDATORY PRE-BID MEETING

A **MANDATORY** Pre-Bid Meeting will be held at **10:00 am (CDT) on Wednesday, July 8, 2026**, in the **Purchasing Conference room** located at 840 W. 11th Street, second floor suite 2500, Panama City, FL 32401.

Note: Respondents shall attend the pre-bid meeting. Any respondent who fails to attend will be deemed non-responsive and automatically disqualified from further consideration.

The purpose of this meeting is to familiarize respondents with the project and answer questions. **All respondents must be present and signed in prior to the start of the Mandatory Pre-Bid Meeting.** The convener of the meeting will collect the sign in sheet(s) and the meeting will "Officially" start. Anyone not signed in at the "Official" start of the meeting will be considered late and will not be allowed to propose on the project. **Please allow 10 to 15 minutes to sign in prior to the start of the Mandatory Pre-Bid Meeting.**

In the event that any discussions or questions at the pre-bid meeting or afterward require additional clarification the COUNTY will issue a written summary of questions and answers as an addendum to this Invitation to Bid.

BID DEADLINE/DELIVERY

ELECTRONIC OR SEALED PAPER BIDS for ITB NO: **26-52 Southport Fire Station #8 Relocation FEMA Hurricane Michael DR-4399** will be received by the BOARD OF COUNTY COMMISSIONERS OF BAY COUNTY, FLORIDA up until **2:00 pm (CDT) Wednesday, July 29, 2026.** Bids will be publicly opened immediately following the deadline. ANY BID RECEIVED AFTER THE SPECIFIED TIME WILL NOT BE CONSIDERED.

Bids for this solicitation may be submitted either electronically via **OPENGOV PROCUREMENT** **or** by paper, sealed and delivered to the Board of County Commissioners Purchasing Department, at 840 W. 11th Street, Suite 2500, Panama City, Florida 32401.

Bidders electing to submit paper bids should submit one (1) original bid package. Bids shall be enclosed in a sealed envelope bearing the title of the work, the name of the bidder, and the date for opening. It is the sole responsibility of the bidder to ensure that the bid is received on time.

Each bid shall be valid to Bay County for a period of ninety (90) days after the bid opening. The County will check the bids and notify the selected bidder at the earliest opportunity.

Special Accommodation: Any person requiring a special accommodation at a Pre-Bid Conference or Bid opening because of a disability should call the Purchasing Department at (850) 248-8270 at least five (5) workdays prior to the Pre-Bid Conference or Bid opening. For Hearing Impaired, Dial 1-800-955-8771 (TOO), and 1-800-955-8770 (Voice).

BID DOCUMENTS

Electronic versions of the solicitation documents are available via OpenGov Procurement https://procurement.opengov.com/portal/baycountyfl

Bid documents, plans, blueprints, or other materials may also be obtained by contacting the Bay County Purchasing Department, purchasing@baycountyfl.gov, 840 West 11th Street, Suite 2500, Panama City, FL 32401, (850) 248-8270.

For those projects with separate plans, blueprints, or other materials that cannot be accessed through the internet, the Purchasing Department will make a good faith effort to ensure that all registered bidders (those who have been registered as receiving a bid package) receive the documents.

POINT OF CONTACT

The County Purchasing Department will be the only point of contact for this ITB. Under no circumstances may a bidder contact any County Commissioner, County Administrator, or County employee concerning this ITB until after award. Any such contact may result in disqualification as per Bay County Code Section 2-124.

QUESTIONS

Bidders shall submit all questions, in writing, to the Purchasing Department via email Purchasing@baycountyfl.gov. All questions shall be submitted no later than **5:00 pm (CDT) on Monday, July 20, 2026.**

ADDENDA

If any addenda are issued after the initial specifications are released, the County will post the addenda on the County website or OpenGov. It is the responsibility of the bidder prior to submission of any bid to check the above website or contact the Purchasing Department to verify any addenda issued. The receipt of all addenda must be acknowledged on the addenda response sheet.

BID FORM

To receive consideration, all bids shall be made on the forms provided, properly executed and with all items filled out. Do not change the wording of the Bid Form and do not add words to the wording of the Bid Form. No conditions, limitations or provisions will be attached or added to the Bid Form or other bid documents by the bidder.

No bidder shall be permitted to correct a bid mistake after bid opening that would cause such bidder to have the low bid, except for the correction of errors in extension of unit prices in the bids. In such cases, the unit price bid shall not be changed and shall prevail.

BONDS

A Bid Bond, in the amount of 5% of the proposed base bid contract amount, shall accompany each bid. A scanned copy may be submitted with the e-bid. The successful bidder's security will be retained until the contract has been signed and the bidder has furnished the required Public Construction Bond. The County reserves the right to retain the security of the next bidder until the selected bidder enters into contract or until 90 days after bid opening, whichever is shorter. All other bid security will be returned as soon as practicable.

COMPLETE BID AMOUNTS; EXAMINATIONS OF SPECIFICATIONS; WORK SITES

Bids shall be on the basis of unit price and shall be compensation in full for the complete work. The unit prices shall include all charges for completing the work and include layout, insurance, taxes, field office and supervision, overhead and profit, permits, impact fees,

bonds and miscellaneous items needed to complete the bid. No allowance will be made to any bidder because of a claimed lack of examination or knowledge. The submission of a bid shall be construed as conclusive evidence that the bidder has made such examination.

WITHDRAWAL OF BIDS

Any bidder may withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening bids. No bidder may withdraw his bid for a period of 90 days after the date for opening and all bids shall be subject to acceptance by the County during this period.

CANCELLATION

The County may cancel this ITB, or reject in whole or in part, when it is in the best interests of the County, as determined by the Board of County Commissioners. Notice of cancellation shall be posted on OpenGov and the County website. The notice shall identify the solicitation, and, where appropriate, explain that an opportunity will be given to compete on any re-solicitation or any future procurement of similar items.

BASIS OF AWARD

The contract will be awarded to the lowest, responsive, responsible bidder(s) who has proposed the lowest qualified **cost per division** and is deemed qualified by Bay County, subject to the County's right to reject any or all bids and to waive informality and irregularity in the proposals and proposing.

RIGHT TO REJECT

In accordance with section 2-113 of the Bay County Code, the County reserves the right to:

a. reject any or all submittals received;
b. select and award any portion of any or all submittal items;
c. waive minor informalities and irregularities in the bidder's submittal.

A bid may be rejected if it is non-responsive or does not conform to the requirements and instructions in this ITB. A bid may be non-responsive by reasons, including, but not limited to, failure to utilize or complete prescribed forms, conditional bids, incomplete bids, indefinite or ambiguous bids, failure to meet deadlines and improper and/or undated signatures. Other conditions which may cause rejection of bids include evidence of collusion, obvious lack of experience or expertise to perform the required work, submission of more than one bid for the same work from an individual, bidder or corporation under the same or a different name, and/or failure to perform or meet financial obligations on previous contracts. Bids may be rejected if not delivered on or before the date and time specified as the due date for submission of the bid.

EXECUTION OF AGREEMENT

The successful bidder shall, within 10 days after receipt of the Notice of Award and the contract forms or documents, sign and deliver to the County Chief Procurement Officer all required contract documents in form and substance approved by the County. The

vendor shall also deliver any required bonds and policies of insurance or insurance certificate as required. All bonds and insurance documents shall be approved by the Bay County Risk Management Office before the successful bidder may proceed with the work.

Neither the Notice of Award nor the execution of the required contract documents by the Vendor create any rights in the bidder. The bidder has no rights with respect to the award of the contract until a fully executed contract is signed by all required parties and all insurance policies and other required deliverables are provided and approved by the County.

The execution of the contract shall be contingent upon the securing of all applicable permits from Bay County Building Safety Division: https://www.baycountyfl.gov/154/Builders-Services

PURCHASE ORDER

Purchase orders by division will serve as the contract for these purchases and will be subject to all terms and conditions stated herein.

LICENSING

Bidder shall be properly licensed for the appropriate work specified in this Invitation to Bid. All bidders are requested to submit any required license(s) with their bids. License(s) must be effective as of the bid opening date and must be maintained throughout the contract period. Failure to be properly licensed as stated above will result in the rejection of the bid as nonresponsive.

GENERAL TERMS

Companies that are required to register with the State of Florida Division of Corporations as a domestic or foreign business entity should provide evidence of their registration.

UNIQUE ENTITY IDENTIFIER (UEI)

A number issued by the System for Award Management (SAM) to identify businesses and other entities that do business with the federal government. The UEI has replaced the DUNS number as the authorized identifier for the federal government. All vendors shall obtain a Unique Entity Identifier (UEI) from SAM.gov.

PUBLIC RECORDS

In accordance with Chapter 119 of the Florida Statutes (Public Records Law) and except as may be provided by other applicable State or Federal Law, all bidders should be aware that bids, responses, and proposals are in the public domain. Bidders must identify specifically any information contained in their response which they consider confidential and/or proprietary and which they believe to be exempt from disclosure, citing specifically the applicable exempting law.

Sealed bids, proposals, or replies received by an agency pursuant to a competitive solicitation are exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution until such time as the agency provides notice of an intended decision or until 30 days after opening the bids, proposals, or final replies, whichever is earlier.

EXEMPTION OF MEETINGS/PRESENTATIONS

Pursuant to Florida Statute section 286.0113(2), any portion of a meeting at which a negotiation with a vendor is conducted pursuant to a competitive solicitation, at which a vendor makes an oral presentation as part of a competitive solicitation, or at which a vendor answers questions as part of a competitive solicitation is exempt from public meeting requirements. However, the County must make a complete recording of any portion of an exempt meeting and no portion of the exempt meeting may be held off the record. The recording of, and any records presented at, the exempt meeting are exempt from the public records law of section 119.07(1), Fla. Stat. (2015) and section 24(a), Art. I of the State Constitution, until such time as the agency provides notice of an intended decision or until 30 days after opening the bids, submittals, or final replies, whichever occurs earlier. If the County rejects all bids, submittals, or replies and concurrently provides notice of its intent to reissue a competitive solicitation, the recording and any records presented at the exempt meeting remain exempt from section 119.07(1), Fla. Stat. (2015) and section 24(a), Art. I of the State Constitution until such time as the agency provides notice of an intended decision concerning the reissued competitive solicitation or until the agency withdraws the reissued competitive solicitation. A recording and any records presented at an exempt meeting are not exempt for longer than 12 months after the initial agency notice rejecting all bids, submittals, or replies.

REPRESENTATIONS

The contract documents contain the provisions required for the project. Information obtained from an office, Director, or employee of the County or any other person shall not affect the risks or obligations assumed by the bidder or relieve the bidder from fulfilling any of the conditions of the contract.

WARRANTY

All goods and services furnished by bidder, relating to and pursuant to this ITB, will be warranted to meet or exceed the specifications contained herein. In the event of breach, the bidder will take all necessary action, at bidder's expense, to correct such breach in the most expeditious manner possible.

SUBCONTRACTORS

The successful bidder will be the prime service provider and shall be responsible for all work performed and contract deliverables. Proposed use of subcontracts should be included in the bidder's response. Requests for use of subcontractors received subsequent to the solicitation process are subject to review and approval by the County.

The County reserves the right to request and review information in conjunction with its determination regarding a subcontract request. All subcontractors are subject to the same requirements of this solicitation as the successful bidder.

PROHIBITION AGAINST CONSIDERING SOCIAL, POLITICAL, OR IDEOLOGICAL INTEREST IN GOVERNMENT CONTRACTING

Bidders are hereby notified of the provisions of section 287.05701, Florida Statutes, as amended, that the County will not request documentation of or consider a Bidder's social, political, or ideological interests when determining if the Bidder is a responsible Bidder. Bidders are further notified that the County's governing body may not give preference to a Bidder based on the Bidder's social, political, or ideological interests.

BID PROTEST

A notice of protest must be submitted in accordance with section 2-114 of the Bay County Code, as amended from time to time. If a party intends to initiate such an action, it must electronically notify the Chief Procurement Officer and the County Attorney no later than one business day after notice of the awarding authority's decision.

ANTICIPATED SCHEDULE

This schedule may be altered solely at the County's discretion:

ITB Advertisement	Friday, June 26, 2026
Pre-Bid Meeting	Wednesday, July 8, 2026
Questions Due Date	Monday, July 20, 20026
Bid Deadline	Wednesday, July 29, 2026
Board Meeting for recommended award	Tuesday, August 18, 2026

BID CHECKLIST

The checklist is provided as a courtesy and may not be all inclusive of items required within this invitation to bids.

The following bid forms may be submitted electronically through OpenGov. Bidders submitting paper bids may download all documents from the Purchasing Department's Opengov Procurement page: https://procurement.opengov.com/portal/baycountyfl

_____ BID FORM
_____ ADDENDUM ACKNOWLEDGEMENT
_____ AFFIDAVIT OF COMPLIANCE WITH SECTION 287.138, FLORIDA STATUTES, CONTRACTING WITH FOREIGN ENTITIES OF CONCERN
_____ AFFIDAVIT OF COMPLIANCE WITH SECTION 787.06, FLORIDA STATUTES, HUMAN TRAFFICKING ATTESTATION
_____ ANTI-COLLUSION CLAUSE
_____ CONFLICT OF INTEREST DISCLOSURE FORM
_____ DRUG FREE WORKPLACE
_____ SUB-CONTRACTORS
_____ CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION
_____ APPENDIX A, 44 C.F.R. PART 18-CERTIFICATION REGARDING LOBBYING
_____ BID BOND
_____ UNIQUE ENTITY IDENTIFIER (UEI)
_____ LICENSE AND CERTIFICATION AS REQUIRED

ATTACHMENT 1
REQUIRED FORMS

BID FORM
ITB NO: 26-52

This proposal of _____, hereinafter called "BIDDER," organized and existing under the laws of the State of _____doing business as _____ (Insert "a corporation", "a partnership" or "an individual" as applicable), is hereby submitted to the Board of County Commissioners, Bay County, hereinafter called "OWNER."

In compliance with the Advertisement for Bids, BIDDER hereby proposes to perform all work, as detailed in this bid.

By submission of this BID, each Bidder certifies, and in the case of a joint BID each party thereto certifies as to its own organization, that this BID has been arrived at independently, without consultation, communication or agreement as to any matter relating to this BID with any other BIDDER or with any other competitor.

Vendor agrees to perform all the work described in the documents for the following Division Lump Sum (LS) Prices. Vendor may submit cost for one or more divisions. Purchase Orders will be issued to individual vendors by division(s).

DIVISION	DESCRIPTION	UNIT	COST
01	**New Concrete Slab**	**LS**	**$**
03	**Moving of Sprung Unit**	**LS**	**$**
04	**Mechanical**	**LS**	**$**
05	**Electrical**	**LS**	**$**
06	**Plumbing**	**LS**	**$**
08	**Construction of Wooden Deck/Walkway**	**LS**	**$**

Submitted By: _____
Name of Firm/Vendor Submitting This Bid

Bid Prepared By: _____
Name of Individual Who Prepared This Bid

Contact Email: _____

Address: _____

Phone: _____

Contractor's License No.(if applicable) _____

Vendor's Unique Entity Identifier (UEI) No. _____

_____ _____
Signature of Authorized Representative of Firm/Vendor Date

SEAL: (If bid is by Corporation

ADDENDUM ACKNOWLEDGEMENT

I acknowledge receipt of the following addenda:

ADDENDUM NO._____ DATED_____

ADDENDUM NO._____ DATED_____

ADDENDUM NO._____ DATED_____

ADDENDUM NO._____ DATED_____

ADDENDUM NO._____ DATED_____

Name of Firm: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

It is the responsibility of the firm to ensure that they have received addendums if issued.

Call (850) 248-8270 or email Purchasing@baycountyfl.gov prior to submitting your bid to ensure that you have received addendums.

AFFIDAVIT OF COMPLIANCE WITH SECTION 287.138, FLORIDA STATUTES, CONTRACTING WITH FOREIGN ENTITIES OF CONCERN

Before me, the undersigned authority, personally appeared (Name of Affiant) _____ _____, who, after being first duly sworn, deposes and says of his or her personal knowledge the following:

1. Affiant is the (Title) _____ of (Business Name) _____ which does business in the State of Florida, hereinafter called the "Nongovernmental Entity."

2. Nongovernmental Entity, pursuant to § 287.138, Florida Statues, certifies that (1) Nongovernmental Entity is not owned by a government of a foreign country of concern; (2) a government of a foreign country of concern does not have a "controlling interest" in Nongovernmental Entity, as defined by Section 287.138(1)(a), Florida Statutes; and (3) Nongovernmental Entity is not organized under the law of nor has its principal place of business in a foreign country of concern. For the purposes of this affidavit, foreign country of concern means the People's Republic of China, the Russian Federation, the Islamic Republic of Iran, the Democratic People's Republic of Korea, the Republic of Cuba, the Venezuelan regime of Nicolás Maduro, or the Syrian Arab Republic, including any agency of or any other entity of significant control of such foreign country of concern, as defined in § 287.138(1)(c), Florida Statutes.

3. This Affidavit is executed by the Nongovernmental Entity accordance with § 287.138, Florida Statutes, for the purposes of preventing Bay County, Florida, from entering contracts with foreign entities of concern which would provide Nongovernmental Entity access to an individual's personal identifying information.

Signed and Delivered on this _____ day of _____, 2026.

_____ _____
Signature of Affiant Printed Name of Affiant

STATE OF_____

COUNTY OF_____

Sworn to (or affirmed) and subscribed before me by means of □ physical presence or □ online notarization, this _____ day of _____, 2026, by _____.

Personally Known OR Produced Identification
Type of Identification Produced_____ __ _____
(*Notary Signature*)

(SEAL)

AFFIDAVIT OF COMPLIANCE WITH SECTION 787.06, FLORIDA STATUTES, HUMAN TRAFFICKING ATTESTATION

Before me, the undersigned authority, personally appeared (Name of Affiant) _____, who, after being first duly sworn, deposes and says of his or her personal knowledge the following:

1. Affiant is the (Title) _____ of (Business Name) _____ which does business in the State of Florida, hereinafter called the "Nongovernmental Entity."

2. Nongovernmental Entity, pursuant to § 787.06(13), Florida Statues, certifies that 1) neither Nongovernmental Entity nor any of its subsidiaries or affiliates uses coercion for labor or services, as terms are defined in § 787.06, Fla. Stat., as may be amended from time to time; (2) Nongovernmental Entity will immediately notify Bay County, Florida, if, at any time in the future, Nongovernmental Entity does use coercion for labor or services, and understands that pursuant to such notification no contracts may be executed, renewed, or extended between the parties; and (3) Nongovernmental Entity has read the foregoing attestation, confirms the facts stated in it are true, ad are made for the benefit of, and reliance by, Bay County, Florida.

Signed and Delivered on this _____ day of _____, 2026.

_____ _____
Signature of Affiant Printed Name of Affiant

STATE OF _____

COUNTY OF _____

Sworn to (or affirmed) and subscribed before me by means of □ physical presence or □ online notarization, this ____ day of _____, 2026, by _____.
.

Personally Known OR Produced Identification

Type of Identification Produced_____ _____
(Notary Signature)

(SEAL)

ANTI-COLLUSION CLAUSE

Firm certifies that their response is made without prior understanding, agreement or connection with any Corporation, Firm or person submitting a response for the same services and is in all respects fair and without collusion or fraud.

Name of Firm: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

CONFLICT OF INTEREST DISCLOSURE FORM

For purposes of determining any possible conflict of interest, all firms, must disclose if any Bay County Board of County Commissioner(s), employee(s), elected officials(s), or any of its agencies is also an owner, corporate officer, agency, employee, etc., of their firm.

Indicate either “yes” (a county employee, elected official, or agency is also associated with your firm), or “no”. If yes, give person(s) name(s) and position(s) with your firm.

YES_____ NO_____

NAME(S)	**POSITION(S)**

Name of Firm: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

DRUG FREE WORKPLACE

To have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under Proposal a copy of the statement specified in subsection (1).

4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under Proposal, the employees will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by an employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify the following:

(Check one and sign in the space provided.)

_____ This firm complies fully with the above requirements.

_____ This firm does not have a drug free work place program at this time.

Name of Firm: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

SUB-CONTRACTORS

As the bidder, I submit a listing of the Sub-Contractors which I shall use to accomplish the Work. Sub-Contractors are listed by name, address, amount of work and item of work. If none, please state so.

Subcontractor Name and Address: _____

_____

Work to be performed and $ amount: _____

_____

Subcontractor Name and Address: _____

_____

Work to be performed and $ amount: _____

_____

Subcontractor Name and Address: _____

_____

Work to be performed and $ amount: _____

_____

Subcontractor Name and Address: _____

_____

Work to be performed and $ amount: _____

_____

Name of Firm: _____

Authorized Signature: _____

Printed Name: _____

Title: _____

Date: _____

*Complete additional forms if needed to list all subcontractors

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

Contractor Covered Transactions

(1) The prospective contractor of the Recipient, _____, certifies, by submission of this document, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the Recipient's contractor is unable to certify to the above statement, the prospective contractor shall attach an explanation to this form.

CONTRACTOR:

_____

By _____ Bay County BOCC
Signature Recipient's Name

_____ Hurricane Michael DR4399
Name and Title

_____ _____
Street Address

_____
City, State, Zip

_____
Date

APPENDIX A, 44 C.F.R. PART 18 – CERTIFICATION REGARDING LOBBYING
Certification for Contracts, Grants, Loans, and Cooperative Agreements

(To be submitted with each bid or offer exceeding $100,000)

The undersigned [Contractor] certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

The Contractor, _____ , certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq*., apply to this certification and disclosure, if any.

_____

Signature of Contractor's Authorized Official

_____

Name and Title of Contractor's Authorized Official

_____

BID BOND

BY THIS BOND, We, _____ as Principal and _____, a corporation, as Surety, are bound to the Board of County Commissioners, Bay County, Florida, as County, in the sum of $_____ for the payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally. THE CONDITION of this bond is such that

1. The Principal has submitted to the County a certain Bid dated _____.
2. If said Bid shall be rejected, or, if said Bid shall be accepted and the Principal shall execute and deliver a Contract, and furnish bonds for the faithful performances of work and for the payment of all persons performing labor and furnishing materials in connection therewith, and shall fulfill all other aspects created by the acceptance of said Bid, then this obligation shall be void. Otherwise, this bond shall remain in full force and effect with it being expressly understood and agreed that the liability of the Surety and for any and all claims hereunder shall, in no event, exceed the amount of this obligation.

This Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and this bond shall, in no way, be impaired or affected by any extension of time within which the County may accept such Bid; and Surety hereby waives notice of any such extension.

Signed, sealed and delivered in three (3) counterparts on _____

CORPORATE PRINCIPAL

By: _____ Attest:

Its: _____ Seal:

Acknowledged and subscribed on _____, before the undersigned authority by _____, as the _____ of the Corporation named as Principal and with due authorization of the Corporation.

_____
Notary Public

SURETY

By:_____ Attest:

Seal:

Countersigned:
By: _____
Attorney-in-Fact, State of Florida

EXHIBIT 1
CONDITIONS OF PURCHASE ORDERS

1. **AGREEMENT:** Purchase orders (contract) issued during FY 2026, including terms, conditions, the quote and all specifications (as applicable), constitute the sole and entire agreement between the parties hereto.(Vendor's acceptance of purchase orders is limited to the terms and conditions thereof, and written confirmation, commencing performance, or making deliveries hereunder constitutes such acceptance notwithstanding Vendor's proposals or terms additional to or different from those set forth in purchase order.) The Vendor's bid is incorporated in and made a part of the purchase order only to the extent of specifying the nature and description of the goods and services ordered and then only to the extent that such items are consistent with the other terms of the purchase order. No course of prior dealings between the parties and no usage of the trade shall be a relevant supplement or explain any of the terms or conditions.

2. **PURCHASE ORDER NUMBER:** Purchase Order Number must appear on all packages, packing slips, invoices, and all other correspondence relating to the order.

3. **TIME IS OF THE ESSENCE**. Time is of the essence for this contract.

4. **MODIFICATIONS**. This Agreement can be modified only by written agreement of the parties.

5. **LICENSING.** Vendor shall be properly licensed for the appropriate category of work specified. Vendor is requested to submit any required license(s) with their quote. License(s) must be effective for the duration of the project. Failure to be properly licensed as stated above will result in cancellation of purchase order.

6. **SUBCONTRACTORS.** The Vendor will be the prime service provider and shall be responsible for all work performed and contract deliverables. Proposed use of subcontracts should be included with the bid. Requests for use of subcontractors received subsequent to the issuance of a purchase order are subject to review and approval by the County.

The County reserves the right to request and review information in conjunction with its determination regarding a subcontract request. All subcontractors are subject to the same requirements of the purchase orders as the Vendor.

7. **PERMITS:** Vendor is responsible for the securing of all applicable necessary permits from the appropriate permitting entity.

8. **WAIVER.** No waiver by either Vendor or County with respect to any breach or default of or with respect to any provisions or condition of this agreement, and no course of dealing shall be deemed to constitute a continuing waiver of any other breach or default of or with respect to the same or any other provision or condition of this agreement. No claim or right arising out of a breach of this agreement can be discharged in whole or in

part by a waiver or renunciation of the claim or right unless the waiver or renunciation is supported by consideration and is in writing signed by the aggrieved party.

9. **COUNTY'S OPTIONS.** County reserves the right to change specifications and delivery dates. Any difference in price required by such changes shall be equitably adjusted and the agreement shall be modified in writing accordingly. County further reserves the right to terminate all or part of the work to be performed pursuant to this Agreement. The County also reserves the right to terminate this agreement without cause at any time that the Vendor fails to timely or sufficiently satisfy the provisions of the agreement. In such event, County shall be liable only for the service supplied up to the time of notice of termination. In no event shall County be liable for incidental or consequential damages by reasons of such termination.

10. **ASSIGNMENT.** The Vendor shall not assign any rights, duties, or interest in the Contract without the written permission of the County.

11. **RECORDS/AUDITS**

The County is a public agency subject to Chapter 119, Florida Statutes. The Vendor shall comply with Florida's Public Records Law. Specifically, the Vendor shall:

a. Keep and maintain public records required by the County to perform the service;

b. Upon request from the County's custodian of public records, provide the County with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, F.S. or as otherwise provided by law.

c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the vendor does not transfer the records to the County.

d. Upon completion of the contract, transfer, at no cost to the County, all public records in possession of the Vendor, or keep and maintain public records required by the County to perform the service. If the Vendor transfers all public records to the County upon completion of the contract, the Vendor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Vendor keeps and maintains public records upon completion of the contract, the Vendor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the County, upon request from the County's custodian of public records in a format that is compatible with the information technology systems of the County.

e. During the term of the contract, the Vendor shall maintain all books, reports and records in accordance with generally accepted accounting practices and standards for records directly related to this contract. The form of all records and reports shall be subject to the approval of the County's Auditor. The Vendor agrees to make available to the County's Auditor, during normal business hours and in Bay County, all books of account, reports and records relating to this contract.

12. **INSPECTOR GENERAL**

The parties agree to comply with s.20.055(5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with s. 20.055(5), Florida Statutes. "(5) It is the duty of every state officer, employee, agency, special district, board, commission, contractor, and subcontractor to cooperate with the inspector general in any investigation, audit, inspection, review, or hearing pursuant to this section."

13. **PUBLIC RECORDS CUSTODIAN**

If the Vendor has questions regarding the application of Chapter 119, Florida Statutes, to the Vendor's duty to provide public records relating to this contract contact the custodian of public records, at (850) 248-8145, publicrecords@baycountyfl.gov or 840 W. 11th Street, Panama City, Florida 32401.

14. **GOVERNING LAW**

The parties hereby agree that the only laws that apply to this Agreement are those of the State of Florida and U.S. Government. The parties waive the privilege of venue and agree that all litigation between them in the state courts will take place exclusively in the Fourteenth Judicial Circuit in and for Bay County, Florida, and that all litigation between them in the federal courts will take place exclusively in the United States District Court or United States Bankruptcy Court for the Northern District of Florida.

15. **FAILURE TO EXECUTE PURCHASE ORDER.** Failure of the Vendor to accept and execute the purchase order as specified may be cause for cancellation of the award. In the event that the award is cancelled, the award may then be made to the second lowest responsive and responsible bidder, and such bidder shall fulfill every stipulation embraced herein as if he were the original party to whom the bid award was made; or the County may reject all the bids and re-bid.

16. **INSURANCE COVERAGES.** The Vendor shall maintain all insurance coverages as set forth in the Insurance Requirements attached.

17. **PAYMENT.**

The County shall pay the Vendor for services provided in accordance with the Florida Prompt Payment Act of the Florida Statutes, Chapter 218.70, upon receipt of the Vendor's invoice and written approval of same by the County's Designated Representative indicating that services have been rendered in conformity with this Agreement. The Vendor shall submit an invoice for payment to County Capital Projects Division on a monthly basis for those specific services, as described in this Agreement, ITB 26-52, and the Vendor's proposal cost of $_____, that were satisfactorily completed during that invoicing period.

INVOICE REQUIREMENTS: All invoices are required to have the following information included:

Vendor's name
Invoice number
Invoice date
Contract/Project Number
Purchase Order Number
FEMA Project #
Dates of service/activities were provided (mm/dd/yy-mm/dd/yy)
Site of work
Details of work provided
Amount of the invoice

18. **HOLD HARMLESS AND INDEMNIFICATION**

a. The Vendor shall indemnify and hold harmless the County, and its officers and employees, from any and all claims, suits, actions, damages, liabilities, expenditures, or causes of action of any kind, losses, penalties, interest, demands, judgments, and costs of suit, including attorneys' fees and paralegals' fees, for any expense, damage, or liability incurred by any of them, whether for bodily or personal injury, death, property damage, direct or consequential damages, or economic loss, including environmental impairment, arising directly or indirectly, on account of or in connection with Vendor's performance of the contract or by any person, firm, or corporation to whom any portion of the performance of this Agreement is subcontracted to or used by the Vendor, or by any other person.

b. The parties understand and agree that such indemnification by the Vendor relating to any matter which is the subject of this Agreement shall extend throughout the term of this Contract and any statutes of limitations thereafter.

c. The Vendor's obligation shall not be limited by or in any way to any insurance coverage or by any provision in or exclusion or omission from any policy of insurance.

d. If the indemnity provisions are limited by Florida Statutes Sec. 725.06(2)-(3) or Florida Statutes Sec. 725.08, then with respect to the part so limited, the Vendor shall indemnify and hold harmless the County, and its officers and employees, from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees to the extent caused by the negligence, recklessness, or intentional wrongful conduct of the indemnifying party and persons employed or utilized by the Vendor. If the above indemnity or the defense provisions contained herein or any part of those provisions are limited by Florida Statutes Sec. 725.06(1), or any other applicable law, then with respect to the part so limited, the monetary limitation on the extent of the indemnification shall be the greater of (1) the monetary value of the Purchase Order, (ii) coverage amount of Commercial General Liability Insurance required under the Purchase Order; or (iii) $1,000,000.00. Otherwise, the obligations for indemnification and defense will not be limited by the amount of any insurance required to be obtained or maintained under this Purchase Order.

e. This section survives termination or expiration of this purchase order.

19. **DUTY TO PAY DEFENSE COSTS AND EXPENSES**

a. The Vendor agrees to reimburse and pay on behalf of the County the cost of the County's legal defense, through and including all appeals, and to include all attorneys' fees, costs, and expenses of any kind for any and all 1) claims described in the Hold

Harmless and Indemnification paragraph or 2) other claims arising out of the Vendor's performance of the Contract and in which the County has prevailed.

b. The County shall choose its legal defense team, experts, and consultants and invoice the Vendor accordingly for all fees, costs and expenses upon the conclusion of the claim.

c. Such payment on the behalf of the County shall be in addition to any and all other legal remedies available to the County and shall not be considered to be the County's exclusive remedy.

d. This section survives termination or expiration of this purchase order.

20. **ADMINISTRATIVE, CONTRACTUAL, OR LEGAL REMEDIES**

Unless otherwise provided in this contract, all claims, counter-claims, disputes and other matters in question between the local government and the vendor, arising out of or relating to this contract, or the breach of it, will be decided by arbitration, if the parties mutually agree, or in a Florida court of competent jurisdiction.

21. **TERMINATION FOR CAUSE AND FOR CONVENIENCE**

a. This contract may be terminated in whole or in part in writing by either party in the event of substantial failure by the other party to fulfill its obligations under this contract through no fault of the terminating party, provided that no termination may be effected unless the other party is given: (a) Not less than ten (10) calendar days written notice (delivered by certified mail, return receipt requested) of intent to terminate; and (b) An opportunity for consultation with the terminating party prior to termination.

b. This contract may be terminated in whole or in part in writing by the local government for its convenience, provided that the other party is afforded the same notice and consultation opportunity specified in l (a) above. If termination for default is effected by the local government, an equitable adjustment in the price for this contract shall be made, but no amount shall be allowed for anticipated profit on unperformed services or other work, and any payment due to the vendor at the time of termination may be adjusted to cover any additional costs to the local government because of the vendor's default.

c. If termination for convenience is effected by the local government, the equitable adjustment shall include a reasonable profit for services or other work performed for which profit has not already been included in an invoice. For any termination, the equitable adjustment shall provide for payment to the vendor for services rendered and expenses incurred prior to receipt of the notice of intent to terminate, in addition to termination settlement costs reasonably incurred by the vendor relating to commitments (e.g., suppliers, subcontractors) which had become firm prior to receipt of the notice of intent to terminate.

d. Upon receipt of a termination action under paragraphs (a) or (b) above, the vendor shall promptly discontinue all affected work (unless the notice directs otherwise) and deliver or otherwise make available to the local government all data, drawings, reports specifications, summaries and other such information, as may have been accumulated by the vendor in performing this contract, whether completed or in process.

e. Failure of the Vendor to comply with the provision of any Federal, State, and/or Local Laws, Rules, and Regulations shall constitute grounds for the County to immediately terminate this Contract for cause and declare the Vendor to be non-responsible for bidding or proposing on future contracts for one year from the date the County notifies the Vendor of such non-compliance.

22. **LAWS, RULES, AND REGULATIONS**

a. General Laws: Vendor shall give all notices required of it by law and shall comply with all Federal, State and local laws, ordinances, rules and regulations governing Vendor's performance of this Contract and the preservation of public health and safety. Upon request by the County, Vendor shall provide proof of such compliance to the County.

b. Illegal Alien Labor: Vendor shall comply with all provisions state and federal law regarding the hiring and continued employment of aliens not authorized to work in the United States. Vendor shall not knowingly employ or contract with an illegal alien to perform work under this contract or enter into a contract with a subcontractor that fails to certify to the Vendor that the subcontractor is in compliance with such laws. Vendor agrees that it shall confirm the employment eligibility of all employees through participation in E-Verify or an employment eligibility program approved by the Social Security Administration and will require the same of any subcontractors. Vendor shall pay all cost incurred to initiate and sustain the verification programs.

23. **PUBLIC ENTITY CRIMES STATEMENT**

A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a vendor, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list. By submission of a proposal in response to this document, the vendor certifies compliance with the above requirements as stated in Section 287.133, Florida Statutes.

24. **E-VERIFY**

As a condition precedent to entering into this AGREEMENT, and in compliance with Section 448.095, Fla. Stat., Vendor and its subcontractors shall, register with and use the E-Verify system to verify work authorization status of all employees.

a. Vendor shall require each of its subcontractors to provide Vendor with an affidavit stating that the subcontractor does not employ, contract with, or subcontract with an unauthorized alien. Vendor shall maintain a copy of the subcontractor's affidavit as part of and pursuant to the records retention requirements of this AGREEMENT.

b. The COUNTY, Vendor, or any subcontractor who has a good faith belief that a person or entity with which it is contracting has knowingly violated Section 448.09(1), Fla. Stat. or the provisions of this section shall terminate the contract with the person or entity.

c. The COUNTY, upon good faith belief that a subcontractor knowingly violated the provisions of this section, but Vendor otherwise complied, shall promptly notify Vendor and Vendor shall immediately terminate the contract with the subcontractor.

d. A contract terminated under the provisions of this section is not a breach of contract and may not be considered such. Any contract termination under the provisions of this section may be challenged pursuant to Section 448.095(2)(d), Fla. Stat. Vendor acknowledges that upon termination of this AGREEMENT by the COUNTY for a violation of this section by Vendor, Vendor may not be awarded a public contract for at least one (1) year. Vendor further acknowledges that Vendor is liable for any additional costs incurred by the COUNTY as a result of termination of any contract for a violation of this section.

e. *Subcontracts.* Vendor or subcontractor shall insert in any subcontracts the clauses set forth in this section, including this subsection, requiring the subcontractors to include these clauses in any lower tier subcontracts. Vendor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in this section.

25. FOREIGN COUNTRIES OF CONCERN

Vendor, pursuant to § 287.138, Florida Statues, certifies that (1) Vendor is not owned by a government of a foreign country of concern; (2) a government of a foreign country of concern does not have a “controlling interest” in Vendor, as defined by Section 287.138(1)(a), Florida Statutes; and (3) Vendor is not organized under the law of nor has its principal place of business in a foreign country of concern. For the purposes of this affidavit, foreign country of concern means the People’s Republic of China, the Russian Federation, the Islamic Republic of Iran, the Democratic People’s Republic of Korea, the Republic of Cuba, the Venezuelan regime of Nicolás Maduro, or the Syrian Arab Republic, including any agency of or any other entity of significant control of such foreign country of concern, as defined in § 287.138(1)(c), Florida Statutes.

26. HUMAN TRAFFICKING ATTESTATION

Vendor, pursuant to § 787.06(13), Florida Statues, certifies that 1) neither Vendor nor any of its subsidiaries or affiliates uses coercion for labor or services, as terms are defined in § 787.06, Fla. Stat., as may be amended from time to time; (2) Vendor will immediately notify Bay County, Florida, if, at any time in the future, Vendor does use coercion for labor or services, and understands that pursuant to such notification no contracts may be executed, renewed, or extended between the parties; and (3) Vendor has read the foregoing attestation, confirms the facts stated in it are true, and are made for the benefit of, and reliance by, Bay County, Florida.

27. Advertising

Subject to Chapter 119, Florida Statutes, Vendor will not publicly disseminate any information concerning the Agreement without prior written approval from the County, including, but not limited to mentioning the Agreement in a press release or other

promotional material, either in print or electronically, to any entity that is not a party to Agreement.

28. **Use of County Logo**

Pursuant to, and consistent with, Bay County Ordinance 2-150, Vendor may not manufacture, use, display, or otherwise use any facsimile or reproduction of the County Seal/Logo without express written approval of the Board of County Commissioners of Bay County, Florida.

29. **FEDERAL TERMS**

In the event that there exists a conflict between any term, condition, or provision contained within these conditions of purchase order, and in any term, condition or provision in the federal terms, then the federal terms shall prevail.

Vendor:

Signed and Delivered on this _____ day of _____, 2026.

_____ _____

Signature Date

This document was acknowledged and subscribed before me the undersigned notary by _____, as the _____, of _____, and with proper authority, and who is personally known by me or produced identification of _____.

_____

Notary Public

EXHIBIT 2
SUPPLEMENTAL GENERAL CONDITIONS
FEDERAL EMERGENCY MANAGEMENT AGENCY

The supplemental conditions contained in this section are intended to cooperate with, to supplement, and to modify the general conditions and other specifications. In cases of disagreement with any other section of this contract, the Supplemental Conditions shall govern.

Contractor means an entity that receives a contract.

The services performed by the awarded Contractor shall be in compliance with all applicable grantor regulations/requirements, and additional requirements specified in this document. It shall be the awarded Contractor's responsibility to acquire and utilize the necessary manuals and guidelines that apply to the work required to complete this project. In general,

1)The contractor (including all subcontractors) must insert these contract provisions in each lower tier contracts (e.g. subcontract or sub-agreement);

2)The contractor (or subcontractor) must incorporate the applicable requirements of these contract provisions by reference for work done under any purchase orders, rental agreements and other agreements for supplies or services;

3)The prime contractor is responsible for compliance with these contract provisions by any subcontractor, lower-tier subcontractor or service provider.

FEDERAL CONTRACT PROVISIONS

1. **Conflict of Interest -** This Contract/Work Order is subject to chapter 112, F.S. The vendor shall disclose the name of any officer, director, employee, or other agent who is also an employee of the State. Grantee shall also disclose the name of any State employee who owns, directly or indirectly, more than a five percent (5%) interest in the Contractor's company or its affiliates.

2. **Discriminatory Vendors** – (1) No person, on the grounds of race, creed, color, religion, national origin, age, gender, or disability, shall be excluded from participation in; be denied the proceeds or benefits of; or be otherwise subjected to discrimination in performance during the term of the contract. (2) Contractor shall disclose if they appear on the discriminatory vendor list. An entity or affiliate placed on the discriminatory vendor list pursuant to section 287.134, F.S. may not: 1) Submit a bid on an agreement to provide any goods or services to a public entity; 2) Submit a bid on an agreement with a public entity for the construction or repair of a public building or public work; 3)Submit bids on leases of real property to a public entity; or 4) Be awarded or perform work as a consultant under an agreement with any public entity; or transact business with any public entity.

3. **Lobbying** - No funds received pursuant to this Agreement may be expended for lobbying the Federal or State Legislature, the judicial branch, or a federal or state agency. The bidder or offeror certifies by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that: (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Bidder or Offeror, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement. (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. (3) The undersigned shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all sub-recipients shall certify and disclose accordingly.

   This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure

4. **Record Retention** – A. The contractor shall maintain and retain sufficient records demonstrating its compliance with the terms of the Agreement for a period of at least five (5) years after final payment is made and shall allow the County, the State, or its authorized representatives access to such records for audit purposes upon request. B. In the event of litigation or settlement of claims arising from the performance of this contract, in which case contractor agrees to maintain same until the County, the FEMA Administrator, the Comptroller General of the United States, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related to the litigation or settlement of claims

5. **Diversity –** All contracting and subcontracting opportunities afforded by this solicitation/contract embrace diversity enthusiastically. The award of subcontracts should reflect the full diversity of the citizens of the State of Florida. Firms qualifying under this solicitation are encouraged to submit bids/proposals. Award of this contract will be conditioned upon satisfying the requirements of this bid specification. These requirements apply to all bidders/offerors, including those who qualify as a Minority

Business vendor. A list of minority owned firms that could be offered subcontracting opportunities may be obtained by contacting the Office of Supplier Diversity at (850) 487-0915.

6. **Applicable Laws** - The contractor shall comply with all applicable federal, state and local rules and regulations in providing services to the County. The contractor acknowledges that this requirement includes, but is not limited to, compliance with all applicable federal, state and local health and safety rules and regulations and that FEMA financial assistance may be used to fund the contract. As such, the contractor will comply will all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.

7. **Administrative, Contractual, or Legal Remedies -** Unless otherwise provided in this contract, all claims, counter-claims, disputes and other matters in question between the local government and the contractor, arising out of or relating to this contract, or the breach of it, will be decided by arbitration, if the parties mutually agree, or in a Florida court of competent jurisdiction.

8. **Patents and Data** - No reports, maps, or other documents produced in whole or in part under this contract shall be the subject of an application for copyright by or on behalf of the contractor. The grantor agency and the grantee shall possess all rights to invention or discovery, as well as rights in data which may arise as a result of the contractor's services.

9. **Clean Air Act and Federal Water Pollution Control Act -** (1) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 *et seq*. (2) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 *et seq*. (3) The contractor agrees to report each violation to the County and understands and agrees that the County will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office. (4) The contractor agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FEMA.

10. **Suspension and Debarment** (1) This contract is a covered transaction for purposes of 2 C.F.R.pt. 180 and 2 C.F.R. pt. 3000. As such the contractor is required to verify that none of the contractor's principals (defined at 2 C.F.R. § 180.995), or its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935). (2) The contractor must comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into. (3) This certification is a material representation of fact relied upon by the County. If it is later determined that the contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to

the Florida Department of Emergency Management, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. (4) The contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions."

The Contractor's debarment and suspension status will be validated by the County at the System for Award Management and the State of Florida.

11. **Reporting** - The contractor will provide any information required to comply with the grantor agency requirements and regulations pertaining to reporting. It is important that the contractor is aware of the reporting requirements of the County, as the Federal or State granting agency may require the contractor to provide certain information, documentation, and other reporting in order to satisfy reporting requirements to the granting agency.

12. **Access to Records –** (1) The contractor agrees to provide the County, the FEMA Administrator, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions. (2) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed. (3) The contractor agrees to provide the FEMA Administrator or his authorized representatives' access to construction or other work sites pertaining to the work being completed under the contract."

13. **Energy Efficiency Standards** - The contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act.

14. **DHS Seal, Logo, and Flags -** The contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre- approval.

15. **No Obligation by Federal Government** - The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, contractor, or any other party pertaining to any matter resulting from the contract.

16. **Program Fraud and False or Fraudulent Statements or Related Acts** - The contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the contractor's actions pertaining to this contract.

17. **Recovered Materials** –
(1) In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA designated items unless the product cannot be acquired (i) Competitively within a timeframe providing for compliance with the contract performance schedule; (ii) Meeting contract performance requirements; or (iii) At a reasonable price.
(2) Information about this requirement, along with the list of EPA designated items, is available at EPA's Comprehensive Procurement Guidelines web site, https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program. (3) The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

18. **Discriminatory Vendors List**: In accordance with Section 287.134, Florida Statutes, an entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

19. **Contracting With Small And Minority Businesses, Women's Business Enterprises, And Labor Surplus Area Firms**
(a) The non-Federal entity must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible.
(b) Affirmative steps must include:
(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
(2) Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses, and women's business enterprises;
(4) Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises;
(5) Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce; and
(c) Requiring the prime contractor, if subcontracts are to be let, to take the affirmative steps listed in paragraphs (1) through (5) of this section.

20. **Equal Opportunity Clauses**
Compliance with Regulations: The contractor shall comply with the Acts and the Regulations relative to Nondiscrimination in federally-assisted programs, as they may

be amended from time to time, which are herein incorporated by reference and made a part of this contract.

During the performance of this contract, the contractor agrees as follows:
(1) The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:
Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause. (2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may

be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: Provided, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of

contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

21. Contract Work Hours And Safety Standards Act 40 U.S.C. 3702 And 3704, As Supplemented By Department Of Labor Regulations (29 CFR Part 5)

Compliance with the Contract Work Hours and Safety Standards Act.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-halftimes the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The County shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.
(4) *Subcontracts* The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

22. Byrd Anti-Lobbying Amendment 31 U.S.C. § 1352 (As Amended)

Contractors who apply or bid for an award of $100,000 or more shall file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or

attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

23. Prohibition on Contracting for Covered Telecommunications Equipment or Services

(a)Definitions. As used in this clause, the terms backhaul; covered foreign country; covered telecommunications equipment or services; interconnection arrangements; roaming; substantial or essential component; and telecommunications equipment or services have the meaning as defined in FEMA Policy, #405-143-1 Prohibitions on Expending FEMA Award Funds for Covered Telecommunications Equipment or Services As used in this clause—

(b)Prohibitions.

(1)Section 889(b) of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. No. 115-232, and 2 C.F.R. § 200.216 prohibit the head of an executive agency on or after Aug.13, 2020, from obligating or expending grant, cooperative agreement, loan, or loan guarantee funds on certain telecommunications products or from certain entities for national security reasons.

(2)Unless an exception in paragraph (c) of this clause applies, the contractor and its subcontractors may not use grant, cooperative agreement, loan, or loan guarantee funds from the Federal Emergency Management Agency to:

(i)Procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;

(ii)Enter into, extend, or renew a contract to procure or obtain any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology of any system;

(iii) Enter into, extend, or renew contracts with entities that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system; or

(iv) Provide, as part of its performance of this contract, subcontract, or other contractual instrument, any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

(c)*Exceptions.*

(1)This clause does not prohibit contractors from providing—

a. A service that connects to the facilities of a third-party, such as backhaul, roaming, or interconnection arrangements; or

b. Telecommunications equipment that cannot route or redirect user data traffic or permit visibility into any user data or packets that such equipment transmits or otherwise handles.

(2)By necessary implication and regulation, the prohibitions also do not apply to:

a. Covered telecommunications equipment or services that:

i. Are not used as a substantial or essential component of any system; and

ii. Are not used as critical technology of any system.

b. Other telecommunications equipment or services that are not considered covered telecommunications equipment or services.

(d)*Reporting requirement.*

(1) In the event the contractor identifies covered telecommunications equipment or services used as a substantial or essential component of any system, or as critical technology as part of any system, during contract performance, or the contractor is notified of such by a subcontractor at any tier or by any other source, the contractor shall report the information in paragraph (d)(2) of this clause to the recipient or subrecipient, unless elsewhere in this contract are established procedures for reporting the information.

(2)The Contractor shall report the following information pursuant to paragraph (d)(1) of this clause:

(i)Within one business day from the date of such identification or notification: The contract number; the order number(s), if applicable; supplier name; supplier unique entity identifier (if known); supplier Commercial and Government Entity (CAGE) code (if known); brand; model number (original equipment manufacturer number, manufacturer part number, or wholesaler number); item description; and any readily available information about mitigation actions undertaken or recommended.

(ii)Within 10 business days of submitting the information in paragraph (d)(2)(i) of this clause: Any further available information about mitigation actions undertaken or recommended. In addition, the contractor shall describe the efforts it undertook to prevent use or submission of covered telecommunications equipment or services, and any additional efforts that will be incorporated to prevent future use or submission of covered telecommunications equipment or services.

(e)*Subcontracts.* The Contractor shall insert the substance of this clause, including this paragraph(e), in all subcontracts and other contractual instruments.

24. Domestic Preferences for Procurements

(a) As appropriate and to the extent consistent with law, the non-Federal entity should, to the greatest extent practicable under a Federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award.

(b) For purposes of this section:

(1) “Produced in the United States” means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

(2) “Manufactured products” means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

EXHIBIT 3
BAY COUNTY
INSURANCE REQUIREMENTS

1. LOSS CONTROL/SAFETY

a. Precaution shall be exercised at all times by the Vendor for the protection of all persons, including employees, and property. The Vendor shall be expected to comply with all laws, regulations or ordinances related to safety and health, shall make special effort to detect hazardous conditions and shall take prompt action where loss control/safety measures should reasonably be expected.

b. The County may order work to be stopped if conditions exist that present immediate danger to persons or property. The Vendor acknowledges that such stoppage will not shift responsibility for any damages from the Vendor to the County.

2. DRUG FREE WORK PLACE REQUIREMENTS

All contracts with individuals or organizations that wish to do business with the Bay County Board of Commissioners, a stipulation will be made in the contract or purchase order that requires contractors, subcontractors, vendors or consultants to have a substance abuse policy. The employees of such contractors, subcontractors, vendors or consultants will be subject to the same rules of conduct and tests as the employees of the Bay County Board of Commissioners. In the event of an employee of a supplier of goods or services is found to have violated the Substance Abuse Policy, that employee will be denied access to the County's premises and job sites. In addition, if the violation(s) is/are considered flagrant, or the County is not satisfied with the actions of the contractor, subcontractor, vendor, or consultant, the County can exercise its right to bar all of the contractor's, subcontractor's, vendor's, or consultants employees from its premises or decline to do business with the contractor, subcontractor, vendor or consultant in the future. All expenses and penalties incurred by a contractor, subcontractor, vendor or consultant as a result of a violation of the County's Substance Abuse Policy shall be borne by the contractor, subcontractor, vendor, or consultant.

3. INSURANCE - BASIC COVERAGES REQUIRED

a. The Vendor shall procure and maintain the following described insurance, except for coverages specifically waived by the County, on policies and with insurers acceptable to the County. These insurance requirements shall not limit the liability of the Vendor. All subcontractors are subject to the same coverages and limits as the Vendor. The County does not represent these types or amounts of insurance to be sufficient or adequate to protect the Vendor's interests or liabilities, but are merely minimums.

b. Except for workers' compensation and professional liability, the Vendor's insurance policies shall be endorsed to name the County as an additional insured to the extent of the County's interests arising from this agreement, contract, or lease.

c. Except for workers' compensation, the Vendor waives its right of recovery against the County, to the extent permitted by its insurance policies.

d. The Vendor's deductibles/self-insured retentions shall be disclosed to the County and may be disapproved by the County. They shall be reduced or eliminated at the option of the County. The Vendor is responsible for the amount of any deductible or self-insured retention.

e. Insurance required of the Vendor or any other insurance of the Vendor shall be considered primary, and insurance of the County shall be considered excess, as may be applicable to claims which arise out of the Hold Harmless, Payment on Behalf of the County, Insurance, Certificates of Insurance and any Additional Insurance provisions of this agreement, contract or lease.

f. WORKERS' COMPENSATION COVERAGE

The Vendor shall purchase and maintain workers' compensation insurance for all workers' compensation obligations imposed by state law and employer's liability limits of at least **$500,000 each accident and $500,000 each employee/$500,000 policy limit for disease**. The Vendor shall also purchase any other coverages required by law for the benefit of employees. The vendor shall provide Certificates of Insurance to the County indicating that the vendor meets all the requirements of Florida Statute 440.02(14)(d).

g. GENERAL, AUTOMOBILE AND EXCESS OR UMBRELLA LIABILITY COVERAGE

The Vendor shall purchase and maintain coverage on forms no more restrictive than the latest editions of the Commercial or Comprehensive General Liability and Business Auto policies of the Insurance Services Office. **Minimum limits of $1,000,000 per occurrence** for all liability must be provided, with excess or umbrella insurance making up the difference, if any, between the policy limits of underlying policies (including employers liability required in the Workers' compensation Coverage section) and the amount of coverage required.

h. GENERAL LIABILITY COVERAGE

Commercial General Liability - Occurrence Form Required

Coverage A shall include bodily injury and property damage liability for premises, operations, products and completed operations, independent vendors, contractual liability covering this agreement contract or lease, and broad form property damage, and property damage resulting from explosion, collapse or underground (x,c,u) exposures. Coverage B shall include personal injury. Coverage C, medical payments, is not required.

i. PRODUCTS/COMPLETED OPERATIONS

The Vendor is required to continue to purchase products and completed operations coverage, at least to satisfy this agreement, contract or lease, for a minimum of three years beyond the County's acceptance of renovation or construction projects.

j. BUSINESS AUTO LIABILITY COVERAGE

Business Auto Liability coverage is to include bodily injury and property damage arising out of ownership, maintenance or use of any auto, including owned, non-owned and hired automobiles and employee non-ownership use.

k. EXCESS OR UMBRELLA LIABILITY COVERAGE

Umbrella Liability insurance is preferred, but an Excess Liability equivalent may be allowed. Whichever type of coverage is provided, it shall not be more restrictive than the underlying insurance policy coverages.

l. CERTIFICATES OF INSURANCE

1. Required insurance shall be documented in Certificates of Insurance which provide that the County shall be notified at least 30 days in advance of cancellation, nonrenewal or adverse change. The Certificate Holder will be addressed as the BAY COUNTY BOARD OF COMMISSIONERS, 840 W. 11th Street, Panama City, Florida 32401. All certificates, cancellation, nonrenewal or adverse change notices should be mailed to this address. Each Certificate will address the service being rendered to the County by the Vendor. **The County shall be named as an Additional Insured, Primary and Non-Contributory for both General Liability and Business Auto Liability with Waiver of subrogation included with respects to both General Liability and Business Auto.**

2. New Certificates of Insurance are to be provided to the County at least 15 days after coverage renewals.

3. If requested by the County, the Vendor shall furnish complete copies of insurance policies, forms and endorsements.

4. For the Commercial General Liability coverage the Vendor shall, at the option of the County, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of the liability coverage.

m. RECEIPT OF INSUFFICIENT CERTIFICATES

Receipt of certificates or other documentation of insurance or policies or copies of policies by the County, or by any of its representatives, which indicate less coverage than required does not constitute a waiver of the Vendor's obligation to fulfill the insurance requirements herein.

4. ADDITIONAL INSURANCE

If checked below, the County requires the following additional types of insurance.

☐ **Professional Liability/Malpractice/Errors or Omissions Coverage**

The Vendor shall purchase and maintain professional liability or malpractice or errors or omissions insurance with minimum limits of per occurrence. If a claims made form of coverage is provided, the retroactive date of coverage shall be no later than

the inception date of claims made coverage, unless the prior policy was extended indefinitely to cover prior acts.

Coverage shall be extended beyond the policy year either by a supplemental extended reporting period (ERP) of as great duration as available, and with no less coverage and with reinstated aggregate limits, or by requiring that any new policy provide a retroactive date no later than the inception date of claims made coverage.

☐ **Property Coverage for Leases**

The Vendor shall procure and maintain for the life of the lease, all risk/special perils (including sinkhole) property insurance (or its equivalent) to cover loss resulting from damage to or destruction of the building and personal property/contents. The policy shall cover 100% replacement cost, and shall include an agreed value endorsement to waive coinsurance.

☐ **Commercial General Liability Increased General Aggregate Limit (or separate aggregate)**

Because the Commercial General Liability form of coverage includes an annual aggregate limitation on the amount of insurance provided, a separate project aggregate limit of N/A is required by the County for this agreement or contract.

☐ **Liquor Liability**

In anticipation of alcohol being served, the Vendor shall provide evidence of coverage for liquor liability in an amount equal to the general/umbrella/excess liability coverage. If the general liability insurance covers liquor liability (e.g. host or other coverage), the Vendor's agent or insurer should provide written documentation to confirm that coverage already applies to this agreement, contract or lease. If needed coverage is not included in the general/umbrella excess liability policy(ies), the policy(ies) must be endorsed to extend coverage for liquor liability, or a separate policy must be purchased to provide liquor liability coverage in the amount required.

☐ **Owners Protective Liability Coverage**

For renovation or construction contracts the Vendor shall provide for the County an owners protective liability insurance policy (preferably through the Vendor's insurer) in the name of the County. This is redundant coverage if the County is named as an additional insured in the Vendor's Commercial General Liability insurance policy. However, this separate policy may be the only source of coverage if the Vendor's liability coverage limit is used up by other claims.

☐ **Builders Risk Coverage**

Builders Risk insurance is to be purchased to cover subject property for all risks of loss (including theft and sinkhole), subject to a waiver of coinsurance, and covering off-site storage, transit and installation risks as indicated in the Installation Floater and Motor Truck Cargo insurance described hereafter, if such coverages are not separately provided. If flood and/or earthquake risks exist, flood and earthquake insurance are to be purchased. If there is loss of income, extra expense and/or expediting expense exposure,

such coverage is to be purchased. If boiler and machinery risks are involved, boiler and machinery insurance, including coverage for testing, is to be purchased.

The Builders Risk insurance is to be endorsed to cover the interests of all parties, including the County and all vendors and subcontractors. The insurance is to be endorsed to grant permission to occupy.

☐ **Installation Floater Coverage**

Installation Floater insurance is to be purchased when Builder's Risk insurance is inappropriate, or when Builder's Risk insurance will not respond, to cover damage or destruction to renovations, repairs or equipment being installed or otherwise being handled or stored by the Vendor, including off-site storage, transit and installation.

The amount of coverage should be adequate to provide full replacement value of the property, repairs, additions or equipment being installed, otherwise being handled or stored on or off premises. All risks coverage is preferred.

☐ **Motor Truck Cargo Coverage**

If the Installation Floater insurance does not provide transportation coverage, separate Motor Truck Cargo or Transportation insurance is to be provided for materials or equipment transported in the Vendor's vehicles from place of receipt to building sites or other storage sites. All risks coverage is preferred.

☒ **Vendor's Equipment Coverage**

Vendor's Equipment insurance is to be purchased to cover loss of equipment and machinery utilized in the performance of work by the Vendor. All risks coverage is preferred. The contract may declare self-insurance for vendor equipment.

☐ **Fidelity/Dishonesty/Liability Coverage – Third Party**

Fidelity/Dishonesty/Liability insurance is to be purchased or extended to cover dishonest acts of the Other Party’s employees resulting in a loss to decedent, i.e. theft of valuables.

☐ **Fidelity/Dishonesty Coverage for Employer (Vendor)**

Fidelity/Dishonesty insurance is to be purchased to cover dishonest acts of the Vendor's employees, including but not limited to theft of vehicles, materials, supplies, equipment, tools, etc., especially property necessary to work performed.

☐ **Fidelity/Dishonesty/Liability Coverage for County**

Fidelity/Dishonesty/Liability insurance is to be purchased or extended to cover dishonest acts of the Vendor's employees resulting in loss to the County.

☐ **Electronic Data Liability Insurance**

The Other Party shall purchase Electronic Data Liability with limits of

☐ **Garage Liability Coverage**

Garage Liability insurance is to be purchased to cover the Vendor and its employees for its garage and related operations while in the care, custody and control of the County's vehicles.

☐ **Garage Keepers Coverage (Legal Liability Form)**

Garage Keepers Liability insurance is to be purchased to cover damage or other loss, including comprehensive and collision risks, to the County's vehicles while in the care, custody and control of the Vendor. This form of coverage responds on a legal liability basis, and without regard to legal liability on an excess basis over any other collectible insurance.

☐ **Damage to Premises Rented/Leased to you- (Legal Liability Form)**

Provide property coverage for leased premises due to liability incurred because the insured's negligence results in fire or explosion. Specified limit of liability required.

☐ **Watercraft Liability Coverage**

Because the Vendor's provision of services involves utilization of watercraft, watercraft liability coverage must be provided to include bodily injury and property damage arising out of ownership, maintenance or use of any watercraft, including owned, non-owned and hired.

Coverage may be provided in the form of an endorsement to the general liability policy, or in the form of a separate policy coverage Watercraft Liability or Protection and Indemnity.

☐ **Aircraft Liability Coverage**

Because the Vendor's provision of services involves utilization of aircraft, aircraft liability coverage must be provided to include bodily injury and property damage arising out of ownership, maintenance or use of any aircraft, including owned, non-owned and hired.

The minimum limits of coverage shall be per occurrence, Combined Single Limits for Bodily Injury (including passenger liability) and Property Damage.

☐ **Pollution Legal Liability Coverage**

Pollution legal liability insurance is to be purchased to cover pollution and/or environmental legal liability which may arise from this agreement or contract.

☐ **United States Longshoremen and Harbor workers Act Coverage**

The Workers Compensation policy is to be endorsed to include United States Longshoremen and Harbor workers Act Coverage for exposures which may arise from this agreement or contract.

☐ **Jones Act Coverage**

The Workers Compensation policy is to be endorsed to include Jones Act Coverage for exposures which may arise from this agreement or contract

EXHIBIT 4
CIP TERMS AND CONDITIONS

All Bay County Capital Projects the awarded Contractor and subcontractors are responsible for pulling all building permits and paying for them. The contractor shall pay all impact and connection fees. The contractor and subcontractors shall preform all proper inspections for the work being performed, including final inspections and providing Bay County with a Certificate of Occupancy.

All Contractors and subcontractors are required to provide Bay County with copies of all pulled permits for the project.

All attached forms from bid documents (Bay County progress report and Final Lien forms) shall be used and submitted.

The intent of all site visits during the bid process is to identify items such as utilities or other items existing and/or missed on drawings. If a bidder/contractor fails to identify an item during the site visit it does not warned a Change Order to Bay County unless it's unforeseeable and not in plain sight.

1. Enough detail is given in the bid to describe the item being bid, although not written, full manufacturer's specifications are implied. Manufacturer's specifications take precedent over information within this bid if any discrepancy exists.
2. Plans, Drawings, Specifications, Special Provisions, Addendums and other documents shall be considered a part of the Bid Forms whether attached or not.
3. Prospective Bidders must be able to show that they are capable of performing each of the various items of work upon which they bid and that the equipment necessary for the prosecution of the work is available. Bidders shall be licensed as General or Building Contractor by state law. Such license shall be in effect prior to the date and time specified for receipt of bids by the County. All subcontractors shall be properly licensed in the trade being bid.
4. Should the bidder to whom the award of contract was made, fail to execute any of the required and acceptable bonds, the award of contract shall be annulled and the Bid Bond posted by the bidder shall be retained by the County, not as penalty, but as liquidated damages. Award will then be given to the next bidder selected by the County with a qualified bid.
5. The General/Building Contractor that awarded the bid must meet all insurance requirements set by Bay County and shall insure Bay County that all subcontractors used or selected to work on Bay County projects meet the same insurance requirement set forth.

5. The Work

a. Intent is for the Contractor/subcontractor to provide for construction, completion in every detail of the work, furnishing all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the Contract Documents.

b. The County's Designated Representative shall have the right to make alterations in the drawings or specifications as considered necessary or desirable during the progress of the work for satisfactory completion of the work. All agreed upon alterations shall be properly documented.

c. Upon completion date of the work. Bay County will issue a Certificate of Substantial Completion and perform a walk-through of project. As part of Substantial Completion a punch list will be generated and the contractor shall be given 30 days to complete punch list items. After the Punch List is completed Bay County will issue a Notice of Completion. The Notice of Completion starts the one (1) year construction warranty period. Before acceptance by Bay

County, the Engineer or Architect of Record and before final payment, the Contractor shall remove all equipment, surplus, discarded materials, rubbish and temporary structures and shall restore, in an acceptable manner, all property, both public and private, damaged during the performance of the work and perform a Final Clean on project.

6. Control of the Work

a. The contractor is responsibilities of keeping the project clean at all times.

b. At project completion, the Contractor shall furnish an electronic Pdf copy of as-built drawings of utility lines, stormwater pipes, and structures showing any deviation from the plans and specifications that exceed 0.1 feet in vertical elevation and 1 foot in horizontal location and any change to the type of construction material and size.

c. The Contractor shall take no advantage of any apparent error or omission which he might discover in the drawings or specifications. In the event that an error or omission is discovered by the Contractor, he shall, within 24 hours of such discovery, notify the County's Designated Representative who shall then make such corrections and interpretations deemed necessary for reflecting the actual spirit, intent, and scope of the drawings and specifications.

d. The Bay County Public Works Director shall have the final say on all questions, difficulties, and disputes, of whatever nature, which may arise relative to the interpretation of the drawings and specifications.

e. The Contractor shall furnish and set slopes stakes, rough grade stakes and all other stakes necessary for construction of the project.

f. Failure to remove or refusal by the Contractor to remove defective materials or work, or make necessary repairs to damaged work shall be cause for the County's Designated Representative to make the necessary corrections at the expense of the Contractor with such monies being deducted from the contract amount or charged against the bonds.

g. **The Contractor shall notify the County's Designated Representative when the project is substantially complete. If the County's Designated Representative determines the project is substantially complete, a "Certificate of Substantial Completion" will be issued by the County**.

h. The Contractor shall maintain all work in first-class condition until it has been completed as a whole and accepted by the County's Designated Representative. The Contractor shall be responsible for the security and protection of all materials used in the project until a "Notice of Completion" is issued by the County.

i. Any written claim for compensation due to delays, additional, or extra work shall include the following:

i. **Contractor must provide a schedule at the beginning of project and identify critical path. Schedule shall be provided at the preconstruction meeting.** For delay claims, provide a critical path schedule showing the delay is due to a controlling item of work and the early start, late start, early finish, late finish and the critical path;
ii. a detailed factual statement providing dates, locations, and items of work affected in each claim;
iii. the date on which actions or conditions resulting in the claim became evident.
iv. all pertinent documents and substance of any material oral communications relating to the claim and the name of the persons making the oral communications;
v. the written claim shall identify the provisions of the contract which support the claim along with a detailed explanation as to why these provisions support the claim;
vi. a detailed breakdown of compensation sought for labor expenses, additional material and supplies, listing of each piece of equipment and

cost, any direct damages and any indirect damages and all documentation in support thereof.

j. The County expects the Contractor to use forces and equipment on any item of work that can be completed during the delay. The Contractor's claim must show the delay is due to the controlling item of work as shown on the critical path method schedule. If the County determines the Contractor forces and equipment can be used on other work items during the delay, no compensation will be given for these forces and equipment.

k. Unless otherwise stated in the plans or specifications, the term "install" shown in the plans and specifications shall be interpreted by the contractor to mean the same as "furnish and install", which means the contractor shall provide all materials, equipment and labor to completely install the item shown in the plans or specifications.

7. Material Control

a. The Contractor shall furnish all materials and equipment and perform all work required per drawings and specifications to complete project.

Only materials conforming to the requirements and intent of the drawings and specifications will be used and all such materials not specifically identified in the plans and specifications will be approved by Bay County, the Engineer or Architect of Record prior to use to perform the work. Reference in the contract documents to a proprietary device, product, material or fixture to establish a quality standard is not intended to limit competition. The Contractor may use any proprietary device, product, material or fixture that in the Engineer of Record's judgment is equal, for the purpose intended.

b. The Contractor shall ensure that County personnel have entry at all times to the construction site in order to inspect and evaluate any or all materials used for performing the work. The County's Designated Representative shall have the right to sample and test any or all materials used in performing the work. Copies of any tests accomplished by the County's Designated Representative will be provided to the Contractor.

c. Materials shall be stored as specified in the contract documents or as per the material manufacturer's recommendations. The protection of stored materials shall be the responsibility of the Contractor and the County shall not be liable for any loss, theft or damage to stored materials. Bay County does not pay for any stored materials until properly installed and work has been accepted.

d. Any materials found to be defective by the Contractor or the County's Designated Representative shall be removed from the work or place of storage at the Contractor's expense and replaced at the Contractor's expense. Failure or refusal by the Contractor to accomplish the removal and replacement of defective materials from the work or place of storage shall be grounds for the County's Designated Representative to do same at the expense of the Contractor and such expense deducted from the contract amount or from the bond.

e. The Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to remove promptly and dispose of properly all water entering excavations and keep such excavations dry so as to obtain a satisfactory undisturbed sub-grade foundation condition until the fill, structure, or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations.

f. The Contractor shall furnish all materials and equipment and perform all work required to install and maintain the drainage systems for handling groundwater and surface water encountered during construction of structures, pipelines and compacted fills. The Contractor shall obtain FDEP and NWFLWMD permits for all dewatering operations. During dewatering operations all engines shall be equipped in a manner to keep pump noise to a minimum. If dewatering is required after 10:00 PM near residences and business, pump noise shall not create a nuisance to the property owners. The Contractor is solely responsible for any damages to private

or public property caused by Contractor's dewatering operations. During dewatering operations, the Contractor shall notify all business and residences within a minimum of 300 feet of the dewatering operations to turn off all irrigation pumps. The 300 foot limit is a minimum, and the Contractor is responsible for any damage to private property, to include, but not limited to loss of plants, burned out pumps, building, pavement, sidewalk or any other structural settlement, etc. that can be attributed to the dewatering operations. The County will assume no liability nor pay for any claims; arising from the Contractor's dewatering operation.

8. Contractor Responsibilities

a. The Contractor shall relieve the County from any and all claims arising from claims by holders of trademarks, patents or copyrights used or incurred by the Contractor in performing the work.

b. The Contractor is responsible solely of proper staffing of projects to meet completion date set forth in the Notice to Proceed.

c. The Contractor shall preserve from damage all public and private property along the line of construction and adjacent to the work. If the Contractor fails to restore such property, the County's Designated Representative, upon written notification, as deemed necessary, may proceed to repair the damaged property and the cost deducted from the contract sum.

d. Arrangements for utilities to the site shall be accomplished by the Contractor and in doing same he shall coordinate with the appropriate utilities for the just and proper utilization of any space where construction shall entail the joint use of area under this work and the utility construction.

e. Final acceptance will not be given nor will bond be released unless any and all claims against the Contractor are paid or the Contractor has otherwise been relieved of the claim.

f. Until acceptance of the work by the County's Designated Representative, the work shall be under charge and custody of the Contractor and he shall take every precaution against injury or damage to the work by the action of the elements or from other causes.

9. Prosecution and Progress

a. The Contractor and Bay County must agree to monthly, biweekly or weekly progress meeting at the preconstruction meeting. Meeting can be changed. Progress meeting will be determined on the complexity of project.

b. The Contractor shall not sublet, sell, transfer, assign or otherwise dispose of the contract or subsequent agreements of the contract without written consent of the County.

c. The Contractor shall commence work on or after the Notice to Proceed date and shall provide sufficient resources to insure completion of the work within the time limit set forth. Should the Contractor fail to provide sufficient resources to assure timely progress and if he fails to perform the work within the specified time, the County shall have ground to claim default.

d. The Contractor shall schedule his operations to minimize any inconvenience to adjacent businesses, residences or operating Bay County Facility. The Contractor shall take special precautions to restrict his major operations in performing the work to what is commonly understood to be "normal" or "standard" working hours. Work performed at other periods requires preapproval from the County's Designated Representative.

e. The Contractor shall maintain reasonable access at all times to all business and private residences and property adjacent to construction area or impacted by the construction.

f. The County's Designated Representative shall make provision for and shall schedule a pre-construction conference with the Contractor and all concerned parties in attendance.

g. The Contractor shall provide a detailed schedule and Schedule of Values to the County at preconstruction conference. Adherence to the Contractor's construction schedule is critical to the residents and businesses impacted on the project. The Contractor shall give the County 48 hours notice of schedule changes and shall submit a new and complete changed schedule. The County will not allow any lane closure or paving operations

without 48 hours notice. The Contractor shall give the County Inspector 48 hours notice of commencement of all major work items.

h. The Contractor shall assure that all supervisory personnel employed by him are fully qualified and competent to properly perform the work in coordination with other trades at the work and can perform the work within the specified periods of time.

i. **The Contractor shall maintain a competent superintendent at the site at all times while work is in progress to act as the Contractor's agent.** The superintendent shall be capable of properly interpreting the Contract Documents and shall be thoroughly experienced in the type of work being performed. The superintendent shall have full authority to receive instructions from the County's Designated Representative and to execute the orders or directions of the County's Designated Representative, including promptly supplying any materials, tools, equipment, labor and incidentals that may be required. This superintendent must be at the project site to supervise sub-contractors. The superintendent must speak and understand English.

ii. Contractor shall designate a responsible person who speaks and understands English, and who is available at or reasonably near the worksite on a 24-hour basis, seven days a week who is the point of contact during emergencies.

iii. The County's Designated Representative shall have the authority to suspend the work, wholly, or in part, for such periods as may be deemed necessary due to unsuitable weather or other conditions considered unfavorable for performance of the work. Weather days are determined in the field on the day work is being affected. Weather days will be agreed upon on a daily or weekly bases. The Contractor shall not wait a month or longer to ask for weather days or delays or days will rejected.

iv. The Contractor may be declared in default for non-progress, by the County's Designated Representative, when the percentage value of dollar work completed with respect to the total amount of contract is not within twenty (20) percent of the time elapsed versus the total performance period.

v. Contractor may subcontract for work identified in this solicitation. The Contractor will be the prime service provider and shall be responsible for all work performed and contract deliverables. The Contractor's workforce shall be responsible for at least 51% of the work performed and provide an on-site full time job supervisor to manage the day to day job site, and subcontractors. Proposed use of subcontractors should be included in the response to this solicitation.

10. Payments and Acceptance

a. **Contractor shall provide schedule of values at the preconstruction meeting and once they are accepted by the County, values must not change unless documented by a written and signed changed order from Bay County**.

b. Payment will not be made until the work invoiced is completed in full. If material or equipment acceptance testing is required, payment will not be made until satisfactory test results as determined by the County's Designated Representative are delivered to the County.

c. Bay County reserves the right to make portional payments at the discretion of Bay County Representative if work is portionally completed or the quality of workmanship is not acceptable.

d. The Contractor shall accept the compensation as provided in the contract as full payment for furnishing all materials and for performing all work contemplated under the contract.

e. The contract price shall include all labor, equipment, material, tools and incidentals required for completing the work.

f. Subsoil conditions, if presented, must be interpreted within the limits of investigation and the anticipated normal field variances. Claims for unusual conditions or excessive

amounts of fill or excavation over original estimates of the Engineer of Record or Contractor shall not be grounds for extra work clauses or request.

g. The County's Designated Representative retains the right to cancel portions or expand the scope of work after a fair and just adjustment is agreed to with the Contractor. A Change Order will be issued by Bay County. Work is not approved until a proper Change Order has been received with proper signatures.
h. The Contractor will receive partial payment based upon the amount of work completed as determined by the County's Designated Representative. The County will withhold retainage in the amount of the total work completed at the date of the Contractor's invoice. The Contractor may reduce the retainage amount as allowed by Florida Statutes.
i. Any partial payments will be subject to withholding by the County's Designated Representative pending any unsatisfied claims brought against the Contractor for labor or materials.
j. Any partial payments will be subject to withholding by the County's Designated Representative pending any unsatisfied completion or restoration of any assertion for defective or damaged work or materials.
k. In the event of dispute regarding amounts due to the Contractor, the County reserves the right, at any time prior to final payment on the Contract, to audit, or cause to be audited, the Contractor's original records pertaining to the work.
l. Whenever the work provided for under the contract has been completely performed by the Contractor, and the final inspection and final acceptance has been made, and it is proven to the County's Designated Representative that all claims are satisfied, the final payment, being the difference between the contract amount and summation of all previous payment less any penalties assessed, shall be paid to the Contractor. Upon final payment the Contractor shall provide the County's Designated Representative a statement that he has been paid all monies due and that the work was performed in accordance with the Contract Documents.
m. The payments of sub-contractors, material, men and suppliers shall comply with Section 255.071 of Florida Statues.
n. Within five (5) working days following each payment to the Contractor, the Contractor shall pay respective amounts allowed by the County for all materials, all equipment installed in the work, all work performed by sub-contractors to the extent of each sub-contractor's interest in the Contractor's amount of payment.
o. Payment must be submitted at the beginning of month or the end of each month. Payment shall be established at the start of each project.
p. All payment must be agreed upon between Bay County Representative on percentages before submitted for acceptance.
q. On monthly invoices subsequent to the first invoice submitted there shall be a signed "Waiver of Right to Claim Against the Payment Bond (Progress Payment)" indicating that invoices for equipment and material supplied and sub-contractors have been paid by the Contractor.
r. On the final invoice submitted there shall be a signed "Waiver of Right to Claim Against the Payment Bond (Final Payment)" indicating that invoices for equipment and material supplied and sub-contractors have been paid by the General Contractor.
s. Date of final payment shall be the commencement of all warranties and guarantees. If the County reasonably determines that the Contractor or Vendor has breached any of the warranties provided herein, then the Contractor or Vendor shall perform the necessary work to comply with its warranties and shall pay to the owner its reasonable costs to investigate and then identify the breach of warranty claim. A Notice of Completion must be issued by Bay County

11. Safety

a. The General Contractor must ensure that all employees and subcontractors are wearing proper personal protection equipment (PPE) on construction site and project.
b. Bay County reserves the right to request a project safety plan from contractor and subcontractor. If requested than contractor and subcontractor shall provide safety plan to County. This request can be made at any time during construction of project.
c. No shorts allowed to be wore onsite by contractors or subcontractors. It includes wearing a shirt at all times while work onsite. Pants must be worn around the waist, not sagging where under garnets can be seen.

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 Heather 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

WHERE THE NORTH RIGHT-OF-WAY LI
INTERSECTS WITH THE EAST LINE OF
NORTHWEST QUARTER (SW1/4NW1/4) (
SOUTH, RANGE 14 WEST; THENCE NOR
LINE; THENCE EAST 100 FEET PARAL
LINE; THENCE SOUTH 100 FEET TO S
THENCE WEST 100 FEET WITH SAID F
POINT OF BEGINNING.

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

(EAST)
S 88°58'14" E
99.88' (100')

GRAVEL DRIVE

CONC.

12.0'

METAL SHED

20.0'

RAMP

33.4'

FD. 5/8" IRON ROD LB NO. 3257

7.0'

32.5'

5.1'

FD. 4"X4" CONC. MON. NO I.D. (SEE NOTES)

PUMP HOUSE

11.7'

COVERED CONC. 15'X65.5'E

3.4'

29.7'

2.7'

CONC. FLUME

TRENCH DRAIN

36.0'

15'

TRENCH DRAIN

COVERED STOOP

APPROXIMATE LIMITS OF DRAIN FIELD

AREA SURVEYED = 0.227 ACRE±

AC

CONC. FLUME

17.0'

15.0'

15'

13'X6

1 SINGLE STORY BRICK FIREHOUSE

70'X62.5'

(NORTH)
N 01°45'49" E

99.03' (100')

42.8'

98.89' (100')

S 01°45'49" W
(SOUTH)

13.0'

AC

16.3'

COVERED ASPHALT

ASPHALT DRIVE

P.O.B.
SET 5/8" IRON ROD LB NO. 2372

(200')
209.59'

NORTH R.O.W. LINE

N 89°02'42" W

98.89' (100')

(EAST)

DRIVE APRON

ASPHALT DRIVE

SET 5/8" IRON ROD NO. 2372. FD. 4"X4" CONC. MON. NO I.D. 1.07' S. & 0.03' W. (SEE NOTES)

UTILITY POLE & GUY ANCHOR

STORM INLET

STORM INLET

C.R. NO 2321 ~ 100' R.O.W.
(STATE ROAD NO. 77-A)
(PAVED)

321

40'

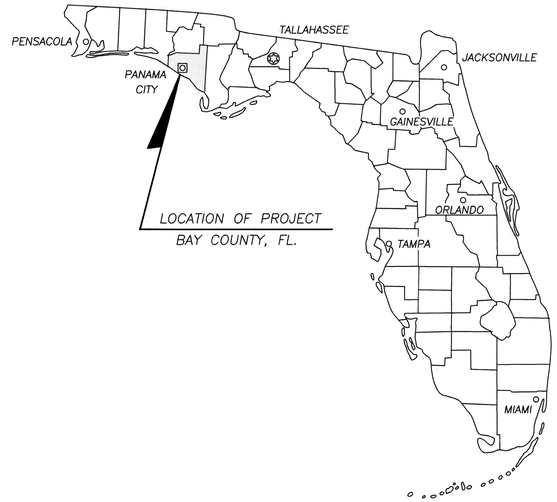
SYMBOLS AND ABBREVIATIONS

P.O.C.	POINT OF COMME
P.O.B.	POINT OF BEGIN
N	NORTH
E	EAST
S	SOUTH
W	WEST
SEC.	SECTION
T	TOWNSHIP OR TA
R	RANGE
°	DEGREES
'	MINUTES OR FEE
"	SECONDS OR INC
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 CONDITIONE

BAY COUNTY PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

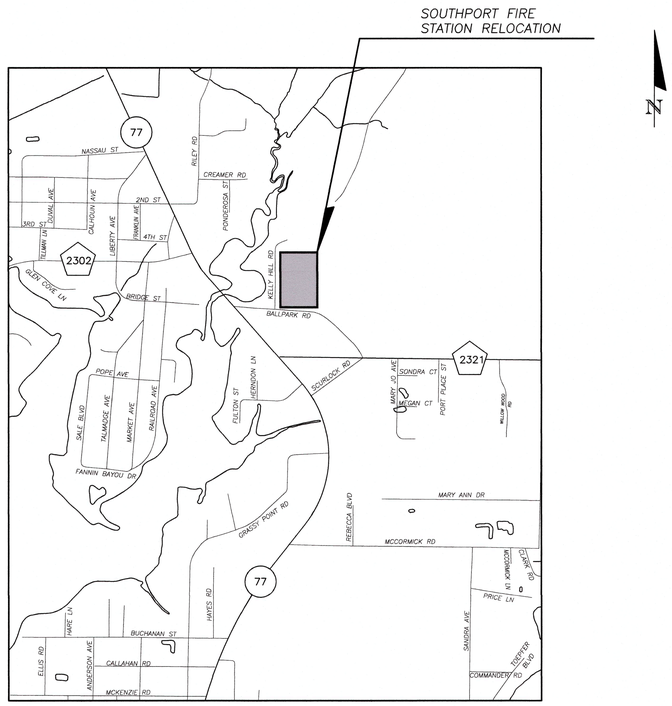
CONTRACT PLANS

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



BOARD OF COUNTY COMMISSIONERS

DANIEL RAFFIELD	VICE CHAIRMAN	DISTRICT 1
ROBERT CARROLL	COMMISSIONER	DISTRICT 2
DOUG CROSBY	COMMISSIONER	DISTRICT 3
DOUGLAS MOORE	COMMISSIONER	DISTRICT 4
CLAIR PEASE	CHAIRMAN	DISTRICT 5

PLANS PREPARED BY

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

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

PROJECT ~ PROJ. # ~

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.

Sunshine 811

EVERYONE PLANNING TO DIG IN FLORIDA IS REQUIRED BY LAW TO CONTACT SUNSHINE 811 AT LEAST TWO (2) FULL BUSINESS DAYS BEFORE STARTING THEIR PROJECT TO HAVE UNDERGROUND UTILITIES LOCATED AND MARKED.

#	DATE	APPROVED BY	REVISION

SEAL

NATALIJA LITHWAY — LICENSE — 62402 — 05/19/2026 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

APPROVED BY
NAME: NATALIJA LITHWAY
TITLE: COUNTY STORMWATER ENGINEER
FLORIDA P.E. #: 62402
DATE: 05/19/2026

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

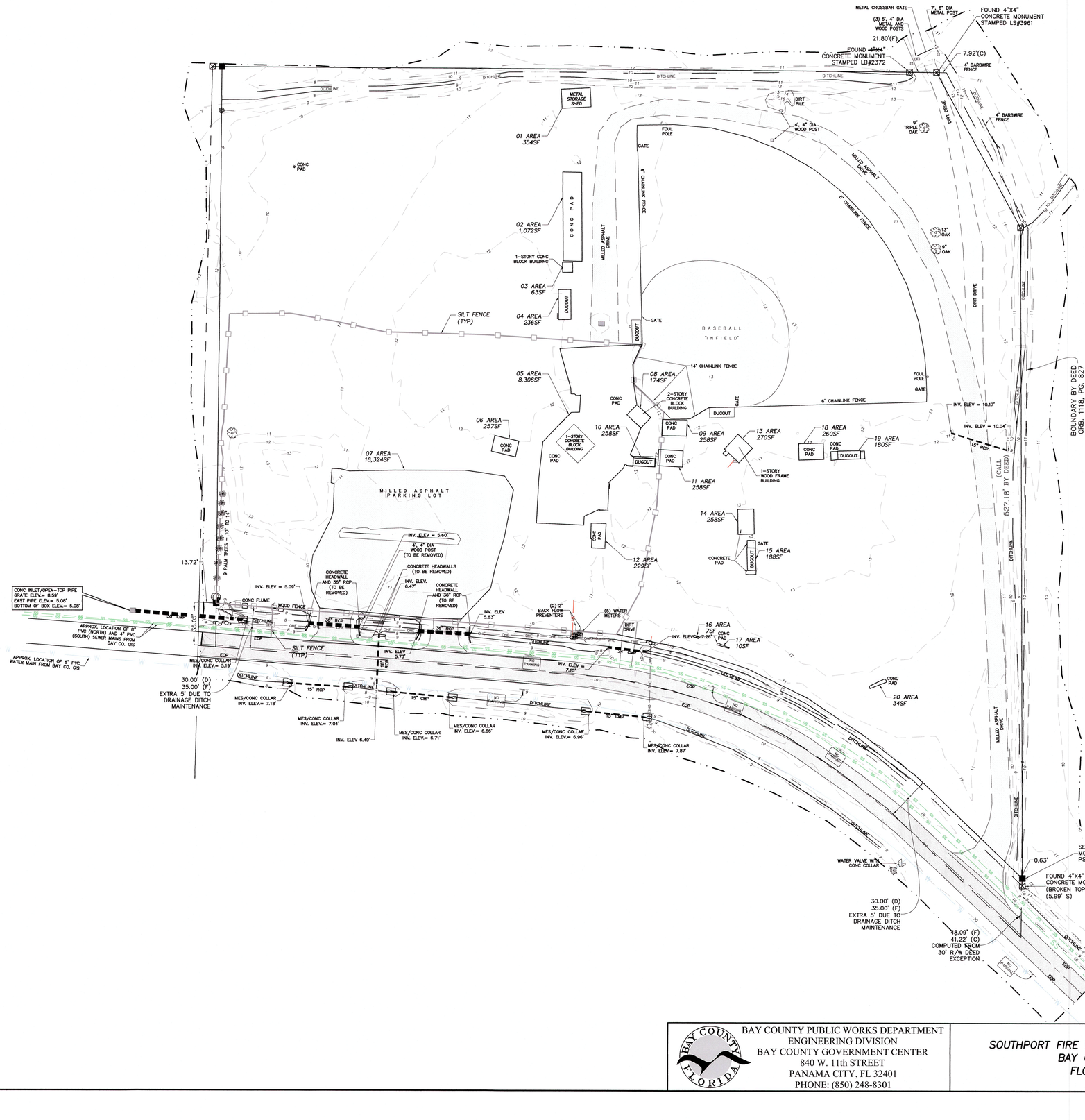
SOUTHPORT FIRE STATION RELOCATION
BAY COUNTY, FLORIDA

KEY SHEET

SCALE	DESIGNED BY	DRAWN BY	SHEET NO.	PROJECT #
NTS	MM	WT	01	
FIELD BOOK	CHECKED BY	DATE DRAWN	OF	PAGE #
N/A	MM	05/20/25	04	

Bar is one inch on original drawing 0 ——— 1" If not, adjust scale accordingly.

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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

GRAPHIC SCALE
0 20 40 80
1 INCH = 40 FEET

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

NATALIA LITHWAY LICENSE No. 82402 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

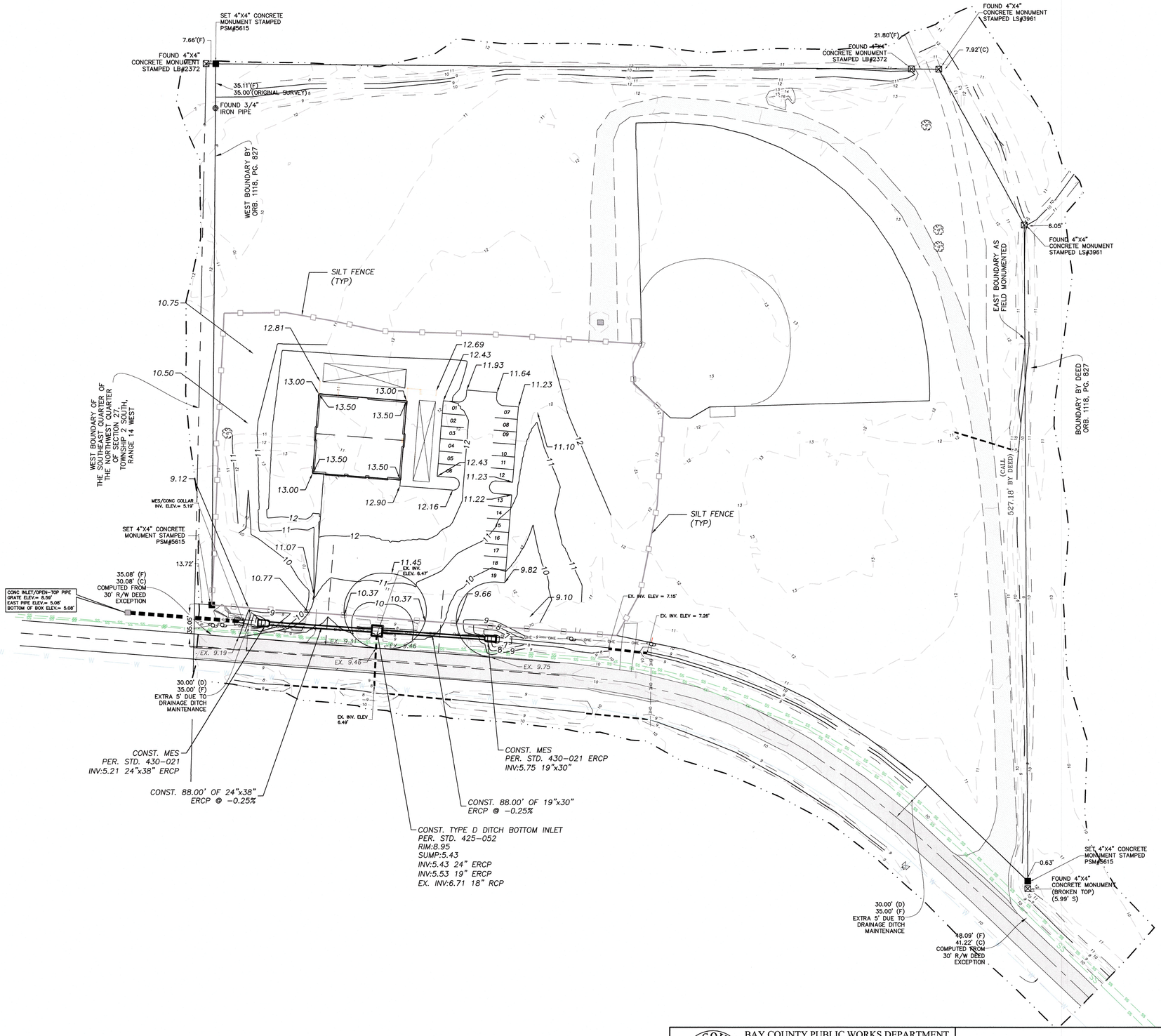
SOUTHPORT FIRE STATION RELOCATION
BAY COUTNY
FLORIDA

DEMOLITION PLAN AND EROSION CONTROL PLAN

SCALE AS SHOWN	DESIGNED BY MM	DRAWN BY WT	SHEET NO. 02	PROJECT # N/A
FIELD BOOK NA	CHECKED BY MM	DATE DRAWN 5/20/25	OF 04	PAGE # N/A

Bar is one inch on original drawing 0 1" if not, adjust scale accordingly.

Drawing name: S:\C3D\76xx\76XX SOUTHPORT FIRE STATION\Production\SOUTH PORT FIRE STATION LAYOUT.dwg ~ Date plotted: May 18, 2026 – 3:35pm



EXISTING IMPERVIOUS AREAS TO BE REMOVED

01 AREA	354 SF
02 AREA	1,072 SF
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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

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.*

NATALJA LITHWAY LICENSE No. 62402 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

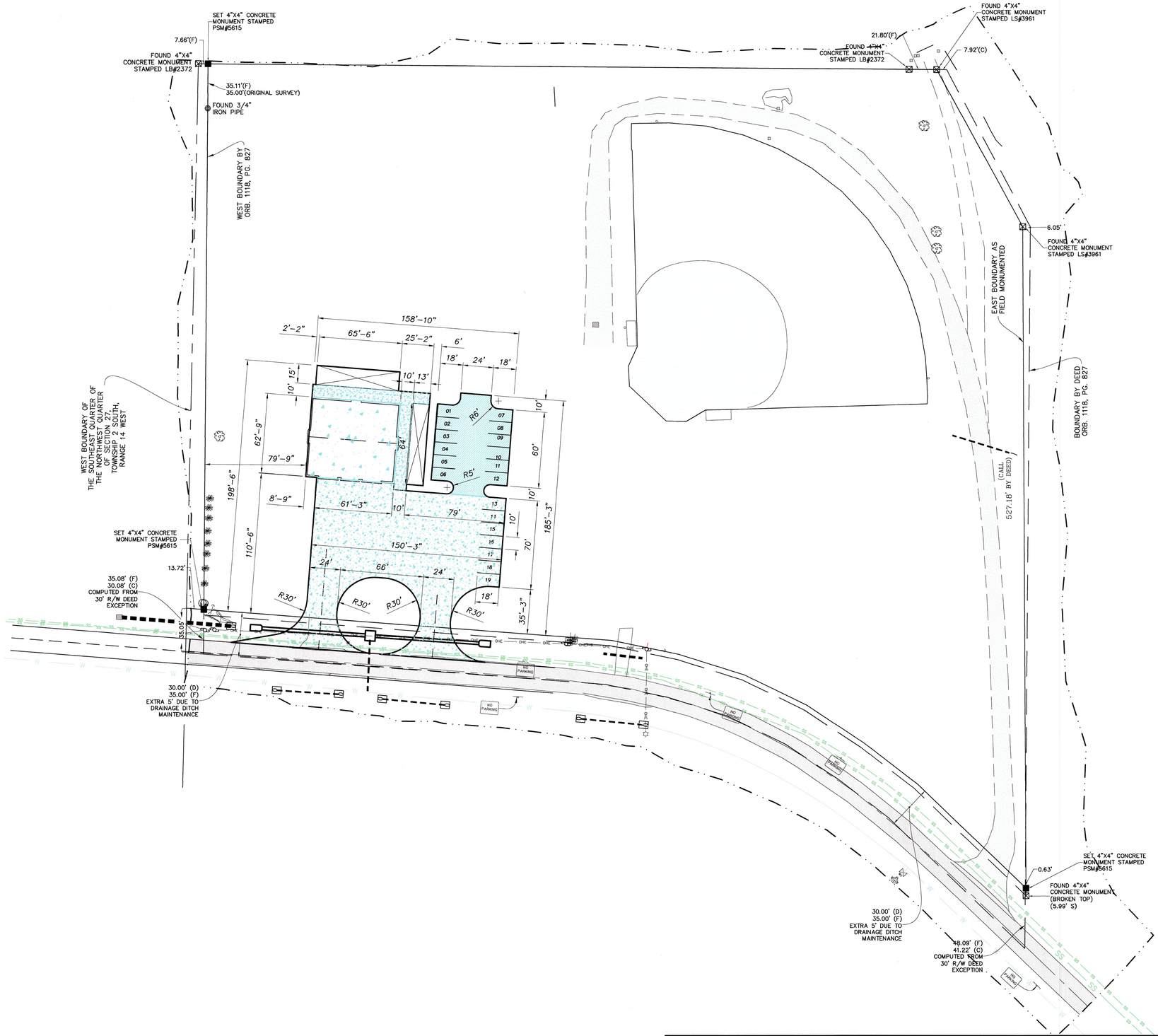
SOUTHPORT FIRE STATION RELOCATION
BAY COUTNY
FLORIDA

SITE GRADING PLAN AND EROSION CONTROL PLAN

SCALE AS SHOWN	DESIGNED BY MM	DRAWN BY WT	SHEET NO. 03	PROJECT # N/A
FIELD BOOK NA	CHECKED BY MM	DATE DRAWN 5/20/25	OF 04	PAGE # N/A

Bar is one inch on original drawing 0 1" if not, adjust scale accordingly.

Drawing name: S:\C3D\76xx\76XX SOUTHPORT FIRE STATION\Production\SOUTH PORT FIRE STATION LAYOUT.dwg ~ Date plotted: May 18, 2026 - 4:04pm



NATALJA LITHWAY LICENSE No. 62402 STATE OF FLORIDA PROFESSIONAL ENGINEER

5/11/2026

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

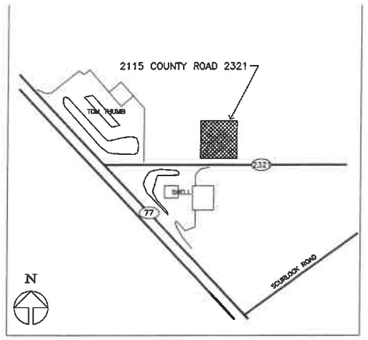
SITE LAYOUT

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

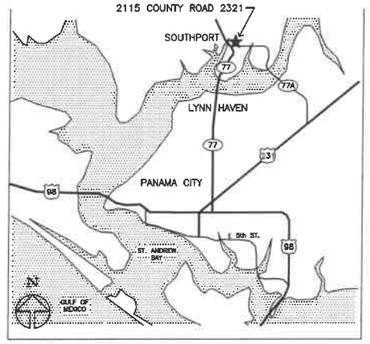
Bar is one inch on original drawing 0 1" If not, adjust scale accordingly.

Drawing name: S:\C3D\76xx\76XX SOUTHPORT FIRE STATION\Production\SOUTH PORT FIRE STATION LAYOUT.dwg ~ Date plotted: May 18, 2026 - 3:36pm

KEY PLAN



VICINITY MAP



PROJECT NAME

MODULAR FIRE RESCUE STATION
SOUTHPORT
70x62.5 SPRUNG BUILDING

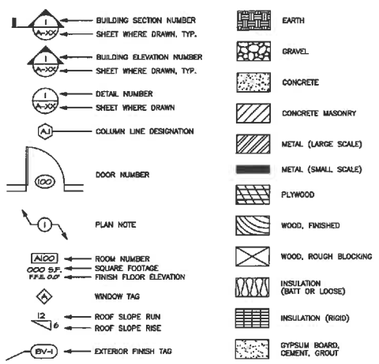
2115 HWY 2321
BAY COUNTY
PANAMA CITY, FLORIDA 32401

AS-BUILT

ABBREVIATIONS

A.B. ANCHOR BOLT
ACOUST ACOUSTICAL
A.F.F. ABOVE FINISH FLOOR
ALT. ALTERNATE
ALUM. ALUMINUM
APPROX. APPROXIMATELY
ARCH. ARCHITECTURAL
BD. BOARD
BLDG. BUILDING
BLK. BLOCK
BLKG. BLOCKING
BM. BEAM
B.O.S. BOTTOM OF STEEL
BS BOTH SIDES
BTM. BOTTOM
B.U.R. BUILT UP ROOF
C.I. CAST IRON
C.J. CONTROL JOINT
C.T. CERAMIC TILE
CAB. CABINET
CEM. CEMENT(ITIOUS)
CG CORNER GUARD
CL. CLEAR
CLG. CEILING
CMU. CONCRETE MASONRY UNIT
CO CLEAN OUT
COL. COLUMN
CONC. CONCRETE
CONST. CONSTRUCTION
CONT. CONTINUOUS
CONTR. CONTRACTOR
CPT. CARPET
CR CARTRIAL, CHARRIAL
CSK COUNTERSUNK
D DEPTH; DEEP
DBL. DOUBLE
DEMO DEMOLITION
DET. DETAIL
DIA. DIAMETER
DN. DOWN
DIM. DIMENSION
D.O. DOOR OPENING
D.S. DOWN SPOUT
DWG. DRAWING
E EAST
EA. EACH
E.B. EXPANSION BOLT
EIFS EXTERIOR INSULATION FINISH SYSTEM
E.J. EXPANSION JOINT
EL. ELEVATION (FLOOR)
ELEV. ELEVATION
ELEC. ELECTRICAL
EQ. EQUAL
EQUIP. EQUIPMENT
E/W EACH WAY
EWC ELECTRIC WATER COOLER
EXIST. EXISTING
EXP. EXPOSED (CONSTRUCTION)
EXT. EXTERIOR
F.D. FLOOR DRAIN
F/O FACE OF
FIN. FINISH
FL. FLOOR
FDN. FOUNDATION
F.S. FLOOR SINK
FT FOOT, FEET
FTG. FOOTING
G.C. GENERAL CONTRACTOR
GA. GAUGE; GYPSUM ASSOC.
GALV. GALVANIZED
GEN. GENERAL
GL. GLASS/GLAZING; GLUE
GYP. BD. GYPSUM BOARD
H HIGH
H.B. HOSE BIBB
HC HANDICAPPED
HDW. HARDWARE
H.M. HOLLOW METAL
HORIZ. HORIZONTAL
H.P. HIGH POINT
HT. HEIGHT
H.V.A.C. HEATING VENTILATING & AIR CONDITIONING
ID INSIDE DIAMETER
INCL. INSULATION
INT. INTERIOR, INTERMEDIATE
J.V. JOB VERIFY
JT JOINT
LAM. LAMINATED
LF LINEAR FEET
LG. LONG , LARGE
LLH LONG LEG HORIZONTAL
LLV LONG LEG VERTICAL
LOC. LOCATION
L.P. LOW POINT
MAS. MASONRY
MATL. MATERIAL
MAX. MAXIMUM
MECH. MECHANICAL
MED. MEDIUM
MFR. MANUFACTURER
MIN. MINIMUM
MISC. MISCELLANEOUS
M.D. MASONRY OPEING
M.R.G.B MOISTURE RESISTANT GYPSUM BOARD
MTD. MOUNTED
MTL. METAL
N NORTH
N.I.C. NOT IN CONTRACT
NO., # NUMBER
NTS NOT TO SCALE
O/A OVERALL
O.F.D. OVERFLOW DRAIN
O/H OVERHEAD
O/O OUT TO OUT
OC ON CENTER
OD OUTSIDE DIAMETER
OPNG. OPENING
OPP OPPOSITE
P PAINT
PC. PIECE
PL. PLATE
PLAS. PLASTER, PLASTIC
PLYWD. PLYWOOD
PTD. PAINTED
QUAN QUANTITY
R RADIUS; RISER
R.D. ROOF DRAIN
REINF. REINFORCING
REQD. REQUIRED
RESIL. RESILIENT
REV REVISION, REVERSE
RM. ROOM
R.O. ROUGH OPENING
RQMTS. REQUIREMENTS
RTU ROOF TOP UNIT
R.W.L. RAIN WATER LEADER
SCHED. SCHEDULE
SF SQUARE FEET, STOREFRONT
SHT. SHEET
SIM. SIMILAR
S.M.S. SHEET METAL SCREW
SPECS SPECIFICATIONS
SQ SQUARE
S.S. SERVICE SINK, STAINLESS STEEL
STD. STANDARD
STL STEEL
STOR STORAGE
STRUCT. STRUCTURAL
SUSP. SUSPENDED
T TREAD
T/B TOP & BOTTOM
TEL TELEPHONE
T/O TOP OF
T.O.M. TOP OF MASONRY
T.O.S. TOP OF STEEL
TH THICK(NESS)
TYP. TYPICAL
UL UNDERWRITERS LABORATORY
U.N.O. UNLESS OTHERWISE NOTED
V VOLT
VCT. VINYL COMPOSITION TILE
W WIDTH; WASTE; WEST; WIRE
W/ WITH
W.C. WATER CLOSET
WD. WOOD
WT WEIGHT
W/H WATER HEATER
W/I WITHIN
W/O WITHOUT
WWF. WELDED WIRE FABRIC

SYMBOLS



PROJECT MANAGER

ADDRESS:

CONTACT:
RICK NELSON
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FIRE DEPARTMENT - BAY COUNTY

ADDRESS:

CONTACT:
PH. (850) 872-3055

GENERAL CONTRACTOR

ADDRESS:
PANHANDLE POWER

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

ELECTRIC SERVICE

ADDRESS:
GULF POWER CO.

CONTACT:
PH. (800) 225-5797

ENGINEER OF RECORD

ADDRESS:

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FLORIDA PRODUCT APPROVAL CHECKLIST- [FBC 2017]

GENERAL NOTES

1. 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.
2. All site work and landscaping shall be established and designed by others (than the architect).
3. 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.
4. 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.
5. In the event a discrepancy is found in the contract documents the owner and architect shall be notified immediately.
6. Contractor shall verify all dimensions in the field and notify the architect of any discrepancy from to construction.
7. Contractor shall verify all measurements at site and be responsible for the accuracy and correctness of the same.
8. Contractor shall coordinate his/her work with all other trades. Notify owner and architect of any discrepancies prior to construction.
9. 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.
10. Store materials in spaces designated by owner.
11. Remove rubbish from premises as often as necessary or as directed.
12. All work and equipment shall be cleaned to the satisfaction of the owner before turning over to owner.
13. Shop drawings shall be submitted to the architect and/or owner for approval prior to ordering and installation of any equipment.
14. 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.
15. There shall be no deviations from specifications and/or drawings without the written approval of the owner, architect and/or engineer.
16. The owner shall employ, as required by governing authorities an 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.
17. Gypsum board installation shall be in conformance with the Gypsum Association recommended processes for thickness, nailing, taping, and stud spacing.
18. All framing to be in conformance with the National Forrest Product "Manuals for house framing" and all applicable building codes.
19. All lumber shall be grade marked.
20. Refer to electrical and landscape drawing for exterior building lighting
21. Refer to civil drawings for location of sidewalks and details.
22. Refer to civil and landscape drawings for all details.
23. Refer to civil drawings for dimensional plan and grading.
24. Refer to civil drawings for fire hydrant location.
25. Refer to electrical and landscape drawings for transformer locations (to be verified with local utilities service).
26. Refer to civil drawings for curb outs.
27. All material finish and color selections shall be approved by the owner prior to installation.
28. 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.
29. 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.
30. 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.
31. 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.
32. 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.
33. All materials shall be new and shall be installed in strict conformance with manufacturing instructions and/or recommendations, unless noted otherwise in the drawings.
34. 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.
35. 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.
36. 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.
37. All existing trees as noted on civil plans shall be protected from damage during construction by boxing or other owner approved means.
38. Provide galvanized metal anchor for wood posts bearing a concrete slab.

AS-BUILT

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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STATE OF FLORIDA
WILLIAM ANDREW POPE
7681
REGISTERED ARCHITECT

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

DATE:
NO. OF PAGES:

SHEET TITLE

TITLE SHEET
& GENERAL NOTES

DATE
JAN
23
2020

REVISIONS

DATE	REMARKS

T-1
AS-BUILT
SHEET NO.

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

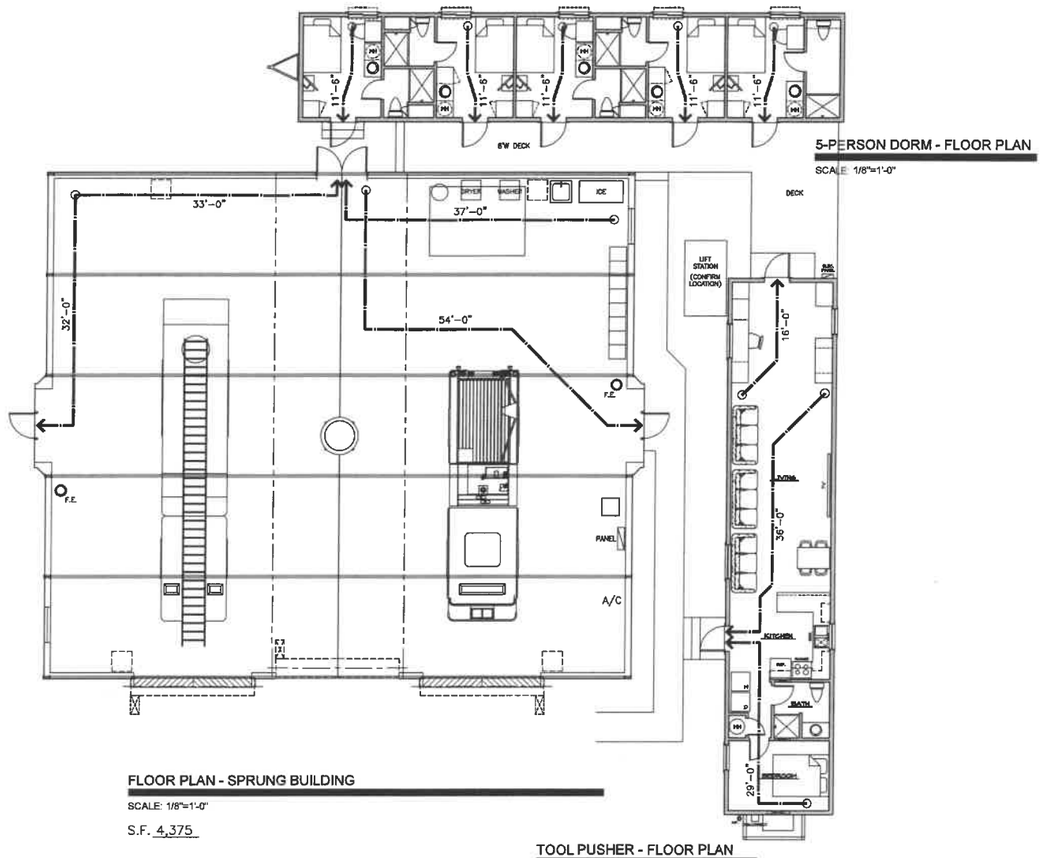
REQUIREMENTS	
CATEGORY	STATUS / REQUIREMENTS
OCCUPANCY GROUP	MANUFACTURED BUILDINGS
OCCUPANT LOAD	100 S.F. PER PERSON
CONSTRUCTION TYPE	TYPE V–A (UNSPRINKLED)
HEIGHT LIMITATION TABLE	TABLE 503 F.B.C.
AREA LIMITATION	9,500 S.F. / FLOOR
EXTERIOR WALLS / BEARING	STRUCTURAL FRAME
FIRE / PARTY WALLS	SINGLE 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')



5-PERSON DORM - FLOOR PLAN

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

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"

AS-BUILT

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STATE OF FLORIDA · WILLIAM ANDREW POPE · 7681 · REGISTERED ARCHITECT

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
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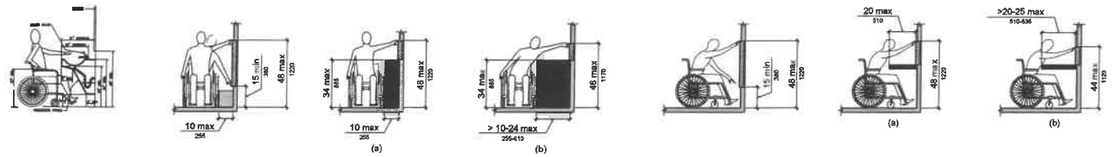
CODE REVIEW
& GENERAL NOTES

DATE
JAN
23
2020

REVISIONS

DATE	REMARKS

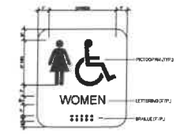
T-2
AS-BUILT
SHEET NO.



(a) (b)

REACH RANGES

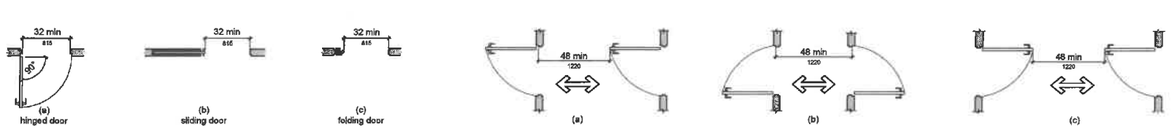
SCALE: 1/4"=1'-0"



ACCESSIBILITY SIGNAGE

NO SCALE

1. ALL PERMANENT ROOM IDENTIFICATION SIGNS SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT. SIGNS SHALL BE ADHERED TO SUPPORTING SURFACE BY ADHESIVE, SELECTED FOR HIGH STRENGTH AND DURABILITY OF BOND BETWEEN SIGN BACKING ND SUPPORTING SURFACE MATERIAL. SIGN BACKGROUND SHALL BE MINIMUM 1/8" THICK ACRYLIC PLATE. BACKGROUND COLOR SHALL BE SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE OF STANDARD AND CUSTOM COLORS, ND SHALL PROVIDE LEAST 70% CONTRAST WITH THE WHITE FOREGROUND LETTERS. BACKGROUND FINISH SHALL BE NON-GLARE.
2. ACRYLIC LETTERING SHALL BE RAISED AT LEAST 1/32", AND MAY BE ACHIEVED THROUGH SURFACE APPLICATION, ETCHING OR INJECTION MOLDING. ALL LETTERS SHALL BE UPPER CASE. LETTER SIZE SHALL BE INDICATED, BUT IN NO CASE LESS THAN 5/8" HIGH OR GREATER THAN 2" HIGH. TYPE STYLE SHELL BE HELVETICA MEDIUM, AND COLOR SHALL BE NON-GLARE WHITE. WHERE MORE THAN ONE ROW OF LETTERING IS REQUIRED. THE LEADING (BLAND SPACE) BETWEEN ROWS SHALL BE APPROXIMATELY 80% OF THE HEIGHT OF THE LETTERING. GRADE 2 BRAILLE REQUIRED, COLOR TO BE THE SAME AS SIGN BACKGROUND.
3. INTERNATIONAL PICTOGRAM SYMBOLS, WHERE REQUIRED, SHALL BE RAISED AT LEAST 1/32" (SIMILAR TO LETTERS). ND SHALL HAVE A MINIMUM 6" HEIGHT VERTICAL FIELD. THE EQUIVALENT VERBAL DESCRIPTION (TEXT) OF THE PICTOGRAM SHALL BE PLACED DIRECTLY BELOW THE PICTOGRAM, AND SHALL BE ACCOMPANIED BY GRADE 3 BRAILLE, PICTOGRAMS SHALL BE REQUIRED FOR THE FOLLOWING ROOM SIGNS: MEN (MALE ACCESSIBLE RESTROOM), WOMEN (FEMALE ACCESSIBLE ROOM)

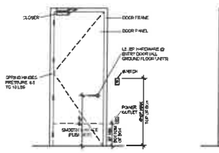


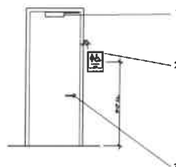
(a) hinged door (b) sliding door (c) folding door

(a) (b) (c)

DOORWAY CLEAR WIDTHS

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

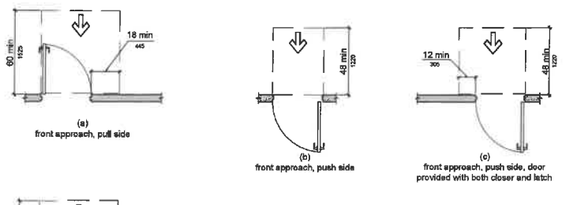




1. DOOR CLOSERS SWEEP PERIOD SHALL BE ADJUSTED SO HAT FROM AN OPEN POSITION OF 70', THE DOOR WILL TAKE A LEAST 5 SECONDS TO MOVE TO A POINT 3" FROM THE LATCH, MEASURED TO THE LEADING EDGE OF THE DOOR. JUST FOR 5 LB. MAX FORCE.
2. IN ACCORDANCE WITH ADA REQUIREMENTS, ALL PERMANENT ROOM IDENTIFICATION SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR, AND SHALL BE MOUNTED WITH THE CENTERLINE OF THE SIGN AT 5'-0" A.F.F. MOUNTING LOCATION FOR SIGN SHALL BE SUCH THAT A PERSON MAY APPROACH WITHIN 3" OF THE SIGN WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING IN HE SWING OF HE DOOR. IF THERE IS INSUFFICIENT WALL SPACE ADJACENT TO THE LATCH SIDE OF THE DOOR, THE SIGN SHALL BE MOUNTED ON THE NEAREST ADJACENT WALL. DA SIGNAGE SHALL COMPLY WITH THE DETAILS PROVIDED ABOVE.
3. DOOR HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE. HARDWARE REQUIRED FOR ACCESSIBLE DOOR PASSAGE SHALL BE MOUNTED T 36"(in.) ABOVE FINISH FLOOR. PROVIDE LEVER HARDWARE.

TYPICAL MOUNTING HEIGHTS

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



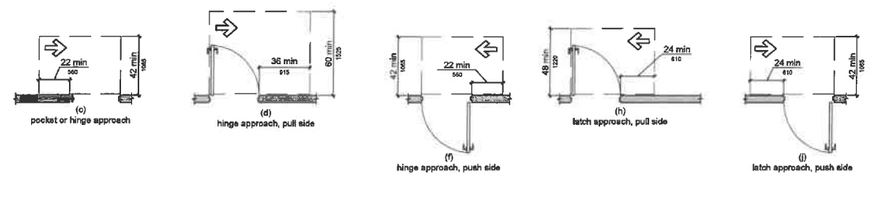
(a) front approach, pull side (b) front approach, push side (c) front approach, push side, door provided with both closer and latch

(a) pull side (b) push side (c) push side, door provided with both closer and latch

(a) front approach

MANEUVERING CLEARANCES AT OPENINGS - FRONT APPROACH

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



(c) pocket or hinge approach (d) hinge approach, pull side (f) hinge approach, push side (h) latch approach, pull side (j) latch approach, push side

(d) stop or latch approach (e) hinge approach, pull side (g) hinge approach, push side, door provided with both closer and latch (i) latch approach, pull side, door provided with closer (k) latch approach, push side, door provided with closer

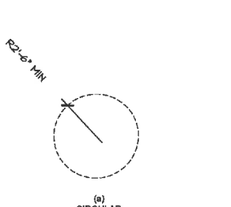
(b) side approach

MANEUVERING CLEARANCES AT OPENINGS - SIDE APPROACH

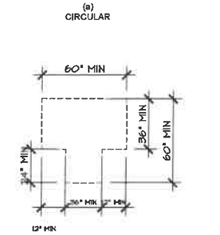
SCALE: 1/4"=1'-0"

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#f.
2. COMPLY WITH THE FOLLOWING MAXIMUM OPENING-FORCE REQUIREMENTS:
   2.1. INTERIOR, NON-FIRE-RATED HINGED DOORS: 5#f APPLIED PERPENDICULAR TO DOOR.
   2.2. SLIDING OF FOLDING DOORS: 5#f APPLIED PARALLEL TO DOOR AT LATCH
   2.3. FIRE DOORS: MINIMUM OPENING FORCE ALLOWABLE BY AUTHORITIES HAVING JURISDICTION
3. BEVEL RAISED THRESHOLDS WITH A SLOPE OF NOT ORE THAN 1:2. PROVIDE THRESHOLDS NOT ORE THAN 1/2 INCH HIGH.
4. ADJUST DOOR CLOSER SWEEP PERIODS SO THAT, FROM AN OPEN POSITION OF 70 DEGREES, THE DOOR WILL AKE T EAST 3 SECONDS TO MOVE TO A POINT 3 INCHES FROM THE LATCH, MEASURED TO HE 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 HEIGHT: 1/4"-1/2"



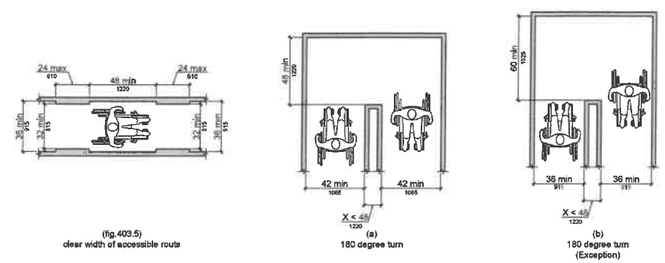
(a) CIRCULAR



(b) T-SHAPED

SIZE OF TURNING SPACE

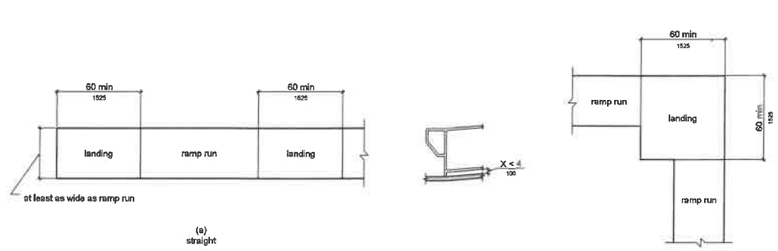
SCALE: 1/4"=1'-0"



(fig.403.5) clear width of accessible route (a) 180 degree turn (b) 180 degree turn (Exception)

CLEAR SPACE OF AN ACCESSIBLE ROUTE

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



(a) straight (b) change in direction

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

AS-BUILT

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STATE OF FLORIDA · WILLIAM ANDREW POPE · 7681 · REGISTERED ARCHITECT

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

DATE:
NO. OF PAGES:

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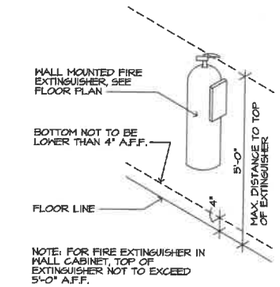
A.D.A. ACCESSIBLE DETAILS

DATE
JAN 23 2020

REVISIONS

DATE	REMARKS

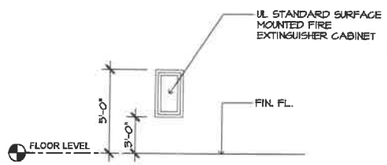
T-3
AS-BUILT
SHEET NO.



(9) REQUIRED. SEE PLAN FOR LOCATIONS.

① FIRE EXTINGUISHER DETAIL (F.E.)

SCALE: NONE



④ 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 RATING
	FIRE EXTINGUISHER CABINET (F.E.C.)
	FIRE EXTINGUISHER, WALL MOUNTED
	EMERGENCY LIGHT, LED
	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 DOOR
	45 MIN DOOR
	60 MIN DOOR
	90 MIN DOOR
	OCCUPANCY SYMBOL
	CARBON MONOXIDE DETECTOR
	SMOKE DETECTOR

FE CALCULATION TABLE:

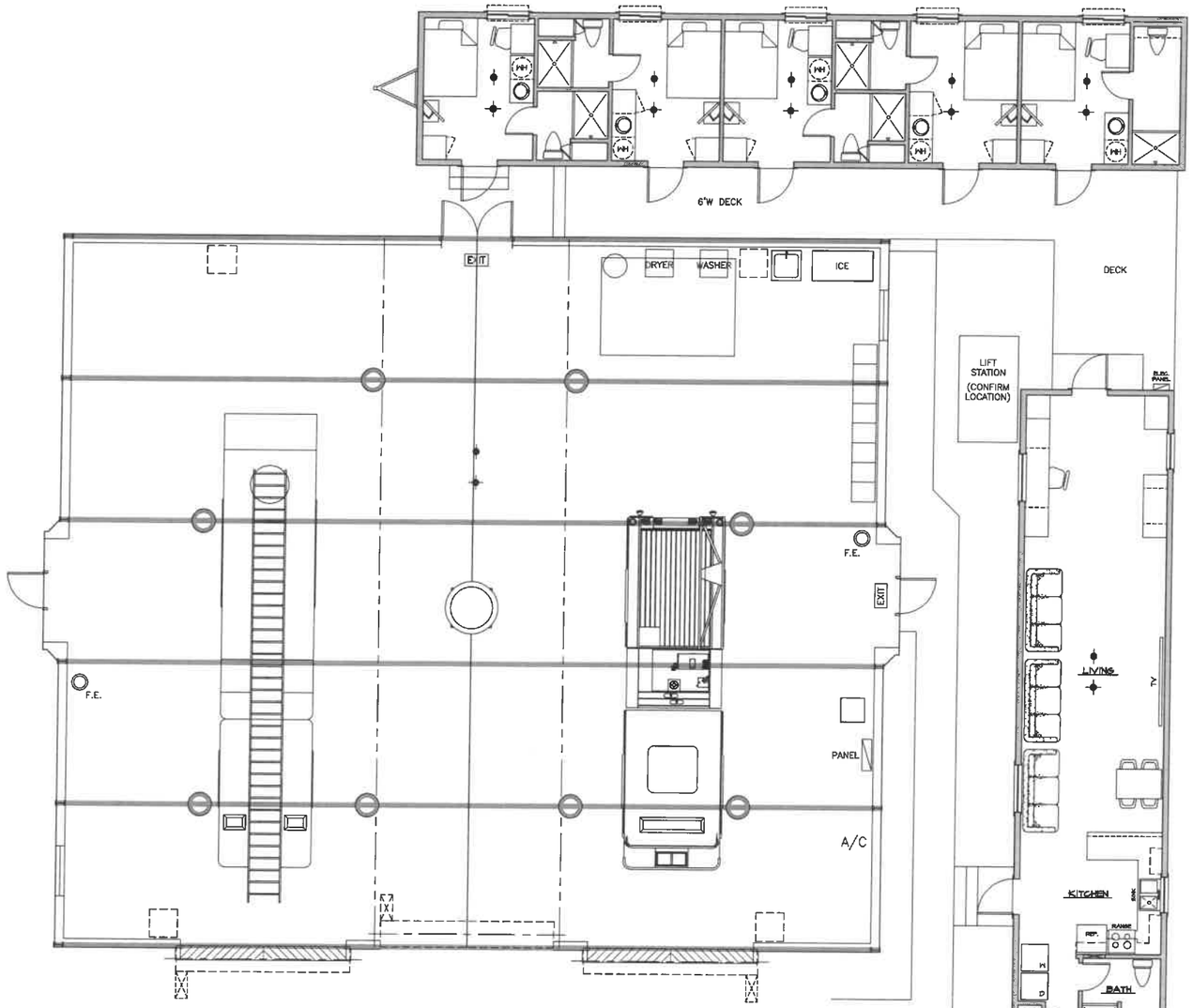
BUILDING NOS.	AREA/FL	EXTINGUISHER TYPE
SPRUNG BLDG. 60x60	3,600 SF	4 - 2A:5B
MODULAR 13X48	624 SF	2 - 2A:5B
MODULAR 13X58	754 SF	2 - 2A:5B

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

N

5-PERSON DORM - FLOOR PLAN

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



N

FLOOR PLAN - SPRUNG BUILDING

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

N

TOOL PUSHER - FLOOR PLAN

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

AS-BUILT

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STATE OF FLORIDA
WILLIAM ANDREW POPE
REGISTERED ARCHITECT
7681

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

DATE:
NO. OF PAGES:

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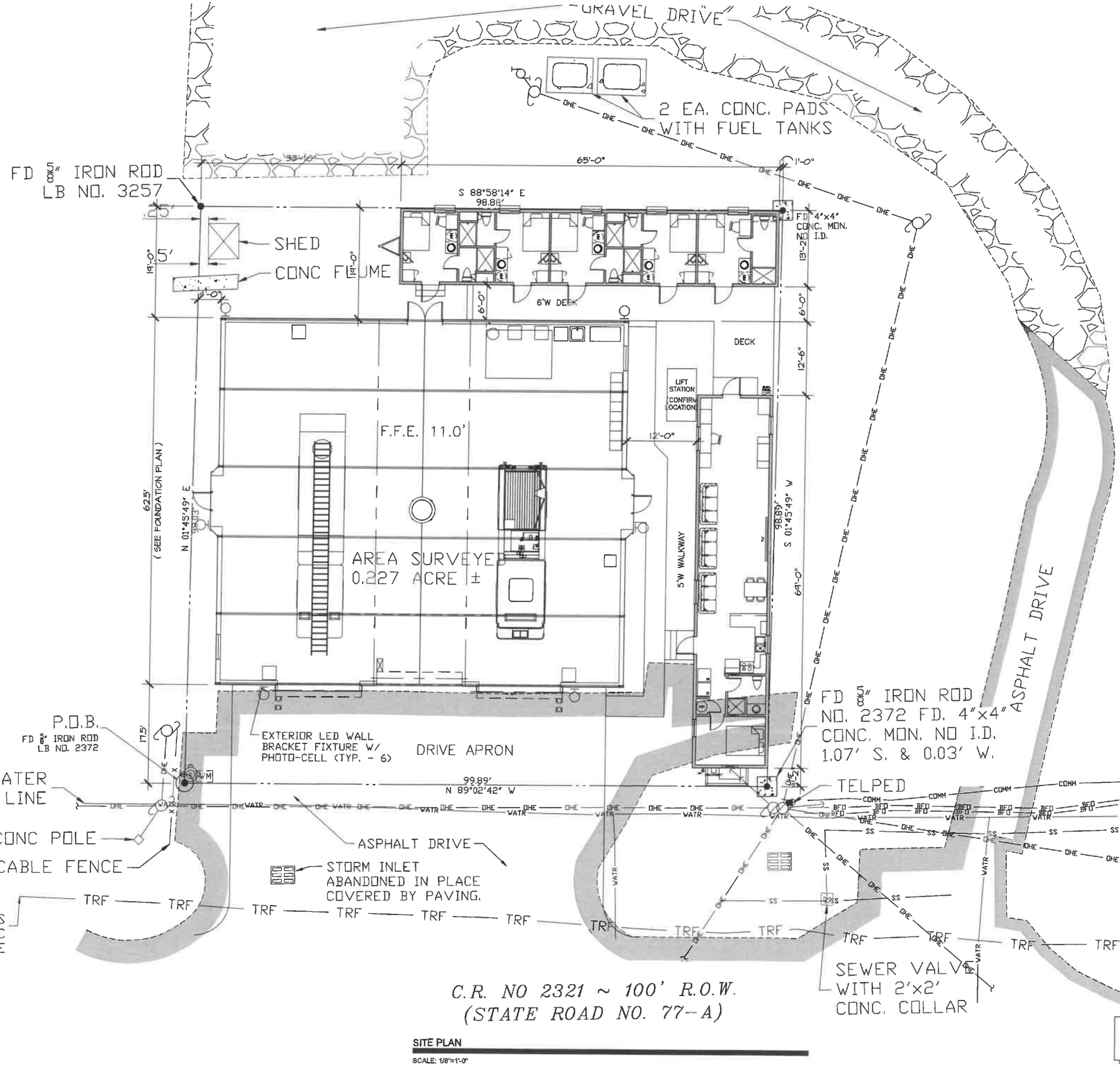
F.E. FLOOR PLAN, F.E. CALCULATION TABLE

DATE
JAN 23 2020

REVISIONS

DATE	REMARKS

T-4
AS-BUILT
SHEET NO.



SITE PLAN

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

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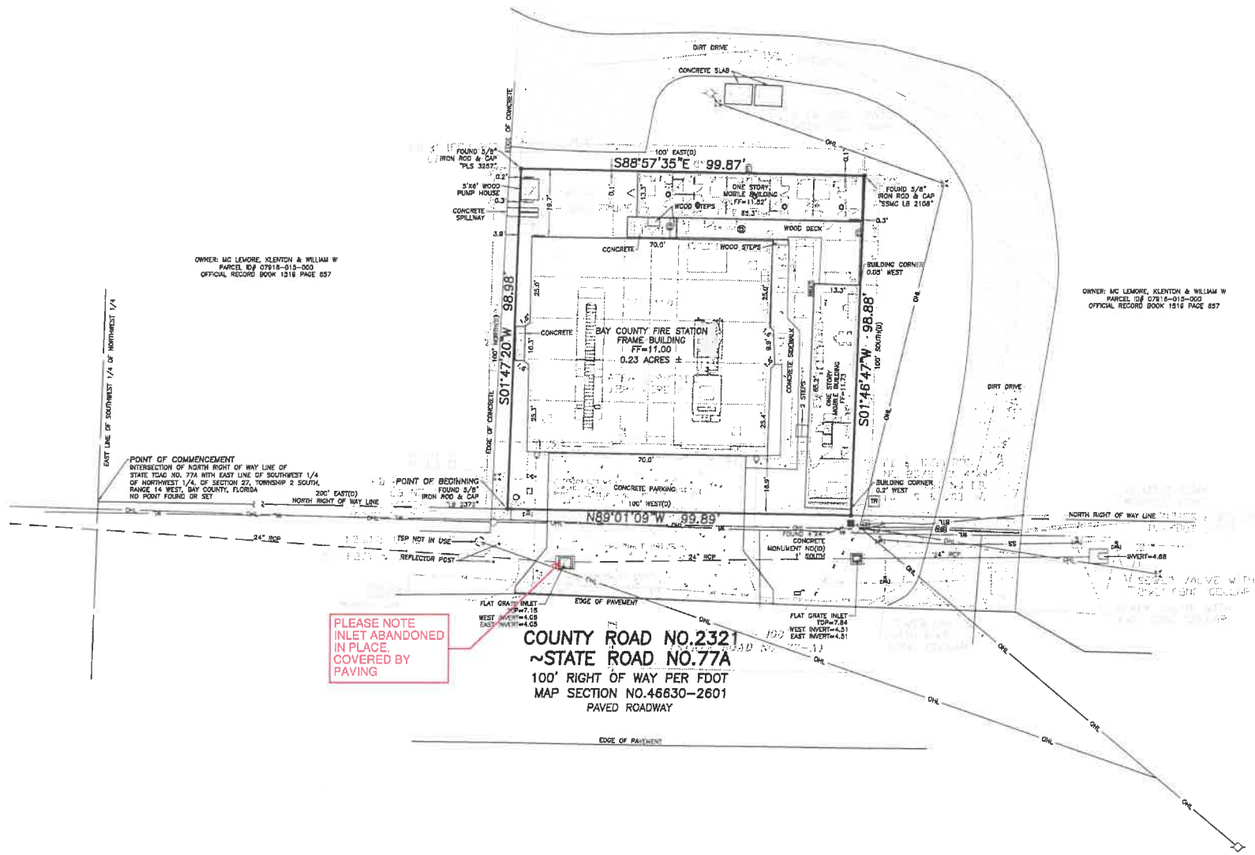
SITE PLAN

DATE
JAN 23 2020

REVISIONS

DATE	REMARKS

X-1
AS-BUILT
SHEET NO.



1" = 20'
GRAPHIC SCALE
0 10' 20' 40'

LEGEND & ABBREVIATIONS:

▯	= TELEPHONE PEDESTAL	◌	= TRAFFIC SIGNAL SPAN POLE
■	= CONCRETE MONUMENT	▫	= WATER METER
◍	= ELECTRIC FIXTURE	—OHL—	= OVERHEAD UTILITY LINE
○	= HOSE BIB	(D)	= DEED DIMENSION
⌣	= GUY ANCHOR	RLS	= PROFESSIONAL LAND SURVEYOR
●	= FOUND IRON ROD	NAD	= NORTH AMERICAN DATUM
⁜	= LIGHT POLE	SSMC	= SOUTHEASTERN SURVEYING & MAPPING CORPORATION
◇	= WOOD UTILITY POLE	—2 2—	= LINE DRAWN TO BROKEN SCALE
•	= POST/BOLLARD	RCP	= REINFORCED CONCRETE PIPE
SV	= SEWER VALVE		
▣	= FLAT GRATE INLET		

DESCRIPTION (OFFICIAL RECORD BOOK 3322, PAGE 2074):

BEGIN AT A POINT 200 FEET EAST OF THE POINT WHERE THE NORTH RIGHT-OF-WAY LINE OF STATE ROAD 77-A INTERSECTS WITH THE EAST LINE OF THE SOUTHWEST QUARTER OF NORTHWEST QUARTER (SW1/4 NW1/4) OF SECTION 27, TOWNSHIP 2 SOUTH, RANGE 14 WEST; THENCE NORTH 100 FEET WITH SAID EAST LINE; THENCE EAST 100 FEET PARALLEL WITH SAID RIGHT-OF-WAY LINE; THENCE SOUTH 100 FEET TO SAID RIGHT-OF-WAY LINE; THENCE WEST 100 FEET WITH SAID RIGHT-OF-WAY LINE TO THE POINT OF BEGINNING.

SURVEYOR'S REPORT:

1. UTILITY LOCATIONS IF SHOWN HEREON ARE BASED ON FIELD LOCATION OF MARKINGS BY UTILITY COMPANY REPRESENTATIVES, SURFACE FEATURES AND CONSTRUCTION PLANS FURNISHED TO THE SURVEYOR. ADDITIONAL SUB-SURFACE UTILITIES MAY EXIST THAT HAVE NOT BEEN FIELD LOCATED.
2. EASEMENTS OR RIGHTS OF WAY THAT APPEAR ON RECORDED PLANS OR THAT HAVE BEEN FURNISHED TO THE SURVEYOR BY OTHERS HAVE BEEN INCORPORATED INTO THIS DRAWING WITH APPROPRIATE NOTATION. OTHER EASEMENTS MAY BE DISCOVERED BY A SEARCH OF THE PUBLIC RECORDS.
3. MINIMUM HORIZONTAL ACCURACY FOR THIS SURVEY IS IN ACCORDANCE WITH THE STANDARDS OF PRACTICE SET FORTH BY THE BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17 REQUIREMENTS OF FLORIDA ADMINISTRATION CODE. THE MAP AND MEASUREMENT METHODS USED FOR THIS SURVEY MEET OR EXCEED THIS REQUIREMENT. THE DIMENSIONS SHOWN HEREON ARE IN UNITED STATES STANDARD SURVEY FEET AND DECIMALS THEREOF.
4. THIS SURVEY DOES NOT DETERMINE OWNERSHIP OF THE LANDS SHOWN HEREON.
5. UNDERGROUND FOUNDATIONS HAVE NOT BEEN LOCATED.
6. SURVEY MAP AND REPORT OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
7. FEATURES SHOWN BY SYMBOL AS INDICATED IN THE LEGEND ARE NOT TO SCALE.
8. ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
9. BEARINGS SHOWN HEREON ARE GRID AND ARE BASED ON FLORIDA DEPARTMENT OF TRANSPORTATION'S "FLORIDA PERMANENT REFERENCE NETWORK" GPS CONTINUOUSLY OPERATING REFERENCE STATIONS "PNMA". THE RELATIVE BEARING IS N89°01'09"W ALONG THE MONUMENT NORTHERN RIGHT OF WAY LINE OF STATE ROAD 77A. BEARINGS AND DISTANCES SHOWN HEREON ARE MEASURED UNLESS OTHERWISE NOTED.
10. THIS SURVEY WAS PERFORMED WITHOUT BENEFIT OF AN ABSTRACT, TITLE SEARCH, TITLE OPINION OR TITLE COMMITMENT. A TITLE SEARCH MAY REVEAL ADDITIONAL INFORMATION AFFECTING THE PARCEL AS SHOWN.
11. UNLESS SHOWN, ONLY THOSE VISIBLE FEATURES FOUND WITHIN THE BOUNDARIES OF THIS SURVEY OR IN THE IMMEDIATE VICINITY OF THE ABOVE DESCRIBED PARCEL BOUNDARY HAVE BEEN LOCATED.
12. RIGHT OF WAY INFORMATION SHOWN HEREON WAS DETERMINED BY FDOT RIGHT OF WAY MAP SECTION #46630-2601.
13. THE ABOVE DESCRIBED PARCEL CONTAINS 0.23 ACRES, MORE OR LESS.
14. ADJACENT PROPERTY INFORMATION SHOWN HEREON, THAT WAS NOT FURNISHED TO THIS SURVEYOR, WAS COMPILED USING LATEST AVAILABLE DATA. NO ATTEMPT WAS MADE BY THIS FIRM TO VERIFY ITS ACCURACY.
15. THIS IS AN AS-BUILT SURVEY OF THE NEWLY CONSTRUCTED BAY COUNTY FIRE STATION AND SURROUNDING AREA.

NOTICE OF LIABILITY:

THIS SURVEY IS CERTIFIED TO THOSE INDIVIDUALS SHOWN ON THE FACE THEREOF. ANY OTHER USE, BENEFIT OR RELIANCE BY ANY OTHER PARTY IS STRICTLY PROHIBITED AND RESTRICTED. SURVEYOR IS RESPONSIBLE ONLY TO THOSE CERTIFIED AND HEREBY DISCLAIMS ANY OTHER LIABILITY AND HEREBY RESTRICTS THE RIGHTS OF ANY OTHER INDIVIDUAL OR FIRM TO USE THIS SURVEY, WITHOUT EXPRESS WRITTEN CONSENT OF THE SURVEYOR.

SOUTHEASTERN SURVEYING AND MAPPING CORPORATION
1139 Highway 98
Chipley, Florida 32428
(850) 638-0780
e-mail: information@semcorp.com
Certification Number LB2108

THOMAS E. MEAD
Florida Land Surveyor and Mapper
License No. 5824

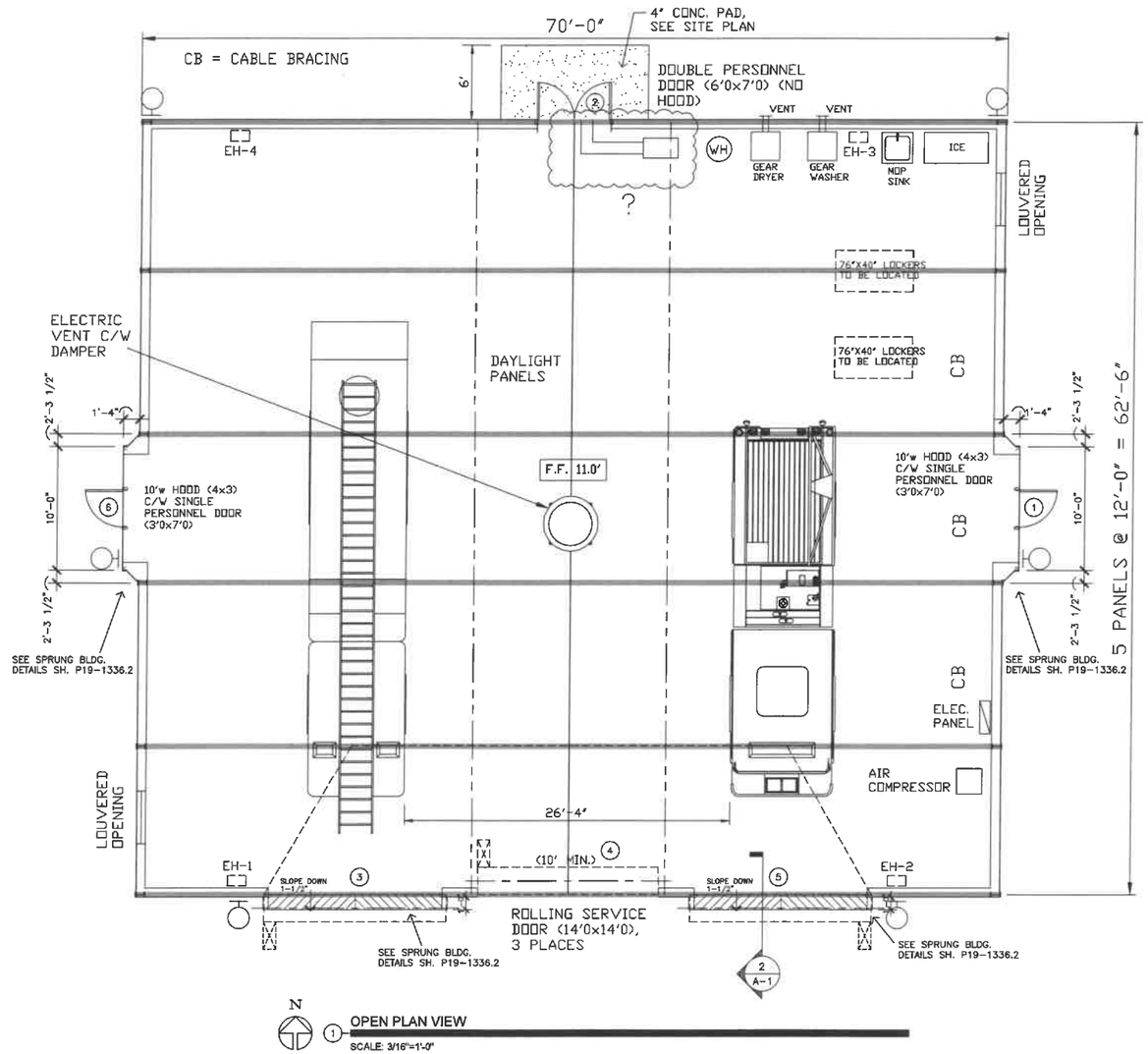
BY	REVISION	DATE

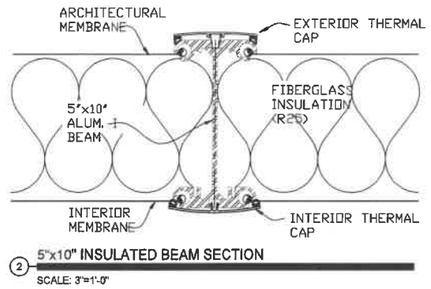
SHEET NUMBER 1 OF 1
NOT VALID WITHOUT SHEETS 1 THROUGH 1

AS-BUILT SURVEY
Project: 2115 HIGHWAY 2321
PANAMA CITY, FLORIDA
Field Date: 06-12-2020
Drawn By: KMA
Scale: 1" = 20'

Certified to:
ROGUE INDUSTRIES

DRAWING NUMBER
63988002C
SHEET NUMBER
1 OF 1





AS-BUILT

W• ARCHITECT, P.A.
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STATE OF FLORIDA
WILLIAM ANDREW POPE
7681
REGISTERED ARCHITECT

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

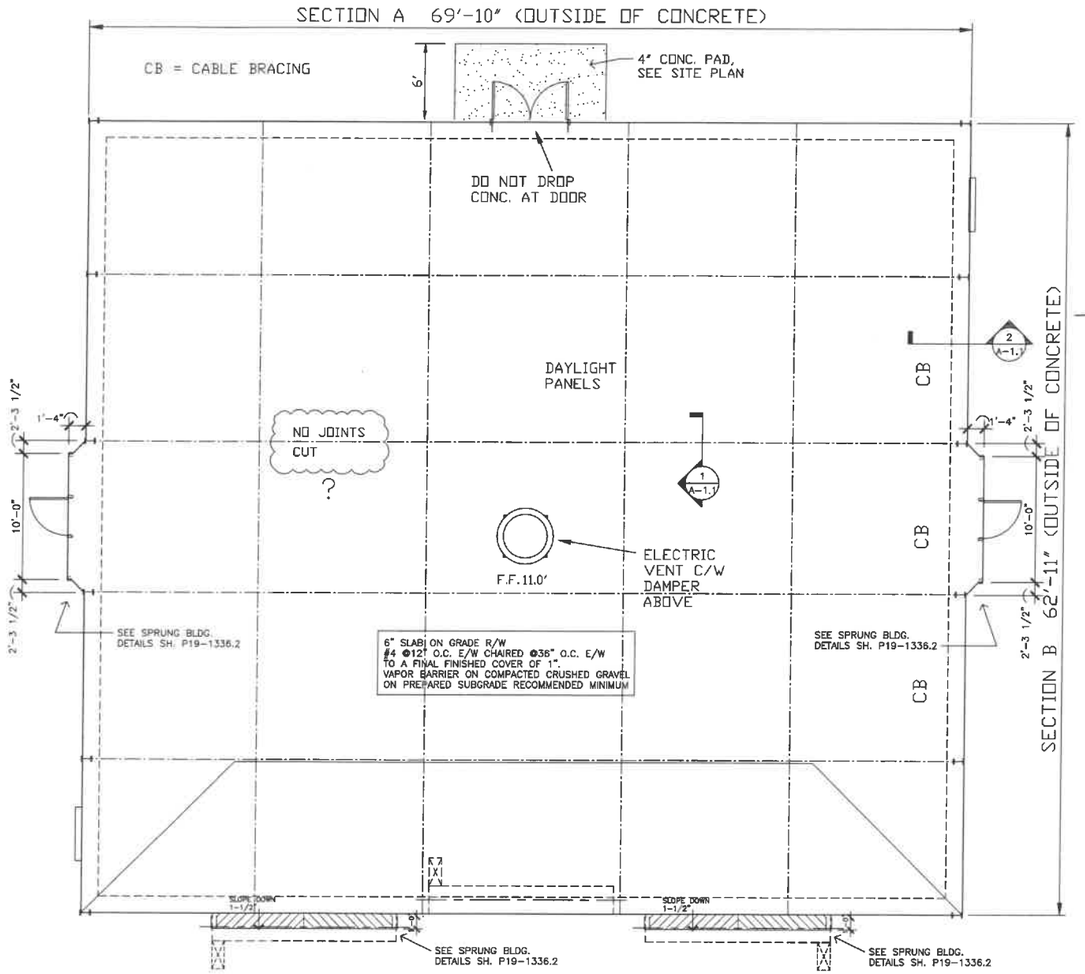
FIRE STATION
FLOOR PLAN
& DETAILS

DATE
JAN 23 2020

REVISIONS

DATE	REMARKS

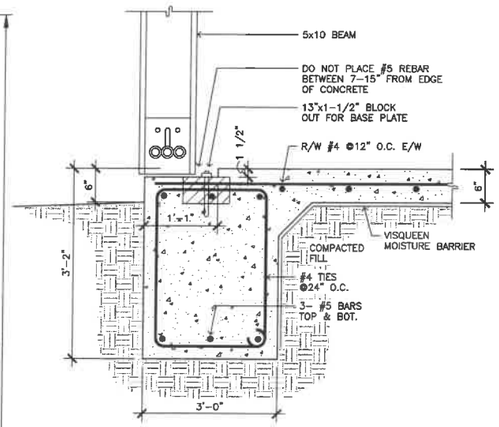
A-1
AS-BUILT
SHEET NO.



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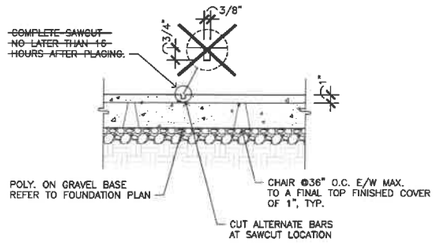
② FOUNDATION PLAN - (SEE SPRUNG FOUNDATION DRAWING)

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



② FOUNDATION DETAIL

SCALE: 1"=1'-0"



③ SUGGESTED SLAB-ON-GRADE SAWCUT

SCALE: 1"=1'-0"

NOTE: SLAB/PERIMETER FDN QUANTITIES

	CONCRETE SLAB AREA (FT)	PERIMETER FOUNDATION LENGTH (FT)
SECTION A	N/A	2x69.83
SECTION B	69.83 X LENGTH OF SECTION B	2X LENGTH OF SECTION B

AS-BUILT

GENERAL CONDITIONS

GENERAL NOTES DIVISION

1. Code

Design is in accordance with:

A- IBC 2012 & ASCE-7-10 & LATER

B- IBC 2000-2012 & ASCE-7-98 TO 10

C- UBC & ASCE-7-93

ALL FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH THESE CODES.

2. Design Loads

(Refer to individual floor plans for details for additional loading requirements.)

Live Loads:
Roof: 8 psf

Dead Loads:
Utility Load Allowance 2 psf
Structural Self Weight
Self Weight of Concrete 120 pcf

Wind Design Loads:

A-1/700 year 3 second gust wind speed without wind direction factored applied.

B- 1/50 year 3 second gust wind speed without wind direction factored applied.

C- 1/50 year fastest mile wind speed without wind direction factored applied.

Appropriate gust and exposure factors in accordance with appropriate code applied to above pressures.

Pressure factors in accordance with wind tunnel tests applied to above pressures.

3. Material Estimate Material estimates were calculated using LRFD factors.

No wastage of material was assumed.

Sample Calculation:
A material estimate may be calculated in the following manner, using the plan and mass quantity table.
Sample structure: 210' long with two flat ends in ASCE-7-10, 115 Mph Exp. C wind.

Finished Area = Area Section B
= 59.83 x 210 = 12565 sq. ft.

Concrete = 2 x (Conc.Vol.) Section A + (Conc. Vol./ft) Section B x Length
= 2 x 11.6 + 1.03 x 210 = 240 cubic yards

Reinforcing steel = 2 x (Reinf. mass Section A) + Reinf. mass Section B x Length
= 2 x 557 + 98 x 210 = 21694 lbs

Perimeter Fdn = 2 x (Perimeter Section A + Perimeter Section B)
= 2 x (59.83 + 210) = 540 ft

Note: underlined values are from Mass Quantity Table.
Account for wastage

DIVISION 2 - SITE CONDITIONS

1. Soil capacity shall be verified by a Professional Engineer registered in the State.
2. Footings are to bear on soil capable of 1000 psf.

DIVISION 3 - CONCRETE

1. All concrete shall have a minimum 28-day compressive strength of 3000 psi. All concrete in contact with the soil shall use Type 5 cement unless testing permits otherwise.
3. Reinforcing steel grade 60 ksi.
4. Use best industry practice and ACI Manual of Practice, latest edition, when placing concrete and reinforcing steel.

DIVISION 4 - MASONRY Not Used

DIVISION 5 - METALS Not Used

DIVISION 6 - WOOD Not Used

GENERAL SOIL AND FILL NOTES

LIMEROCK BEARING RATIO (LBR) – SAME AT BOTH LOCATIONS AS FOLLOWS

- CRUSHED LIMESTONE – LBR= 100
- STABILIZED SUB GRADE – LBR + 40

SOIL MATERIALS:
1. SATISFACTORY SOIL MATERIALS: ASTM D2487 GROUPS GW, GP, GM, SM, SW AND SP.
2. UNSATISFACTORY SOIL MATERIALS: ASTM D2487 GROUPS GC, SC, ML, MH, CL, CH, OL, OH AND PT.
3. SUBBASE MATERIAL: NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, CRUSHED SLAG, NATURAL OR CRUSHED SAND.
4. DRAINAGE FILL: CRUSHED OR UNCRUSHED GRAVEL, MAX. 1–1/2 IN. TO MIN. NO. 4 SIEVE SIZE.
5. BACKFILL AND FILL MATERIALS: SATISFACTORY SOIL MATERIALS FREE OF CLAY, ROCK OR GRAVEL LARGER THAN 2 IN. IN ANY DIMENSION, DEBRIS, WASTE, VEGETABLE AND OTHER DELETERIOUS MATTER.

COMPACTION:
1. DETERMINE IN ACCORDANCE WITH ASTM D 1557.
2. STRUCTURES, BUILDING SLABS AND STEPS, PAVEMENTS: COMPACT SUBGRADE AND EACH 12 IN. LAYER TO 95 PERCENT MAX. DENSITY.
3. LAWN OR UNPAVED AREAS: COMPACT SUBGRADE AND EACH 6 IN. LAYER TO 85 PERCENT MAX. DENSITY.
4. WALKWAYS: COMPACT SUBGRADE AND EACH 6 IN. LAYER TO 90 PERCENT MAX. DENSITY.

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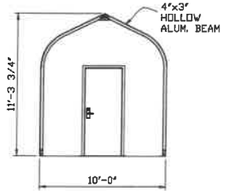
FOUNDATION PLAN & DETAILS

DATE
JAN 23 2020

REVISIONS

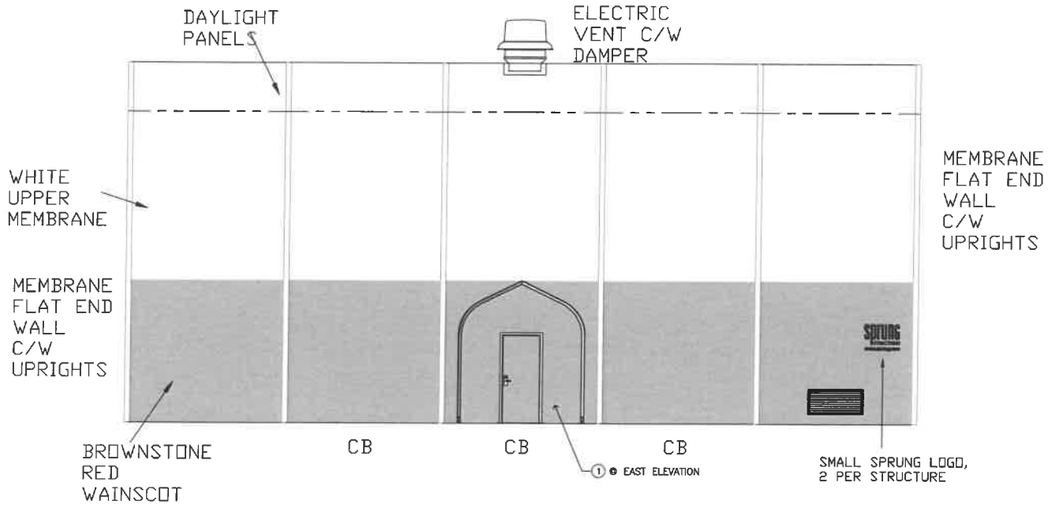
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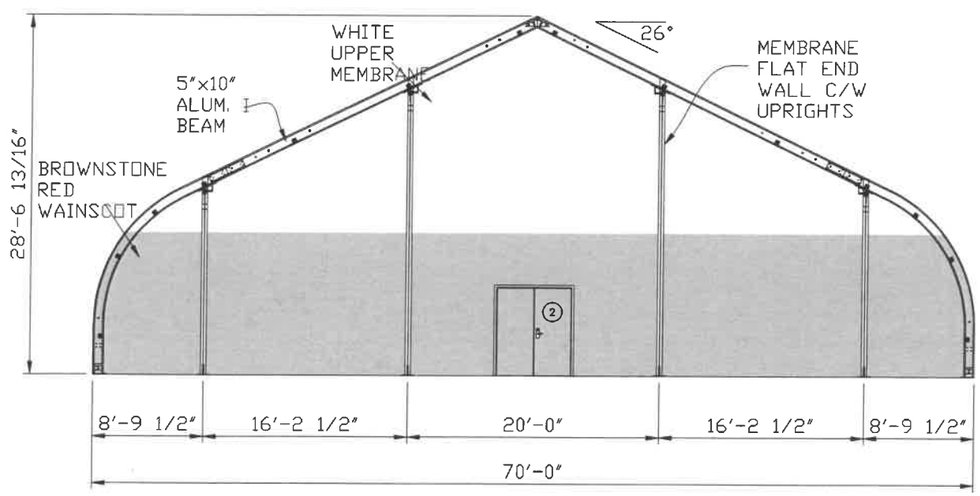
4 SECTION 10'-0" HOOD

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



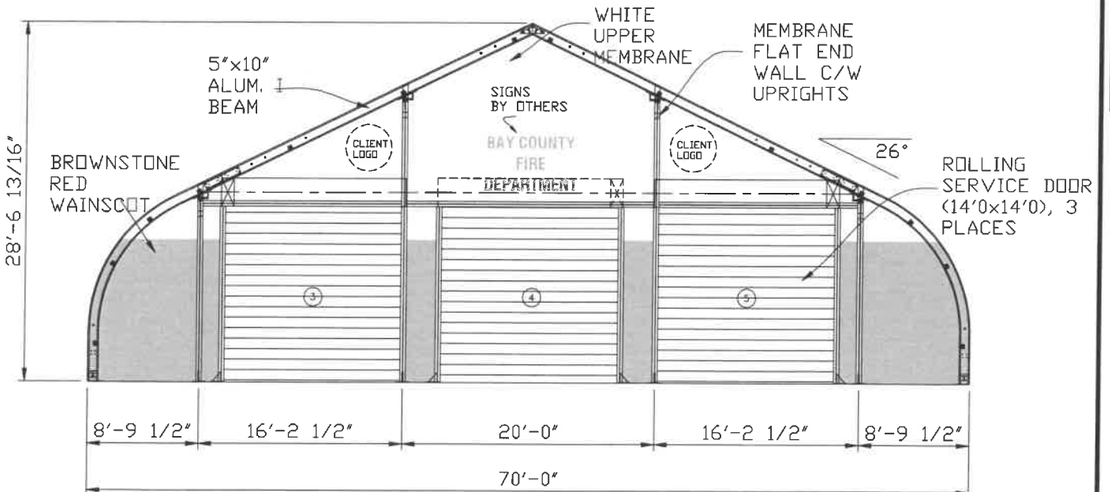
2 WEST & EAST ELEVATION

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



3 NORTH ELEVATION

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



1 SOUTH ELEVATION

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

AS-BUILT

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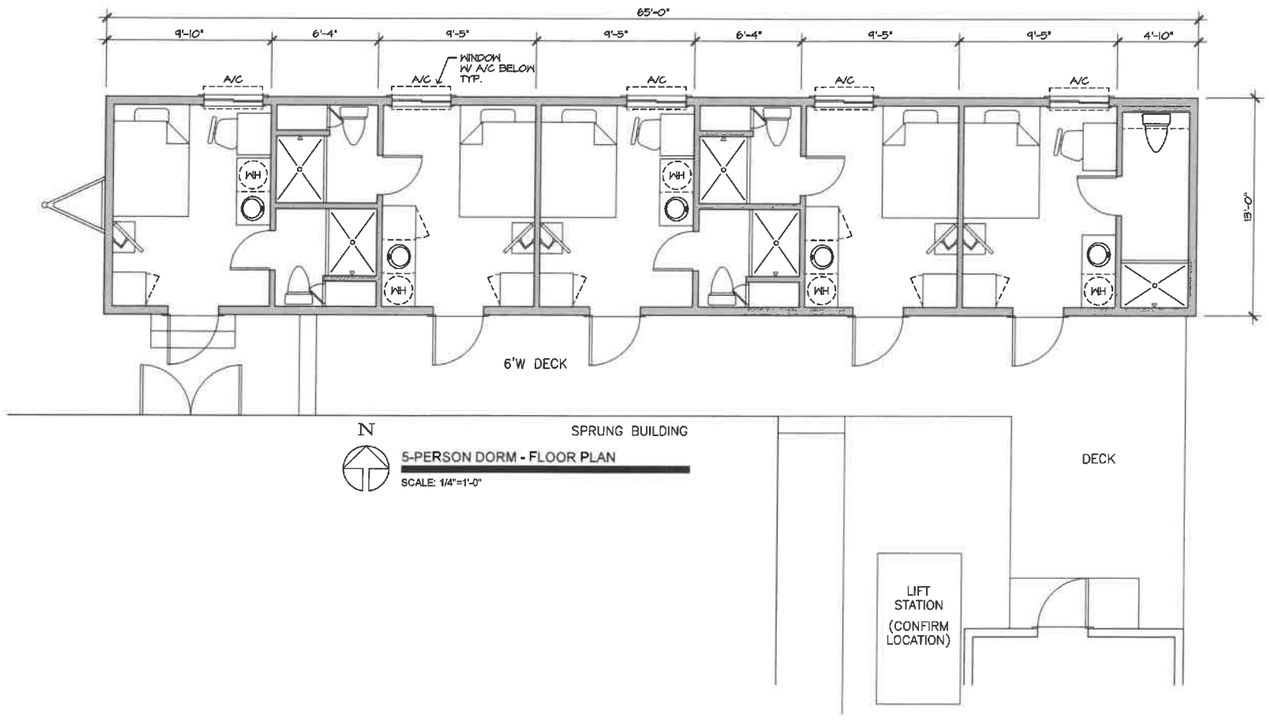
FIRE STATION
ELEVATIONS

DATE
JAN
23
2020

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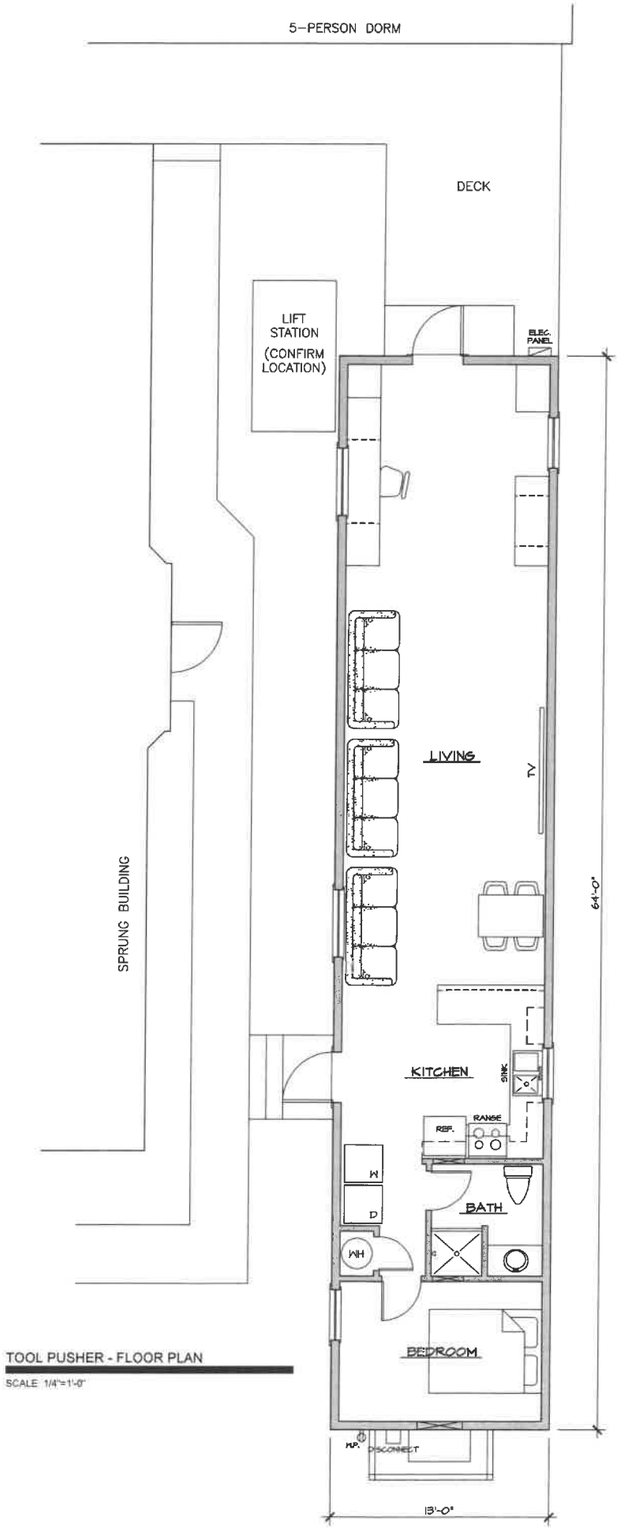
DATE	REMARKS

A-1.2
AS-BUILT
SHEET NO.



5-PERSON DORM - FLOOR PLAN

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



TOOL PUSHER - FLOOR PLAN

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

AS-BUILT

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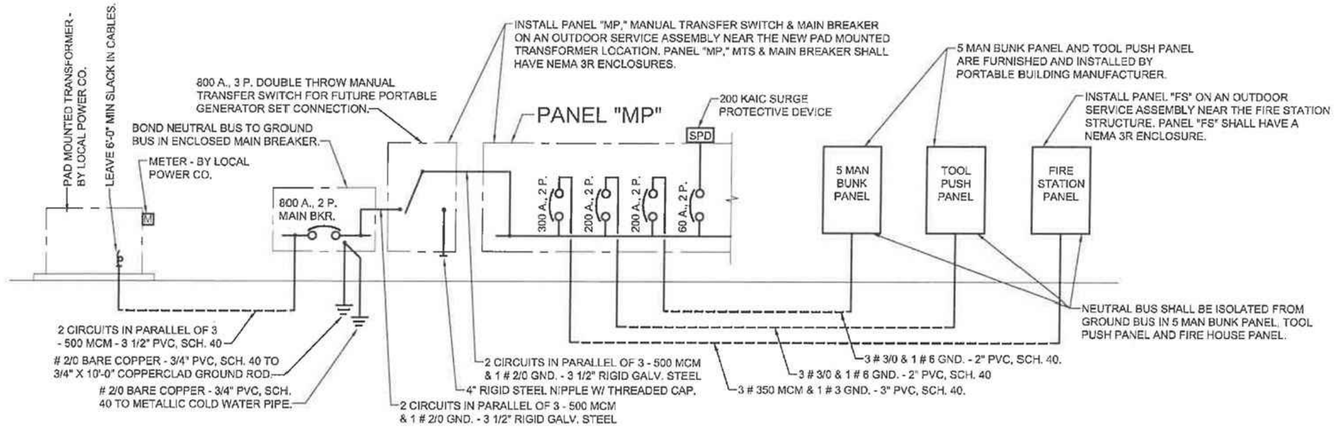
MODULAR BUILDING FLOOR PLANS

DATE
JAN 23 2020

REVISIONS

DATE	REMARKS

A-2
AS-BUILT
SHEET NO.



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 AMP	BREAKER POLE	KVA		BREAKER AMP	BREAKER POLE	LOAD SERVED	CKT.#
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						30	2	VEHICLE EXHAUST	26
27	OHD OPENNER	20	1						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.

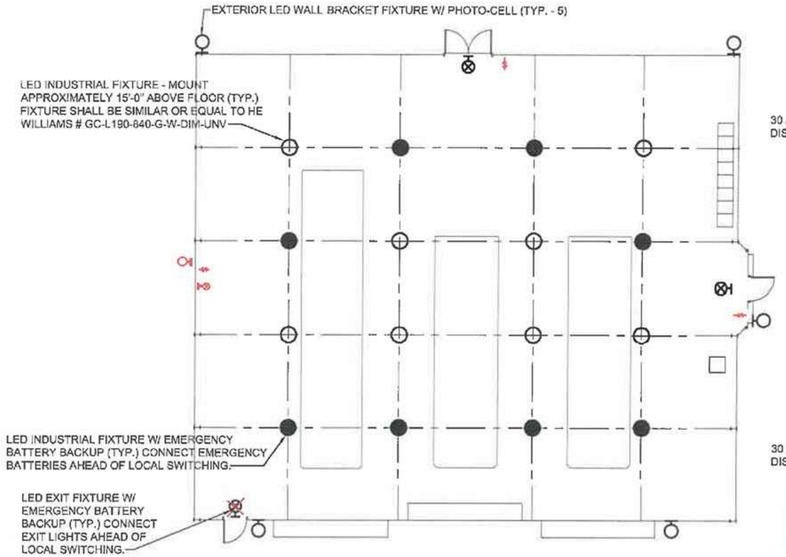
PANEL "MP" — 120/240 V., 1 Ø, 3 W. — 800 A. MAIN LUGS ONLY — SURFACE MTD. PANEL W/ GROUND BUS ISOLATED FROM NEUTRAL BUS. FURNISH PANEL W/ NEMA 3R ENCLOSURE.

CKT.#	LOAD SERVED	BREAKER AMP	BREAKER POLE	KVA		BREAKER AMP	BREAKER POLE	LOAD SERVED	CKT.#
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	6
7								DEVICE	8
9	~~FUTURE~~ LIFT STATION	50	2				2	SPACE ONLY	10
11									12

SERVICE CALCULATION:

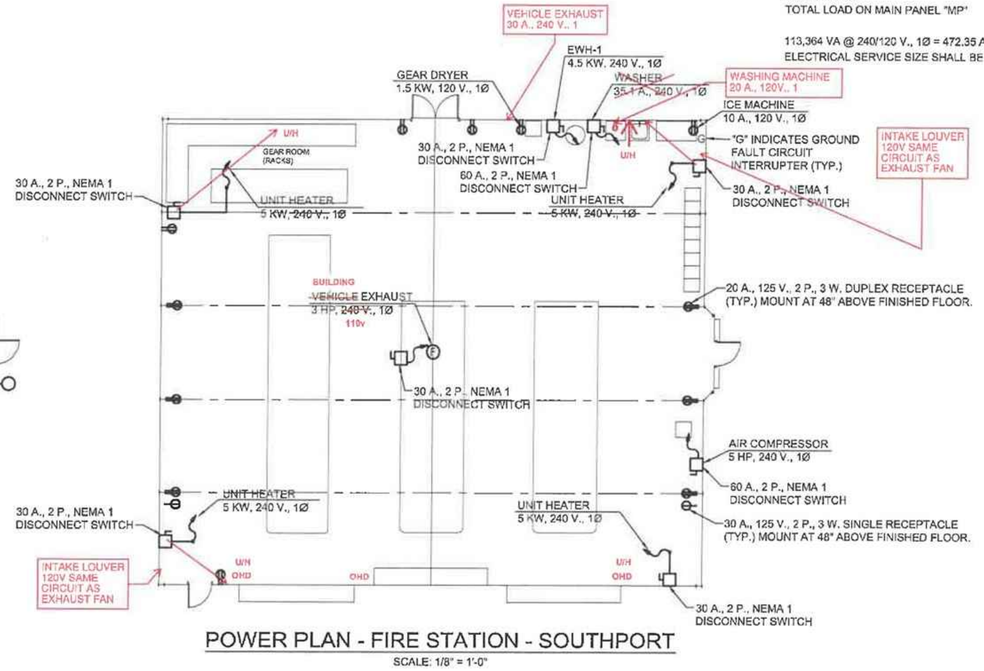
5 MAN BUNK (PER ATCO DRAWINGS)	34,285 VA
TOOL PUSH (PER ATCO DRAWINGS)	22,621 VA
FIRE STATION	56,458 VA
TOTAL LOAD ON MAIN PANEL "MP"	113,364 VA

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

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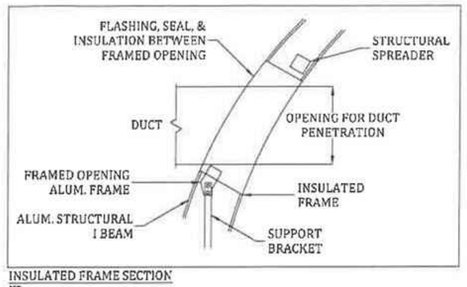
ELECTRICAL PLANS, SCHEDULES & RISER DIAGRAM

DATE
JAN 23 2020

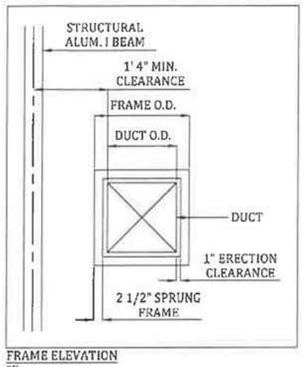
REVISIONS

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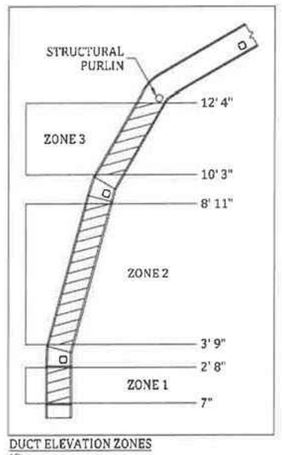
E-1
AS-BUILT
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INSULATED FRAME SECTION
NTS



FRAME ELEVATION
NTS



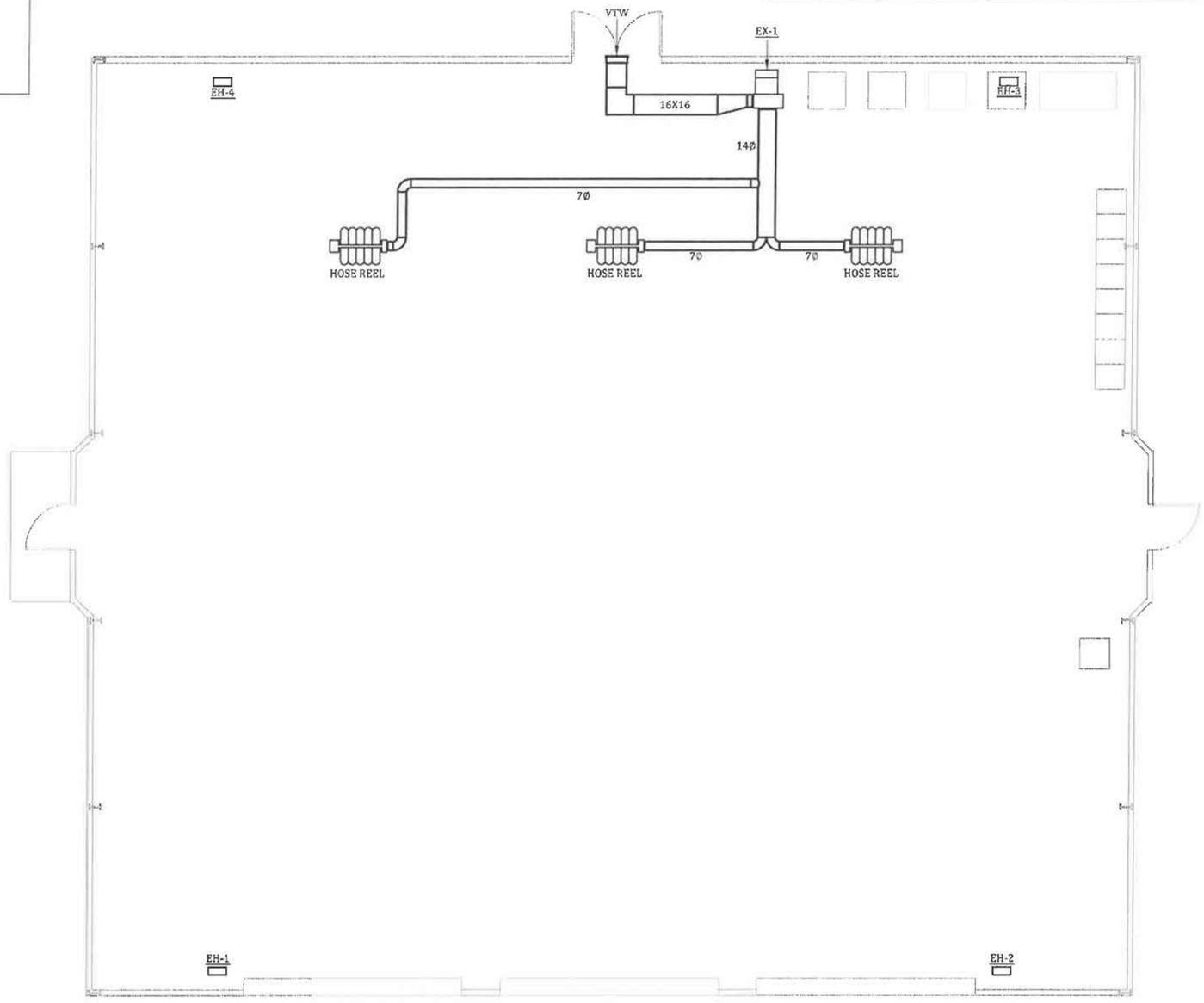
DUCT ELEVATION ZONES
NTS

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 — CEILING DIFFUSER ; 8Ø NECK, 24X24 FACE

135 — 135 CFM

RG / 2424 — RETURN GRILLE, 24X24 FACE, BOOT BOX CONFIG.

400 — 400 CFM

N

HVAC - NEW WORK PLAN
SCALE: ¼" = 1'-0"

AS-BUILT

SYSTEM SERVICE & ENGINEERING, INC.
195 MOSLEY RD.
LAWN LEVEL 1, 32445
PANAMA CITY BEACH, FL 32407
PHONE: (850) 233-2434 | FAX: (850) 233-2435

NO.	DATE	REVISION DESCRIPTION

DRAWN BY: NC
CHECKED BY:
APPROVED BY:
DATE: 6.18.20

PLAN RIGHTS CLAUSE: PLANS ARE FOR THE SOLE USE OF SYSTEM SERVICE and ENGINEERING, LLC CONSTRUCTION SERVICES ONLY

FIRE STATION SOUTHPORT
PANAMA CITY, FL

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

M2.1
SHEET REFERENCE NUMBER

TAG	PLUMBING FIXTURE DESCRIPTION	FAUCET/ FLUSH VALVE	DRAIN SIZE	COLD SIZE	HOT SIZE	ACCESSORIES	EQUAL TO:
EWH-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.
2. 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 @ ⅛" PER FT^2.
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)

AS-BUILT

PLUMBING - SCHEDULES, NOTES, LEGENDS

SYSTEM SERVICE & ENGINEERING, INC.
205 MOSLEY DR.
LYNN HAVEN FL 32444
phone 850.441.3458 | mobile 850.630.4387
CMC 1249918 | CFC 1427601 | EC 13006380 | COA 29976

NO.	DATE	REVISION DESCRIPTION

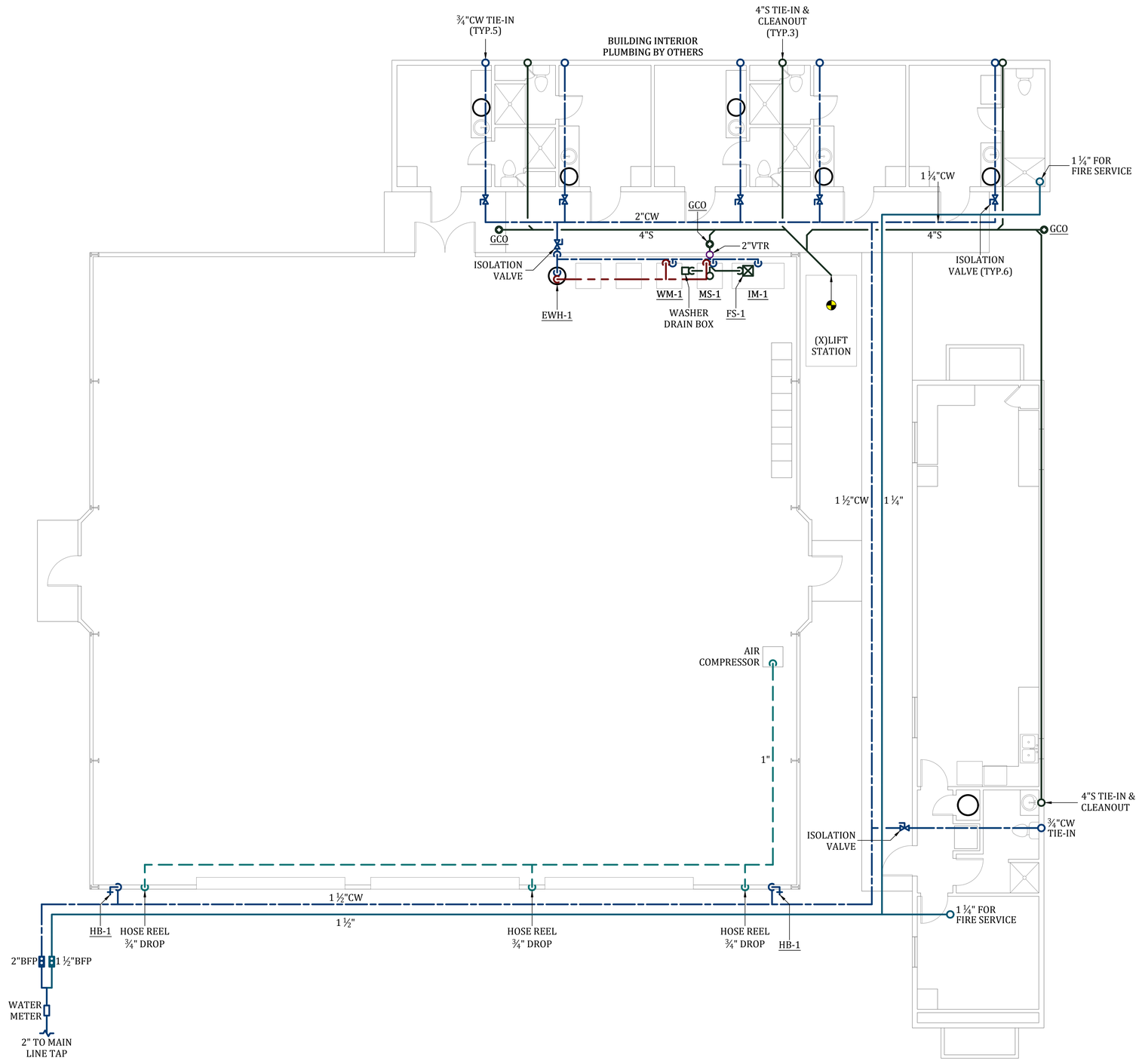
DRAWN BY: NC
CHECKED BY:
APPROVED BY:
DATE: 6.17.20

PLAN RIGHTS CLAUSE: PLANS ARE FOR THE SOLE USE OF SYSTEM SERVICE and ENGINEERING, LLC CONSTRUCTION SERVICES ONLY

FIRE STATION SOUTHPORT
PANAMA CITY, FL

SHEET 1 OF 3
SCALE: NO SCALE

P0.1
SHEET REFERENCE NUMBER



N

PLUMBING - SANITARY & DOMESTIC WATER PLAN

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

AS-BUILT

SYSTEM SERVICE & ENGINEERING, INC.
205 MOSLEY DR.
LYNN HAVEN FL 32444
phone 850.441.3458 | mobile 850.630.4387
CMC 1249918 | CFC 1427601 | EC 13006380 | COA 29970

NO.	DATE	REVISION DESCRIPTION

DRAWN BY: NC

CHECKED BY:

APPROVED BY:

DATE: 6.17.20

PLAN RIGHTS CLAUSE: PLANS ARE FOR THE SOLE USE OF SYSTEM SERVICE and ENGINEERING, LLC CONSTRUCTION SERVICES ONLY

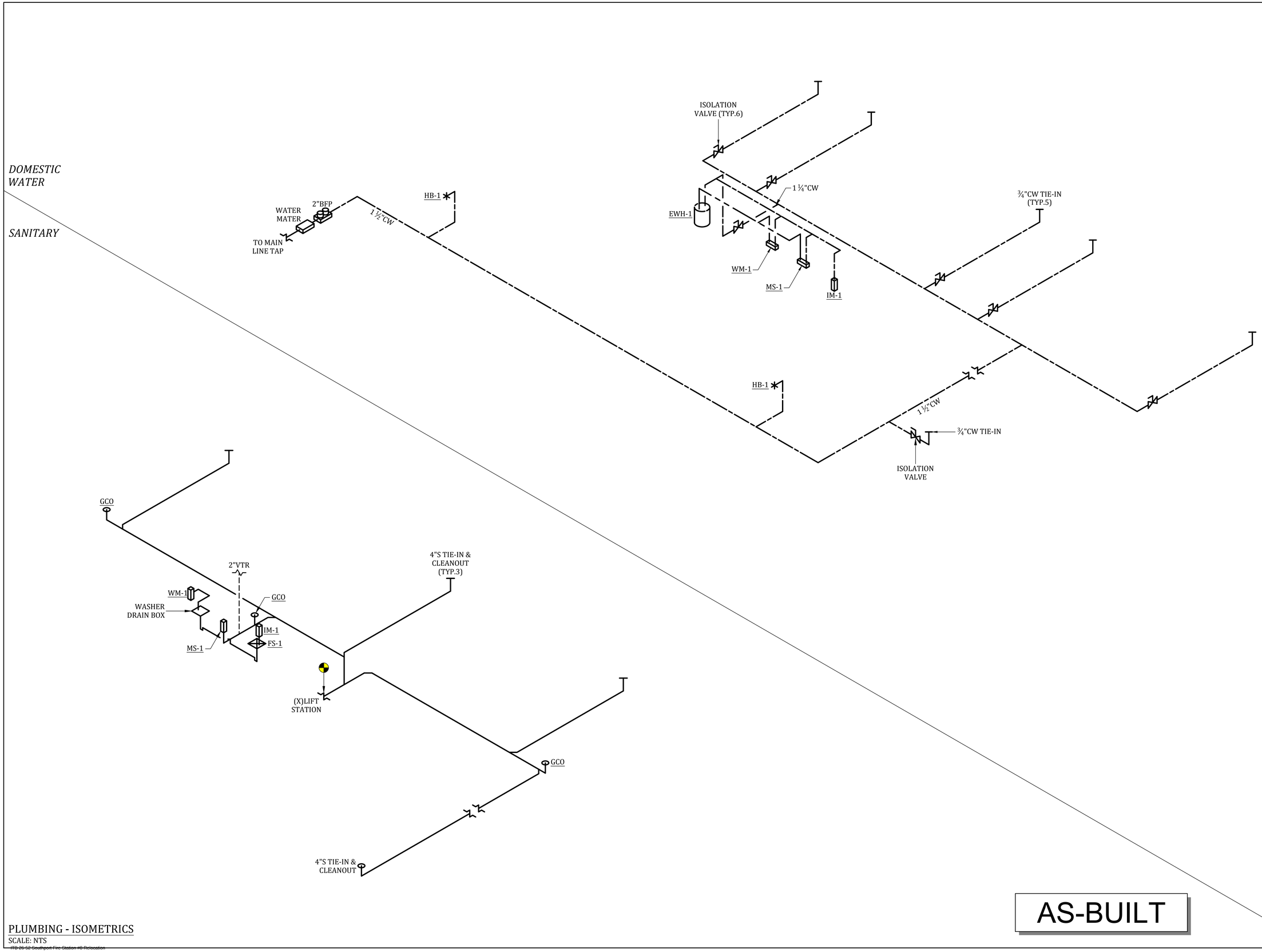
FIRE STATION SOUTHPORT
PANAMA CITY, FL

SHEET 2 OF 3

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

P2.1

SHEET REFERENCE NUMBER



AS-BUILT

PLUMBING - ISOMETRICS

SCALE: NTS

ITD 26-52 Southport Fire Station #8 Relocation

SYSTEM SERVICE & ENGINEERING, INC.
205 MOSLEY DR.
LYNN HAVEN FL 32444
phone 850.441.3458 | mobile 850.630.4387
CMC 1249918 | CFC 1427601 | EC 13006380 | COA 29970

NO.	DATE	REVISION DESCRIPTION

DRAWN BY: NC

CHECKED BY:

APPROVED BY:

DATE: 6.17.20

PLAN RIGHTS CLAUSE: PLANS ARE FOR THE SOLE USE OF SYSTEM SERVICE and ENGINEERING, LLC CONSTRUCTION SERVICES ONLY

FIRE STATION SOUTHPORT
PANAMA CITY, FL

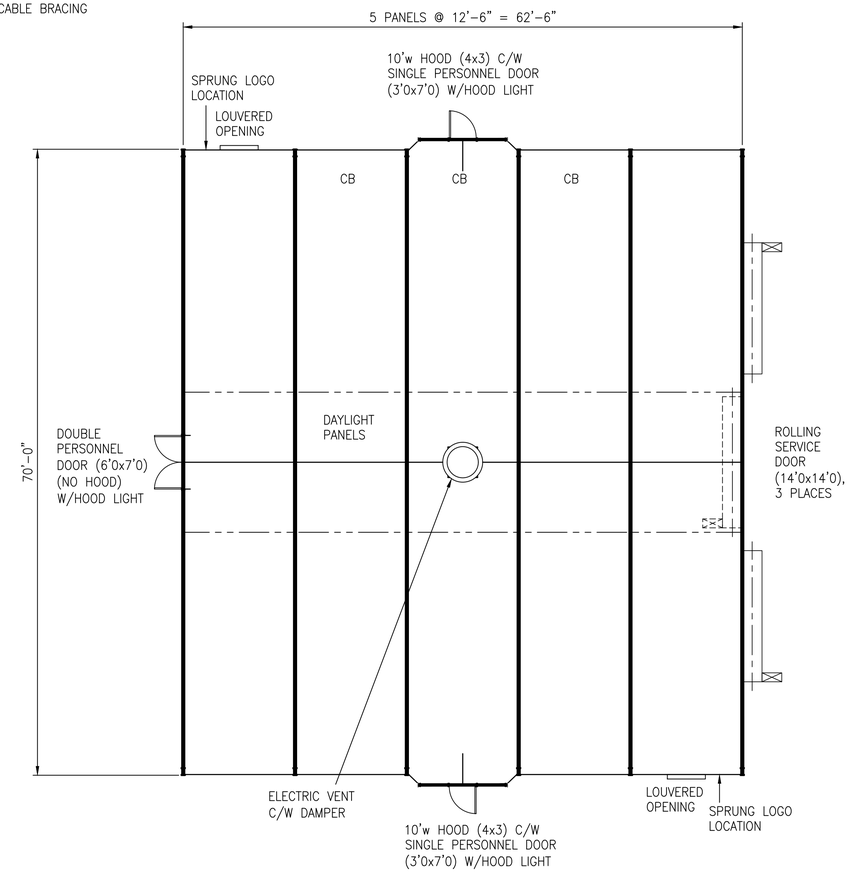
SHEET 4 OF 4

SCALE: NTS

P3.1

SHEET REFERENCE NUMBER

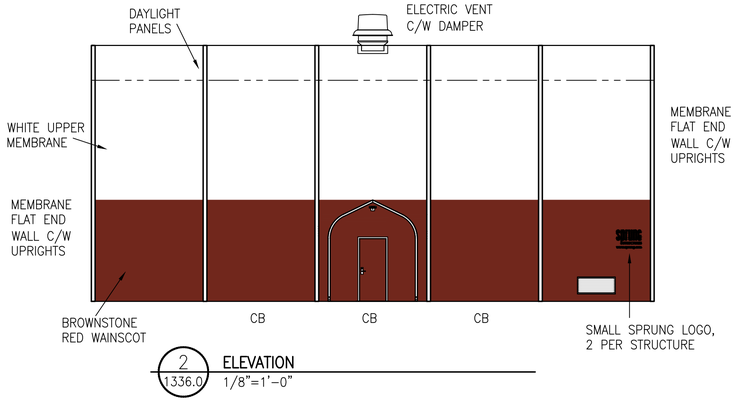
CB = CABLE BRACING



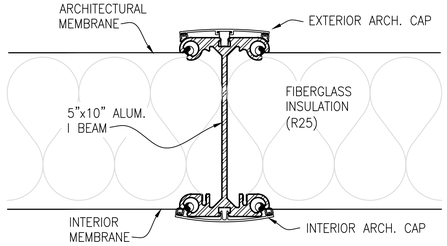
1 / 1336.0 PLAN VIEW
1/8"=1'-0"

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

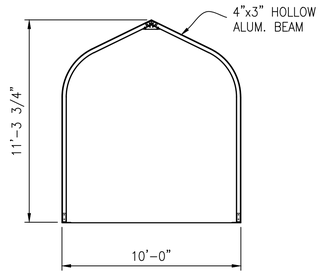
COLORS ON THESE ELEVATIONS MAY VARY SIGNIFICANTLY DEPENDING ON PRINTER OR MONITOR. PLEASE REFER TO MEMBRANE SAMPLES FOR ACTUAL COLORS.



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

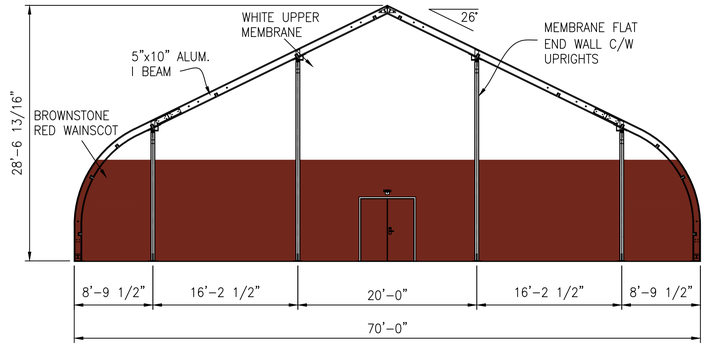


3 / 1336.0 5"x10" INSULATED BEAM SECTION
3"=1'-0"

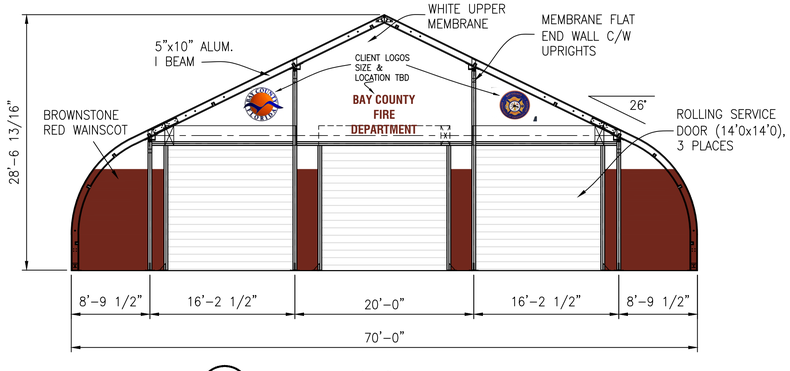


4 / 1336.0 SECTION 10'-0" HOOD
1/4"=1'-0"

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



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



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

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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)	

canyons STRUCTURAL CONSULTING
940 E Elm Avenue
Salt Lake City, Utah 84106
Phone: (801) 486-8848

DAVY TREMBLAY LICENSE No 46051 STATE OF FLORIDA PROFESSIONAL ENGINEER

SIGNATURE SERIES

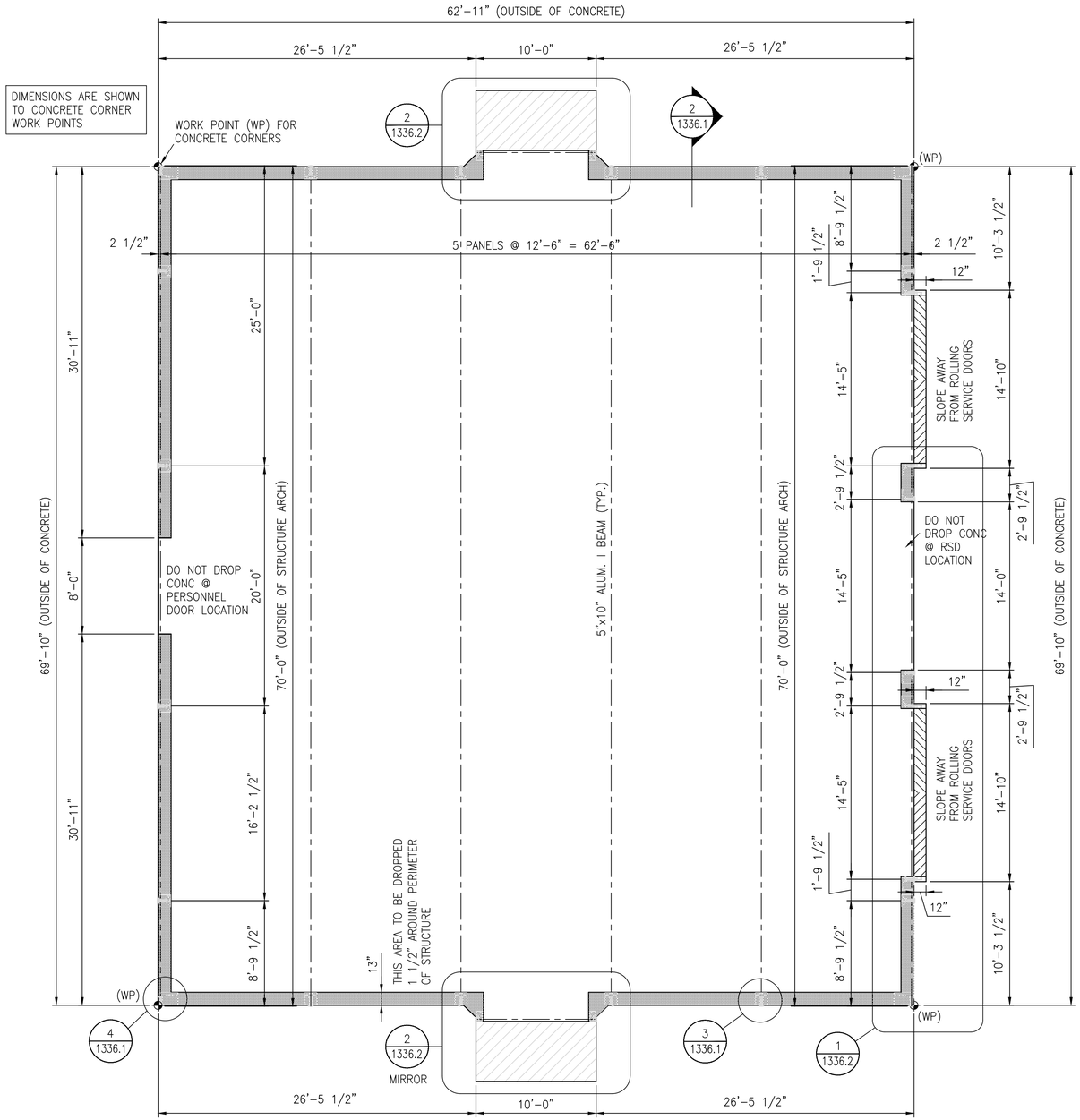
REV	MM/DD/YY	BY	DESCRIPTION
4	01/08/20	EH	ADD HOOD LIGHTS
3	12/17/19	EH	REVISE COMPANY NAME
2	11/18/19	PD	ADD LOGOS & CHANGE COLOR

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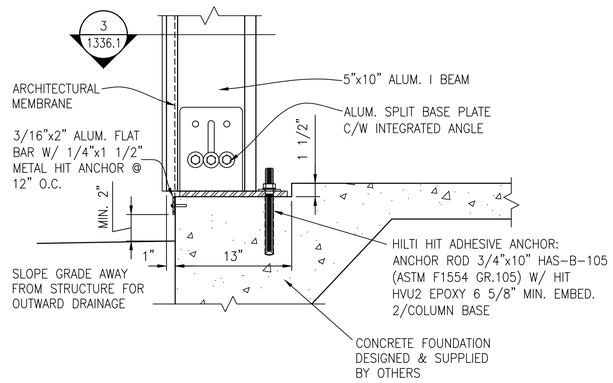
WCC SERVICES INC

70.0' x 62.5'
FIRE STATION

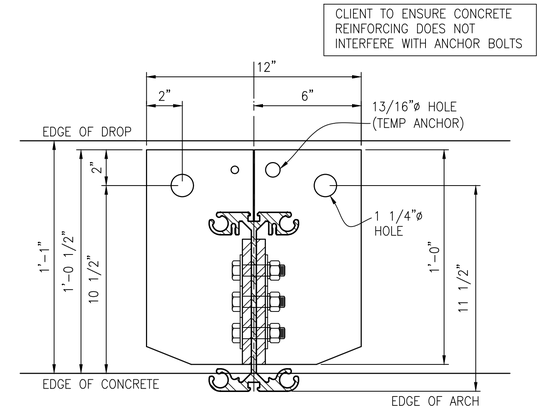
DRAWN BY: P. DUMONT	DATE: 11/06/2019
CHECKED BY	APP'D BY
SCALE: AS NOTED	DRAWING #: P19-1336.0
CUST. APP'L	



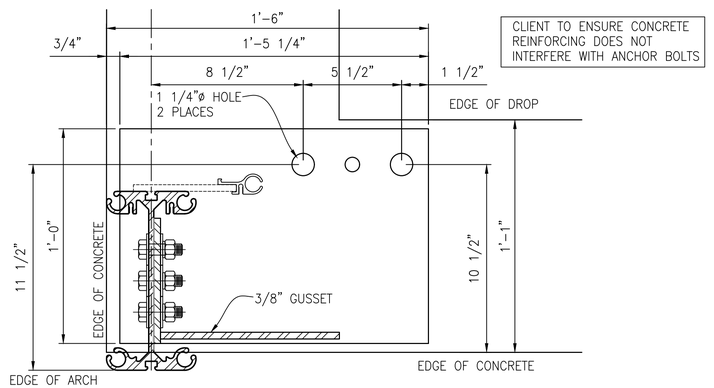
1 1336.1 COLUMN BASE LAYOUT
3/16"=1'-0"



2 1336.1 5"x10" BEAM CONCRETE ANCHORAGE
1 1/2"=1'-0"



3 1336.1 5"x10" BASE PLATE – PLAN
3"=1'-0"



4 1336.1 5"x10" INS. CORNER BASE PLATE – F
3"=1'-0"

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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.

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

DAVY TREMBLAY LICENSE No.82051 STATE OF FLORIDA PROFESSIONAL ENGINEER

SIGNATURE SERIES

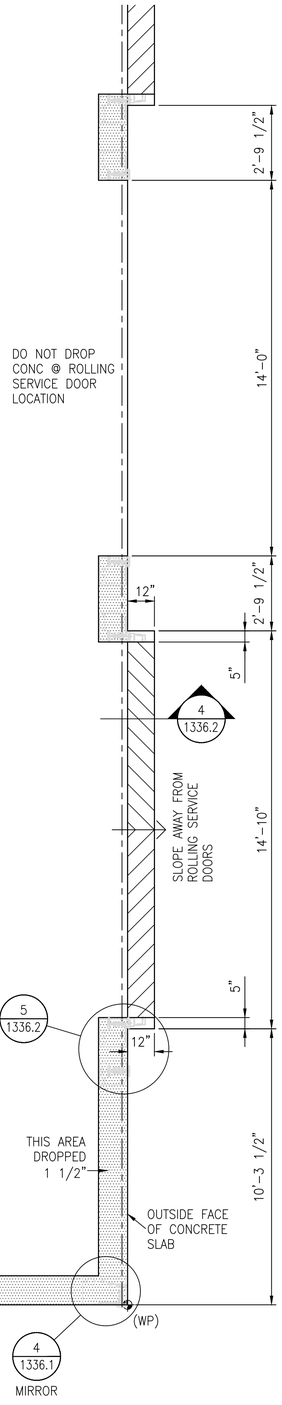
REV	MM/DD/YY	BY	DESCRIPTION
4	01/08/20	EH	ADD HOOD LIGHTS
3	12/17/19	EH	REVISE COMPANY NAME
2	11/18/19	PD	ADD LOGOS & CHANGE COLOR

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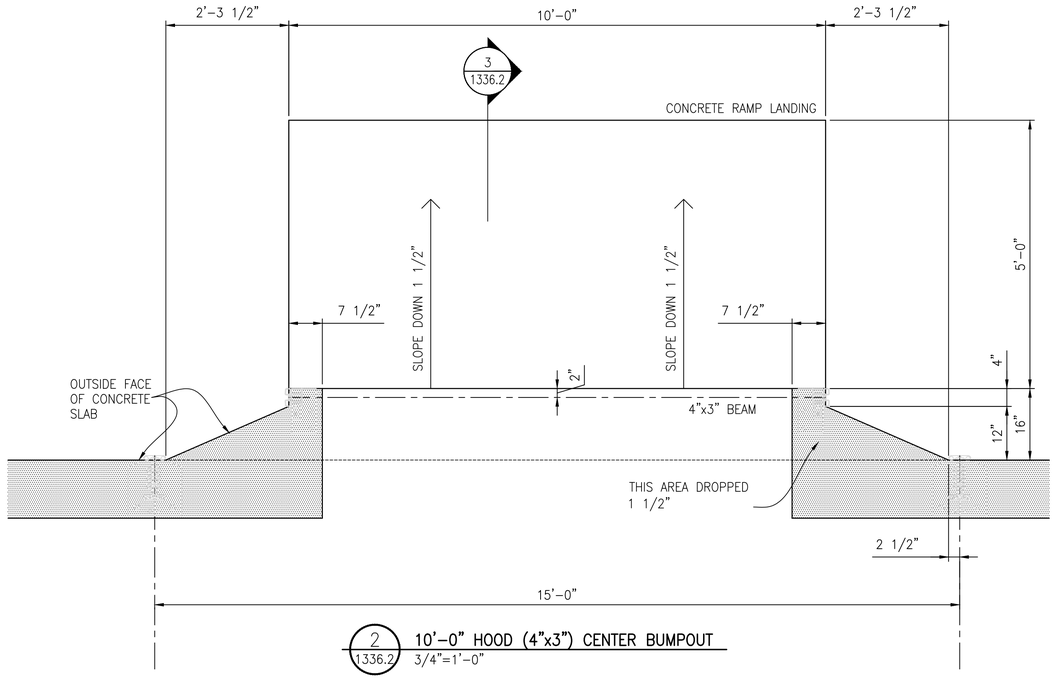
WCC SERVICES INC

70.0' x 62.5'
COLUMN BASE LAYOUT

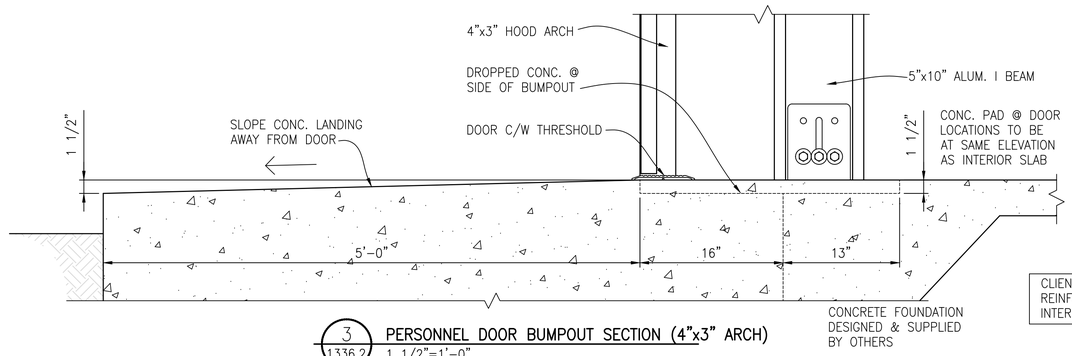
DRAWN BY E. HAMPTON	DATE 01/07/2020
CHECKED BY	APP'D BY
SCALE AS NOTED	DRAWING # P19-1336.1
CUST. APP'L	



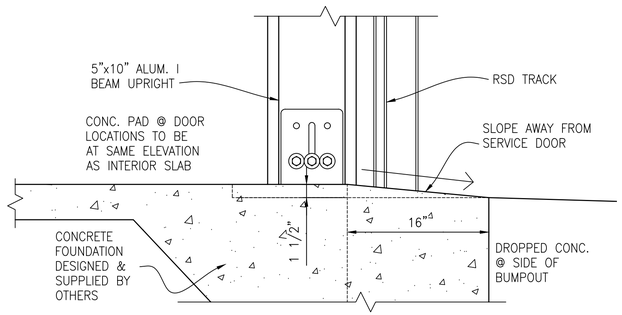
1 1336.2 FLAT END 70'-0" STRUCTURE RSD BUMPOUT
3/8"=1'-0"



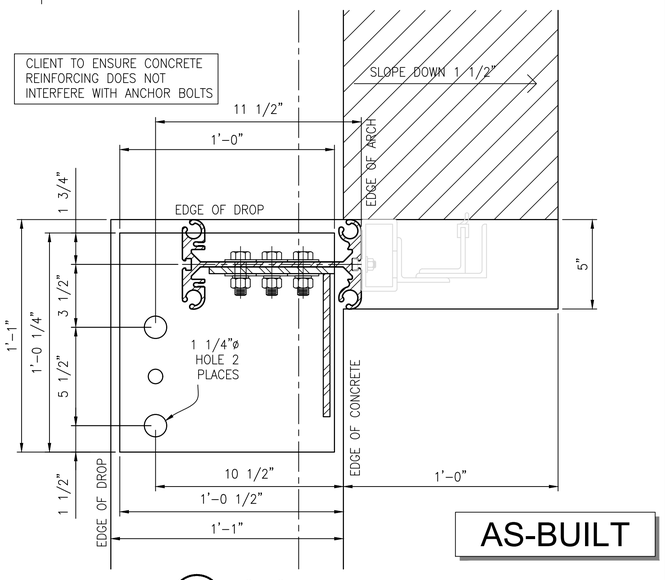
2 1336.2 10'-0" HOOD (4"x3") CENTER BUMPOUT
3/4"=1'-0"



3 1336.2 PERSONNEL DOOR BUMPOUT SECTION (4"x3" ARCH)
1 1/2"=1'-0"



4 1336.2 FE RSD BUMPOUT SECTION
1 1/2"=1'-0"



5 1336.2 5"x10" CORNER BASE PLATE – PLAN
3"=1'-0" (RSD JAMB UPRIGHTS)

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940 E Elm Avenue
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SIGNATURE SERIES

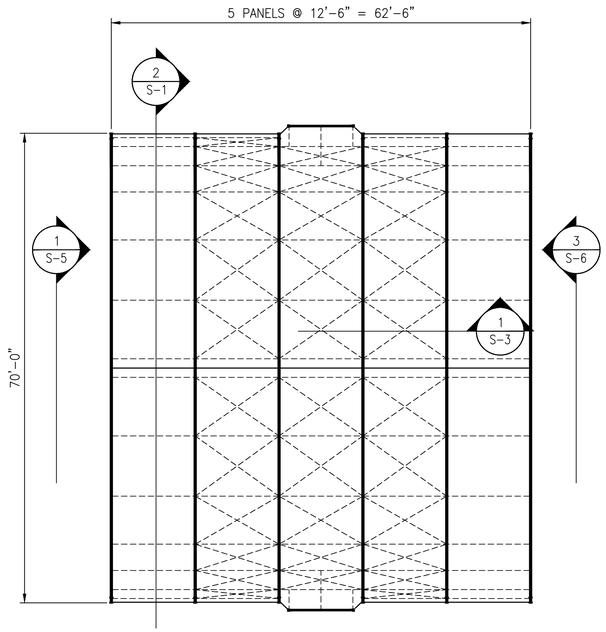
REV	MM/DD/YY	BY	DESCRIPTION
4	01/08/20	EH	ADD HOOD LIGHTS
3	12/17/19	EH	REVISE COMPANY NAME
2	11/18/19	PD	ADD LOGOS & CHANGE COLOR

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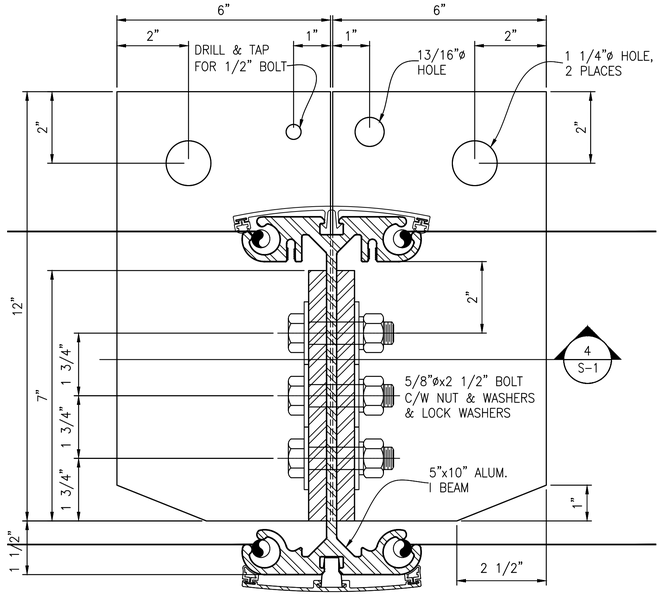
WCC SERVICES INC

70.0' x 62.5'
BUMPOUT DETAILS

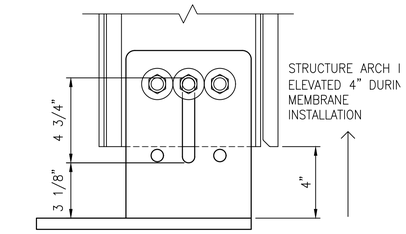
DRAWN BY E. HAMPTON	DATE 01/07/2020
CHECKED BY	APP'D BY
SCALE AS NOTED	DRAWING # P19-1336.2
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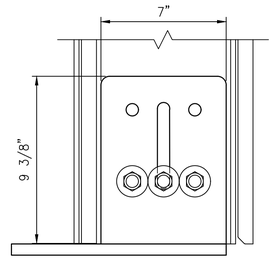
1 S-1 PLAN VIEW
3/32"=1'-0"



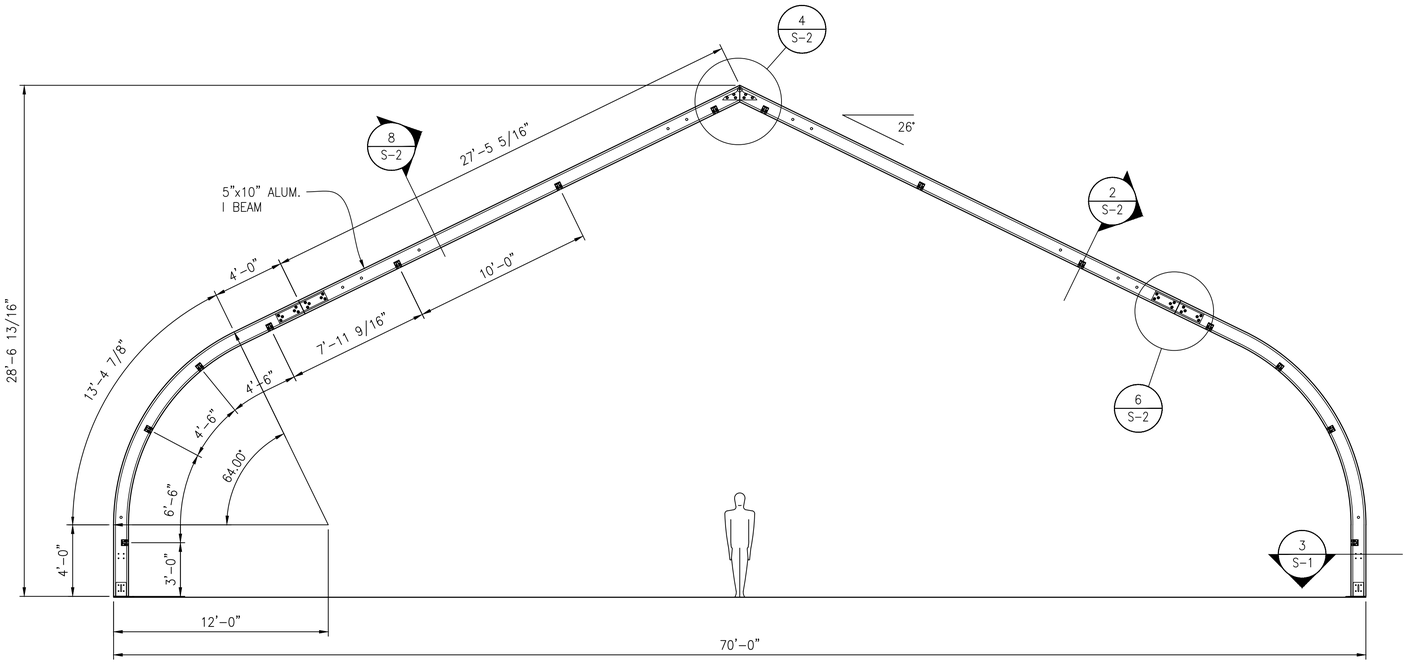
3 S-1 5"x10" BEAM BASE PLATE – PLAN
6"=1'-0"



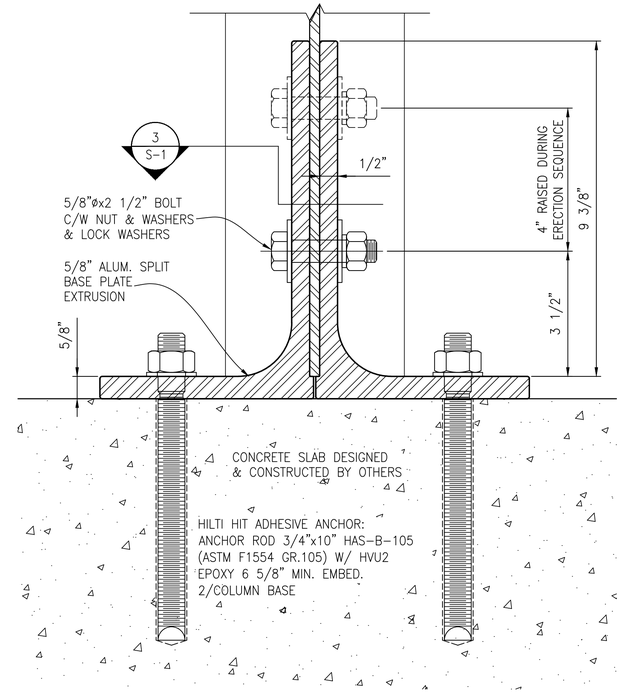
5 S-1 5"x10" BEAM BASE PLATE – ELEVATION
3"=1'-0" (ERECTION CONDITION)



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



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



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

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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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Phone: (801) 486-6848

DANY TREMBLAY LICENSE No 40051 STATE OF FLORIDA PROFESSIONAL ENGINEER

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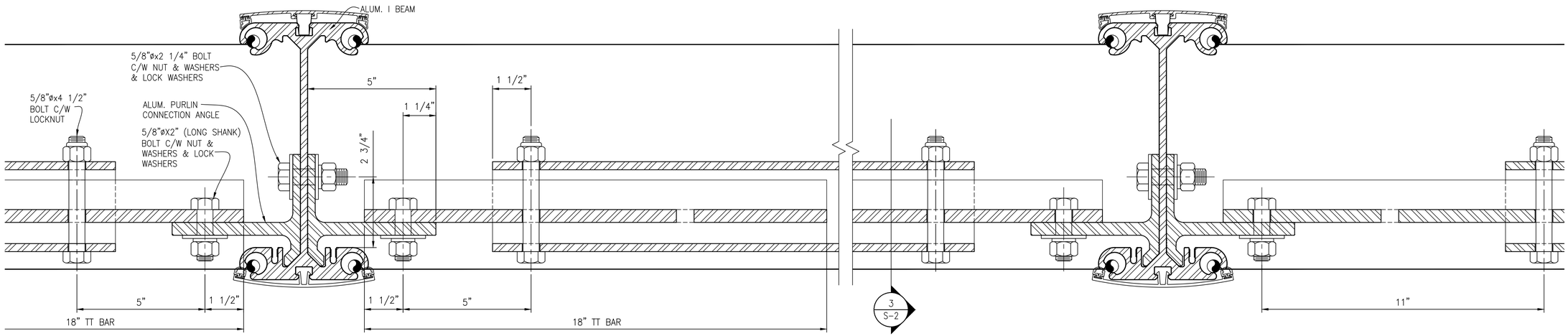
REV	MM/DD/YY	BY	DESCRIPTION

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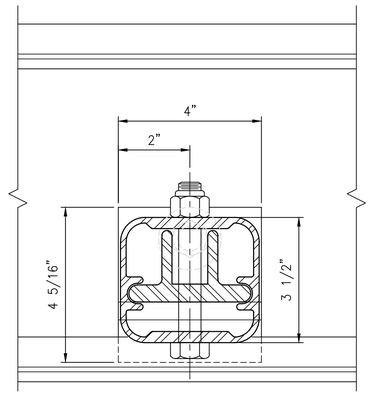
70.0' STRUCTURE SECTION & BASE DETAILS

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

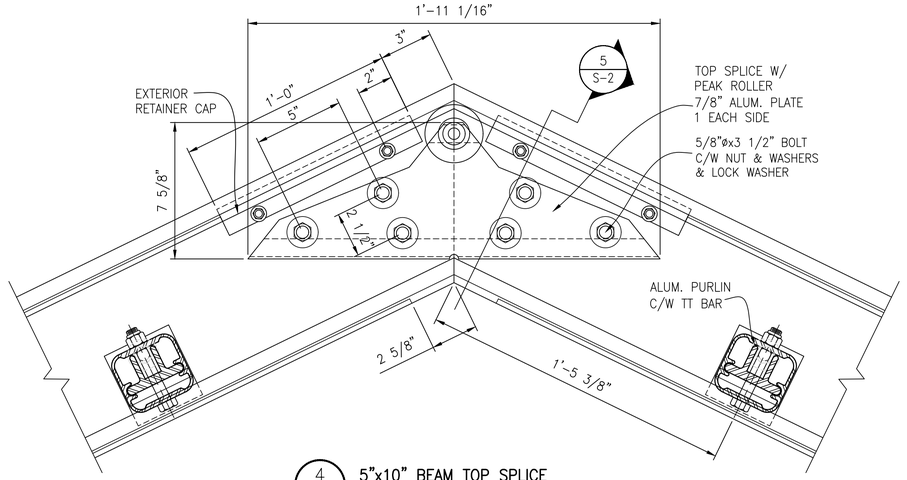


1 S-2 **5"x10" PURLIN – ELEVATION**
6"=1'-0" (ERECTION CONDITION)

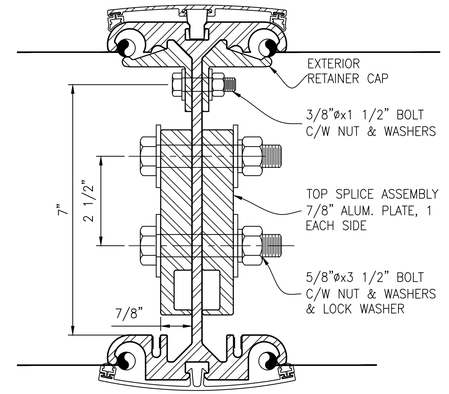
2 S-2 **5"x10" PURLIN – ELEVATION**
6"=1'-0" (FINAL CONDITION)



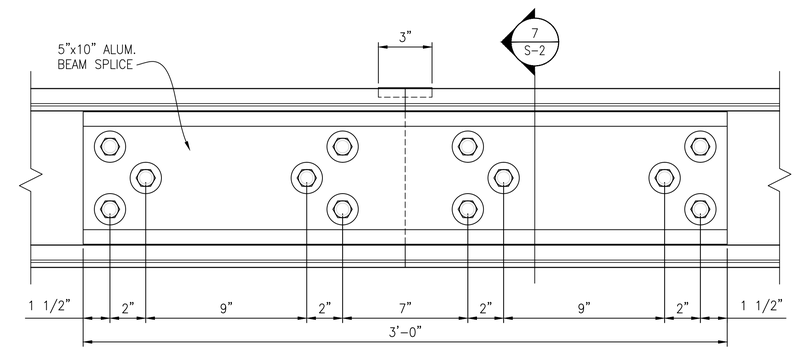
3 S-2 **5"x10" PURLIN – SECTION**
6"=1'-0"



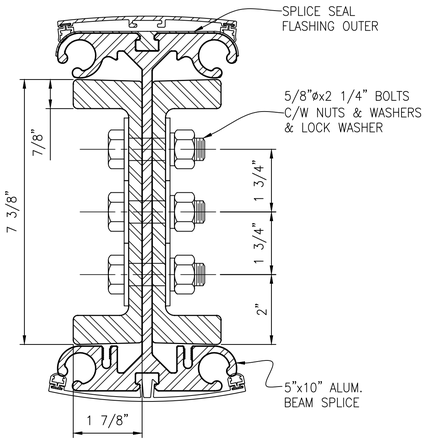
4 S-2 **5"x10" BEAM TOP SPLICE**
3"=1'-0"



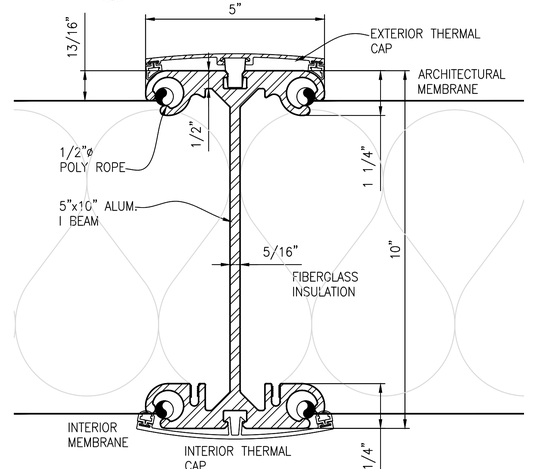
5 S-2 **5"x10" TOP SPLICE – SECTION**
6"=1'-0"



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



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



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

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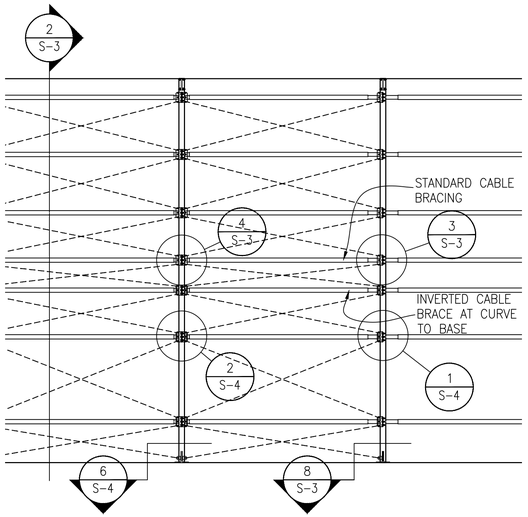
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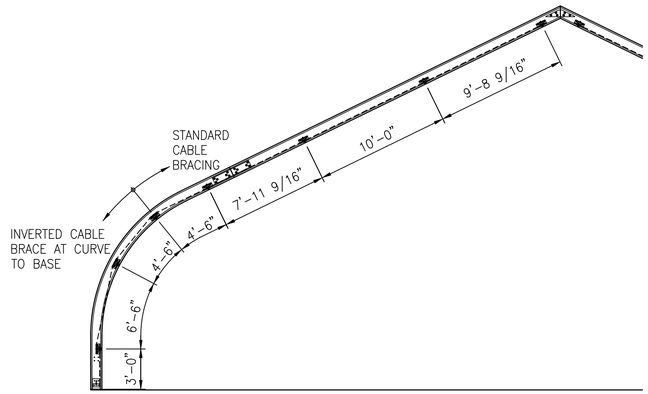
WCC SERVICES INC

70.0' STRUCTURE
PURLIN & SPLICE DETAILS

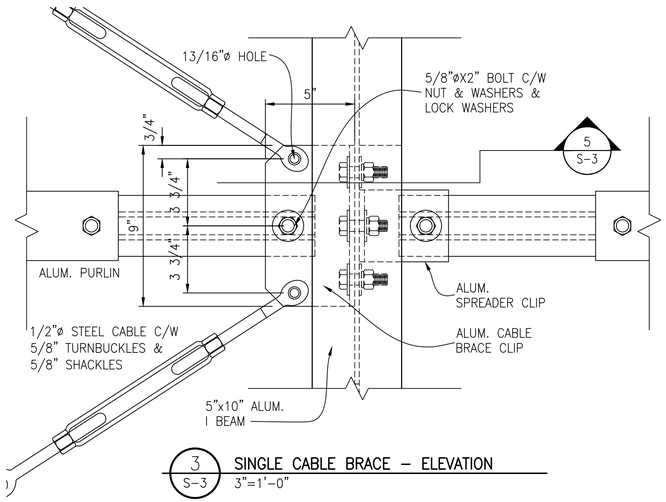
DRAWN BY: D. BENNETT	DATE: 01/08/2020
SCALE: AS NOTED	DRAWING # S-2
SPRUNG WO: 23455	



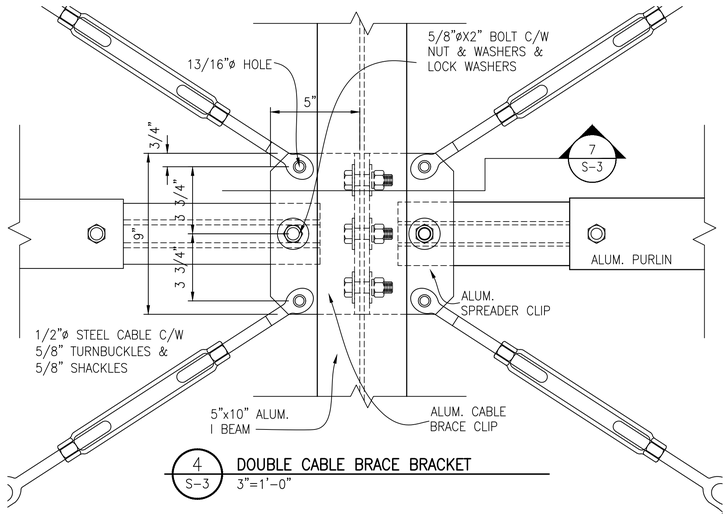
1 S-3 — 70'–0" PARTIAL CABLE BRACING – ELEVATION
3/16"=1'–0"



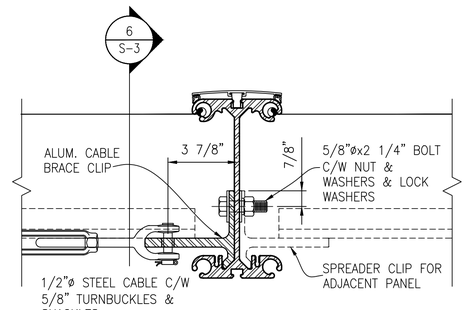
2 S-3 — 70'–0" PARTIAL CABLE BRACING – SECTION
3/16"=1'–0"



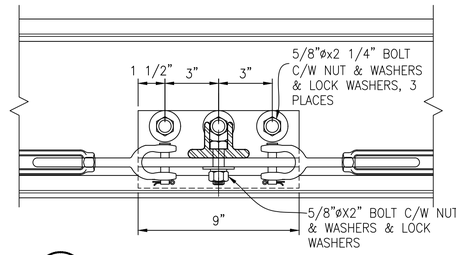
3 S-3 — SINGLE CABLE BRACE – ELEVATION
3"=1'–0"



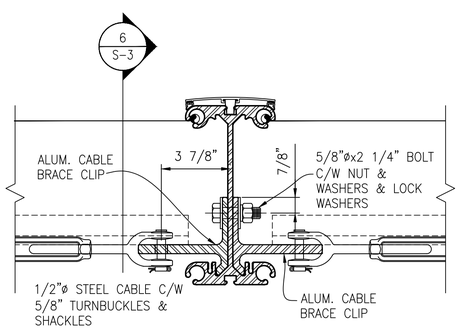
4 S-3 — DOUBLE CABLE BRACE BRACKET
3"=1'–0"



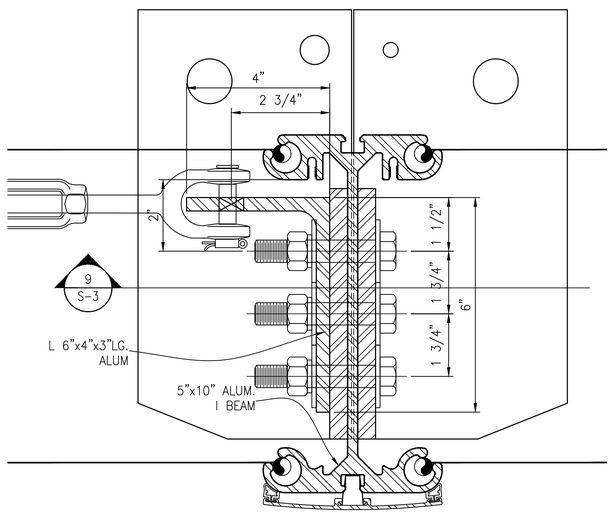
5 S-3 — CABLE BRACE SECTION
3"=1'–0"



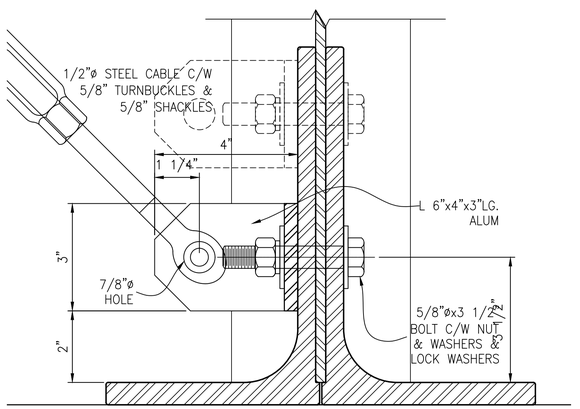
6 S-3 — CABLE BRACE BRACKET ELEVATION
3"=1'–0"



7 S-3 — DOUBLE CABLE BRACE SECTION
3"=1'–0"



8 S-3 — 5"x10" CABLE PLATE – PLAN
6"=1'–0"



9 S-3 — 5"x10" CABLE PLATE – ELEVATION
6"=1'–0"

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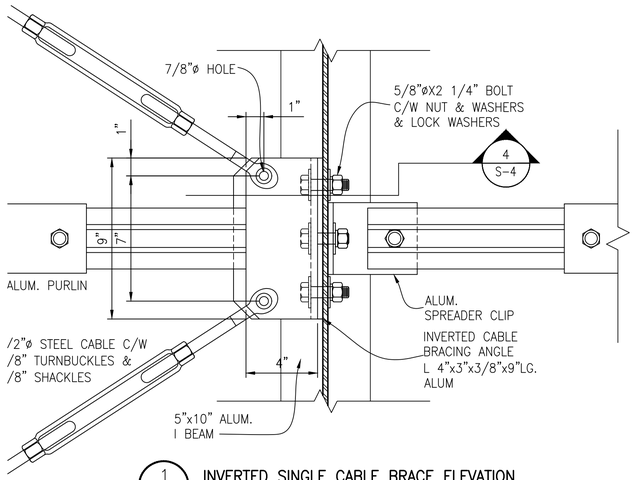
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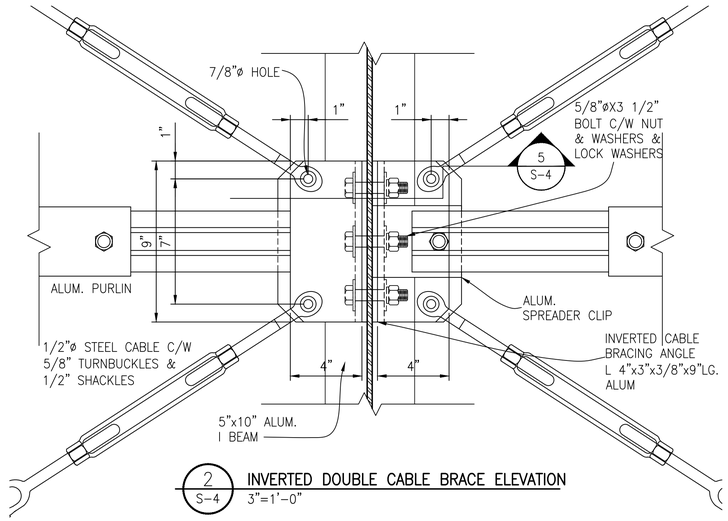
WCC SERVICES INC

70.0' STRUCTURE CABLE BRACE DETAILS

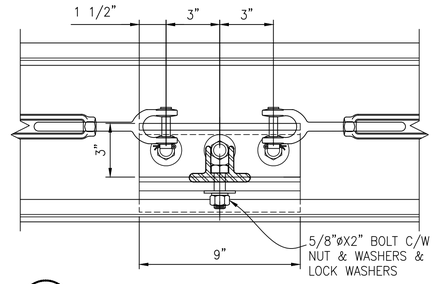
DRAWN BY: D. BENNETT	DATE: 01/08/2020
SCALE: AS NOTED	DRAWING # S-3
SPRUNG WO: 23455	



1 S-4 INVERTED SINGLE CABLE BRACE ELEVATION
3"=1'-0"



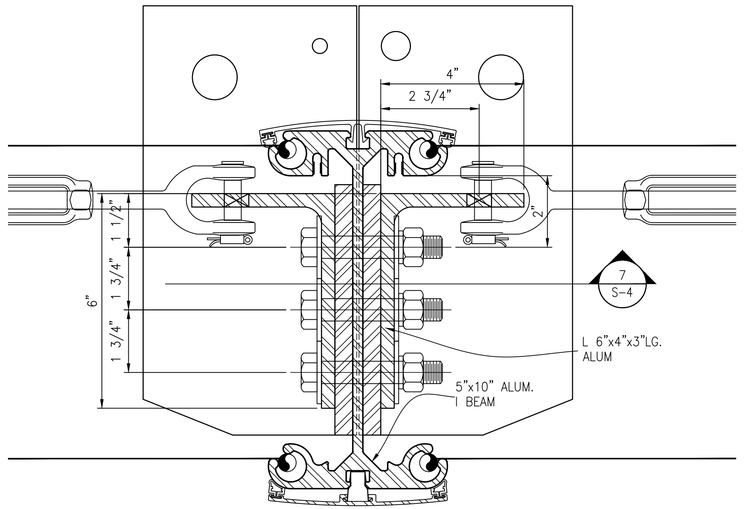
2 S-4 INVERTED DOUBLE CABLE BRACE ELEVATION
3"=1'-0"



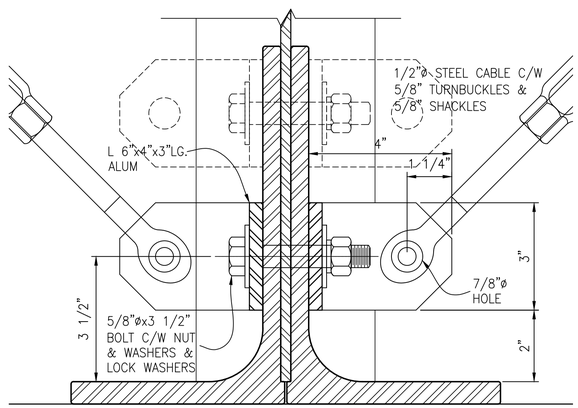
3 S-4 INVERTED CABLE BRACE BRACKET ELEVATION
3"=1'-0"

4 S-4 INVERTED CABLE BRACE SECTION
3"=1'-0"

5 S-4 INVERTED DOUBLE CABLE BRACE SECTION
3"=1'-0"



6 S-4 5"x10" DOUBLE CABLE PLATE – PLAN
6"=1'-0"



7 S-4 5"x10" DOUBLE CABLE PLATE – ELEVATION
6"=1'-0"

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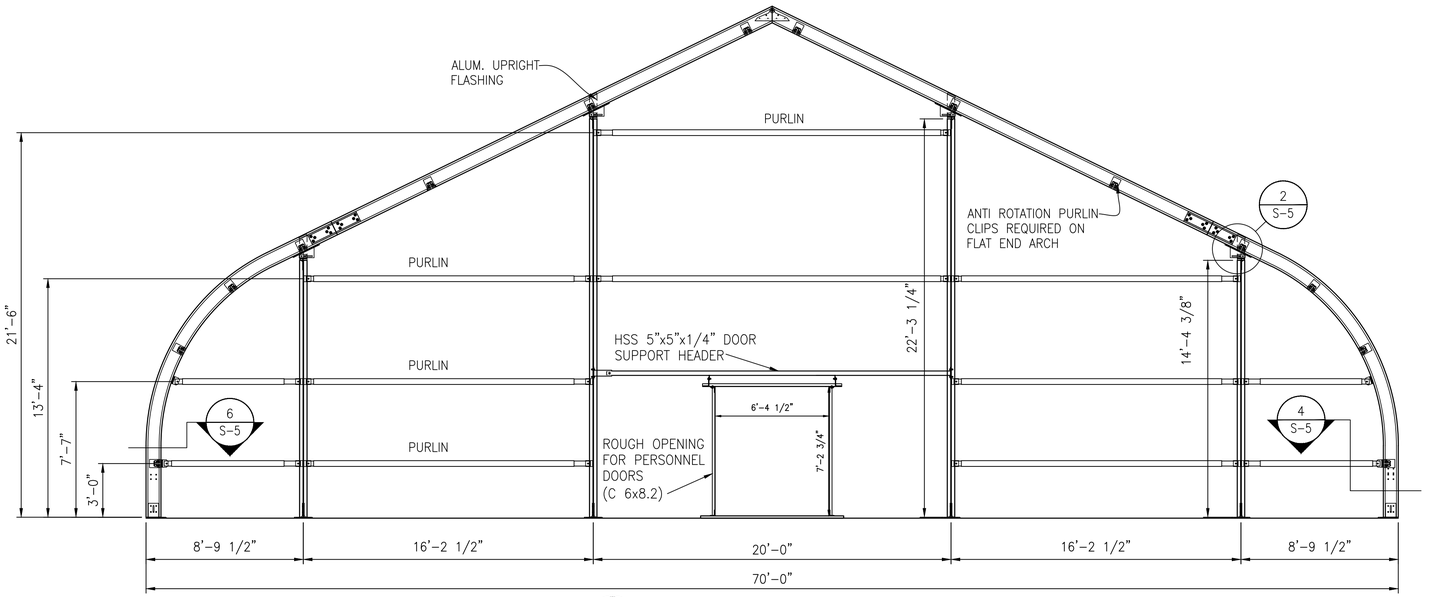
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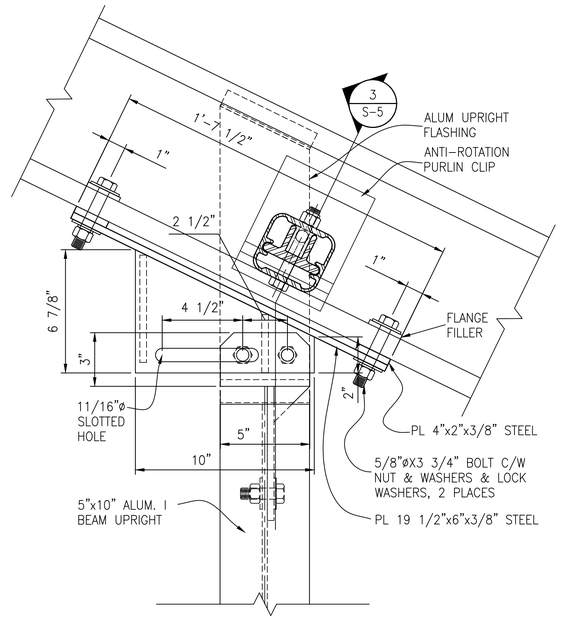
WCC SERVICES INC

70.0' STRUCTURE CABLE BRACE DETAILS

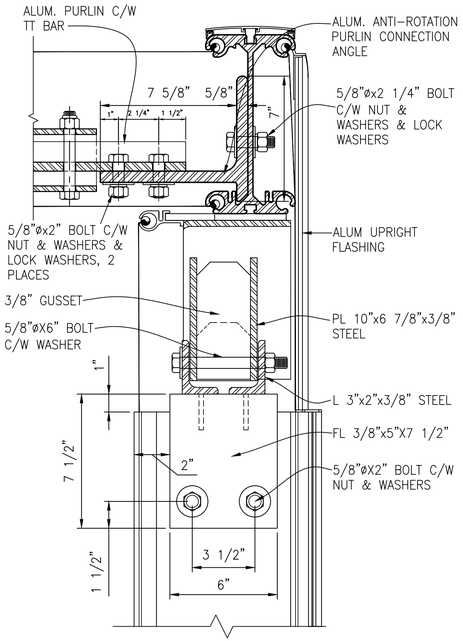
DRAWN BY: D. BENNETT	DATE: 01/08/2020
SCALE: AS NOTED	DRAWING # S-4
SPRUNG WO: 23455	



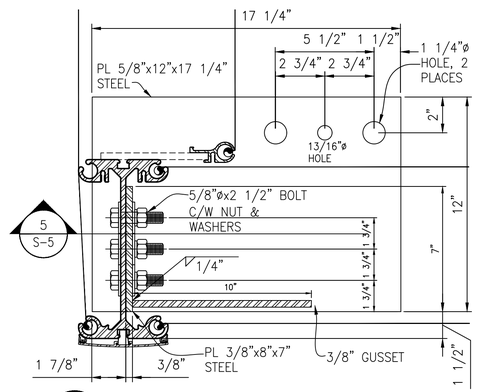
1 S-5 **LEFT FLAT END 70'-0" INSULATED STRUCTURE**
1/4"=1'-0"



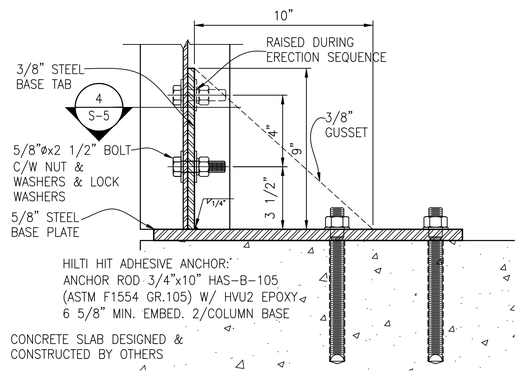
2 S-5 **FLAT END UPRIGHT BRACKET – ELEV.**
3"=1'-0"



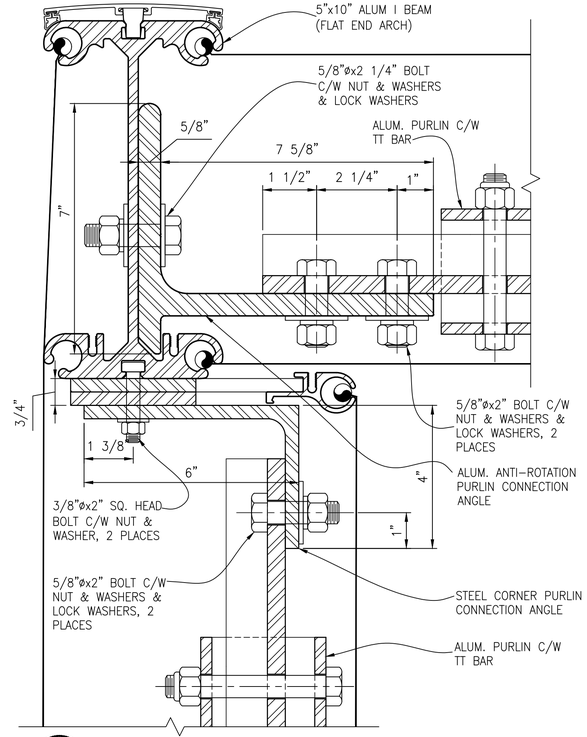
3 S-5 **FLAT END UPRIGHT BRACKET – SECTION**
3"=1'-0"



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



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



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

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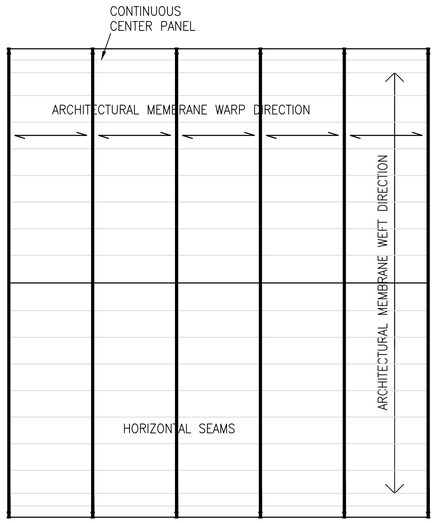
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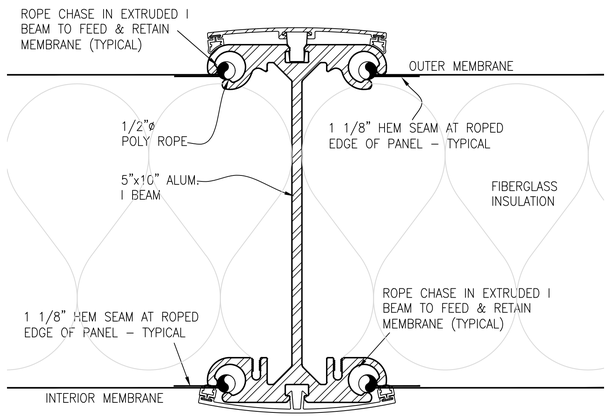
WCC SERVICES INC

70.0' STRUCTURE
FLAT END DETAILS

DRAWN BY: D. BENNETT	DATE: 01/08/2020
SCALE: AS NOTED	DRAWING # S-5
SPRUNG WO: 23455	



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



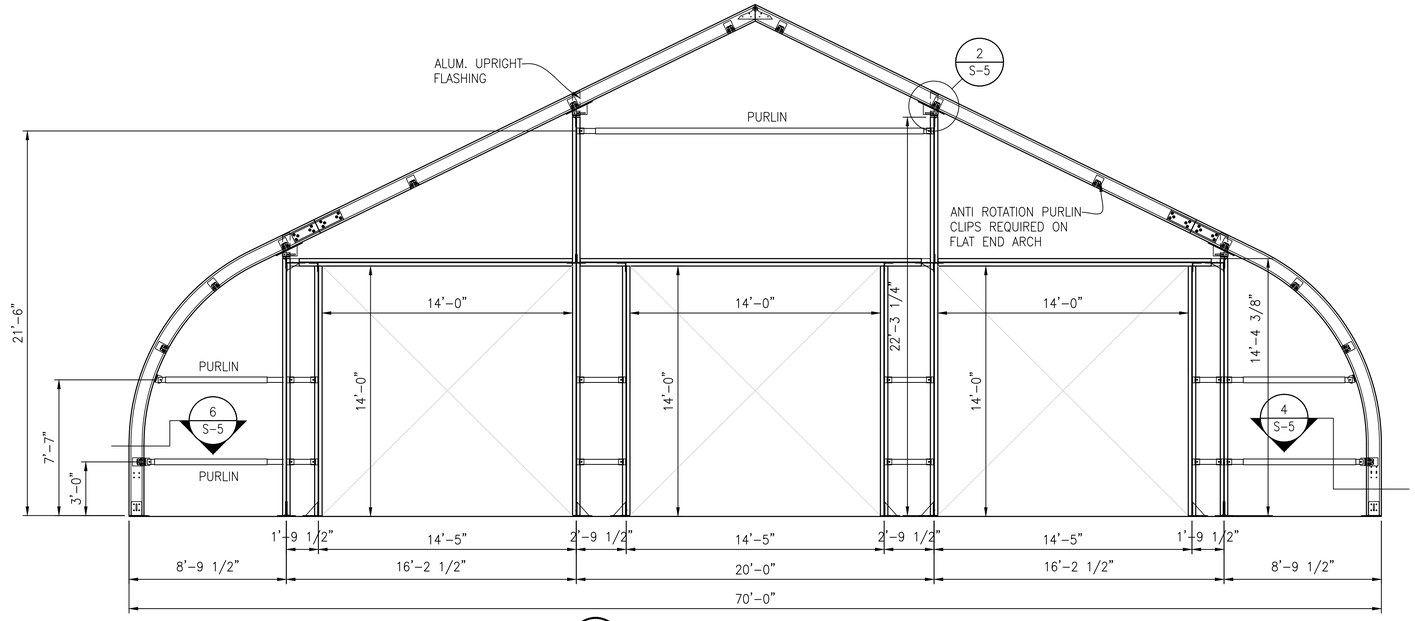
2 S-6 **5"x10" BEAM SECTION – MEMBRANE**
6"=1'-0"

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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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: 01/08/2020
SCALE: AS NOTED	DRAWING # S-6
SPRUNG WO: 23455	

Utility Detail Map



3/4/2026, 7:14:00 AM

Water Hydrant
- Standard
- Flushing

Water Network Structure
- TP Treatment Plant
- PS Pump Station
- T Storage Tank
- Water System Valve
- Water Control Valve

Water Main
- Retail Water
- Wholesale Water
- Raw Water

Sewer Network Structure
- TP Treatment Plant
- LS Lift Station

Sewer System Valve
Sewer Control Valve
Sewer Manhole

Sewer Pressurized Main
- Force
- Vacuum
- Reuse

Sewer Gravity Main

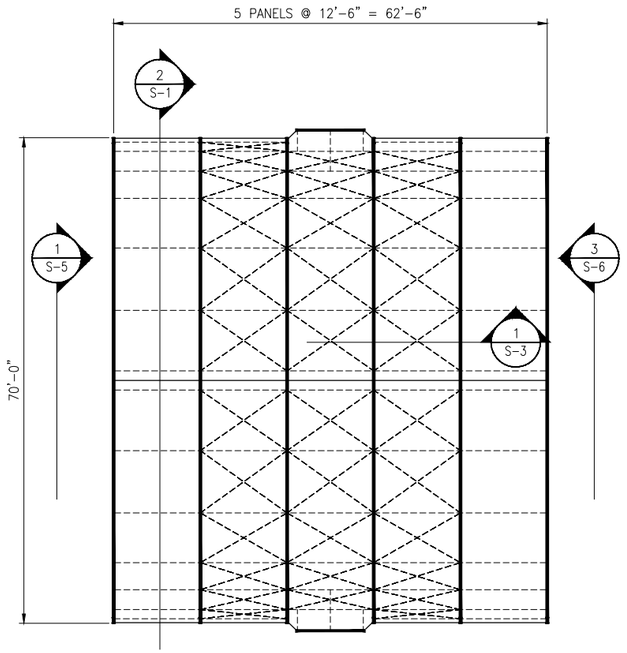
1:802

0 30 60 120 ft

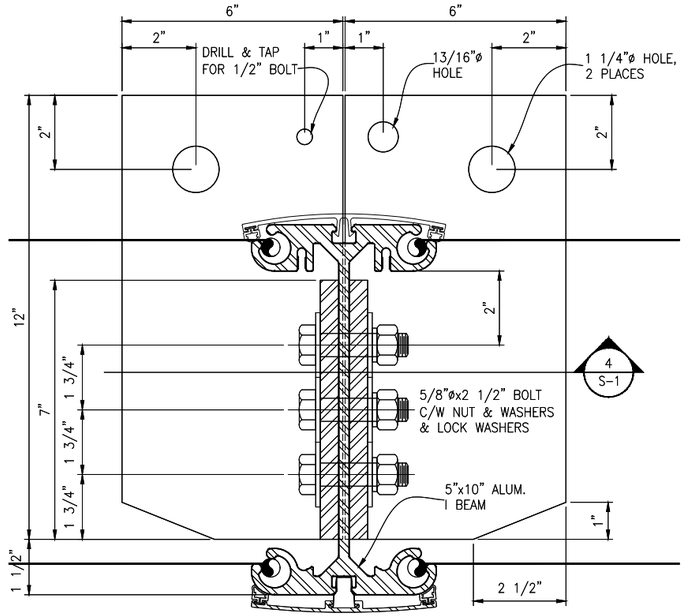
0 5 10 20 m

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

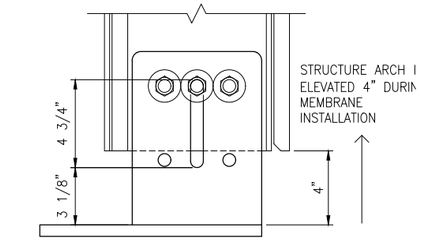
This map is intended for general reference purposes only and does not meet any survey or legal standard.



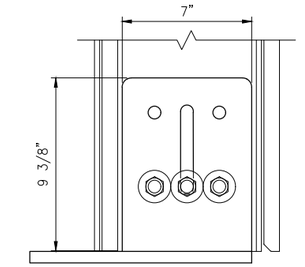
1 S-1 PLAN VIEW
3/32"=1'-0"



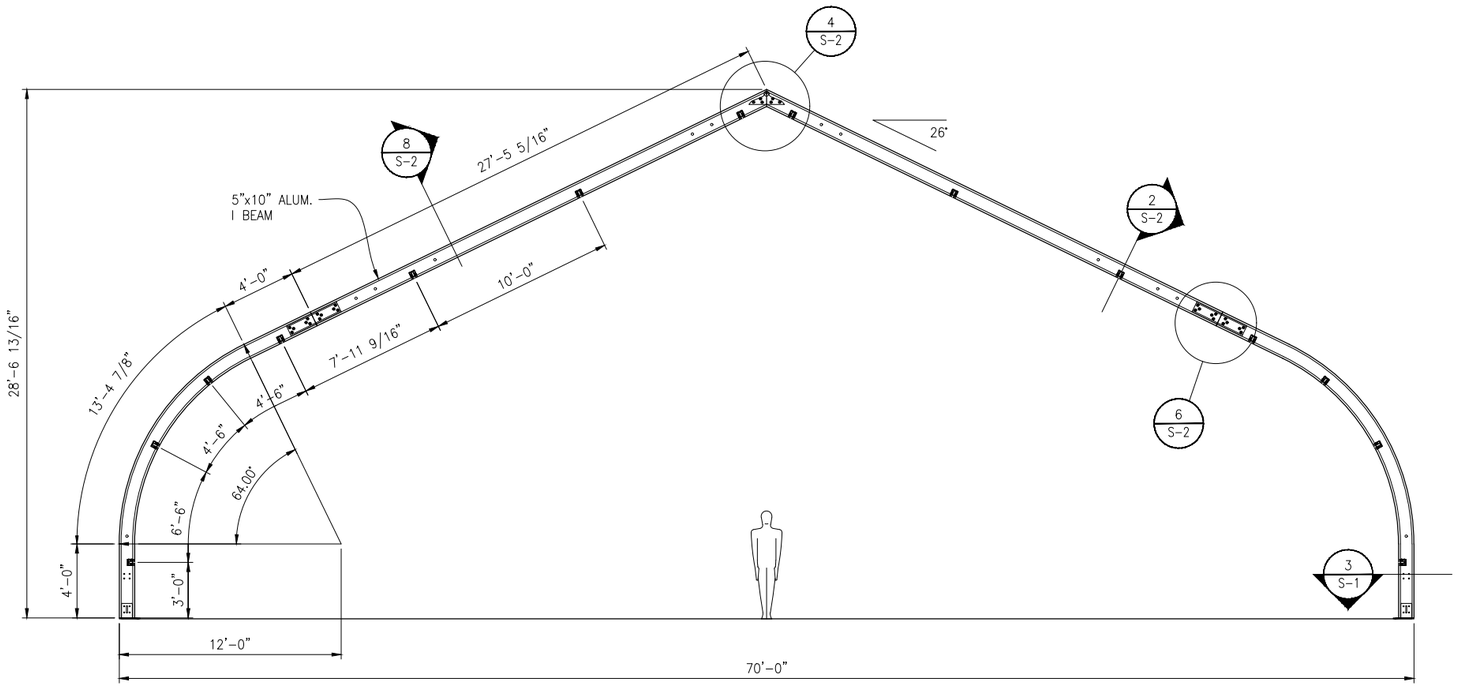
3 S-1 5"x10" BEAM BASE PLATE – PLAN
6"=1'-0"



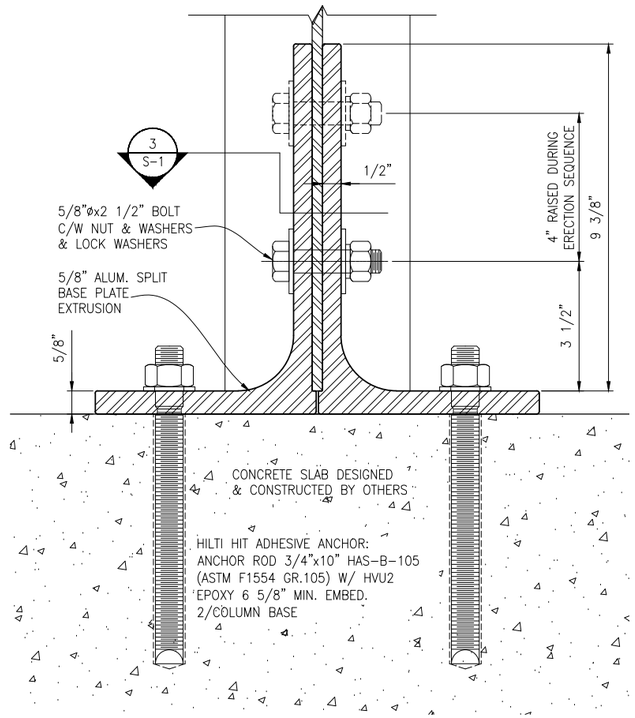
5 S-1 5"x10" BEAM BASE PLATE – ELEVATION
3"=1'-0" (ERECTION CONDITION)



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



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



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

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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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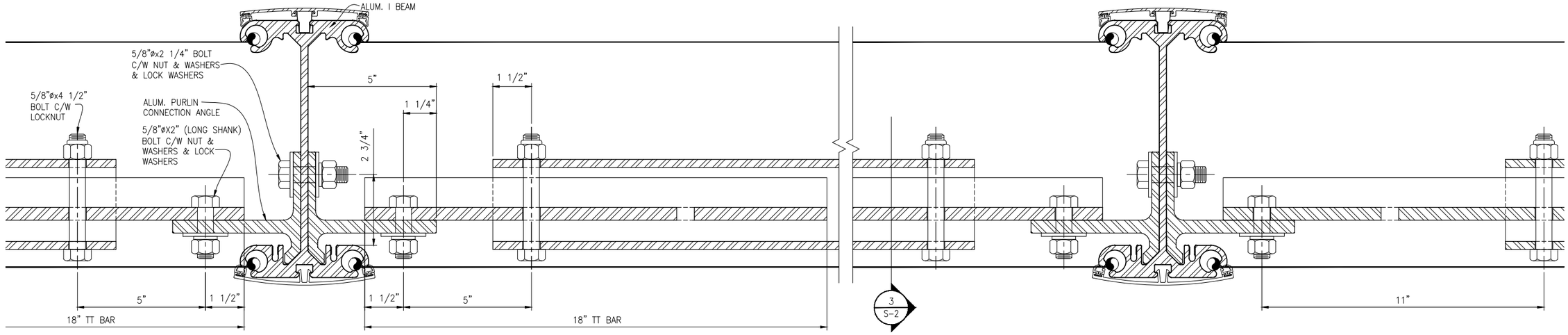
REV	MM/DD/YY	BY	DESCRIPTION

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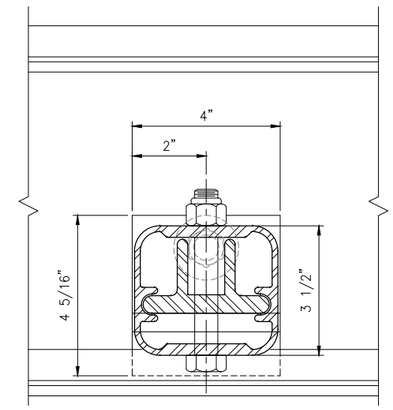
70.0 ' STRUCTURE
SECTION & BASE DETAILS

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

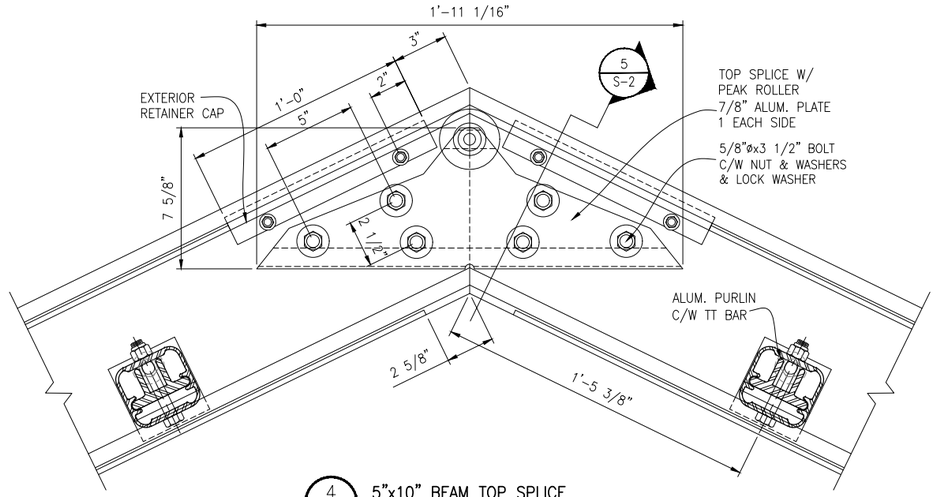


1 S-2 **5"x10" PURLIN – ELEVATION**
6"=1'-0" (ERECTION CONDITION)

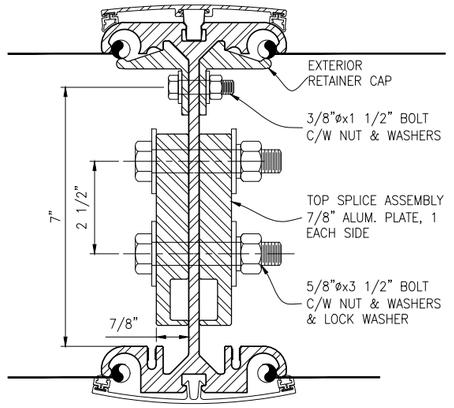
2 S-2 **5"x10" PURLIN – ELEVATION**
6"=1'-0" (FINAL CONDITION)



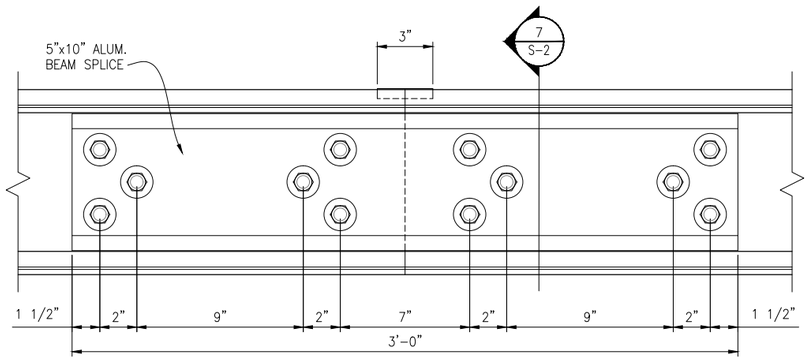
3 S-2 **5"x10" PURLIN – SECTION**
6"=1'-0"



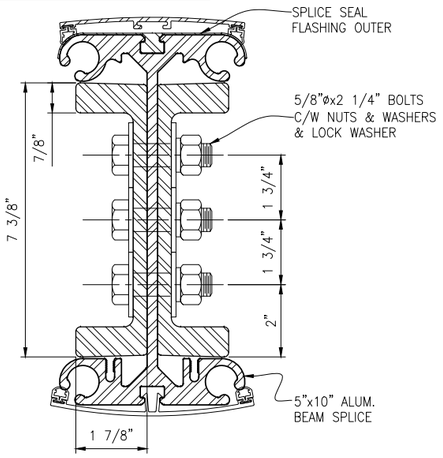
4 S-2 **5"x10" BEAM TOP SPLICE**
3"=1'-0"



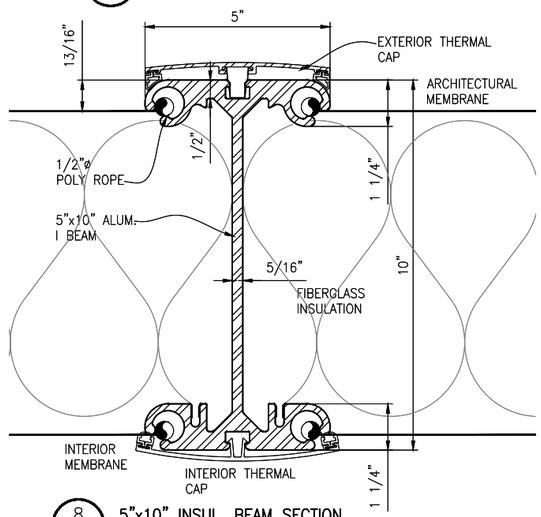
5 S-2 **5"x10" TOP SPLICE – SECTION**
6"=1'-0"



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



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



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

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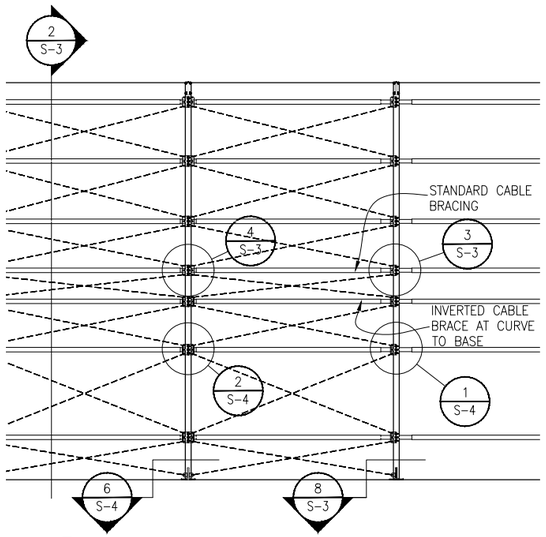
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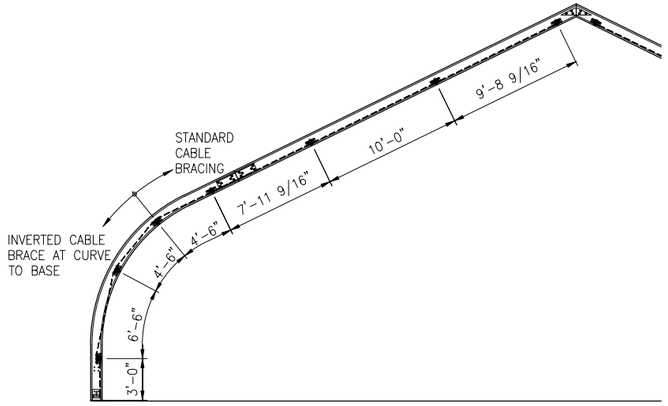
WCC SERVICES INC

70.0 ' STRUCTURE
PURLIN & SPLICE DETAILS

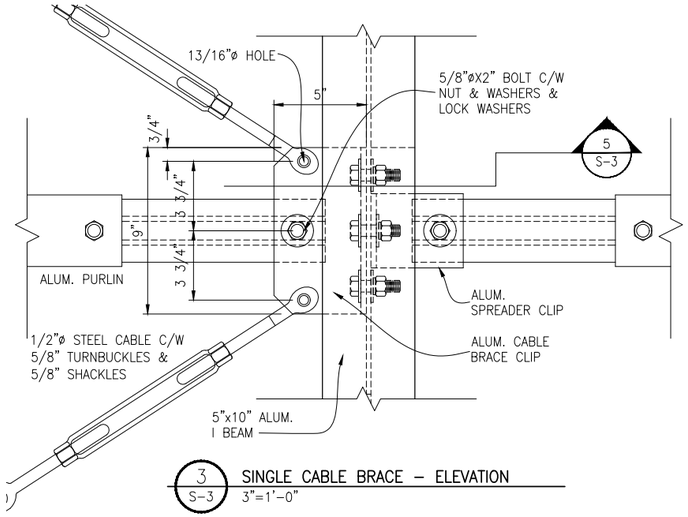
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SCALE: AS NOTED	DRAWING # S-2
SPRUNG WO: 23455	



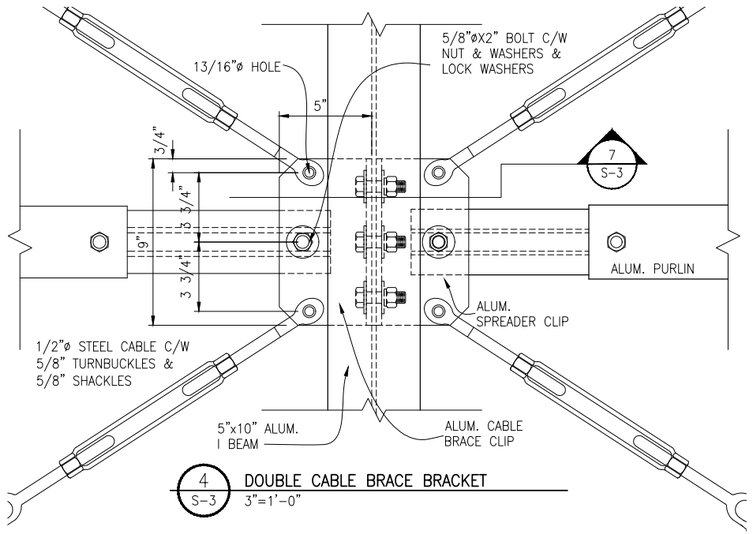
1 S-3 — 70'–0" PARTIAL CABLE BRACING – ELEVATION
3/16"=1'–0"



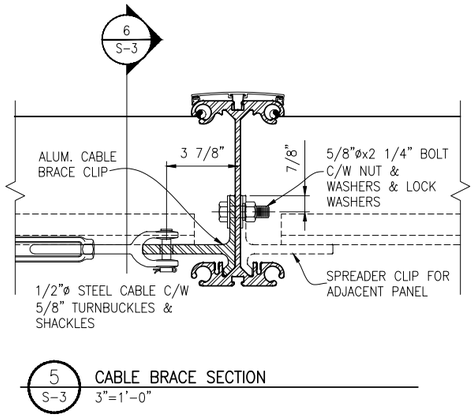
2 S-3 — 70'–0" PARTIAL CABLE BRACING – SECTION
3/16"=1'–0"



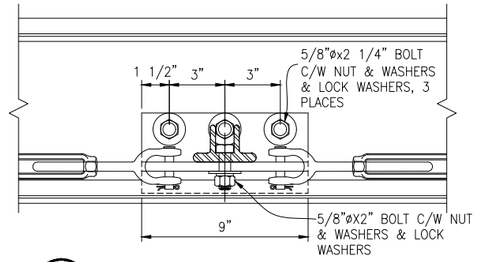
3 S-3 — SINGLE CABLE BRACE – ELEVATION
3"=1'–0"



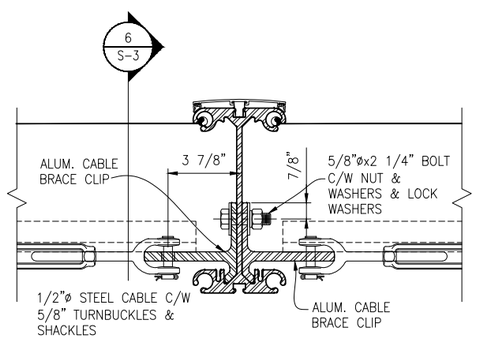
4 S-3 — DOUBLE CABLE BRACE BRACKET
3"=1'–0"



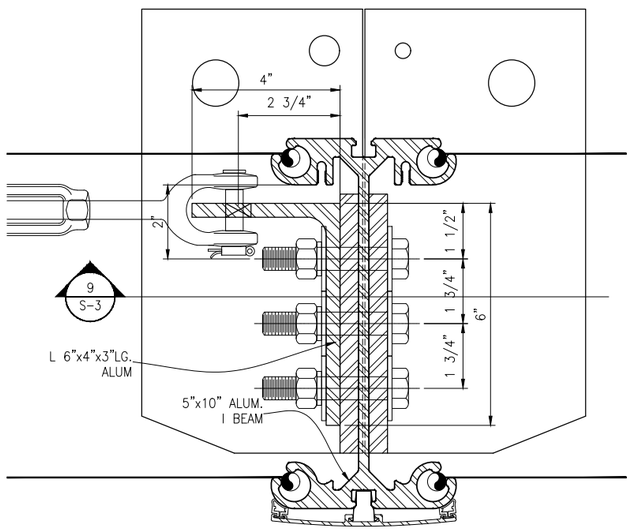
5 S-3 — CABLE BRACE SECTION
3"=1'–0"



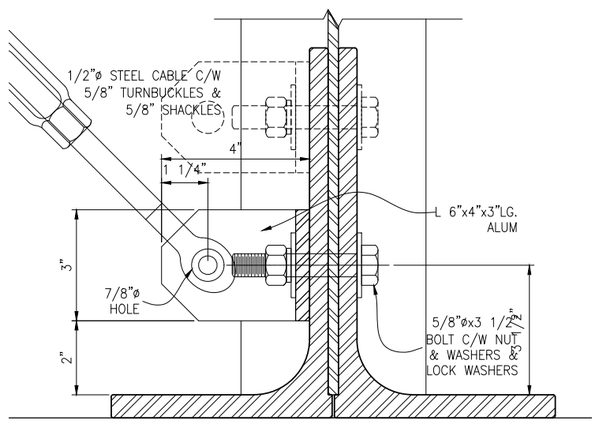
6 S-3 — CABLE BRACE BRACKET ELEVATION
3"=1'–0"



7 S-3 — DOUBLE CABLE BRACE SECTION
3"=1'–0"



8 S-3 — 5"x10" CABLE PLATE – PLAN
6"=1'–0"



9 S-3 — 5"x10" CABLE PLATE – ELEVATION
6"=1'–0"

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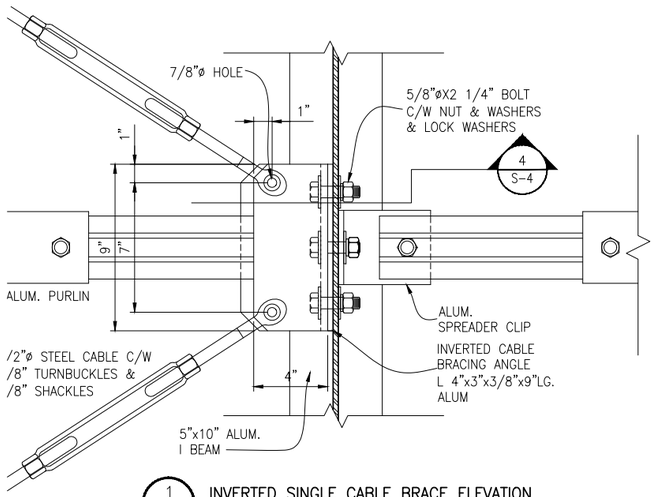
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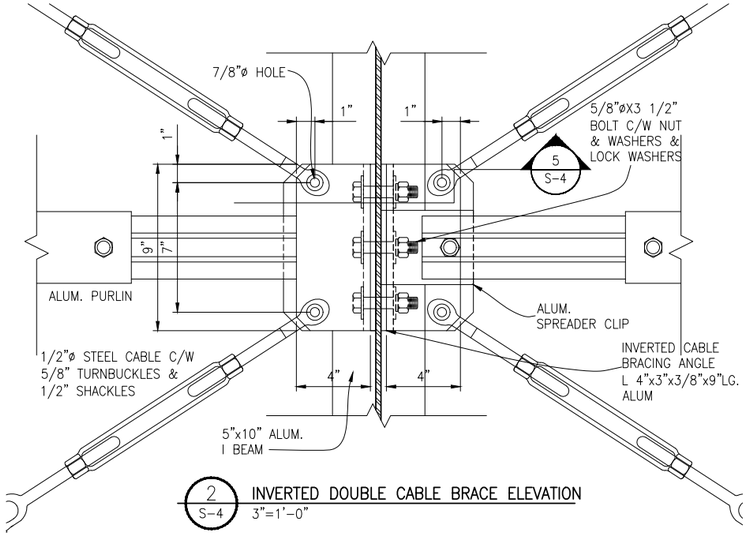
WCC SERVICES INC

70.0 ' STRUCTURE CABLE BRACE DETAILS

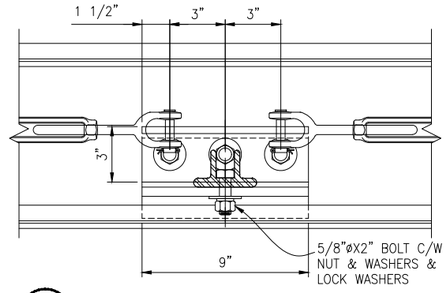
DRAWN BY:	DATE: 01/08/2020
SCALE: AS NOTED	DRAWING # S–3
SPRUNG WO: 23455	



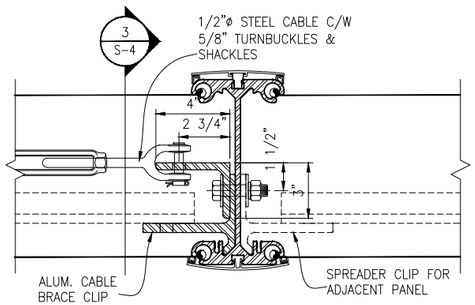
1 S-4 INVERTED SINGLE CABLE BRACE ELEVATION
3"=1'-0"



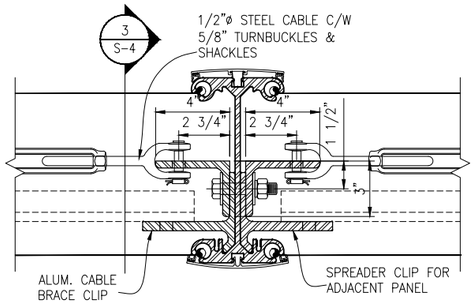
2 S-4 INVERTED DOUBLE CABLE BRACE ELEVATION
3"=1'-0"



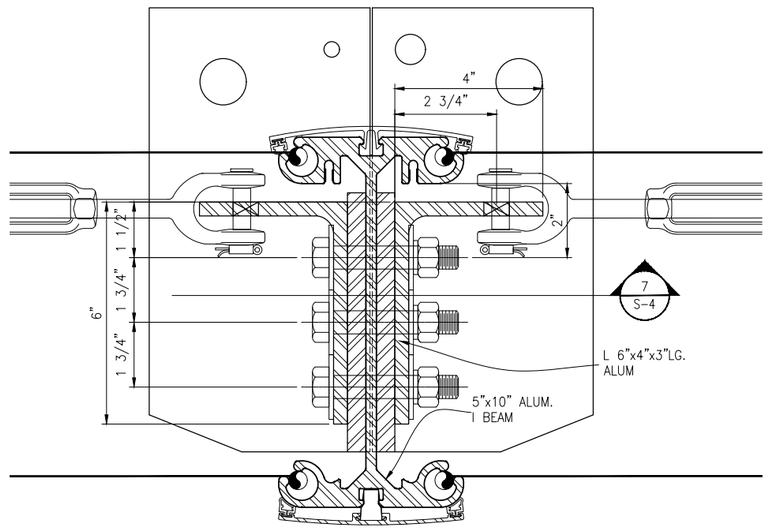
3 S-4 INVERTED CABLE BRACE BRACKET ELEVATION
3"=1'-0"



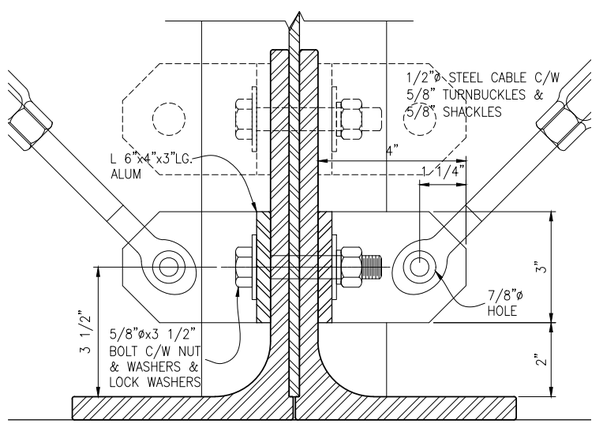
4 S-4 INVERTED CABLE BRACE SECTION
3"=1'-0"



5 S-4 INVERTED DOUBLE CABLE BRACE SECTION
3"=1'-0"



6 S-4 5"x10" DOUBLE CABLE PLATE – PLAN
6"=1'-0"



7 S-4 5"x10" DOUBLE CABLE PLATE – ELEVATION
6"=1'-0"

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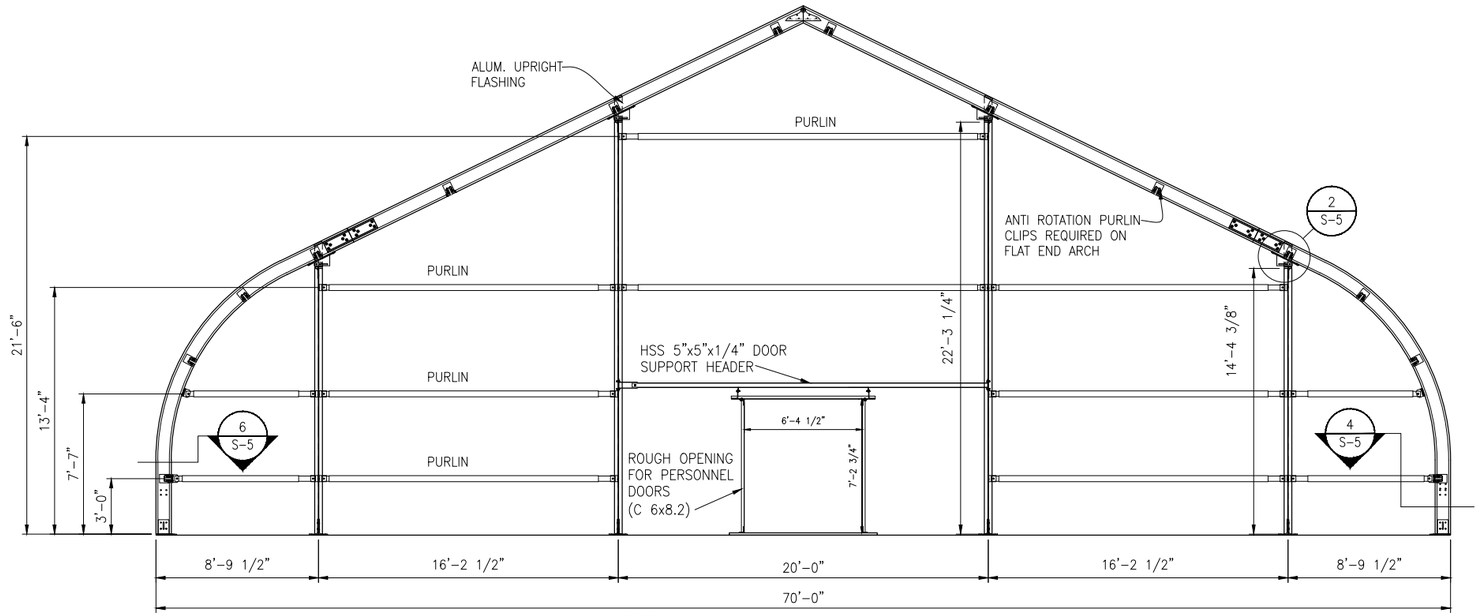
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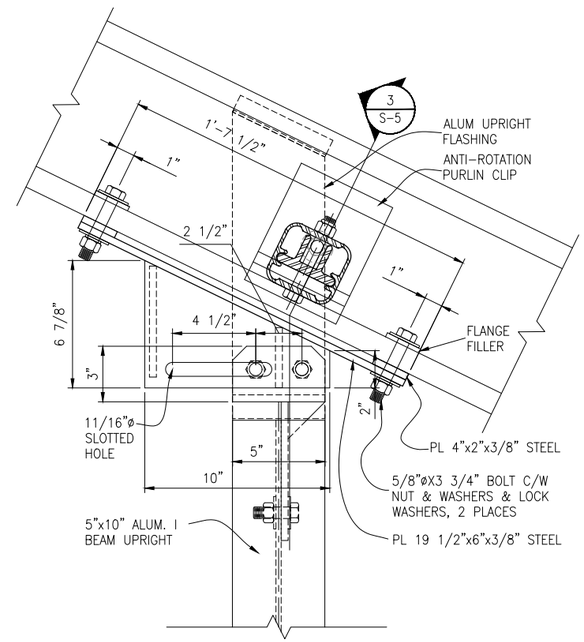
WCC SERVICES INC

70.0' STRUCTURE
CABLE BRACE DETAILS

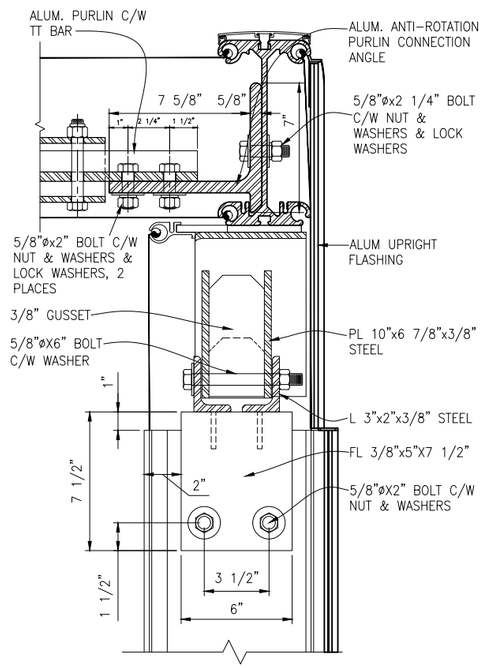
DRAWN BY:	DATE:
[illegible]	01/08/2020
SCALE: AS NOTED	DRAWING # S-4
SPRUNG WO: 23455	



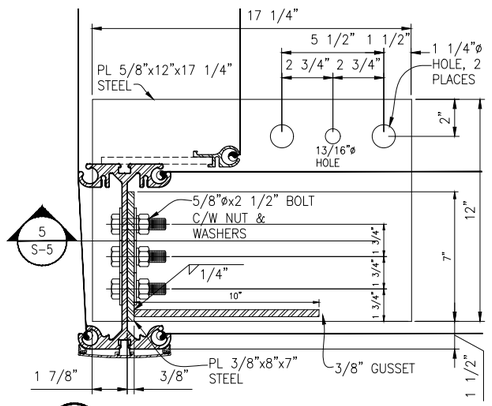
1 S-5 LEFT FLAT END 70'-0" INSULATED STRUCTURE
1/4"=1'-0"



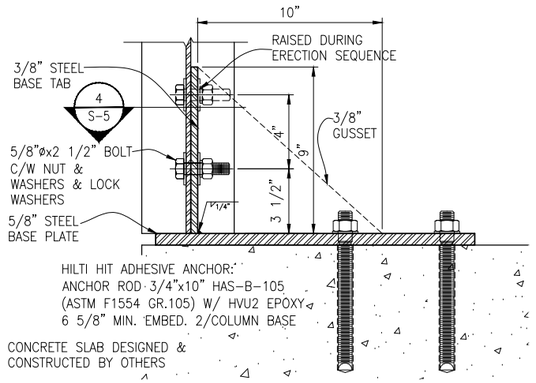
2 S-5 FLAT END UPRIGHT BRACKET – ELEV.
3"=1'-0"



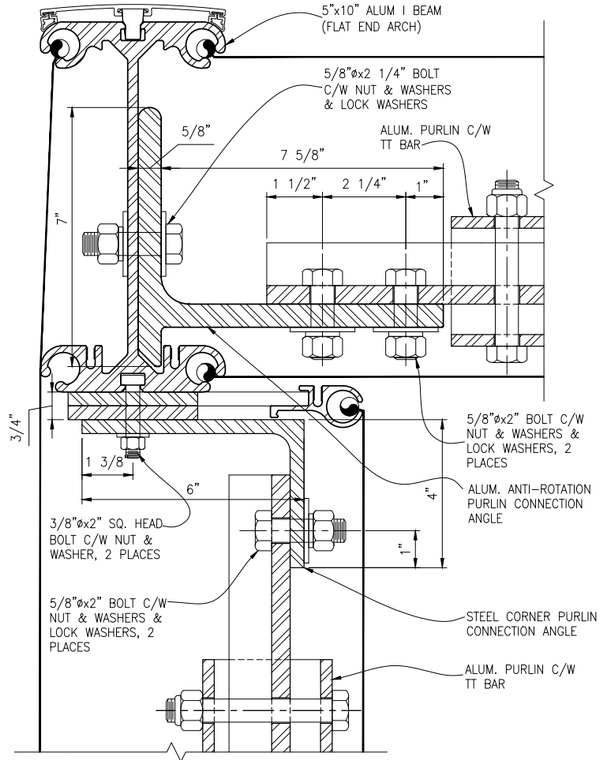
3 S-5 FLAT END UPRIGHT BRACKET – SECTION
3"=1'-0"



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



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



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

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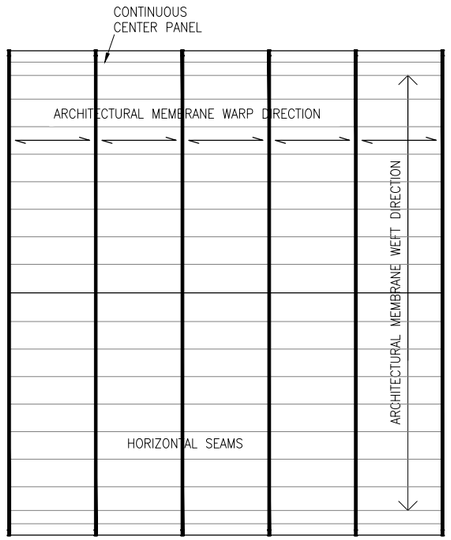
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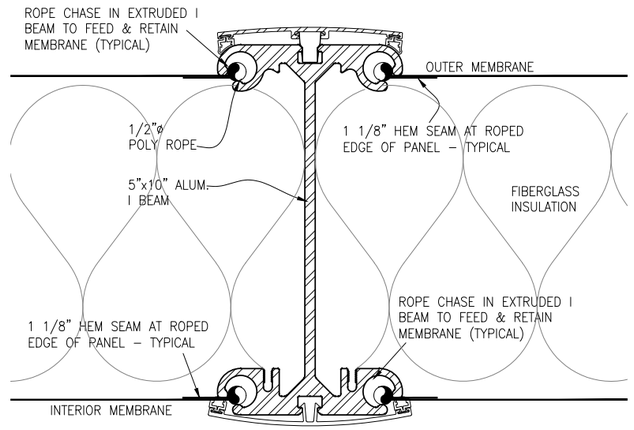
WCC SERVICES INC

70.0 ' STRUCTURE
FLAT END DETAILS

DRAWN BY: [illegible]	DATE: 01/08/2020
SCALE: AS NOTED	DRAWING # S-5
SPRUNG WO: 23455	



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



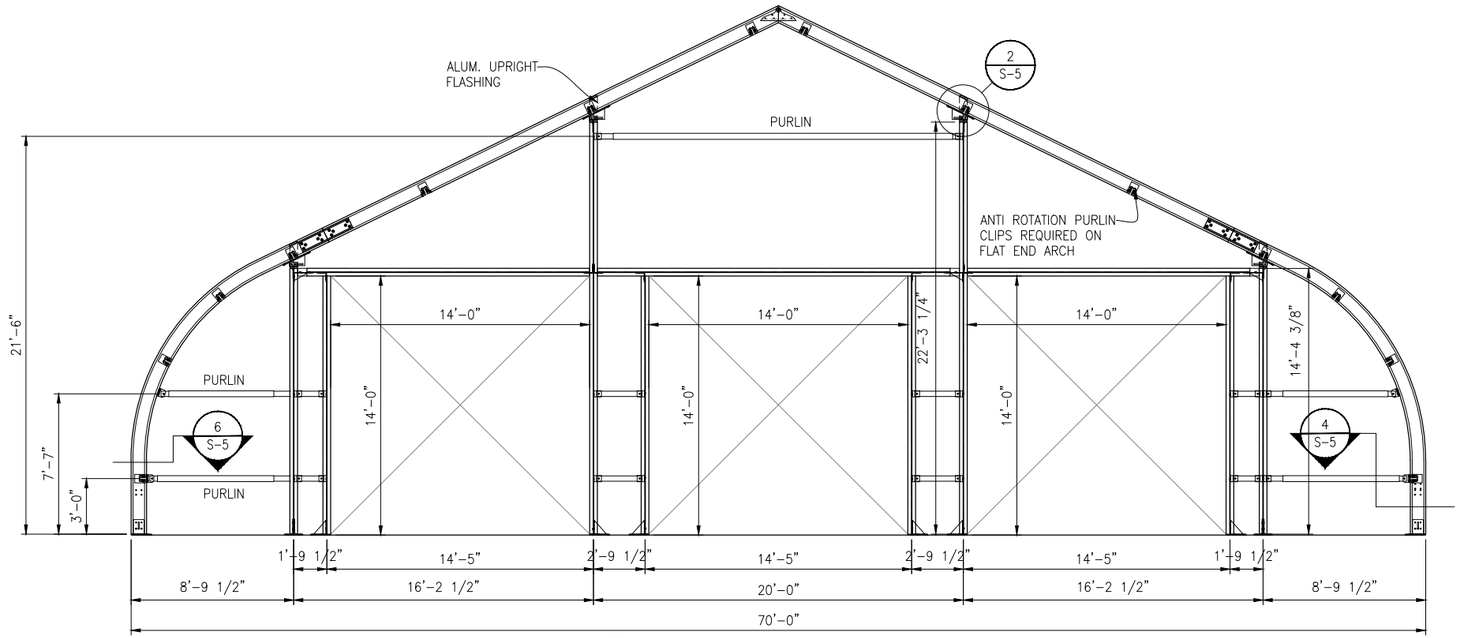
2 S-6 5"x10" BEAM SECTION – MEMBRANE
6"=1'-0"

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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innovation | versatility | reliability
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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

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

SIGNATURE SERIES

REV	MM/DD/YY	BY	DESCRIPTION

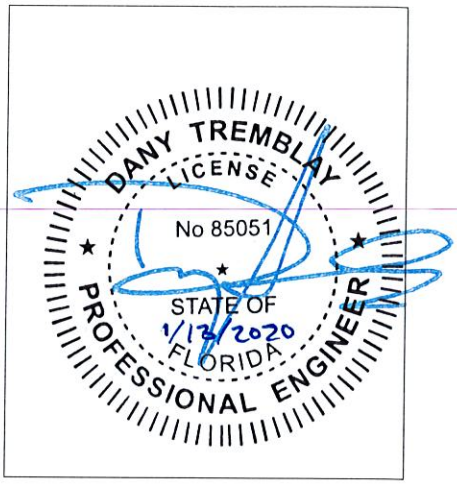
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WCC SERVICES INC

70.0' STRUCTURE
MEMBRANE DETAILS

DRAWN BY:	DATE:
[illegible]	01/08/2020
SCALE: AS NOTED	DRAWING # S-6
SPRUNG WO: 23455	

canyons
STRUCTURAL



CALCULATIONS

WCC Services Inc

70x62.5 fire station

2115 County Rd 2321
Panama City, FL 32409

SPRUNG STRUCTURES
PO Box 62, 80039 Maple Leaf Rd
Aldersyde, AB T0L 0A0 Canada

940 Elm Ave.
Salt Lake City, UT 84106
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DESIGN CRITERIA

Codes	FBC 2012		
	ASCE 7-10 for wind and seismic forces		
Arch spacing	typical	15	ft
Loads	Wind (LRFD) = 3 sec gust, risk category IV	146	mph
	Exposure	C	
	base shear factor	1.0%	
	fabric (0.2) + utility (1.0) + fire supression (3.6)	3.4	psf
	Roof snow (see supporting information studies)	0	psf
	Ground snow at location	0	psf
Material	Arch: proprietary I-shaped aluminium section	5x10	in x in
	Spreaders: 6351-T6 aluminium	3.5x3.8	in x in
	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	1	psf
	HRF = half roof dead load, 1st half	1	psf
	HRF2 = half roof dead load, 2nd half	1	psf
	IP = internal pressure	1	psf
	W0 = longitudinal wind, 1psf x Cp value from wind tunnel testing	1	psf
	W30 = 30* from longitudinal wind, 1psf x Cp value from wind tunnel testing	1	psf
	W60 = 60* from longitudinal wind, 1psf x Cp value from wind tunnel testing	1	psf
	W90 = 90* from longitudinal wind, 1psf x Cp value from wind tunnel testing	1	psf
	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 transfering 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 wa	0 & 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	6351-T6	Fy1	37 ksi	
tf	0.625 in2		Fcy1	37	
d510	10 in		Fu1	42	
tw	0.3125 in		Fbu1	84	
bw	7.625 in		Fsu1	27	
			Fsy1	22.2	
b1510	5 in				
b2510	5	6061-T6	Fy2	35	
t1510	0.625		Fu2	42	
t2510	0.625		Fbu2	82	
			Fby2	58	
J510	0.891 in4				
Aw510	2.38 in2	α	0.5		
Ix	134.73 in4	Cw	189.2598		
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				

Allowable Strength Design

Tension - Chapter D

Pnt	307.5 K	Pnt/Ωty	186.3 K	gross section
1 in hole				
Ae	7.9975 in2			
Pnt2	335.895 K	Pnt2/Ωtr	172.2538 K	

Compression - Chapter E

Member Bucking - E.2

Pnc	307.47 K
λ1c	17.71

		member length	k
λ2c	63.77		
Lcx	24.1 ft	37	0.65
Lcy	5.7 ft	8.7	0.65
Lzc	5.7 ft	8.7	0.65

Flexural Buckling - E2.1

kxc	1
kyc	1
kzc	1
λxc	71.79
λyc	59.01
Fcc	16.44 ksi
Pncc	136.62 K

Torsional and Flexural-Torsional Buckling - E2.2

Doubly Symmetric

kz	1
Lz	37 ft
Fe	51.38 ksi
λtft	44.05
Fc2	16.44 ksi
Pnc3	136.62 K

Local Buckling - E.3

E3.2

Pnc1	307.47 K

E.4

Pnc2	404.43 K

Flexure - Chapter F

Yeilding - F.2

Mnp1	97.74 K-ft		
Mnp2	124.63 K-ft		
Mnp3	124.63 K-ft		
Mnu	110.95 K-ft	Mnu/Ωtr	56.90 K-ft
Mnp	110.95 K-ft	Mnp1/Ωb	59.24 K-ft
Mnlb	83.08 K-ft	Mnlb/Ωb	50.35 K-ft
		Mnmb1/Ωb	56.62 K-ft

Local Buckling - F.3

Mnlb	83.08 K-ft

Lateral Torsional Buckling - F.4

Cb	1.67
rye1	1.38 in

λlbt	24.89	
Cc	63.77	
Sxc=Sxb	26.946	in3
Mnmb1	93.43	K-ft
Mnmb2	361.40	K-ft

Shear - Chapter G

λs1	34.69	
λs2	61.30	
bw/tw	24.4	
Fsv=Fsy1	22.2	ksi

Allowable Forces

Pt	186.35	K
Pc	82.80	K
Mcx	50.35	K-ft
Va	32.06	K

Splice

Ixsplice	39.03	in4
Iysplice	1.72	in4
dsplice	7.25	in
bsplice	1.94	in
Zxsplice	14.24	in3
Sxsplice	10.8	in3
Asplice	5.22	in2
Awsplice	2.22	in2
rxsplice	2.73	in
rysplice	0.57	in

Allowable Forces

Moment

Mxspliceall	22.84	K-ft
2*Mxsplicea	45.68	K-ft

Shear

Vsplicealloy	29.87	K
2*Vspliceal	59.74	K

Compression

Psplicecomp	193.14	K

Tension

Psplicetensi	193.14	K

3.5"x3.875" spreader Aluminum Section

A44	3.19 in2	6351-T6	Fy1	37 ksi	
t44	0.1875 in2		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 in2				
Ix	5.75 in4	6061-T6	Fy2	35	
Iy	5.48 in4		Fu2	42	
			Fbu2	82	
Sx44	6.22 in3		Fby2	58	
rx44	1.34 in				
ry44	1.31 in				

Allowable Strength Design

Tension - Chaapter D

Pnt	118.03 K	Pnt/Ωty	71.53 K	gross section
0.8125 in hole				
A44net	2.662656 in2			
Pnt2	111.83 K	Pnt2/Ωtr	57.35 K	

Compression - Chapter E
Member Bucking - E.2

λ1c	17.71
L44	12 ft
k44	1
λ44	109.87
λ2c	63.77
Fc44	7.02 ksi
Pnc44	22.39 K
Pnc44/Ωc	13.57 K

Bolt Strength, Bolt Tearout, Bolt Bearing, Pullout

dbolt	0.625 in
Fnt	113 ksi
Fnv	68 ksi

Fnvx	84 ksi			
Ωbolt	1.95	20	0.65	
		6		
Abolt	0.31 in2	6		
Pntbolt	34.67 K			
Pntbolt/Ωl	17.78 K			
Vnvbolt	25.77 K			
Vnvbolt/Ω	13.22 K			

Bolt bearing

de44	1.5 in
Rn44	116.55 K
Limit	16.41 K
Double sh	20.19 K

Bolt Summary

0.625 in dia.

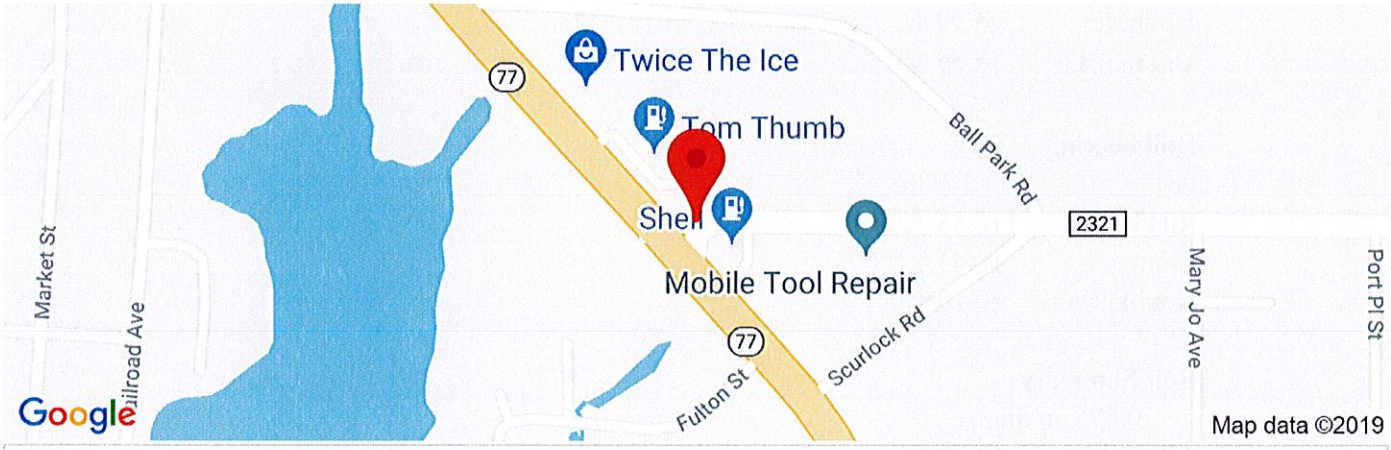
Allowable	17.78 K
Allowable	13.22 K
Bolt Beari	116.55 K

OSHPD

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
SsRT	0.076	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.082	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.05	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.056	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	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

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 (Ωo) = 2.5
Deflection Amplification Factor (Cd) = 3
S_{DS} = 0.763
S_{D1} = 0.423

Seismic Load Effect (E) = Eh +/-Ev = ρQ_E +/- $0.2S_{DS}D$ = Qe +/- 0.153D Q_E = horizontal seismic force
Special Seismic Load Effect (Em) = Emh +/- Ev = $\Omega o\, Q_E$ +/- $0.2S_{DS}D$ = 2.5Qe +/- 0.153D 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 Cu = 1.40
Approx fundamental period (Ta) = $C_T h_n^x$ = 0.263 sec x= 0.75 Tmax = CuTa = 0.368
User calculated fundamental period (T) = sec Use T = 0.263
Long Period Transition Period (TL) = ASCE7 map = error
Seismic response coef. (Cs) = $S_{DS}I/R$ = 0.254
need not exceed Cs = Sd1 I TL/RT^2 = 0.000
but not less than Cs = 0.044SdsI = 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 Δa = 0.020hsx where hsx is the story height below level x

End arch — Distributed wind load (klf) = 1psf x trib x Cp / 1000

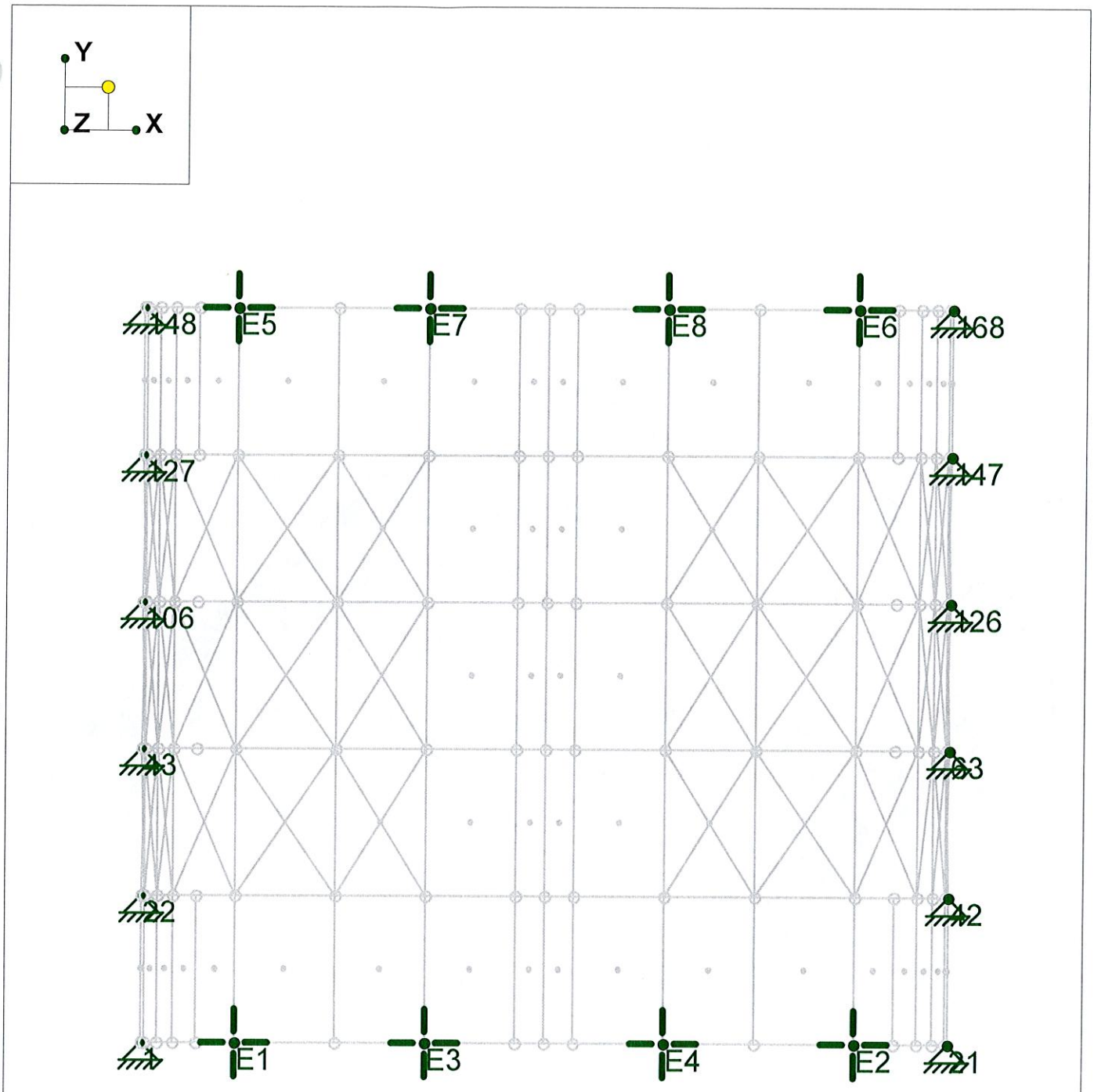
Arch Membe	i	j	ft trib	0 wi	0 wj	30ad wi	30ad wj	30bc wi	30bc wj	60ad wi	60ad wj	60bc wi	60bc wj	90 wi	90 wj
1	1	2	6.25	-0.0024	-0.0024	-0.0003	-0.0003	-0.0020	-0.0020	0.0021	0.0021	-0.0003	-0.0003	0.0018	0.0018
2	2	3	6.25	-0.0024	-0.0027	-0.0003	-0.0004	-0.0020	-0.0021	0.0021	0.0020	-0.0003	-0.0002	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) = 1psf x trib x Cp / 1000

Arch Membe	i	j	ft trib	0 wi	0 wj	30ad wi	30ad wj	30bc wi	30bc wj	60ad wi	60ad wj	60bc wi	60bc wj	90 wi	90 wj
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

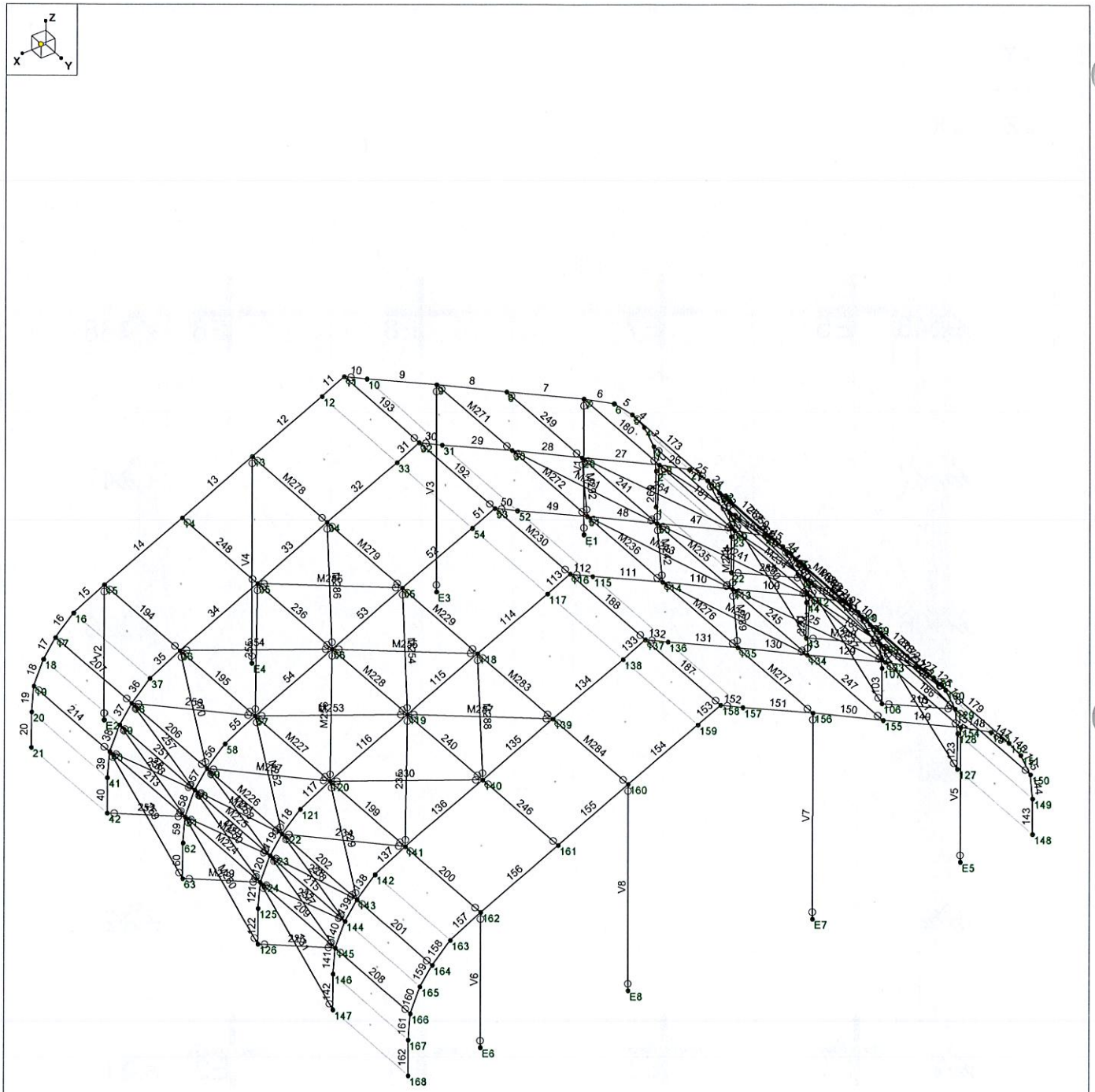
TYP interior arch — Distributed wind load (klf) = 1psf x trib x Cp / 1000

Arch Membe	i	j	ft trib	0 wi	0 wj	30ad wi	30ad wj	30bc wi	30bc wj	60ad wi	60ad wj	60bc wi	60bc wj	90 wi	90 wj
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



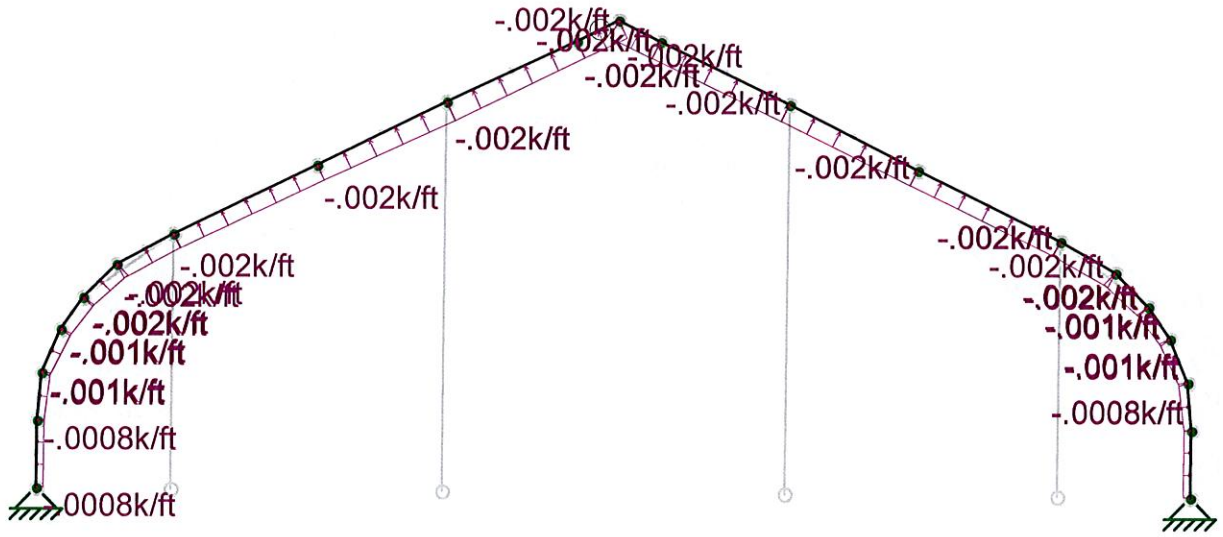
Envelope Only Solution

Canyons Structural Inc.		
Dany Tremblay, SE PE PE...	WCC Services fire station FL 70x63	Dec 19, 2019 at 4:56 PM
	Boundary nodes	WCC Services fire station FL 70x6...



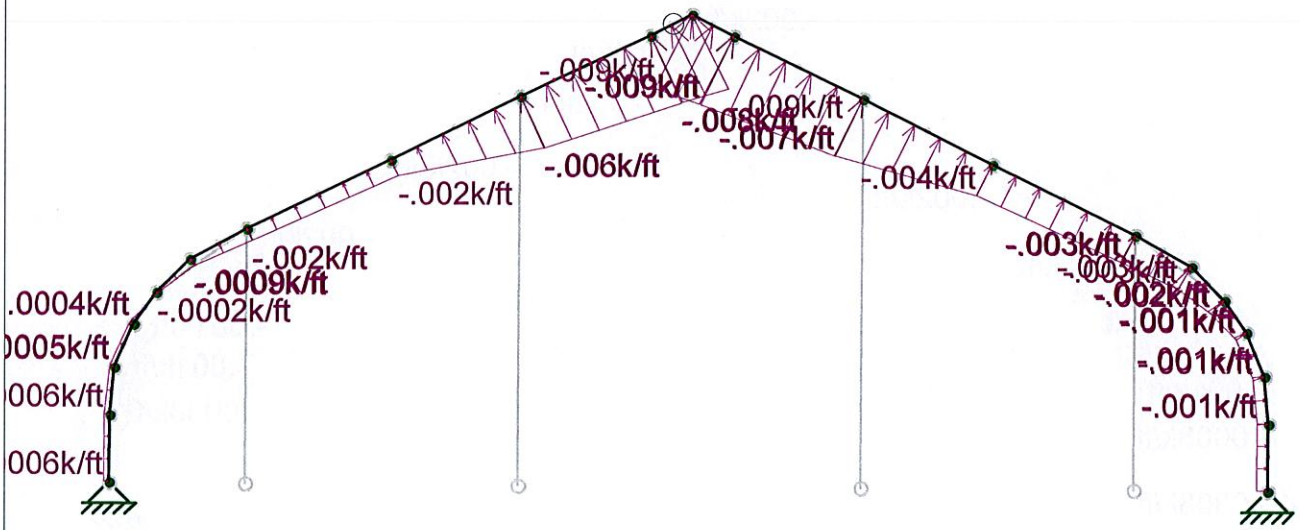
Envelope Only Solution

Canyons Structural Inc.		
Dany Tremblay, SE PE PE...	WCC Services fire station FL 70x63	Dec 19, 2019 at 4:58 PM
	Members and nodes	WCC Services fire station FL 70x6...



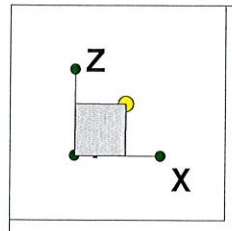
Loads: BLC 6, 0 degree wind 1 psf

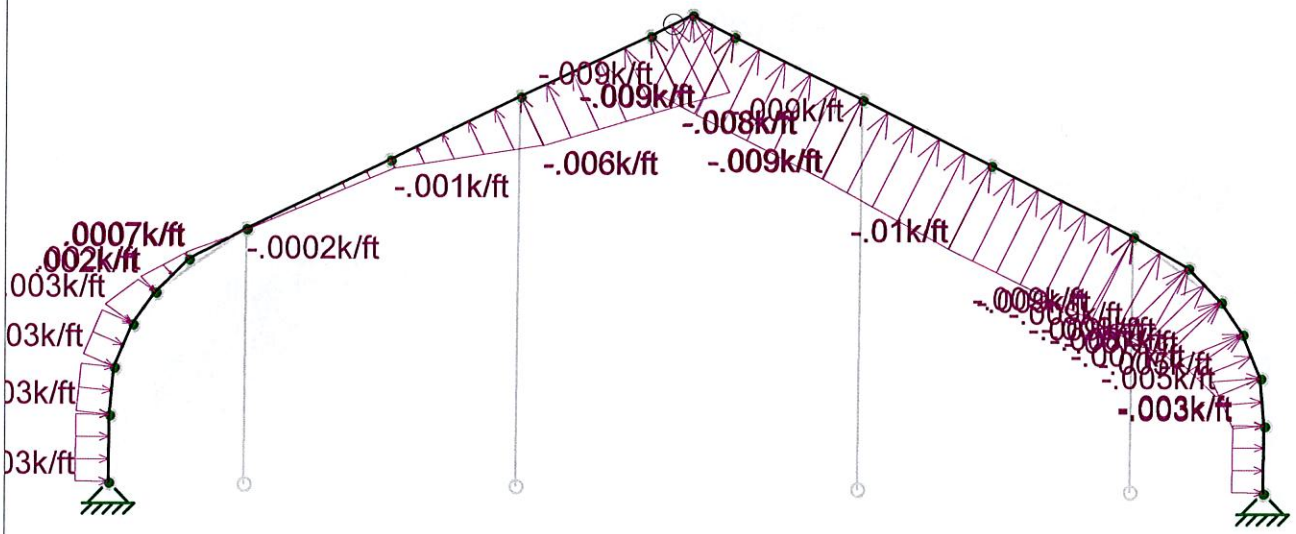
Canyons Structural Inc.		
Dany Tremblay, SE PE PE...	WCC Services fire station FL 70x63	Dec 19, 2019 at 5:56 PM
	Wind tunnel loading envelope, 0* influence	WCC Services fire station FL 70x6...



Loads: BLC 7, 30 degree wind 1 psf

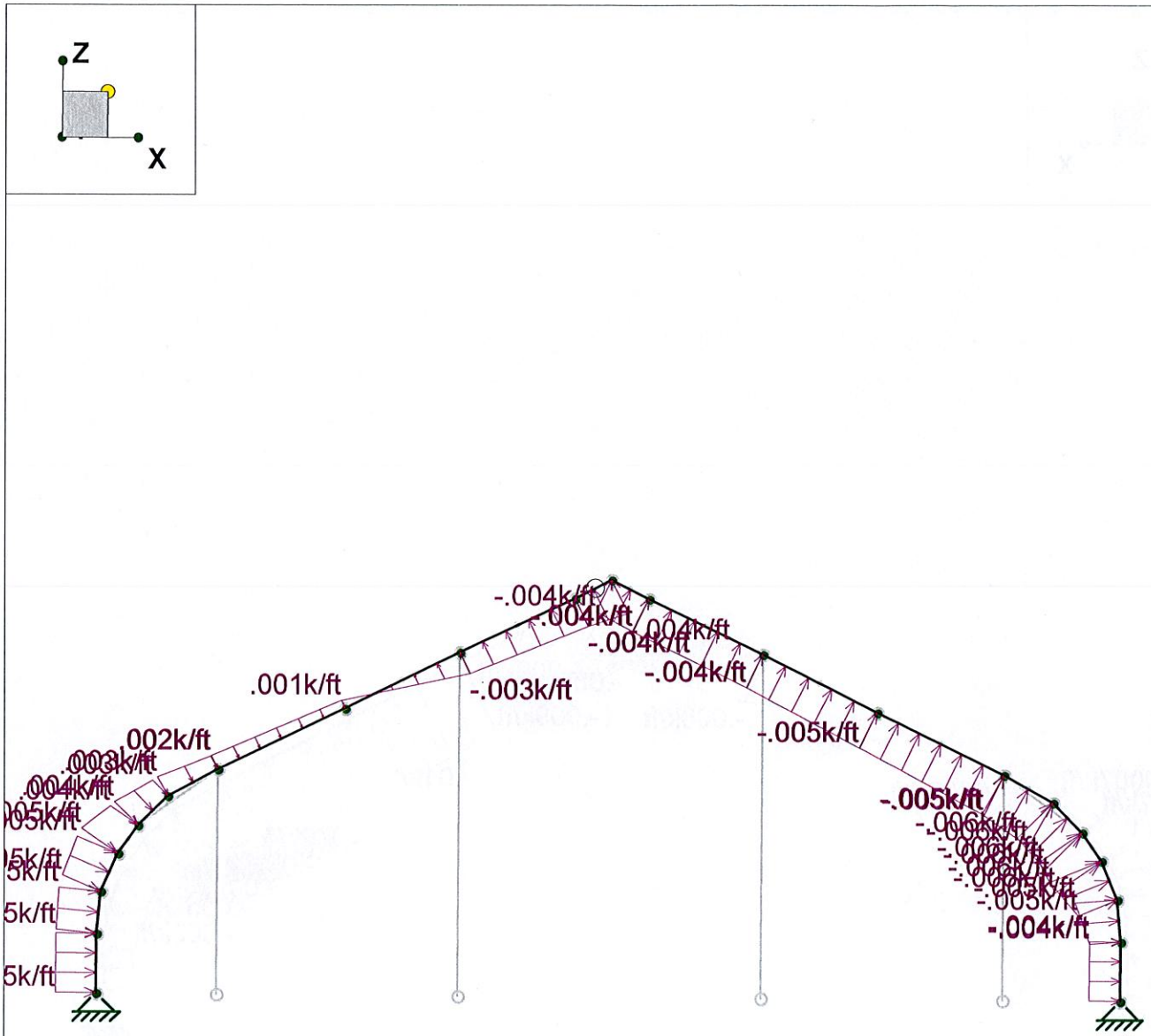
Canyons Structural Inc.		
Dany Tremblay, SE PE PE...	WCC Services fire station FL 70x63	Dec 19, 2019 at 5:57 PM
	Wind tunnel loading envelope, 30* influence	WCC Services fire station FL 70x6...





Loads: BLC 8, 60 degree wind 1 psf

Canyons Structural Inc.		
Dany Tremblay, SE PE PE...	WCC Services fire station FL 70x63	Dec 19, 2019 at 5:57 PM
	Wind tunnel loading envelope, 60* influence	WCC Services fire station FL 70x6...



Loads: BLC 9, 90 Degree Wind 1 psf

Canyons Structural Inc.		
Dany Tremblay, SE PE PE...	WCC Services fire station FL 70x63	Dec 19, 2019 at 5:57 PM
	Wind tunnel loading envelope, 90* influence	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...
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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0	6	0	0	1	-.013	6.357	1
333	224	m...	0	14.1...	6	.003	0	7	0	0	7	0	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	7
335	225	m...	0	15.7...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0	0	7
336		min	-.67	15.7...	5	-.003	15.7...	4	0	0	1	0	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	0	1	0	0	1	0	14.0...	1
339	227	m...	0	12.8...	7	.004	0	1	0	0	7	0	0	5	0	0	7	0	0	7
340		min	-.255	12.8...	6	-.004	12.8...	1	0	0	1	0	0	1	0	0	1	-.013	6.405	1
341	228	m...	0	12.7...	5	.003	0	7	0	0	7	0	0	6	0	0	7	0	0	7
342		min	-.372	12.7...	7	-.003	12.7...	6	0	0	1	0	0	1	0	0	1	-.008	6.357	6
343	229	m...	-.056	0	1	.005	0	1	0	0	7	0	0	5	0	0	7	0	0	7
344		min	-1.288	14.1...	6	-.005	14.1...	1	0	0	1	0	0	7	0	0	1	-.016	7.062	1
345	230	m...	0	15.7...	1	.003	0	7	0	0	7	0	0	6	0	0	7	0	0	7
346		min	-.465	15.7...	5	-.003	15.7...	4	0	0	1	0	0	1	0	0	1	-.012	7.861	4
347	231	m...	0	14.2...	1	.003	0	7	0	0	7	0	0	5	0	0	7	0	0	7
348		min	-.484	14.2...	6	-.003	14.2...	4	0	0	1	0	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	0	1	0	0	1	0	12.6...	1
351	233	m...	-.067	0	7	.004	0	1	0	0	7	0	0	5	0	0	7	0	0	7
352		min	-.528	12.7...	6	-.004	12.7...	1	0	0	1	0	0	1	0	0	1	-.013	6.357	1
353	234	m...	0	14.1...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
354		min	-.178	14.1...	7	-.003	14.1...	7	0	0	1	0	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	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	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	0	7	0	0	1	-.07	6.25	1
361	241	m...	.27	0	6	.022	0	1	0	0	7	0	0	5	0	0	7	0	0	7
362		min	-.491	0	4	-.022	12.5	1	0	0	1	0	0	7	0	0	1	-.07	6.25	1
363	245	m...	-.06	0	1	.022	0	1	0	0	7	0	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	0	1	0	0	7	0	0	7
374		min	-.031	0	1	-.022	12.5	1	0	0	1	0	0	7	0	0	1	-.07	6.25	1
375	251	m...	.658	0	6	.022	0	1	0	0	7	0	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	0	7	0	0	7	0	0	7
378		min	-.289	14.2...	5	-.003	14.2...	4	0	0	1	0	0	5	0	0	1	-.009	7.124	4
379	253	m...	0	12.8...	5	.004	0	1	0	0	7	0	0	4	0	0	7	0	0	7
380		min	-.139	12.8...	6	-.004	12.8...	1	0	0	1	0	0	1	0	0	1	-.013	6.405	1
381	254	m...	0	15.7...	1	.003	0	7	0	0	7	0	0	6	0	0	7	0	0	7
382		min	-.76	15.7...	5	-.003	15.7...	4	0	0	1	0	0	1	0	0	1	-.012	7.861	4
383	255	m...	0	15.7...	5	.003	0	7	0	0	7	0	0	5	0	0	7	0	0	7
384		min	-.551	0	6	-.003	15.7...	4	0	0	1	0	0	6	0	0	1	-.012	7.861	4
385	256	m...	0	14.1...	7	.003	0	6	0	0	7	0	0	6	0	0	7	0	0	7
386		min	-.652	0	5	-.003	14.1...	5	0	0	1	0	0	5	0	0	1	-.01	7.062	5
387	257	m...	-.011	12.7...	1	.004	0	1	0	0	7	0	0	5	0	0	7	0	0	7
388		min	-.651	0	6	-.004	12.7...	1	0	0	1	0	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	0	7
390		min	0	0	1	0	12.8...	1	0	0	1	0	0	1	0	0	1	0	12.6...	1
391	259	m...	0	14.2...	7	.003	0	4	0	0	7	0	0	4	0	0	7	0	0	7
392		min	-.064	0	4	-.003	14.2...	4	0	0	1	0	14.2...	1	0	0	1	-.009	7.124	4
393	260	m...	0	14.2...	1	.003	0	7	0	0	7	0	14.2...	1	0	0	7	0	0	7
394		min	-.331	14.2...	6	-.003	14.2...	4	0	0	1	0	0	6	0	0	1	-.009	7.124	4
395	261	m...	0	12.8...	7	0	6.272	7	0	0	7	0	12.8...	7	0	0	7	0	0	7
396		min	0	0	1	0	12.8...	1	0	0	1	0	12.8...	1	0	0	1	0	12.6...	1
397	262	m...	-.011	0	1	.004	0	1	0	0	7	0	0	1	0	0	7	0	0	7
398		min	-.339	12.7...	6	-.004	12.7...	1	0	0	1	0	0	6	0	0	1	-.013	6.357	1
399	263	m...	0	14.1...	4	.003	0	7	0	0	7	0	0	6	0	0	7	0	0	7
400		min	-.397	14.1...	7	-.003	14.1...	5	0	0	1	0	14.1...	1	0	0	1	-.01	7.062	5
401	264	m...	0	15.7...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0	0	7
402		min	-.374	15.7...	6	-.003	15.7...	4	0	0	1	0	0	7	0	0	1	-.012	7.861	4
403	265	m...	0	14.2...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
404		min	-.059	14.2...	7	-.003	14.2...	4	0	0	1	0	14.2...	1	0	0	1	-.009	7.124	4
405	266	m...	-.022	0	1	.004	0	1	0	0	7	0	0	1	0	0	7	0	0	7
406		min	-.324	12.8...	6	-.004	12.8...	1	0	0	1	0	0	6	0	0	1	-.013	6.405	1
407	267	m...	0	12.7...	7	0	6.225	7	0	0	7	0	12.7...	7	0	0	7	0	0	7
408		min	0	0	1	0	12.7...	1	0	0	1	0	12.7...	1	0	0	1	0	12.5...	1
409	268	m...	0	14.1...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0	0	7
410		min	-1.184	14.1...	6	-.003	14.1...	4	0	0	1	0	0	6	0	0	1	-.01	7.062	4
411	269	m...	0	15.7...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
412		min	-.128	15.7...	4	-.003	15.7...	4	0	0	1	0	0	4	0	0	1	-.012	7.861	4
413	270	m...	0	14.1...	1	.003	0	7	0	0	7	0	0	5	0	0	7	0	0	7
414		min	-.788	14.1...	6	-.003	14.1...	4	0	0	1	0	0	7	0	0	1	-.01	7.062	4
415	M271	m...	-.023	0	1	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
416		min	-1.373	0	6	-.022	12.5	1	0	0	1	-.006	0	5	0	0	1	-.07	6.25	1
417	M272	m...	-.029	0	1	.022	0	1	0	0	7	.001	0	7	0	0	7	0	0	7
418		min	-.688	0	5	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
419	M276	m...	.191	0	6	.022	0	1	0	0	7	.005	0	6	0	0	7	0	0	7
420		min	-.821	0	5	-.022	12.5	1	0	0	1	.001	0	7	0	0	1	-.07	6.25	1
421	M277	m...	.056	0	1	.022	0	1	0	0	7	.005	0	5	0	0	7	0	0	7
422		min	-1.207	0	5	-.022	12.5	1	0	0	1	-.005	0	1	0	0	1	-.07	6.25	1
423	M278	m...	-.024	0	1	.022	0	1	0	0	7	.033	0	6	0	0	7	0	0	7
424		min	-2.34	0	6	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
425	M279	m...	-.029	0	1	.022	0	1	0	0	7	.003	0	6	0	0	7	0	0	7
426		min	-1.798	0	6	-.022	12.5	1	0	0	1	-.003	0	5	0	0	1	-.07	6.25	1
427	M283	m...	.029	0	1	.022	0	1	0	0	7	-.002	0	4	0	0	7	0	0	7
428		min	-1.557	0	6	-.022	12.5	1	0	0	1	-.012	0	5	0	0	1	-.07	6.25	1
429	M284	m...	.056	0	1	.022	0	1	0	0	7	.005	0	1	0	0	7	0	0	7
430		min	-1.582	0	7	-.022	12.5	1	0	0	1	-.028	0	6	0	0	1	-.07	6.25	1
431	M285	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	6	0	0	7	0	0	7
432		min	-.298	15.2...	5	-.003	15.2...	4	0	0	1	0	15.2...	1	0	0	1	-.011	7.6	4
433	M286	m...	0	15.2...	1	.003	0	7	0	0	7	0	15.2...	1	0	0	7	0	0	7
434		min	-.523	15.2...	6	-.003	15.2...	4	0	0	1	0	0	6	0	0	1	-.011	7.6	4
435	M287	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	6	0	0	7	0	0	7
436		min	-.308	15.2...	7	-.003	15.2...	4	0	0	1	0	15.2...	1	0	0	1	-.011	7.6	4
437	M288	m...	-.002	0	1	.005	0	1	0	0	7	0	0	1	0	0	7	0	0	7
438		min	-.241	15.2...	6	-.005	15.2...	1	0	0	1	0	0	6	0	0	1	-.019	7.6	1
439	M289	m...	0	15.2...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
440		min	-.117	15.2...	4	-.003	15.2...	4	0	0	1	0	0	4	0	0	1	-.011	7.6	4
441	M290	m...	-.002	0	1	.005	0	1	0	0	7	0	0	4	0	0	7	0	0	7
442		min	-.383	15.2...	6	-.005	15.2...	1	0	0	1	0	0	6	0	0	1	-.019	7.6	1
443	M291	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0	0	7
444		min	-.225	15.2...	5	-.003	15.2...	4	0	0	1	0	0	7	0	0	1	-.011	7.6	4
445	M292	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	7	0	0	7	0	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
446		min	-.089	15.2...	7	-.003	15.2...	4	0	0	1	0	0	4	0	0	1	-.011	7.6	4
447	M224	m...	2.359	0	6	.022	0	1	0	0	7	.001	0	5	0	0	7	0	0	7
448		min	-.154	0	1	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
449	M225	m...	.244	0	6	.022	0	1	0	0	7	.001	0	6	0	0	7	0	0	7
450		min	-.145	0	4	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
451	M226	m...	.188	0	1	.022	0	1	0	0	7	.002	0	6	0	0	7	0	0	7
452		min	-2.715	0	6	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
453	M227	m...	.444	0	1	.022	0	1	0	0	7	.003	0	6	0	0	7	0	0	7
454		min	-6.224	0	6	-.022	12.5	1	0	0	1	0	0	5	0	0	1	-.07	6.25	1
455	M228	m...	.145	0	1	.022	0	1	0	0	7	.001	0	6	0	0	7	0	0	7
456		min	-2.788	0	6	-.022	12.5	1	0	0	1	-.001	0	5	0	0	1	-.07	6.25	1
457	M229	m...	-.033	0	1	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
458		min	-2.103	0	6	-.022	12.5	1	0	0	1	-.002	0	6	0	0	1	-.07	6.25	1
459	M230	m...	.87	0	6	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
460		min	-.161	0	5	-.022	12.5	1	0	0	1	-.004	0	6	0	0	1	-.07	6.25	1
461	M231	m...	.559	0	5	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
462		min	-.154	0	1	-.022	12.5	1	0	0	1	0	0	5	0	0	1	-.07	6.25	1
463	M232	m...	.463	0	6	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
464		min	-.124	0	4	-.022	12.5	1	0	0	1	-.001	0	6	0	0	1	-.07	6.25	1
465	M233	m...	.451	0	6	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
466		min	-.593	0	4	-.022	12.5	1	0	0	1	-.003	0	6	0	0	1	-.07	6.25	1
467	M234	m...	.444	0	1	.022	0	1	0	0	7	0	0	1	0	0	7	0	0	7
468		min	-1.258	0	4	-.022	12.5	1	0	0	1	-.006	0	6	0	0	1	-.07	6.25	1
469	M235	m...	.399	0	6	.022	0	1	0	0	7	0	0	7	0	0	7	0	0	7
470		min	-1.045	0	4	-.022	12.5	1	0	0	1	-.004	0	6	0	0	1	-.07	6.25	1
471	M236	m...	-.033	0	1	.022	0	1	0	0	7	.003	0	6	0	0	7	0	0	7
472		min	-.884	0	5	-.022	12.5	1	0	0	1	0	0	1	0	0	1	-.07	6.25	1
473	M237	m...	0	14.2...	1	.003	0	7	0	0	7	0	14.2...	1	0	0	7	0	0	7
474		min	-.389	14.2...	6	-.003	14.2...	4	0	0	1	0	0	6	0	0	1	-.009	7.124	4
475	M238	m...	0	12.8...	7	0	6.272	7	0	0	7	0	12.8...	7	0	0	7	0	0	7
476		min	0	0	1	0	12.8...	1	0	0	1	0	12.8...	1	0	0	1	0	12.6...	1
477	M239	m...	-.039	0	1	.004	0	1	0	0	7	0	0	1	0	0	7	0	0	7
478		min	-.607	12.7...	6	-.004	12.7...	1	0	0	1	0	0	6	0	0	1	-.013	6.357	1
479	M240	m...	0	14.1...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
480		min	-.507	14.1...	7	-.003	14.1...	4	0	0	1	0	0	4	0	0	1	-.01	7.062	4
481	M241	m...	0	15.7...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0	0	7
482		min	-.682	15.7...	5	-.003	15.7...	4	0	0	1	0	0	6	0	0	1	-.012	7.861	4
483	M242	m...	0	15.2...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
484		min	-.133	15.2...	4	-.003	15.2...	4	0	0	1	0	0	4	0	0	1	-.011	7.6	4
485	M243	m...	0	15.2...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0	0	7
486		min	-.448	0	5	-.003	15.2...	4	0	0	1	0	0	7	0	0	1	-.011	7.6	4
487	M244	m...	0	15.7...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
488		min	-.132	0	4	-.003	15.7...	4	0	0	1	0	0	4	0	0	1	-.012	7.861	4
489	M245	m...	0	14.1...	1	.003	0	7	0	0	7	0	0	4	0	0	7	0	0	7
490		min	-1.507	0	6	-.003	14.1...	4	0	0	1	0	0	6	0	0	1	-.01	7.062	4
491	M246	m...	0	12.7...	7	.003	0	4	0	0	7	0	0	4	0	0	7	0	0	7
492		min	-.01	0	4	-.003	12.7...	4	0	0	1	0	12.7...	1	0	0	1	-.008	6.357	4
493	M247	m...	-.04	12.8...	1	.004	0	1	0	0	7	0	0	1	0	0	7	0	0	7
494		min	-.478	0	6	-.004	12.8...	1	0	0	1	0	0	6	0	0	1	-.013	6.405	1
495	M248	m...	0	14.2...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
496		min	-.045	0	7	-.003	14.2...	7	0	0	1	0	14.2...	1	0	0	1	-.009	7.124	7
497	M249	m...	0	14.2...	7	.003	0	5	0	0	7	0	14.2...	7	0	0	7	0	0	7
498		min	-.162	14.2...	5	-.003	14.2...	4	0	0	1	0	0	5	0	0	1	-.009	7.124	4
499	M250	m...	0	12.8...	7	.004	0	1	0	0	7	0	0	6	0	0	7	0	0	7
500		min	-.225	12.8...	6	-.004	12.8...	1	0	0	1	0	0	1	0	0	1	-.013	6.405	1
501	M251	m...	0	12.7...	6	.003	0	7	0	0	7	0	0	7	0	0	7	0	0	7
502		min	-.203	12.7...	5	-.003	12.7...	5	0	0	1	0	0	5	0	0	1	-.008	6.357	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	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	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	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	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	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	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	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	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	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	-	Greatest downforce
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	

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

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

Specifier's comments:

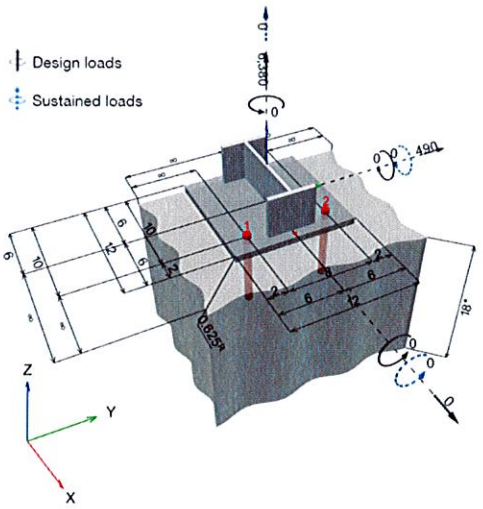
1 Input data



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 I 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 x l_y x t = 12.000 in. x 12.000 in. x 0.625 in.; (Recommended plate thickness: not calculated)
Profile:	S shape (AISC), S10X25.4; (L x W x T x FT) = 10.000 in. x 4.660 in. x 0.311 in. x 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]



Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2019 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

Company:	Sprung	Page:	2
Address:	Canyons Structural, 940 E. Elm Ave.	Specifier:	Dany Tremblay
Phone I 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

Input data and results must be checked for conformity with the existing conditions and for plausibility!
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Company:	Sprung	Page:	3
Address:	Canyons Structural, 940 E. Elm Ave.	Specifier:	Dany Tremblay
Phone I 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)

		Design values [lb]		Utilization	
Loading	**Proof**	**Load**	**Capacity**	**β_N / β_V [%]**	**Status**
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!

Input data and results must be checked for conformity with the existing conditions and for plausibility!
PROFIS Engineering (c) 2003-2019 Hilti AG, FL-9494 Schaan Hilti is a registered Trademark of Hilti AG, Schaan

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.

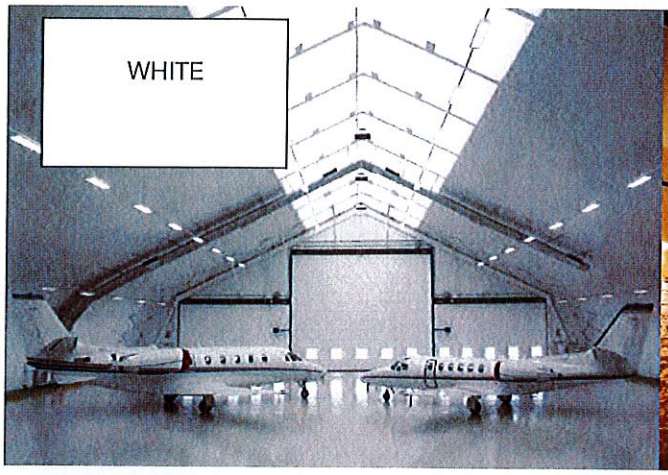
The structure is typically anchored to the concrete pad/foundation using two concrete Hilti type anchors per column base. These anchors are either mechanical or adhesive. Please ensure that any reinforcement steel in the concrete is not placed under the locations of the concrete anchors. The specified 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.

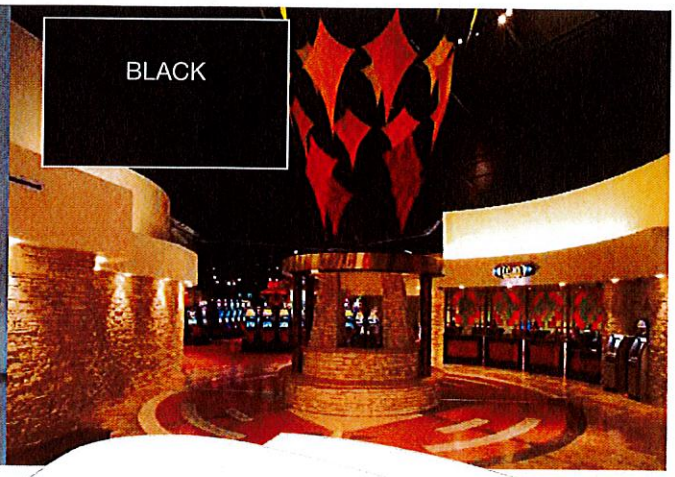
Some customers choose to crown their concrete pad sloping outward in all directions from the center point to allow for positive drainage.

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.

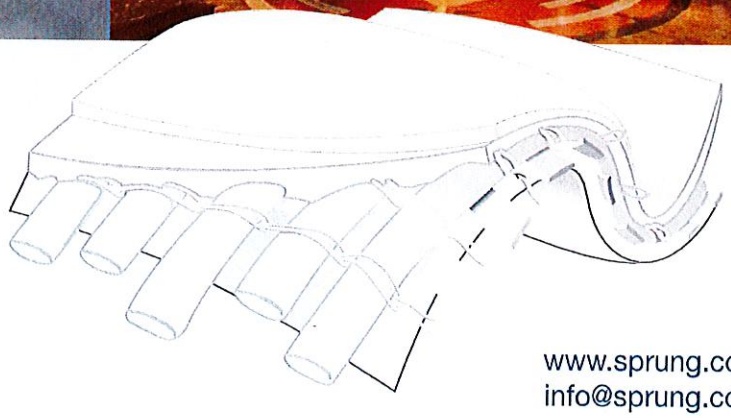
Should you have any questions regarding the accompanying drawings, please feel free to contact me at (403) 601-2292 or Toll Free at 1-800-661-1163.

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





sprung
Since 1887



Interior Membrane Offers Superior Performance

www.sprung.com
info@sprung.com

- 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-8

DIVERSIFIED
TESTING LABORATORIES, INC.
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BURLINGTON, NORTH CAROLINA 27215
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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 1, Small Scale)".The results are as follows:

Specimen Number	Residual Flame (seconds)	Weight Loss (percent)
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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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:

Specimen Number		After Flame (seconds)	Residual Flame (seconds)	Char Length (inches)
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. Puett

BEP/mr
Attachment

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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 (± 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°F) and a controlled relative humidity of 50 $\pm$ 5 percent.

T/BP:6/2004

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

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

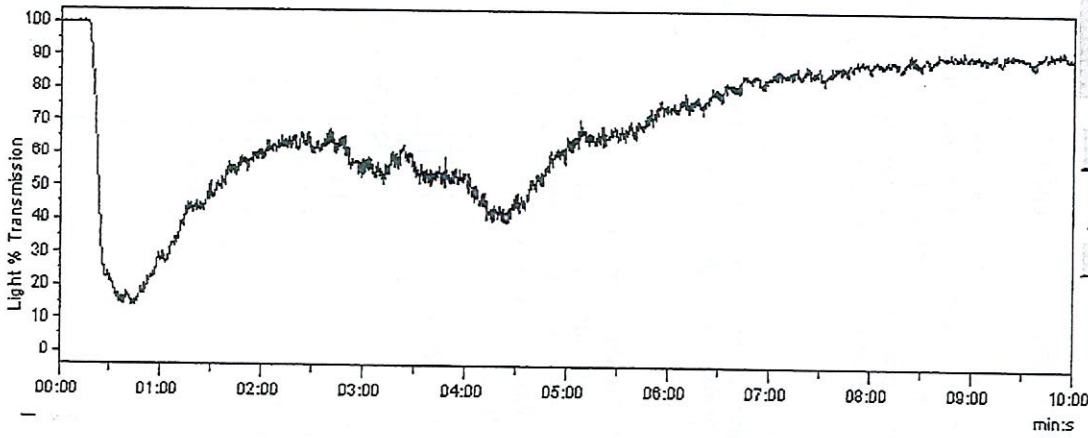
Manager of Fire Testing

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.



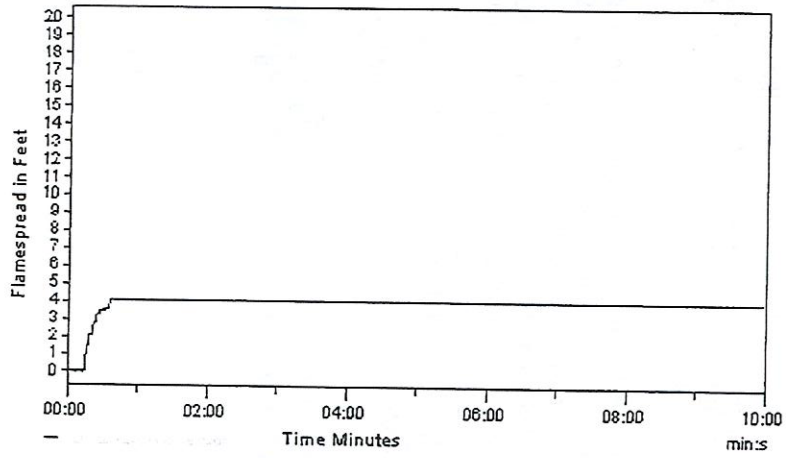
Time, Minutes

Smoke Data

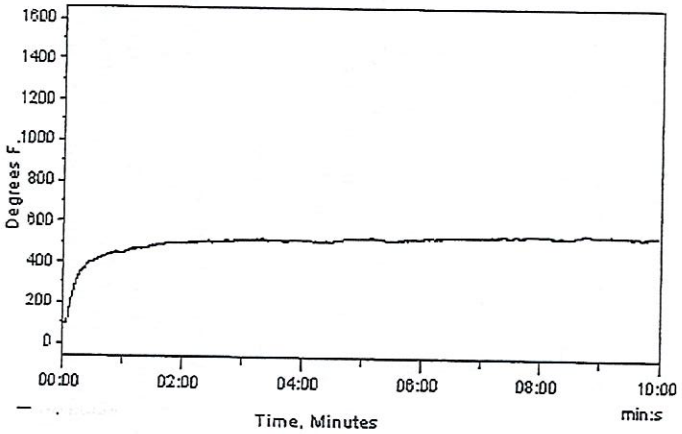
Test Time	FS Counts
600	38.8
seconds	Fuel Counts
	686
STOP Early	Smk Cts
NEW TEST	592
progrm	

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



Flamespread Data



Fuel Data

test ON/OFF

◆ Test ON

Cool

HPVA LABORATORIES – TESTING AND CERTIFICATION SERVICES
1825 Michael Faraday Drive, Reston, Virginia 20190 TEL: 703-435-2900 FAX: 703-435-2537

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.

<table>
<tr><td colspan="3">HARDWOOD PLYWOOD VENEER ASSOCIATION</td></tr>
<tr><td rowspan="2">BOND LINE
TYPE II
ANSI/HPVA
HP-1-2009</td><td rowspan="2">HARDWOOD PLYWOOD AND VENEER ASSOCIATION
hpva
®

MILL 00
SPECIALTY GRADE</td><td>FLAME SPREAD
200 OR LESS
CLASS C
ASTM E 84</td></tr>
<tr><td>SIMULATED
DECORATIVE
FINISH ON
PLYWOOD</td></tr>
</table>

T/BP:6/2004

Exova
2395 Speakman Dr.
Mississauga
Ontario
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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 ± 3°C and a relative humidity of 50 ± 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.

EXOVA

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·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

SAMPLE		Flame Spread Value (FSV)	Smoke Developed Value (SDV)
"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.

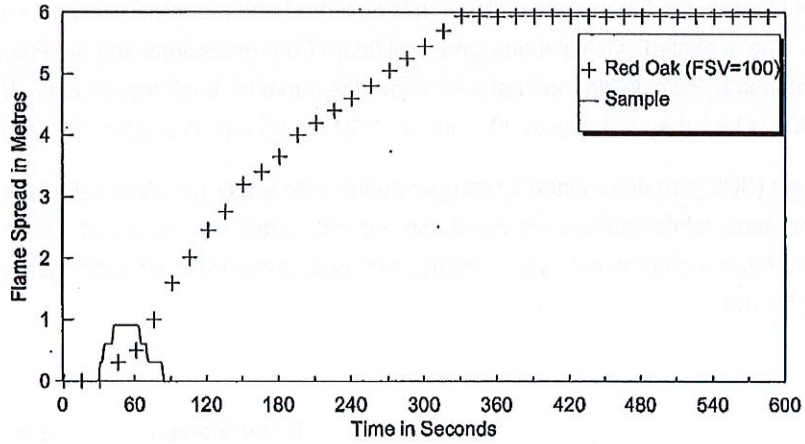
Ian Smith,
Technical Manager.

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.

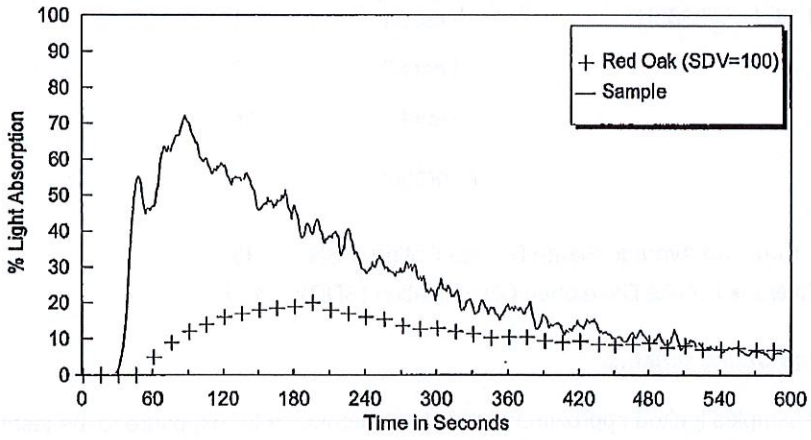
Sample: "110688 Architent Excel 14, Lot #9363H"

Test #2 of 3

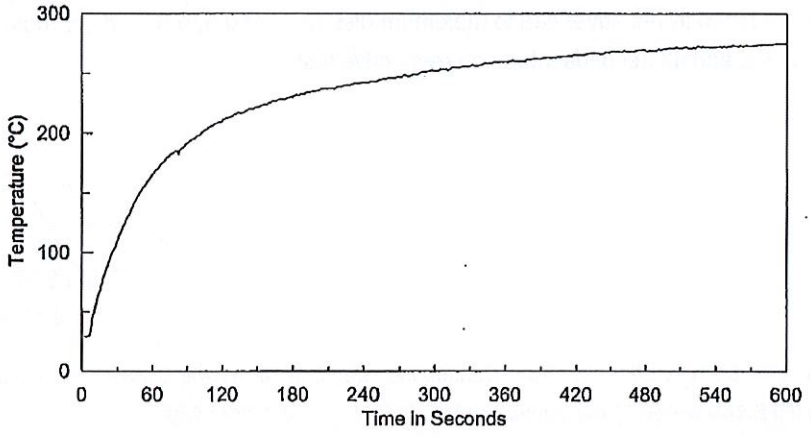
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE



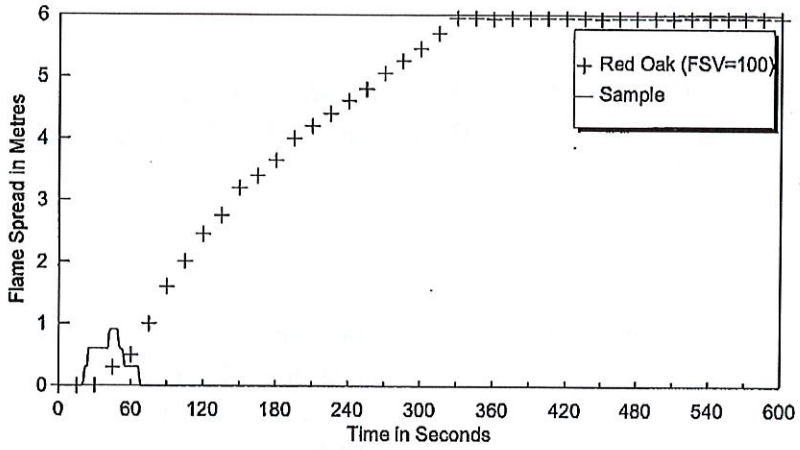
FSV	SDV	Max. Temp. (°C)
16	184	276

EXOVA

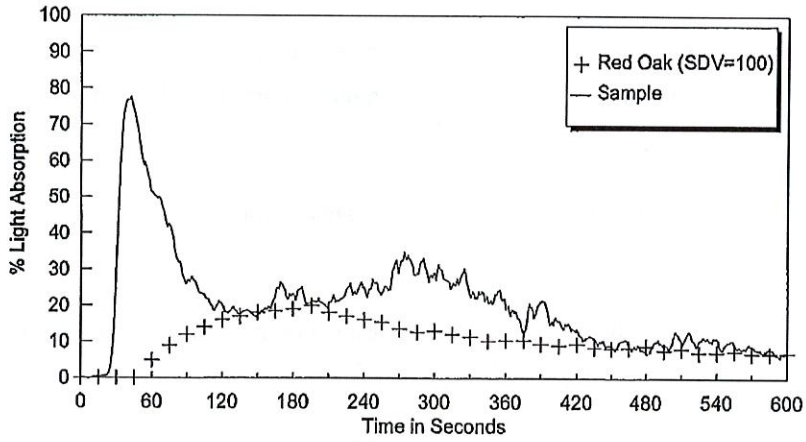
Sample: "110688 Architent Excel 14, Lot #9363H"

Test #3 of 3

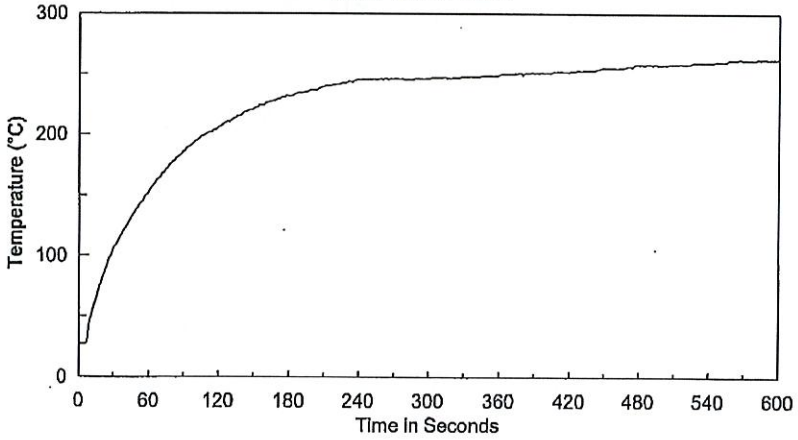
FLAME SPREAD



SMOKE DEVELOPED



TEMPERATURE



FSV	SDV	Max. Temp. (°C)
16	146	263

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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/m²		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 (Above tip of test flame)	-	2.0	(individual)

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.

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℃, or if they melt or distort at thes e temperatures, 18 - 22℃ at 50% R.H. for at least 1 2 hours or by drying in an oven for 1 hour at 60℃.

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	Maximum Length of Char or Destroyed Material for any Specimens
165 mm	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℃ for 30 minutes or, if distortion or mel ting occurs at these temperatures, 20 ± 2℃ at 25 - 50% relative humidity for at least 12 hours or by drying in an oven for 1 hour at 60℃.

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 vertic al. 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.

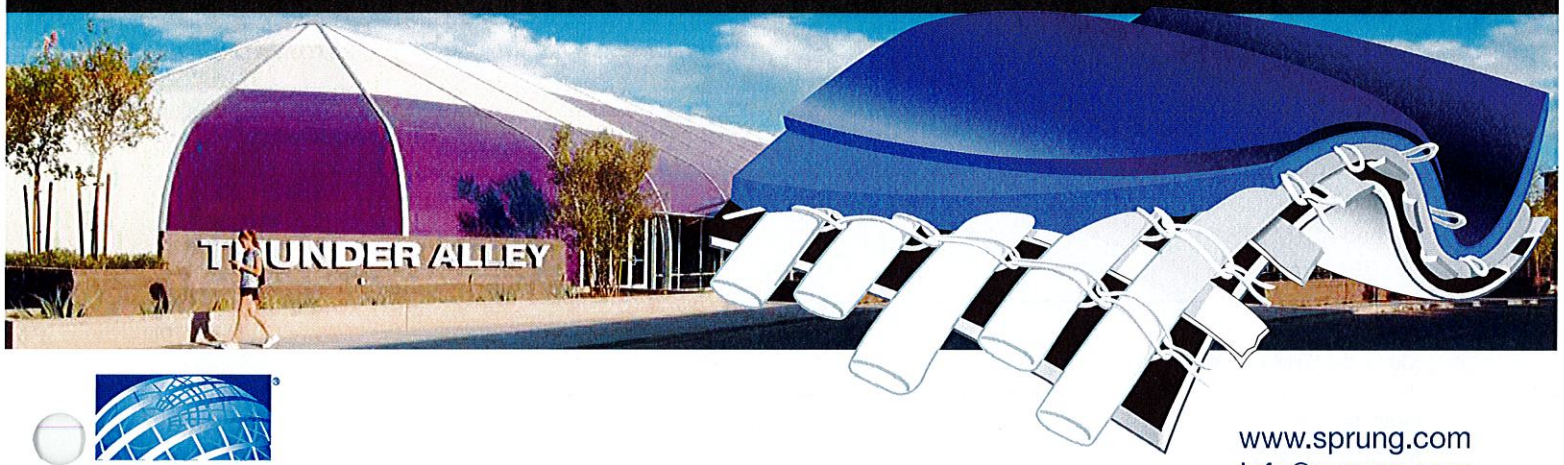
Flame Resistance Requirements - Specified Maxima:

Specimen Configuration	Char Length or Damaged Material Length (mm)	Flaming Residue on Floor of Tester (s)
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".

BROWNSTONE RED* PMS 7526-C (Inventoried Color)	PATINA GREEN* PMS 556-C	MEDITERRANEAN OLIVE* PMS 7536-C (Inventoried Color)	CROMWELL GRAY	DARK TAUPE	BLACK
YELLOW	ORANGE	RED	GREEN	SALEM BLUE* PMS 5415-C (Inventoried Color)	PURPLE

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Kynar®

Architectural Membrane Color Chart

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Designed for permanent or long-term applications

- 3 coat system provides maximum protection and longevity
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- Weighs approximately 24 oz. per square yard
- Guards against UV and airborne contaminants
- Dramatically extends membrane life
- High strength, rip-stop design
- Exceptional fire-retardant capability
- Available in large selection of colors (custom colors available)
- 25-year pro-rata guarantee

*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.

KYNAR® COATED ARCHITECTURAL MEMBRANE

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	Flame Spread Index <25
2. National Fire Protection Association - 701	Smoke Development Rating <450
3. ASTM E84	
4. CAN/ULC-S-109	
5. CAN/ULC-S-102	

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 CORPORTATION
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

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Total Quality. Assured.

SEAMAN CORPORATION TEST REPORT

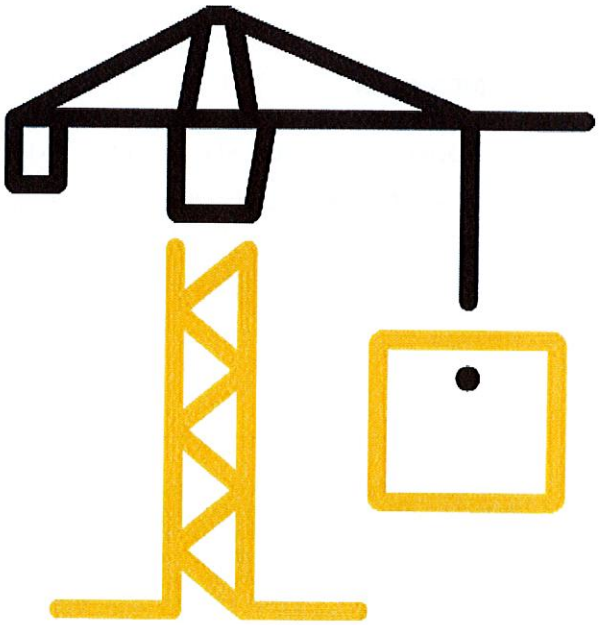
SCOPE OF WORK
NFPA 701 METHOD 2 - 2015 STANDARD METHODS OF FIRE TESTS FOR FLAME PROPAGATION OF TEXTILES AND FILMS / "8324 FRLTC"

REPORT NUMBER
103680724SAT-001

TEST DATE(S)
10/3/2018

ISSUE DATE
10/4/2018

PAGES
5



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16015 Shady Falls Road
Elmendorf, Texas 78112

Telephone: 210-635-8100
Facsimile: 210-635-8101
www.intertek.com/building

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	**REVIEWED BY:**	Servando Romo
TITLE:	Technician II	**TITLE:**	Project Engineer
SIGNATURE:	Darrell R Gonzales	**SIGNATURE:**	
DATE:	10/4/2018	**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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Facsimile: 210-635-8101
www.intertek.com/building

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

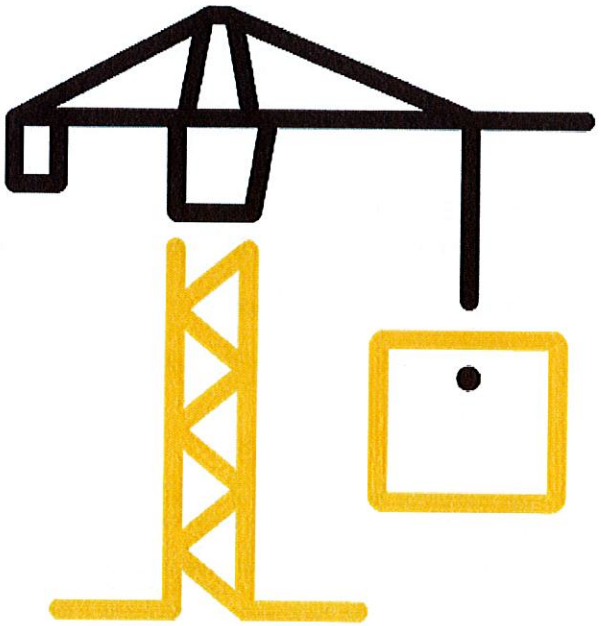
REPORT NUMBER
103680724SAT-002

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	REVIEWED BY:	Servando Romo
TITLE:	Technician	TITLE:	Project Engineer
SIGNATURE:		SIGNATURE:	
DATE:	10/3/18	DATE:	10/3/18

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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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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.

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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.

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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.

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Report No.: 103680724SAT-002
Date: 10/3/18

SECTION 9
PHOTOGRAPHS

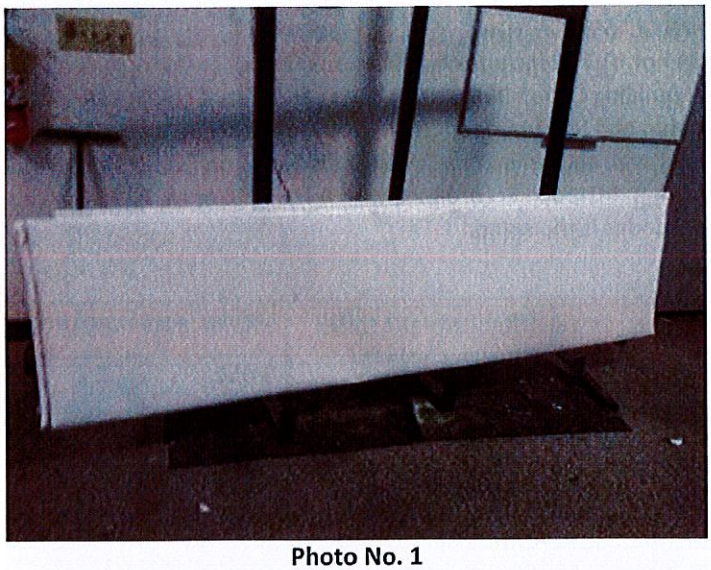


Photo No. 1
Exposed Surface of the Test Specimen (Pre-test)



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

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SECTION 9 (Continued)
PHOTOGRAPHS

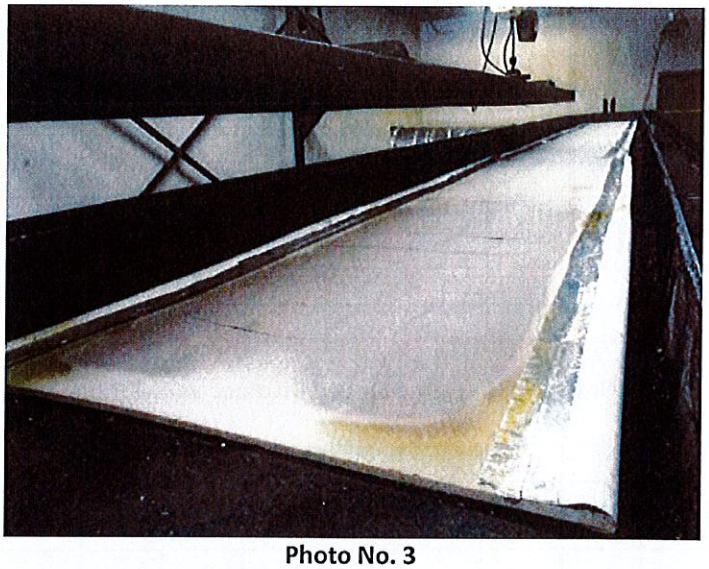


Photo No. 3
Unexposed Surface of the Test Specimen (Post-test)

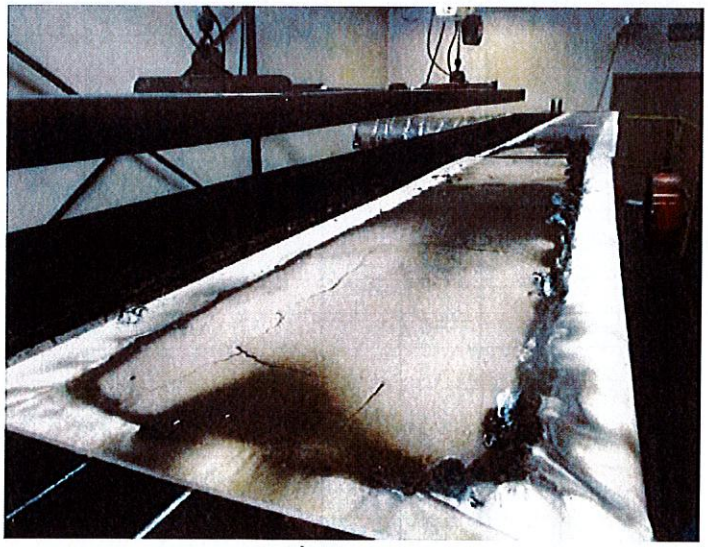


Photo No. 4
Exposed Surface of the Test Specimen (Post-test)

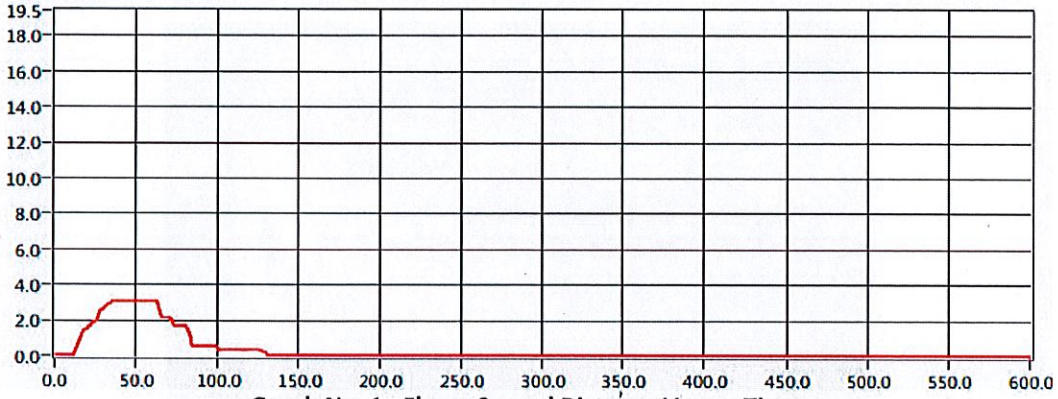
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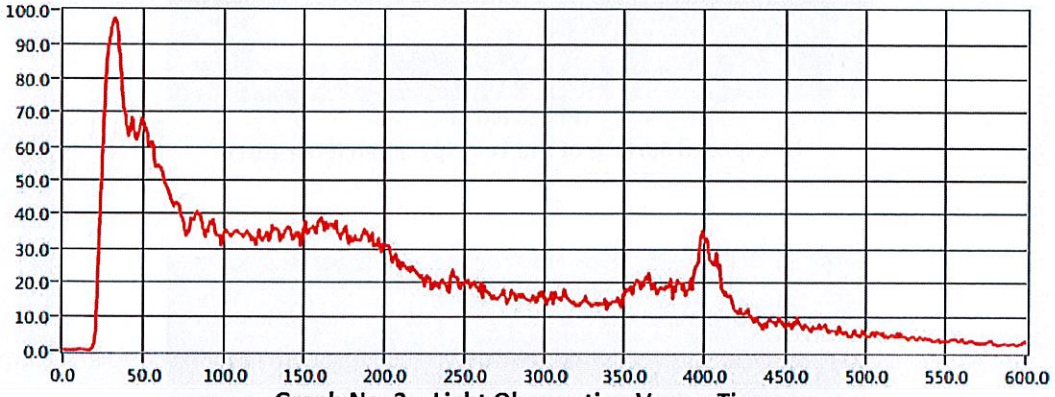
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TEST REPORT FOR SEAMAN CORPORATION
Report No.: 103680724SAT-002
Date: 10/3/18

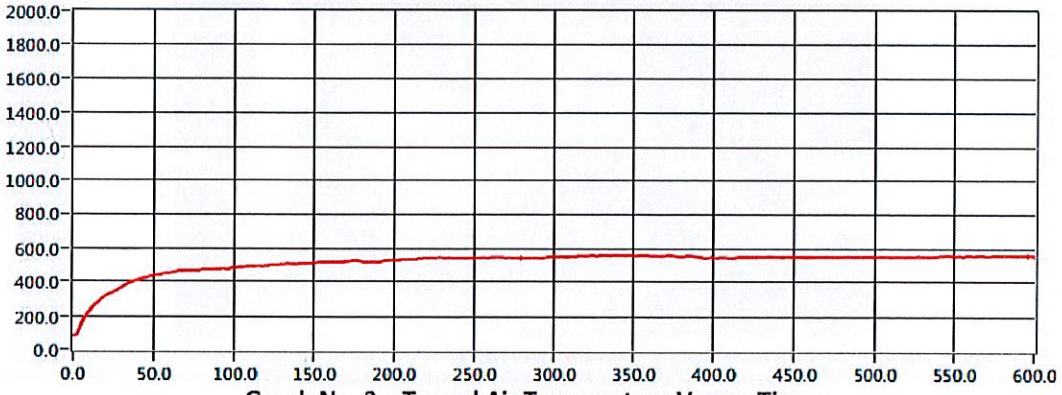
SECTION 10
GRAPHS



Graph No. 1 - Flame Spread Distance Versus Time



Graph No. 2 – Light Obscuration Versus Time



Graph No. 3 – Tunnel Air Temperature Versus Time

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Report No.: 103680724SAT-002
Date: 10/3/18

SECTION 11
REVISION LOG

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

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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: E-mail:	Joanne Pasho 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 ± 3°C and a relative humidity of 50 ± 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·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)

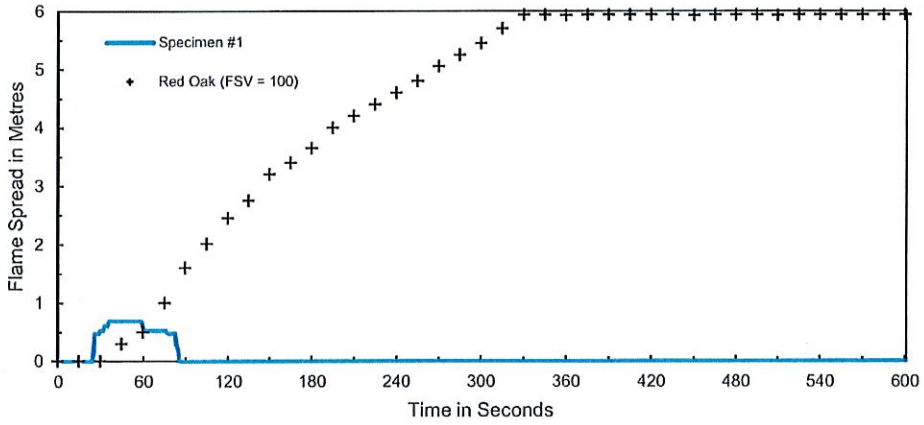


Chart 2. SMOKE DEVELOPED (Specimen #1)

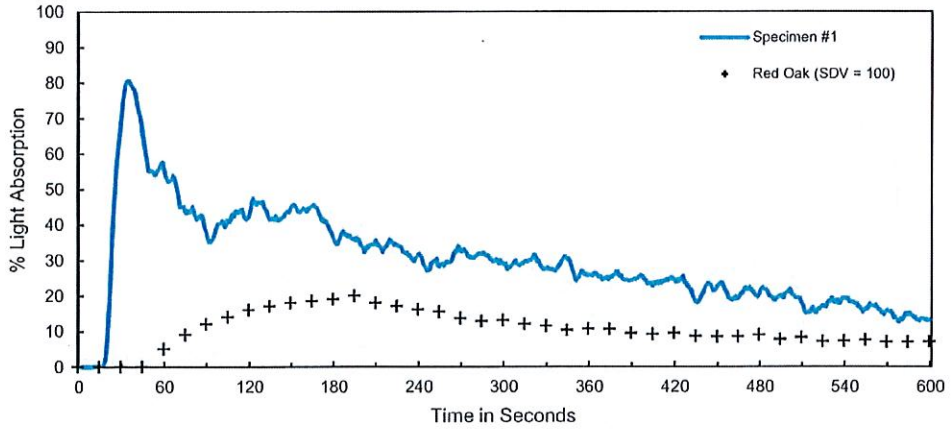
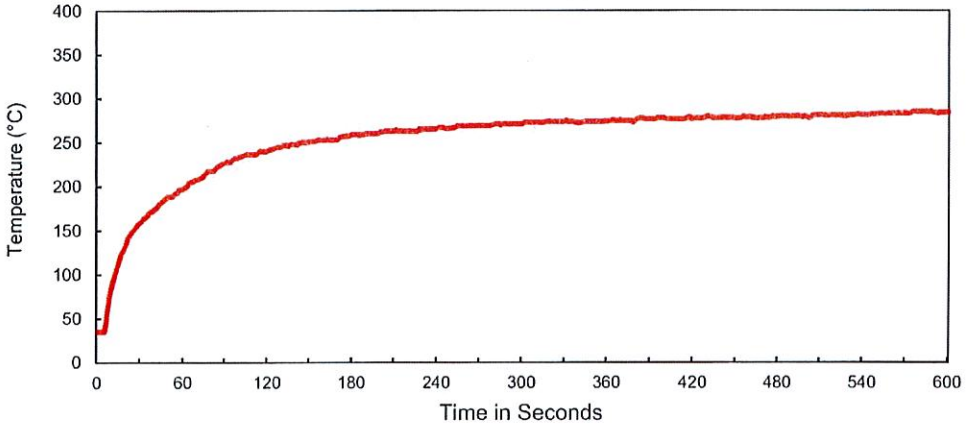


Chart 3. TEMPERATURE (Specimen #1)



Flame Spread Value (FSV)	Smoke Developed Value (SDV)	Maximum Air Temperature (°C)
12	**275**	285

Test 2 of 3

Sample: "8324 FRLTC"

Chart 4. FLAME SPREAD (Specimen #2)

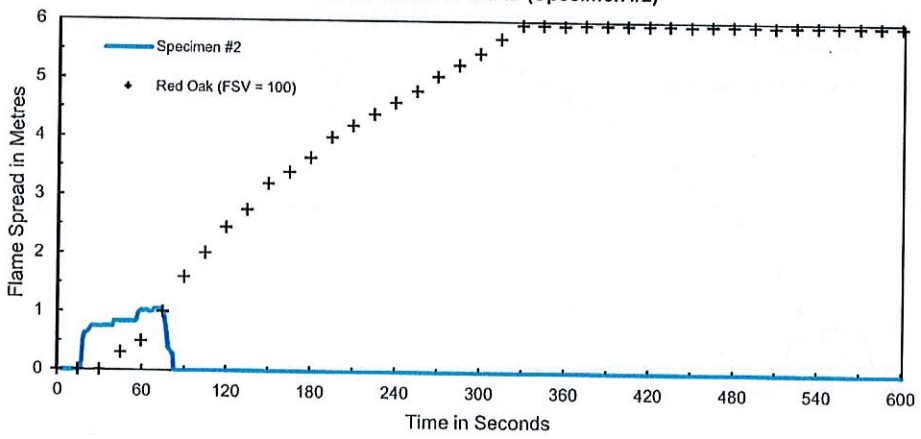


Chart 5. SMOKE DEVELOPED (Specimen #2)

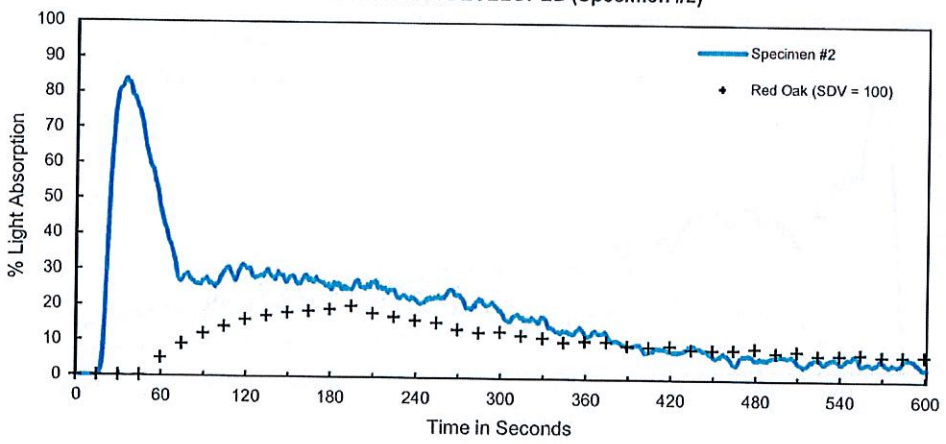
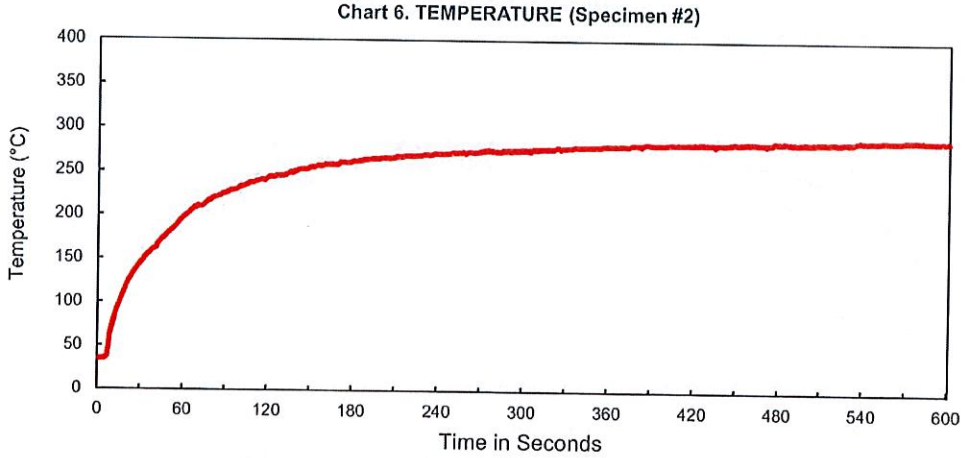


Chart 6. TEMPERATURE (Specimen #2)



Flame Spread Value (FSV)	Smoke Developed Value (SDV)	Maximum Air Temperature (°C)
19	**176**	289

Test 3 of 3 Sample: "8324 FRLTC"

Chart 7. FLAME SPREAD (Specimen #3)

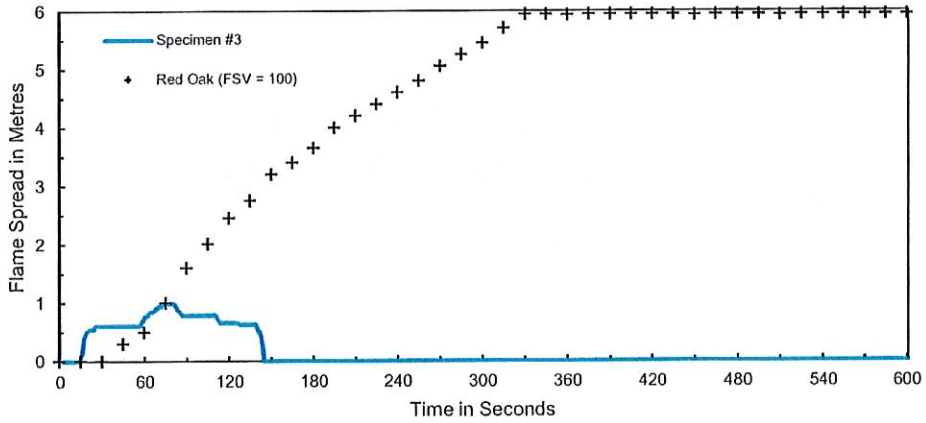


Chart 8. SMOKE DEVELOPED (Specimen #3)

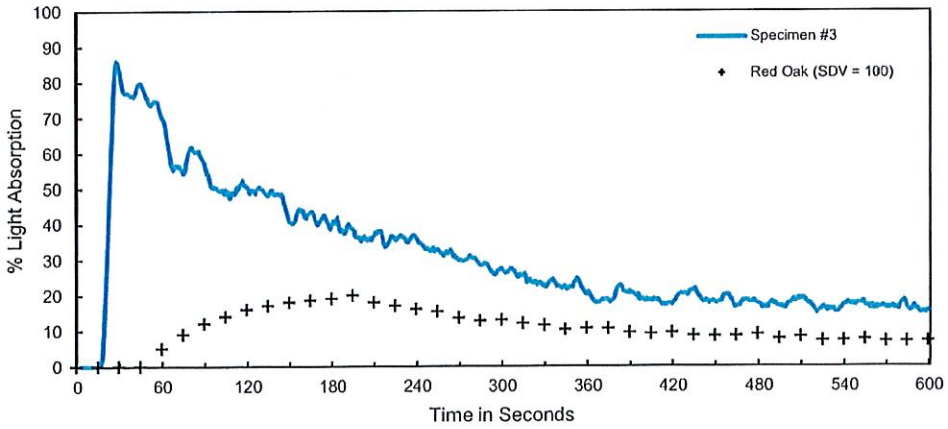
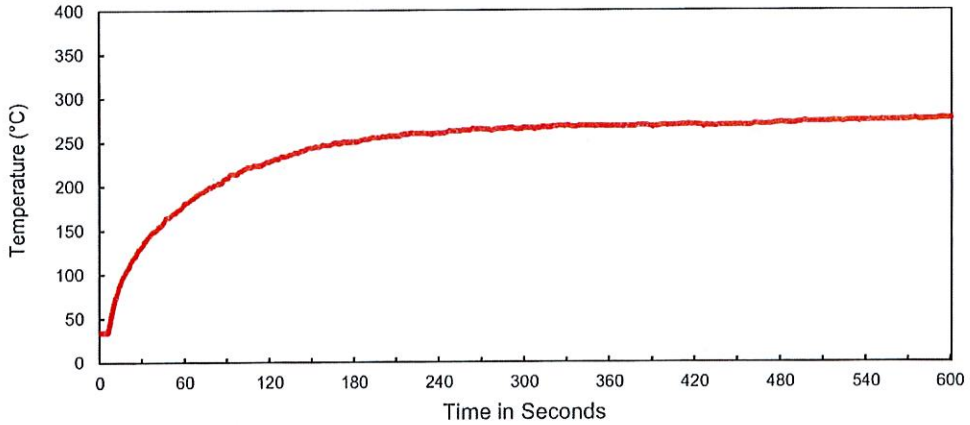


Chart 9. TEMPERATURE (Specimen #3)



Flame Spread Value (FSV)	Smoke Developed Value (SDV)	Maximum Air Temperature (°C)
17	**286**	277

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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/m^2

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.



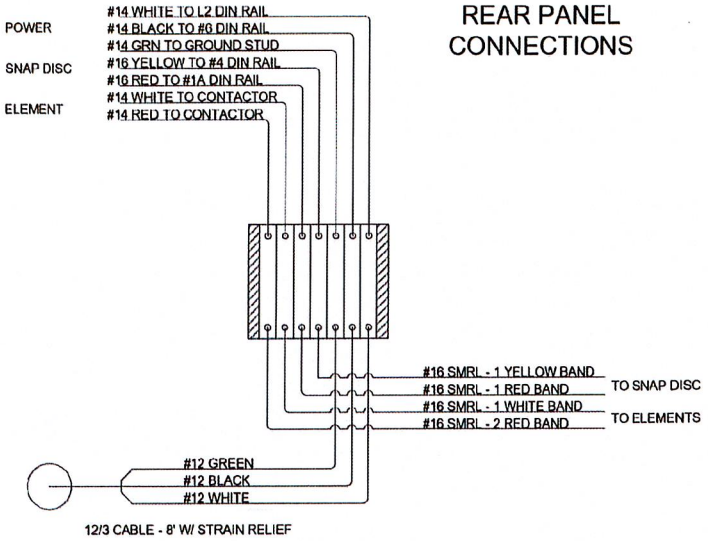
WARNING

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

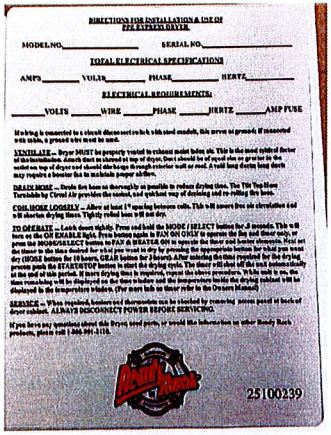


Levelling the Dryer

- 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.

Understanding the Model Number

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.


DIRECTIONS FOR INSTALLATION & USE OF
FH2 EXPRESS DRYER

MODEL NO._____ SERIAL NO._____

TOTAL ELECTRICAL SPECIFICATIONS

AMPS_____ VOLTS_____ PHASE_____ HERTZ_____

ELECTRICAL REQUIREMENTS:

_____VOLTS _____WIRE _____PHASE _____HERTZ _____AMP FUSE

If wiring is connected to a circuit that is not to be used, this serves as ground. If connected with cable, a ground wire must be used.

VENTILATE – Dryer MUST be properly vented to exhaust moist heated air. This is the most critical factor of this installation. Attach duct as shortest as top of dryer. Duct should be of equal size or greater in the vented on top of dryer and should also be run through exterior wall or roof. A vent hood may require a booster fan to maintain proper airflow.

DRAIN HOSE – Drain dirt hose as thoroughly as possible to reduce drying time. The Tilt You Have Turnable by Circul Air provides the easiest, and quickest way of draining and re-rolling the hose.

COIL HOSE LOOSELY – Allow at least 1" spacing between coils. This will assure free air circulation and will shorten drying times. Tightly rolled hose will not dry.

TO OPERATE – Latch doors tightly. Press and hold the MODE / SELECT button for 3 seconds. This will turn on the OR ENABLE light. Press button again to RUN ON ONLY or operate the fan and timer only, or press the MODE/SELECT button to FAN & HEATER ON to operate the timer and heater elements. Next set the timer to the time desired for what you want to dry by pressing the appropriate button for what you want dry (HOUR button for 10 hours, ONE button for 1 hours). After selecting the time required for the drying process push the START/STOP button to start the drying cycle. The timer will start off the unit automatically at the end of the period. If more drying time is required, repeat the above procedure. While unit is on, the time remaining will be displayed on the timer window and the temperature inside the drying cabinet will be displayed in the temperature window. (For more info on timer refer to the Owners Manual)

SERVICE – When required, lint screen and thermostats can be reached by removing access panel at back of dryer cabinet. ALWAYS DISCONNECT POWER BEFORE SERVICING.

If you have any questions about this Dryer, need parts, or would like information on other Handy Rack products, give us a call 1-866-591-2158.

25100239

Figure: Electrical Placard

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.

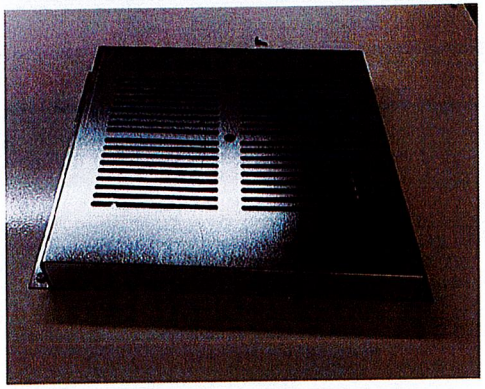


Figure – Top Duct Guard

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

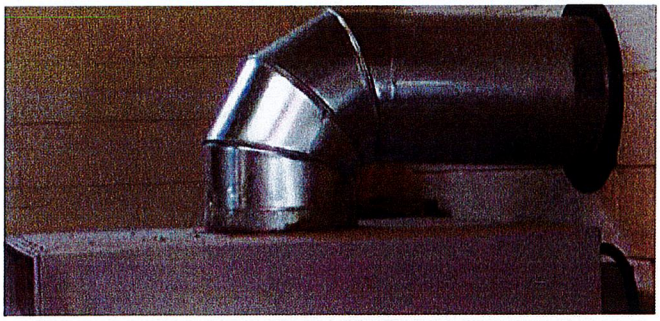


Figure – Top Duct Guard

- 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 louvre 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

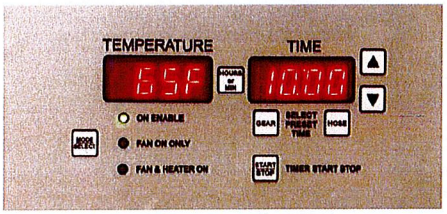


FIGURE: CONTROL PANEL

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 paints 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.

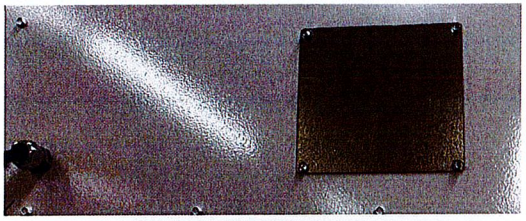


Figure – Rear Access and Strain Relief

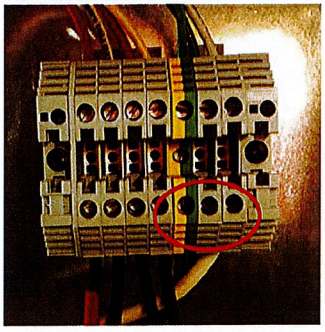


Figure – Rear Terminal Block

- 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.

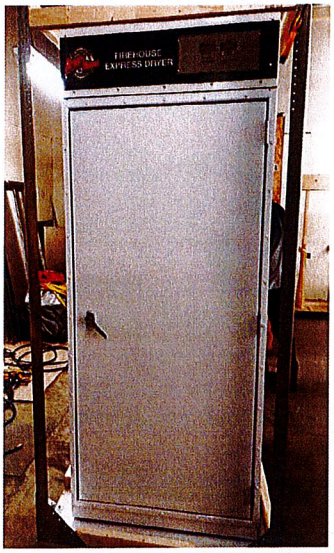
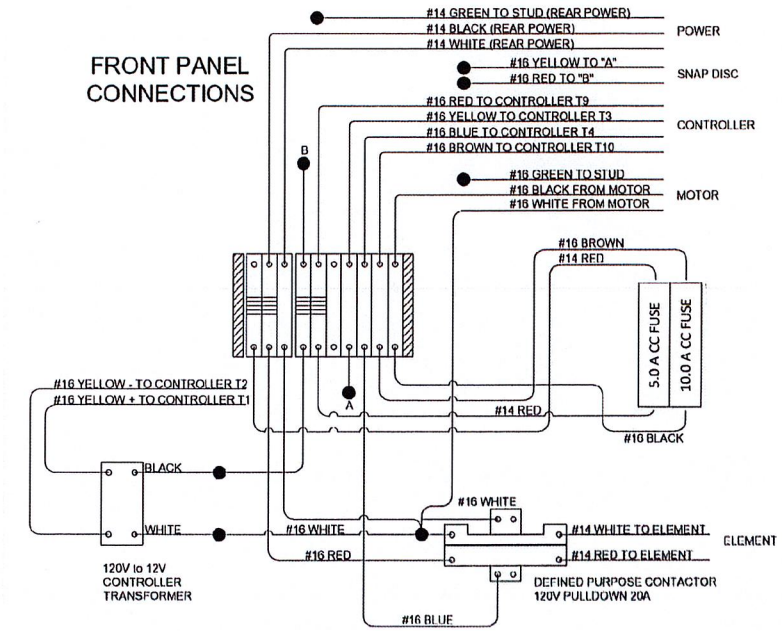


Figure – Uncrating Dryer

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

Maintenance Log

Model No. _____ **Serial No.** _____

Date:	Activity	Technician

ATCO Structures & Logistics

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 STRUCTRURES & 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.

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

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

WCC SERVICES

Panama City – FL
(Wind-Borne Debris Region)

13'X64' TOOL PUSH

PROJECT # 96005

SQUARE FOOTAGE: 832

OCCUPANT LOAD: 7

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

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

DRAWING INDEX

CS	COVER SHEET
AA01	EQUIPMENT PAGE
A01	CONSTRUCTION PAGE
A02	RAISED FLOOR, COUNTERTOP, & CABINET DETAILS
D01	CROSS SECTION
D02	FASTENING SCHEDULE & DETAILS
D03	ROOFING FASTENING PATTERN
D04	SIDING FASTENING PATTERN
E01	ELECTRICAL LAYOUT
E02	ELECTRICAL LEGEND, CALCS, & PANEL SCHEDULE
M01	HVAC LAYOUT
M02	SUPPLY & DRAINAGE PLUMBING LAYOUT
M03	SUPPLY & DRAINAGE PLUMBING SCHEMATICS
F01	SUGGESTED FOUNDATION PLAN & DETAILS

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

NOTES:
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2400 BURKBURNETT ROAD
WICHITA FALLS, TEXAS 76306

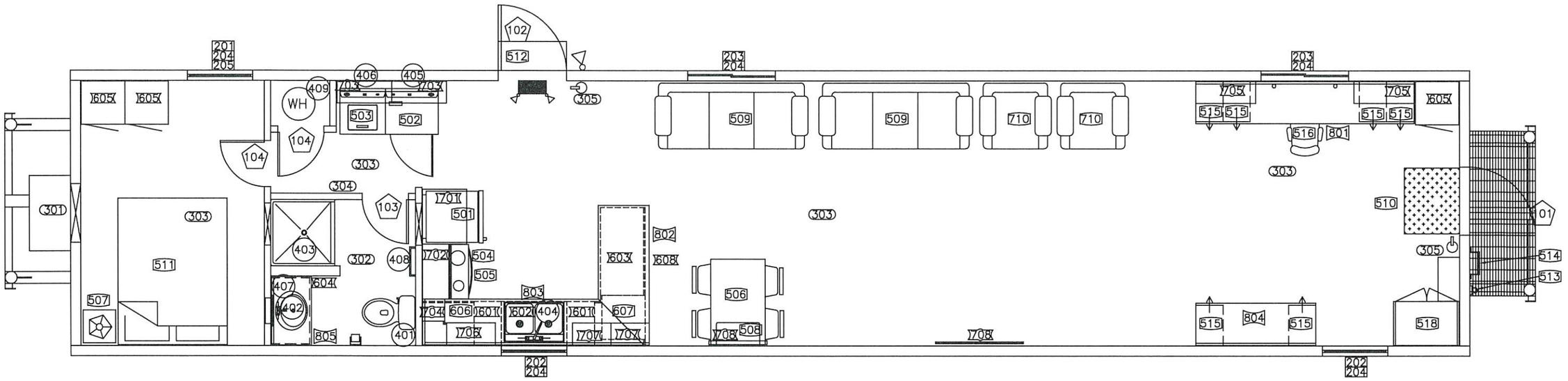
PROJECT:
WCC SERVICES
13' X 64'
TOOL PUSH

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
–
COVER SHEET
–

DRAWING NO:
96005-01-CS

ATCO Structures & Logistics



	NO.	QTY.	SIZE	ITEM	DESCRIPTION
DOORS (100)	101	1	36x80	EXTERIOR	20 GA. PRE-HUNG STEEL DOOR W/ 10"X10" V/P-T HARDWARE: DEADBOLT, CHECK CHAIN, KASON,GATE PULL-TELL
	102	1	36X80	EXTERIOR	20 GA. PRE-HUNG STEEL DOOR W/BLANK FACE-T HARDWARE: DEADBOLT, CHECK CHAIN, KASON,GATE PULL-TELL
	103	3	24X80	INTERIOR	PRE-FINISHED H.C. DOOR W/METAL FRM HARDWARE: (2) PASSAGE, (1) PRIVACY-TELL
WINDOWS (200)	201	1	36X60	WINDOW	INSULATED ARGON LOW-E, V.S. VINYL W/SCRN-EGRESS
	202	2	36X36	WINDOW	INSULATED ARGON LOW-E, H.S. VINYL W/SCRN
	203	2	48X36	WINDOW	INSULATED ARGON LOW-E, H.S. VINYL W/SCRN
(201)	204	5	–	BLINDS	VINYL MINI BLINDS
	205	1		SHADE	BLACK OUT SHADE
MECHANICAL (300)	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
	302	1	75 CFM	FAN	EXHAUST FAN LIGHT COMBO
	303	4	120V	DETECTORS	SMOKE DETECTORS W/ BATTERY BACKUP
	304	1	9V	DETECTORS	CARBON MONOXIDE DETECTOR
	305	2	5#	EXTINGUISHER	FIRE EXTINGUISHER
PLUMBING (400)	401	1	–	WATER CLOSET	STANDARD WATER CLOSET W/TOILET PAPER HOLDER
	402	1	–	LAVATORY	COUNTER MOUNTED LAVATORY
	403	1	36"	SHOWER	36" NON-ADA SHOWER
	404	1	–	SINK	DOUBLE COMPARTMENT STAINLESS STEEL SINK 8" DEEP
	405	1	–	VENT	DRYER VENT
	406	1	–	OUTLET BOX	WASHER OUTLET BOX W/VALVES
	407	1	–	CABINET	RECESSED MEDICINE CABINET
	408	1	18"	BAR	18" CHROME PLATE TOWEL BAR
	409	1	40 GAL.	WATER HEATER	ELECTRIC WATER HEATER W/ ANTI SCALD VALVE, HEAT TRAPS & EXPANSION TANK
(500)	501	1	18 CU.FT.	FRIDGE	TOP FREEZER REFRIGERATOR
	502	1	–	DRYER	ELECTRIC DRYER
	503	1	–	WASHER	AUTOMATIC WASHING MACHINE
	504	1	30"	RANGE	4-BURNER ELECTRIC RANGE
	505	1	–	MICROWAVE	W/VENT HOOD
	506	1	36X48	TABLE	DINING TABLE W/ 4 CHAIRS

	NO.	QTY.	SIZE	ITEM	DESCRIPTION
FURNISHINGS (500)	507	1	–	NIGHT STAND	NIGHT STAND
	508	1	42"	TV	LCD TV
	509	1	–	SOFA	SOFA W/FOLD DOWN TABLE
	710	2	–	SOFA RECLINER	SOFA SINGLE RECLINER
	510	1	36X31	ENTRY PLATE	ALUMINUM ENTRY PLATE W/DRAIN PAN
	511	1	QUEEN	BED	QUEEN BED
	512	1	–	STEP	PULL OUT STEP
	513	1	–	POLE	STEEL TELESCOPING SATELLITE POLE
	514	1	–	LADDER	STEEL LADDER- TUBULAR IRON
	515	6	–	FILE CABINET	2-DRAWER METAL FILING CABINET
	516	1	–	CHAIR	SWIVEL TILT CHAIR W/ARMS & CHAIR MAT
	517	1	4X4	BOARD	MARKER BOARD
	518	1	36"	CABINET	METAL STORAGE CABINET
BASE CABINETS (1600)	601	2	–	B15	BASE CABINET
	602	1	–	SB36	BASE CABINET
	603	1	–	B48	BASE CABINET
	604	1	–	VSB36	VANITY BASE CABINET
	605	3	–	U24	UTILITY CABINET
	606	1	–	PERPLY335	STOVE CABINET
	607	1	–	B24	BASE CABINET
	608	1	–	PP9635	BASE CABINET FILLER
WALL CABS. (1700)	701	1	–	RW3018	FRIDGE CABINET
	702	1	–	W301815	MICROWAVE CABINET
	703	2	–	W3024	WALL CABINET
	704	1	–	W1230	WALL CABINET
	705	2	–	W3330	WALL CABINET
	706	1	–	W2730	WALL CABINET
	707	2	–	W2130	WALL CABINET
	708	1	–	24"	CUSTOM WALL SHELVES FOR TV
	709	1	–	–	65" TV TO BE MOUNTED AND INSTALL
	CAM LOCK THUMB LATCH TO ALL CABINETS				
C-TOPS (800)	801	1	10'-0"	COUNTERTOP	OFFICE COUNTERTOP
	802	1	6'-4 1/4"	COUNTERTOP	KITCHEN COUNTERTOP
	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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

–	–	–	BP
–	28JAN28	ISSUE FOR AWARDS	BP

ITB 26-52 Southport Fire Station #8 Relocation

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CHECKED BY: BS
DATE: 07FEB2020

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1106 NORTH TEMPLE DRIVE
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2400 BURKBURNETT ROAD
WICHITA FALLS, TEXAS 76306

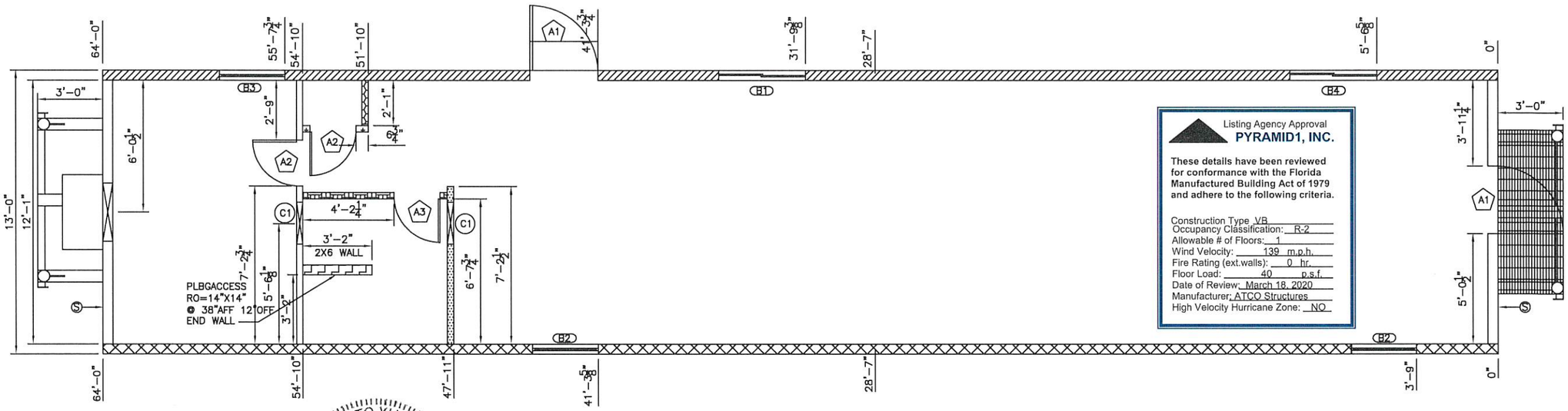
PROJECT:
WCC SERVICES
13' X 64'

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
–
EQUIPMENT PAGE
–

DRAWING NO:

ATCO Structures & Logistics



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YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER
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"

RO SCHEDULES

DOORS (A)

NO.	QTY.	RO	SILL HEIGHT
A1	2	36"X80"	N/A
A2	2	25–1/4"X81"	N/A
A3	1	25–1/4"X89"	7–1/4"

WINDOWS (B)

NO.	QTY.	RO	SILL HEIGHT
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"

MECH (C)

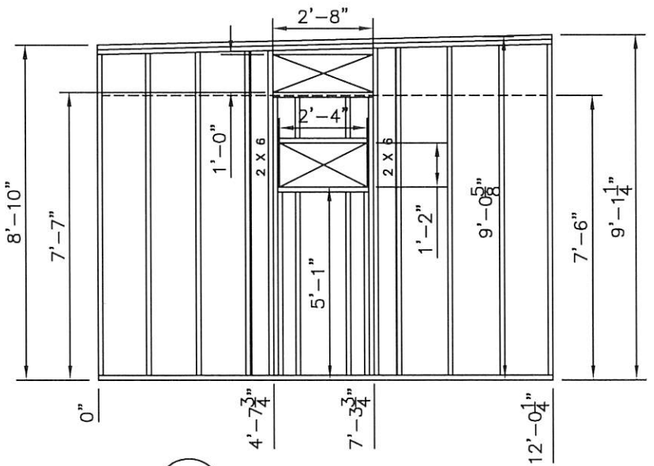
NO.	QTY.	RO	SILL HEIGHT
C1	2	22"x11"	91"

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

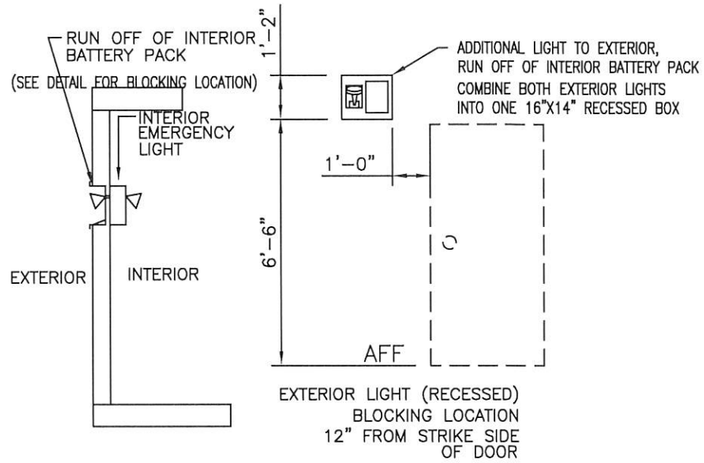
Ⓢ – INDICATES SHEAR WALLS LOCATIONS SHEAR WALLS TO BE SHEATHED FULL HEIGHT BOTH SIDES TO BOTTOM OF RAFTERS & BLOCKING INSTALLED IF NOT CONTINUOUS.

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 / A01 END WALL DETAIL
SCALE AS NOTED



ELD / A01 RECESSED EXTERIOR LIGHT DETAIL
SCALE AS NOTED

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

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DRAWN BY: TT
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DATE: 07FEB2020
SCALE: 1/4"=1'–0"

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1106 NORTH TEMPLE DRIVE
DIBOLL, TEXAS 75941
2400 BURKBURNETT ROAD
WICHITA FALLS, TEXAS 76306

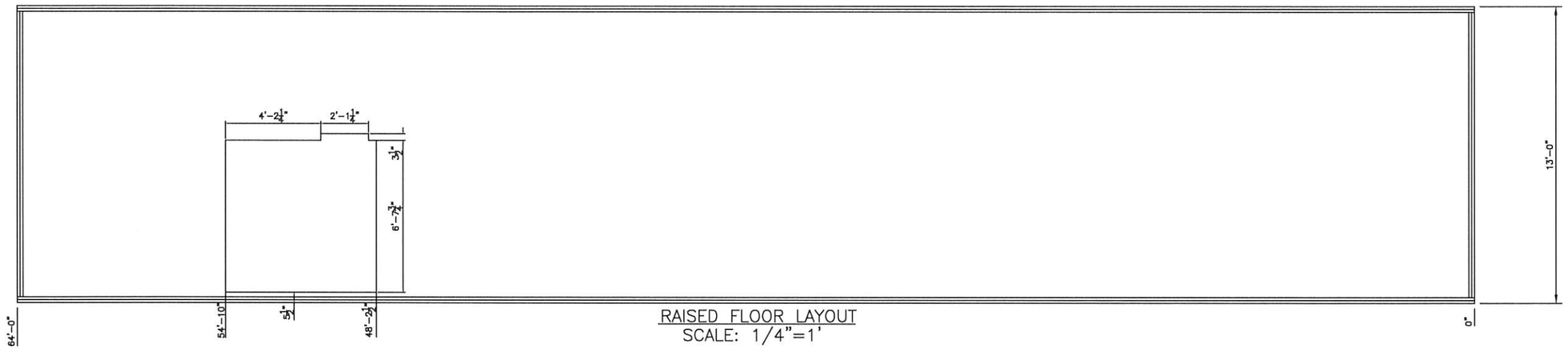
PROJECT:
WCC SERVICES
13' X 64'
TOOL PUSH

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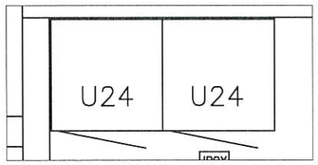
DRAWING TITLE:
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CONSTRUCTION PAGE
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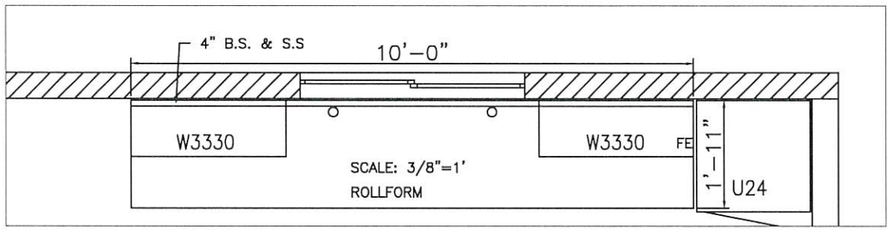
DRAWING NO:
96005–01–A01

ATCO Structures & Logistics

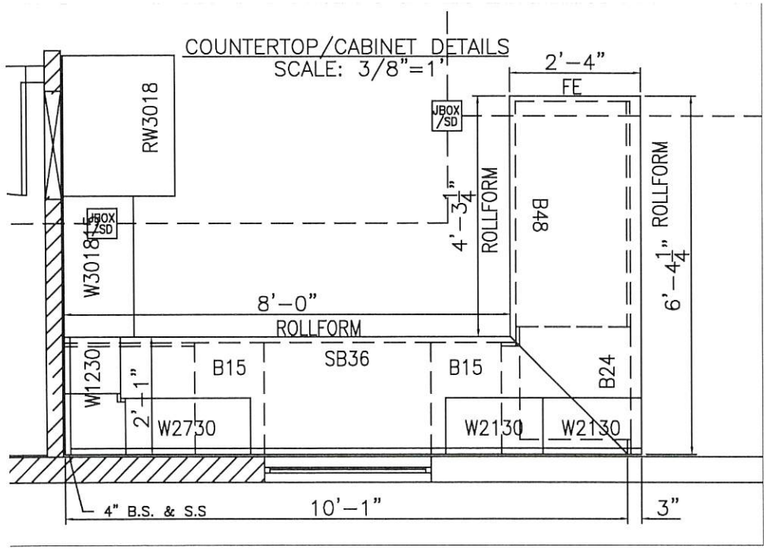


RAISED FLOOR LAYOUT
SCALE: 1/4"=1'

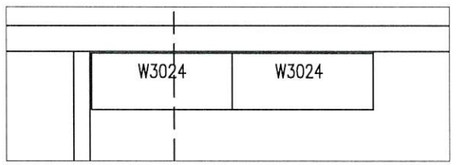


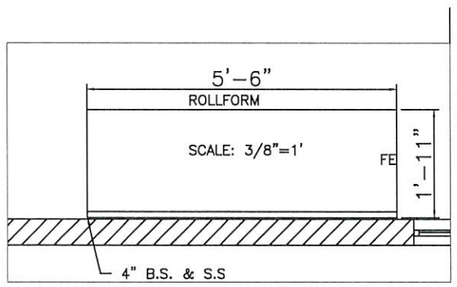


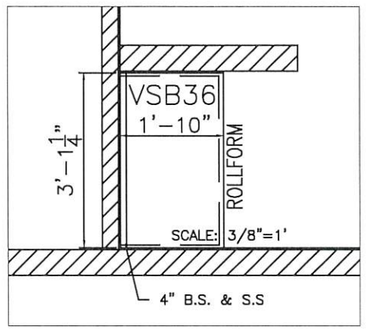
SCALE: 3/8"=1'
ROLLFORM



COUNTERTOP/CABINET DETAILS
SCALE: 3/8"=1'







Listing Agency Approval
PYRAMID1, INC.

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Occupancy Classification: R-2
Allowable # of Floors: 1
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Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

By Yuri at 9:56:12 AM, 3/18/2020

(Structural Aspects Only)

–	–	–
–	28JAN20	ISSUE FOR AWARDS

ITB 26-52 Southport Fire Station #8 Relocation

BP
BP

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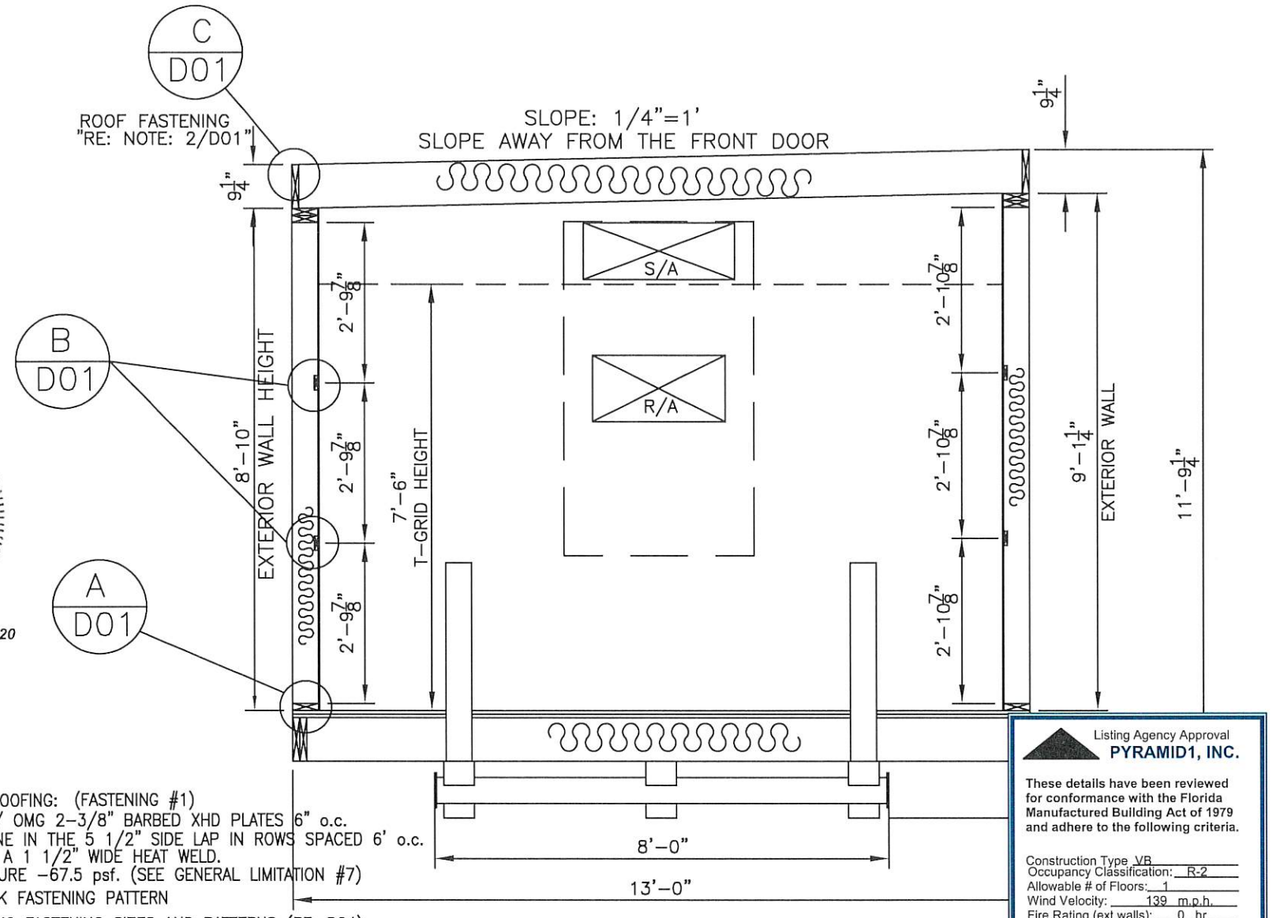
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13' X 64'

SPECIFICATION NUMBER
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DRAWING TITLE:
RAISED FLOOR DETAILS
& COUNTERTOP/CABINET
DETAILS

DRAWING NO:

ATCO Structures & Logistics



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)

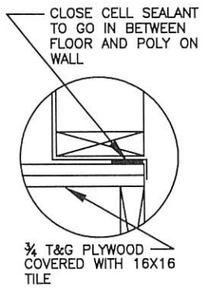
YURIANTO YURIANTO LICENSE No. 85261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

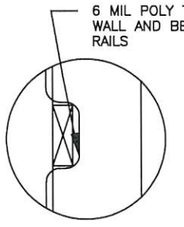
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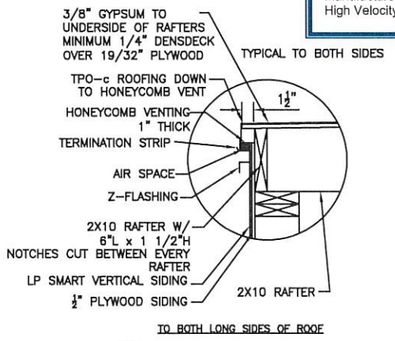
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A / D01 POLY APPLICATION DETAIL
SCALE:NTS



B / D01 POLY APPLICATION DETAIL
SCALE: NTS



C / D01 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.

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

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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:
CROSS SECTION
&
CONSTRUCTION LIST

DRAWING NO:
96005-01-D01

ATCO Structures & Logistics

FASTENING SCHEDULE FOR PANELING, SHEATING, & TRIMS

FASTENING SCHEDULE			FASTENER		SPACING OF FASTENERS o/c ("P"=Perimeter, "F"=Field)					
					FLOOR		WALL/PARTITION		ROOF	
DESCRIPTION		COMMENTS	SIZE	TYPE	"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 #8 x 1-3/4	44G BAB STAPLE LOW ROOT WOOD SCREW	4	8	4	8	3	6
5/8	T & G PLYWOOD		1/2 x 2-1/2 #8 x 1-3/4	63G BAB STAPLE LOW ROOT WOOD SCREW	4 16	8 16			6	12
3/4	T & G PLYWOOD		1/2 x 2-1/2 #8 x 1-3/4	63G BAB STAPLE LOW ROOT WOOD SCREW	4 16	8 16			6	12
1 1/8	T & G PLYWOOD	FASTENING TO METAL FLOOR JOIST	8d RING SHANK #12x4x2-1/2" SCREW	HARDENED NAIL SELF-DRILLING METAL SCREW	6 6	6 6				
3/8	V.C. DRYWALL		1 x 1-1/4 1-1/4	31G BAB STAPLE FOAM ADHESIVE			8	24		
1/2	PLAIN DRYWALL		#6 x 1-1/4 #8 x 1-5/8	DRYWALL SCREW DRYWALL SCREW			12	12	12	12
1/2	V.C. DRYWALL		1 x 1-1/2 #6 x 1 5/8	38G BAB STAPLE FOAM ADHESIVE			8		8	24
5/8	PLAIN DRYWALL		#6 x 1-5/8	DRYWALL SCREW			12	12	12	12
5/8	V.C. DRYWALL		1 x 1-1/2 #6 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	24	10	24
5.2mm	LUAN PANELLING	STUD 16 o/c	7/32 x 1	351G BAB BROWN STAPLE			6	12		
3.2mm	LUAN PANELLING	STUD 16 o/c	7/32 x 5/8	355/8G BROWN STAPLE			6	12		
1/4	V.C. LUAN PANELLING	STUD 16 o/c	7/32 x 1 1-1/4	351G BABN WHITE STAPLE FOAM ADHESIVE			4	24	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		#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		#9 X 1-1/2 #14 X 7/8	WOOD SCREW LAP SCREW			12	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 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)

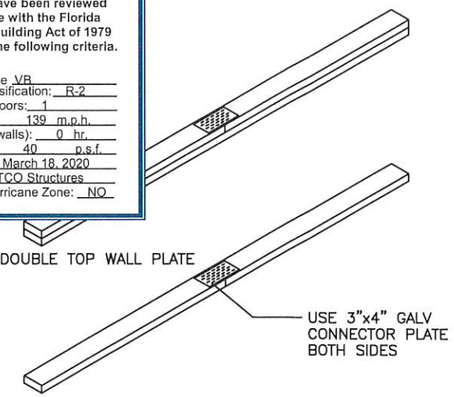
		FLOOR QTY	WALLS QTY	PARTITION QTY	ROOF QTY	SIZE OF NAIL OR STAPLE	TYPE	COMMENTS
2 x 4	TO PLATE	3	3	3	3	.131 x 3-1/4	S12D131 NAIL	MIN 3/4" FROM EDGE OF PLATES
2 x 6	TO PLATE	3	3	3	3			
2 x 8	TO PLATE	4	3	–	3			
2 x 10	TO PLATE	4	–	–	3			
2 x 12	TO PLATE	5	–	–	7			
* 2 x _	TO 2 x _	16" STGRD	16" STGRD	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	#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



2x4 SINGLE BOTTOM WALL PLATE,

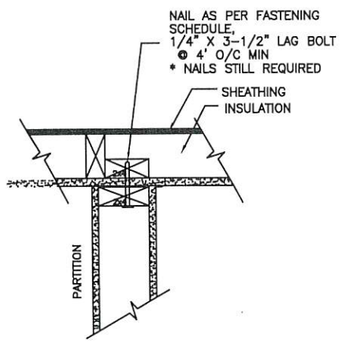
NOTES:
1. DOUBLE SIDE PLATE JOINTS TO BE SPACED WITH A MINIMUM OF 4' APART
2. USE GALV. STEEL 'CONNECTOR PLATE' GAUGE 20G. (EAGLE METAL—E20 STRUCTURAL CONNECTOR PLATE OR EQUAL)
3. PRESS PLATES TO CONNECT DIMENSIONAL LUMBER TO CREATE DESIRED PLATE LENGTH.
4. PLATES MAY BE INSTALLED WITH A 1/4" VARIANCE FROM CENTER OF JOINT.
5. NAILING THROUGH CONNECTOR PLATES INTO STUD END MEMBERS IS PERMISSIBLE.
6. DOUBLE TOP PLATES ARE FASTENING TOGETHER USING 3"X0.131"ø NAILS @ 8" O.C.

D02 LUMBER CONNECTIONS
SCALE: NTS

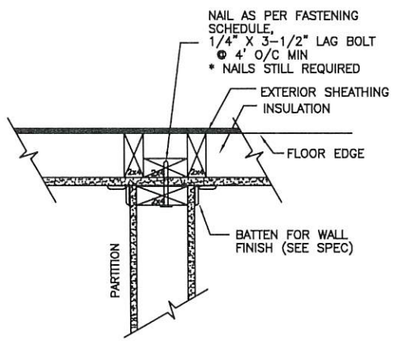
YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

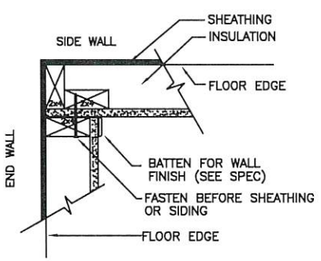
RO WIDTH	HEADER ASSEMBLY
18" to 48"	USE 2-2x4 HEADERS WITH CRIPLES
48" to 72"	USE 2-2x6 HEADERS WITH CRIPLES
72" to 120"	USE 2-2x8 HEADERS WITH CRIPLES



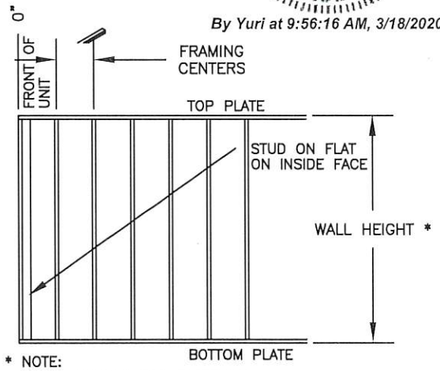
D02 PARTITION WALL TO CEILING ATTACHMENT
SCALE: 1" = 1'-0"



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

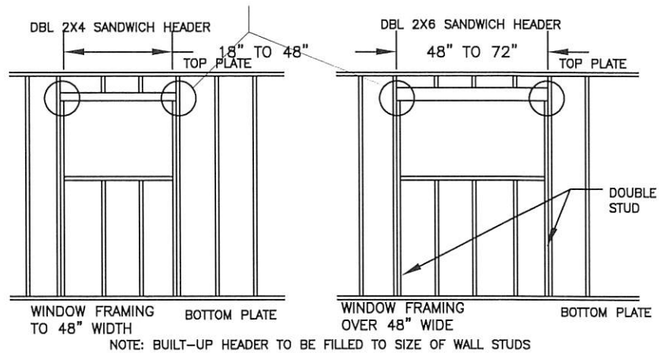


D02 END WALL ATTACHMENT
SCALE: 1" = 1'-0"



* NOTE:
SEE SCHEUDLE FOR FASTENING.

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



NOTE: BUILT-UP HEADER TO BE FILLED TO SIZE OF WALL STUDS

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

REV	DATE	DESCRIPTION	BY
–	–	TTB 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: 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'X64'
TOOL PUSH

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
HEADER SCHEDULE, FASTENING DETAILS, & FASTENING SCHEDULE

DRAWING NO:
96005-01-D02

ATCO Structures & Logistics

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.

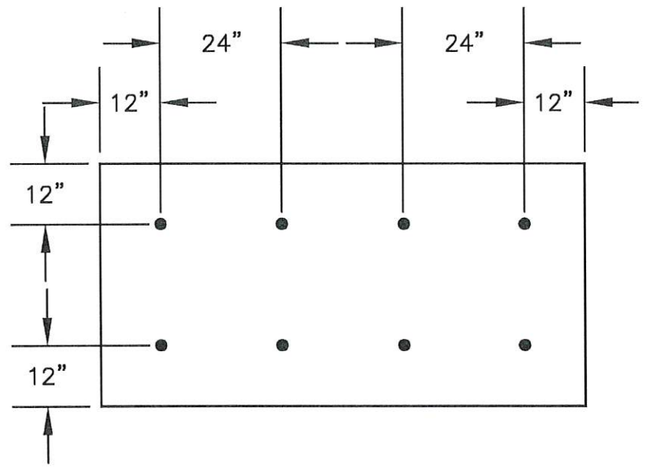
5. FASTENER DENSITY INCREASES BASED ON THE FOLLOWING:
   - 50% FOR PERIMETERS
   - 100% FOR CORNERS

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

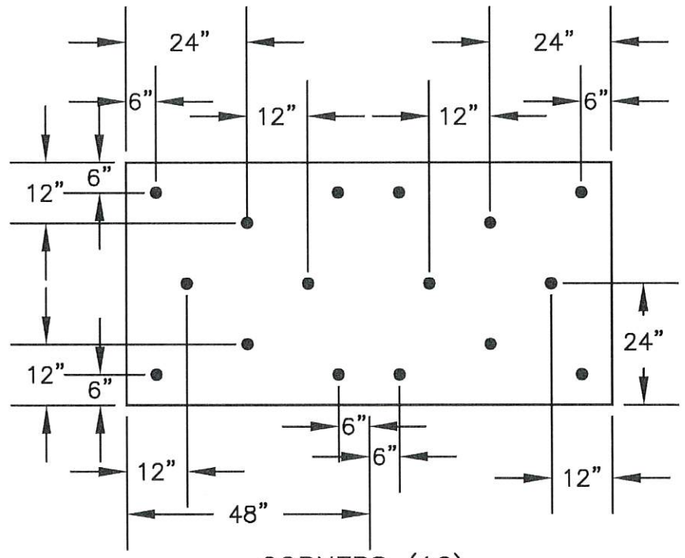
POLY ISO BOARD FASTENING PATTERN



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

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

DENSEDECK FASTENING PATTERN



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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER
By Yuri at 9:56:18 AM, 3/18/2020

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

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SCALE: NTS

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

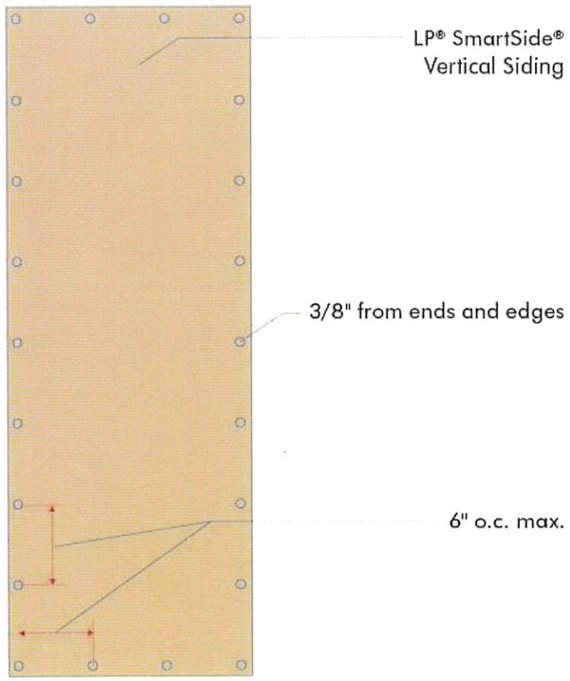
PROJECT:
WCC SERVICES
13' X 64'
TOOL PUSH

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
ROOF FASTENING PATTERN

DRAWING NO:
96005-01-D03

ATCO Structures & Logistics

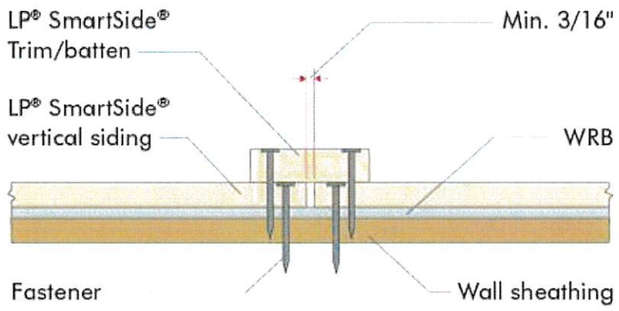


Vertical Siding

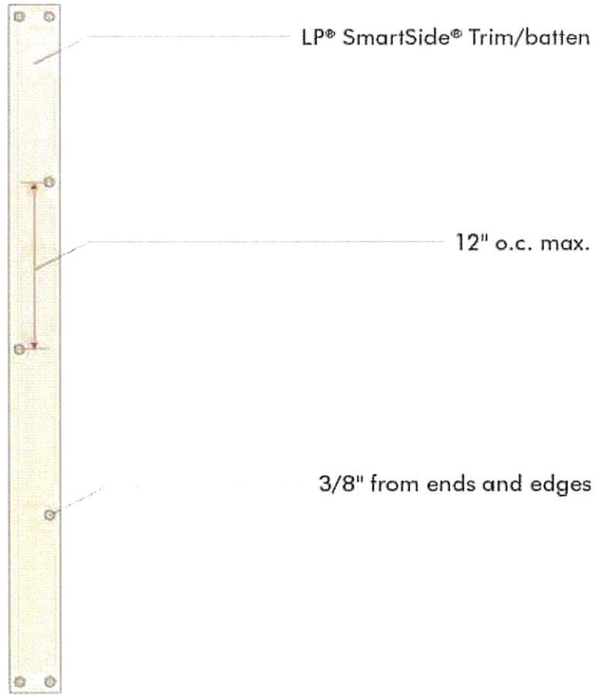
Listing Agency Approval
PYRAMID1, INC.

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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



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)		
					Wind Exposure Category		
		Edges	Field		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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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.

(1) 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.

(2) Wall studs must have a minimum specific gravity of 0.42.

(3) 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.

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

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CUSTOMER ACCEPTANCE

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BY: _____

DATE: _____

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CHECKED BY: BS
DATE: 07FEB2020
SCALE: NTS

ATCO STRUCTURES & LOGISTICS (USA) INC.
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2400 BURKBURNETT ROAD
WICHITA FALLS, TEXAS 76306

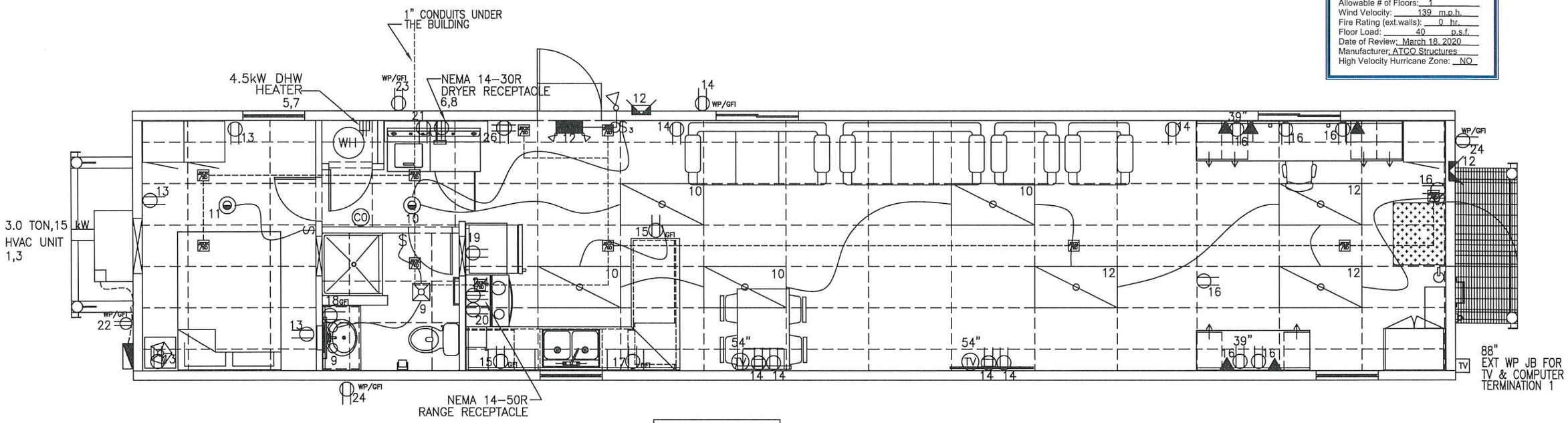
PROJECT:
WCC SERVICES
13' X 64'
TOOL PUSH

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
SIDING FASTENING PATTERN

DRAWING NO:
96005–01–D04

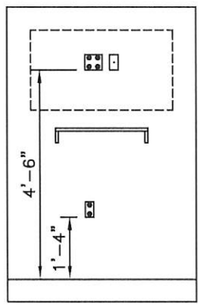
ATCO Structures & Logistics



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.

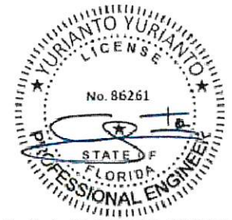


TV DETAILS

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 9:56:21 AM, 3/18/2020

(Structural Aspects Only)

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

NOTES:
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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

ATCO Structures & Logistics

SYMBOL LEGEND & LOADS						
SYMBOL	DESCRIPTION	#	LOAD	AMPS	LUMENS	EFFICACY LUMENS/WATT
	2' x 4' T-8 FLUORESCENT TROFFER C/W 4@32W ES LAMPS – ELECTRIC BALLAST	5	124W	1.16A	2900	85.29
	RECESSED INC. C/W 60W A19 LAMP	2	60W	0.50A	N.A.	N.A.
	2 BULB VANITY LIGHT	1	60W	0.50A	N.A.	N.A.
	EXTERIOR WP WALL LIGHT C/W 13.5W LED LAMP & SWITCH CONTROL–LOW PROFILE	2	13.5W	0.11A	N.A.	N.A.
	EMER BATTERY PACK – 36W C/W 2@ 9W REMOTE HEADS & 1 HEAD TO THE EXTERIOR	1	36W	0.3A	N.A.	N.A.
	SMOKE ALARM – 120VDC	4	–	–	–	–
	75 CFM EXHAUST FAN/LIGHT COMBO	1	99W	0.83A	N.A.	N.A.
	POWER PANEL – NEMA3R	–	–	–	–	–
$	20A/125V SINGLE POLE SWITCH	2	–	–	–	–
$3	20A/125V 3-WAY SWITCH	4	–	–	–	–
	20A/125V DUPLEX RECEPTACLE	17	180W	1.5A	–	–
GFI	20A/125V GFCI RECEPTACLE	3	180W	1.5A	–	–
WP/GFI	20A/125V WP/GFCI RECEPTACLE	5	180W	1.5A	–	–
	20A/125V QUAD RECEPTACLE	1	360W	3.0A	–	–
50 (20)	30A(50A)/125/250V NEMA 14-30R RECEPTACLE	2	4.0kW	16.67A	–	–
	20A/125V QUAD RECEPTACLE	1	360W	3.0A	–	–
	HARD WIRED CONNECTION	1	–	–	–	–
	BLANK DUPLEX TELE/DATA OUTLET C/W 1/2" FLEX STUB UP	5	–	–	–	–
CO	9V CO DETECTOR @12" AFF	1	N.A.	N.A.	–	–
TV	TV OUTLET C/W RG6 CABLE BACK TO SAT. JB	1	N.A.	N.A.	–	–
J	JUNCTION BOX SIZED TO NEC FOR CONDUCTOR FILL	1	–	–	–	–
N.A.	HVAC	1	15.0kW	62.5A	–	–
N.A.	WATER HEATER	1	4.50kW	21.63A	–	–

LOAD CALCULATION TOTAL COMPLEX

LP-1

LIGHTING LOAD =624sqft x 3.0VA	1 872 VA
APPLIANCE LOAD =	1 620 VA
HEATING LOAD 1@15kW =	15 000 VA
DHW HEATER LOAD =	5 500 VA
DRYER LOAD =	4 000 VA
RANGE LOAD =	6 000 VA
COMPLEX TOTAL LOAD =	39 492 VA
APPLICATION OF DEMAND FACTOR	
COMPLEX TOTAL LOAD =	39 492 VA
MINIMUM SERVICE SIZE	
39 492 VA/240V =	164.55 VA
164.55 VA+20% (free space) =	197.46 VA

NOTES:
1. WIRING METHOD TO BE MC CABLE, COPPER, MINIMUM #12AWG.
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 1/2" FLEXIBLE CONDUIT STUBBED UP INTO THE CEILING SPACE UNLESS NOTED.
4. ALL CONDUIT TO CONTAIN AN INSULATED GROUND CONDUCTOR SIZED AS REQUIRED BY 2011 N.E.C., MINIMUM #14 AWG.
5. ELECTRICAL INSTALLATION SHALL BE IN COMPLIANCE WITH 2011 N.E.C..
6. ALL WIRING IN RETURN AIR PLENUMS SHALL MEET RATING REQUIREMENTS OF 2011 N.E.C..
7. MOUNTING HEIGHTS FOR ALL WALL MOUNTED DEVICES SHALL BE FROM FINISHED FLOOR TO BOTTOM OF DEVICE BOX.
8. ALL 125 VOLT, 20 AMP RECEPTACLES SHALL BE LISTED TAMPER-RESISTANT RECEPTACLES(2011-NEC, ART.406-11)
9. ALL CIRCUITS MARKED W/ A * SHALL BE PROTECTED BY A LISTED ARC-FAULT CIRCUIT INTERRUPTER (COMB. TYPE)
10. REMOVE ALL GROUNDING BONDS FROM APPLIANCES.

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 BOTTOM 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

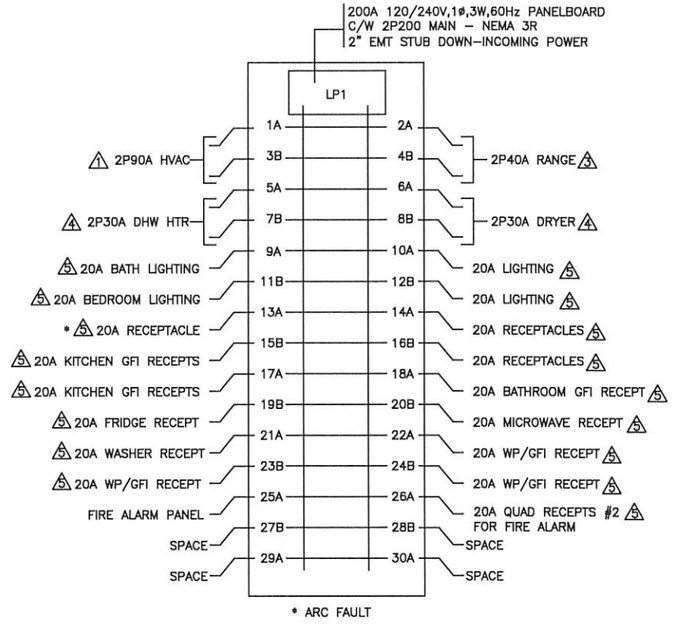
WIRING LEGEND

1 – 4 AWG THHN WIRE
2 – 6 AWG THHN WIRE
3 – 8 AWG THHN WIRE
4 – 10 AWG THHN WIRE
5 – 12 AWG THHN WIRE
6 – 14 AWG THHN WIRE

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



YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

By Yuri at 9:56:21 AM, 3/18/2020

(Structural Aspects Only)

–	–	–	BP
–	28JAN28	ISSUE FOR AWARDS	BP

ITB 26-52 Southport Fire Station #8 Relocation

NOTES:
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CUSTOMER ACCEPTANCE

☐ – ACCEPTANCE AS DRAWN
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BY: _____

DATE:

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DRAWN BY: TT
CHECKED BY: BS
DATE: 07FEB2020

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

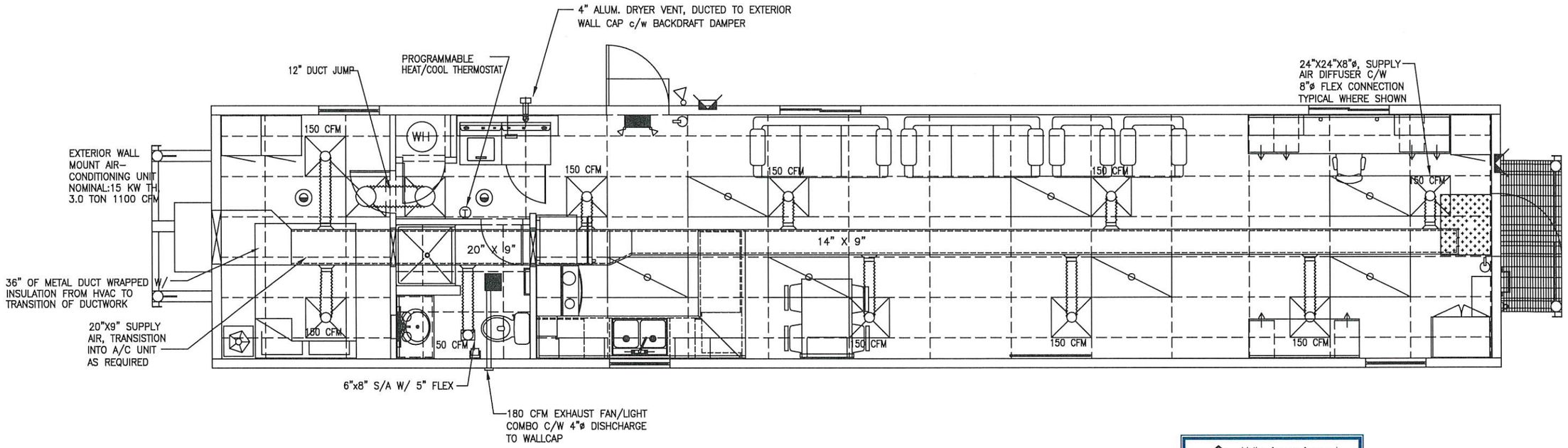
PROJECT:
WCC SERVICES
13' X 64'

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
ELCTRICAL PANEL,
SCHEDULE
& CALCULATIONS

DRAWING NO:

ATCO Structures & Logistics



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

YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

By Yuri at 9:56:22 AM, 3/18/2020

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ITB 26-52 Southport Fire Station #8 Relocation

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DATE: 07FEB2020

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

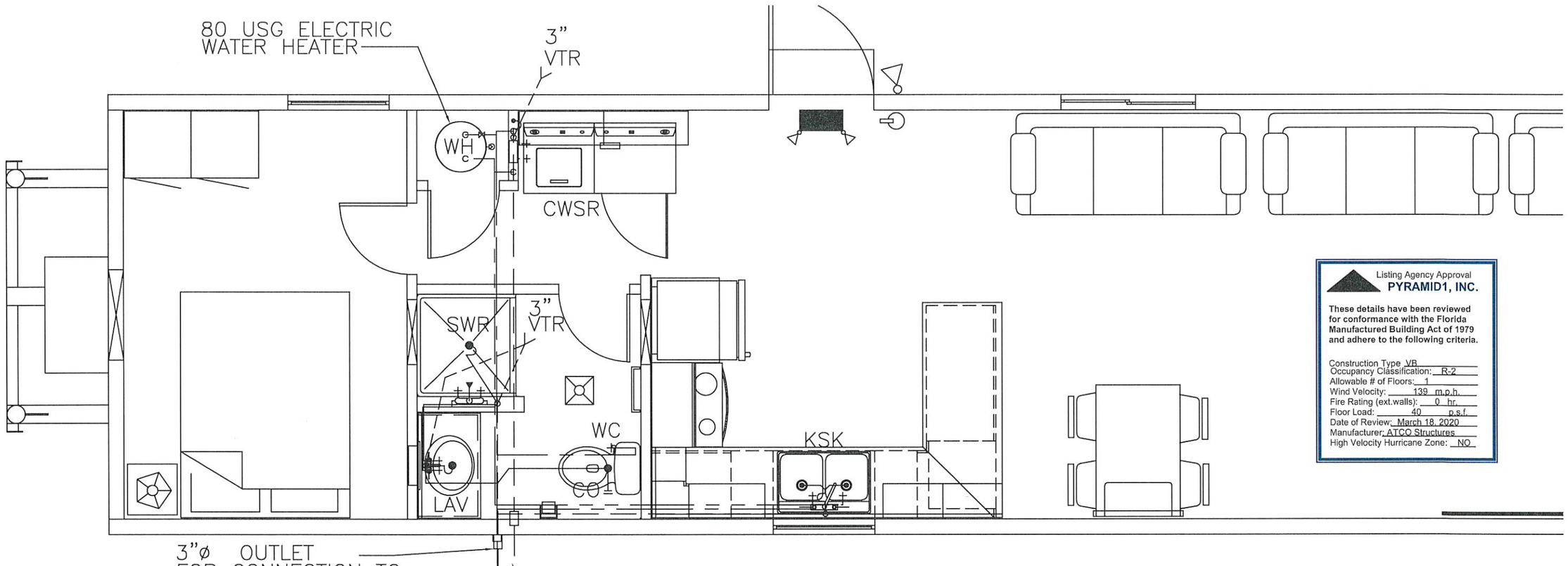
PROJECT:
WCC SERVICES
13' X 64'

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
–
HVAC LAYOUT
–

DRAWING NO:

ATCO Structures & Logistics



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

——-—— – DOMESTIC COLD WATER
——--—— – 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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

By Yuri at 9:56:23 AM, 3/18/2020

(Structural Aspects Only)

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

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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

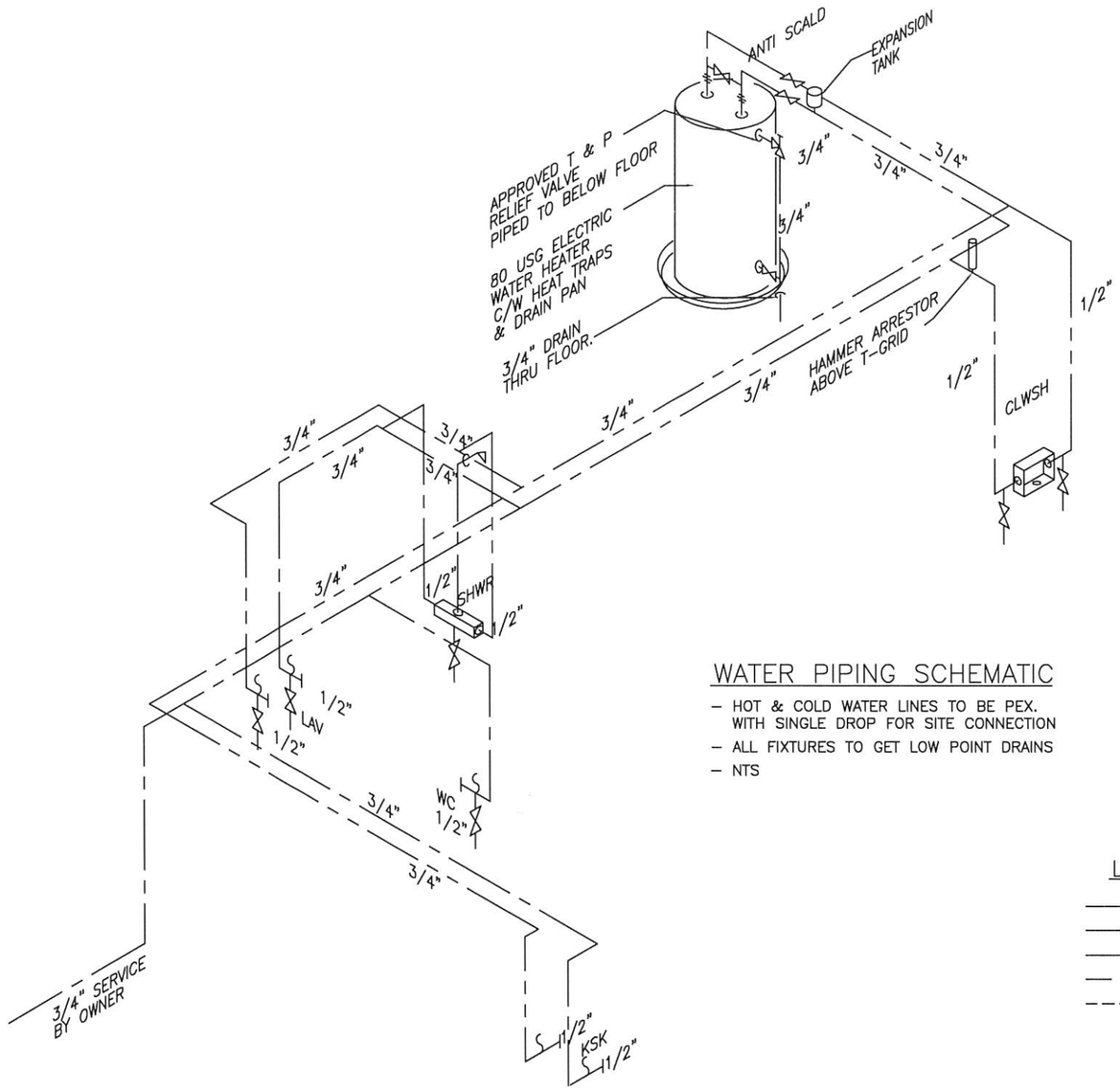
PROJECT:
WCC SERVICES
13' X 64'
TOOL PUSH

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
DOMESTIC WATER & SANITARY DRAINAGE LAYOUT
–

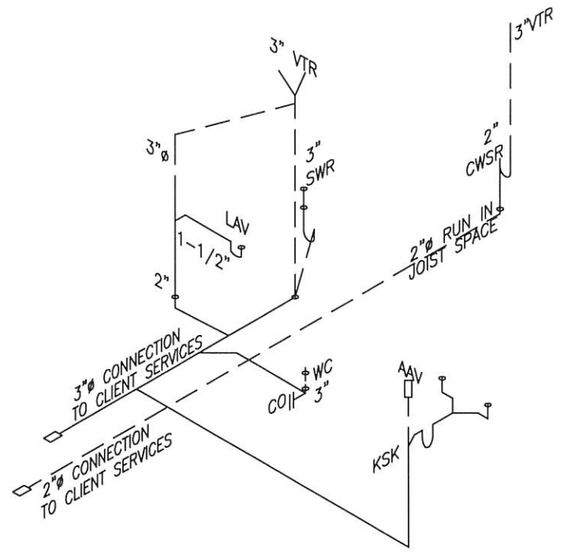
DRAWING NO:
96005–01–M02

ATCO Structures & Logistics



WATER PIPING SCHEMATIC

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



DRAINAGE PIPING SCHEMATIC

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

LEGEND

——-——	– DOMESTIC COLD WATER
——--——	– 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

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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

(Structural Aspects Only)

REV	DATE	DESCRIPTION	BY
–	–	–	BP
–	28JAN28	ISSUE FOR AWARDS	BP

ITB 26-52 Southport Fire Station #8 Relocation

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SCALE: NTS

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

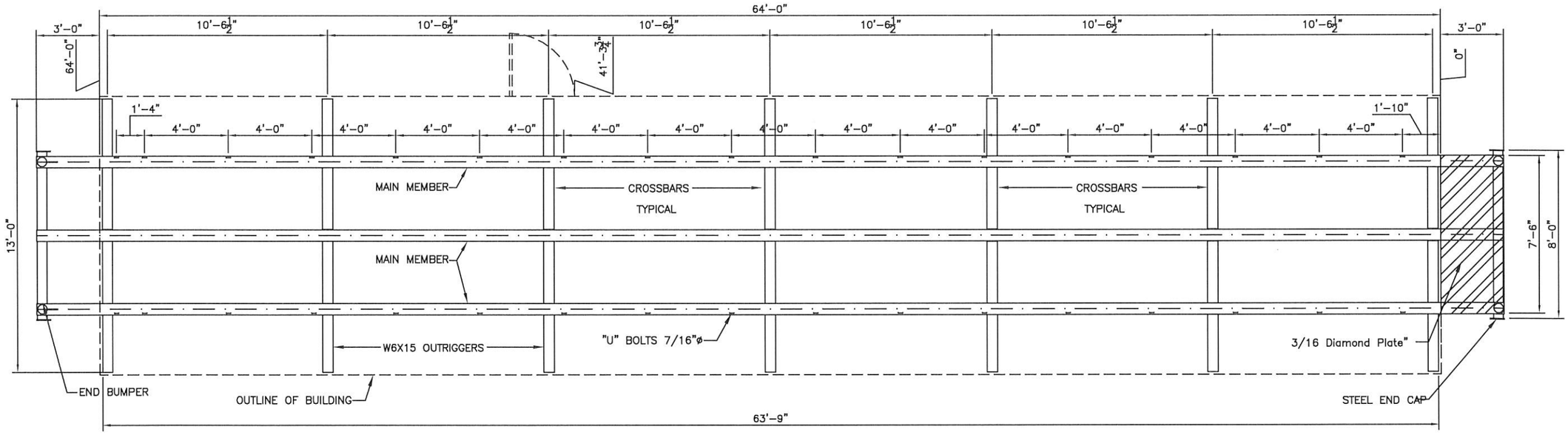
PROJECT:
WCC SERVICES
13' X 64'
TOOL PUSH

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
DOMESTIC WATER & SANITARY DRAINAGE SCHEMATICS
–

DRAWING NO:
96005–01–M03

ATCO Structures & Logistics



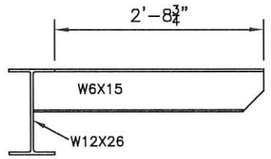
GENERAL NOTES

1. MAIN MEMBERS – 12" WF @ 26 lbs/lft (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.

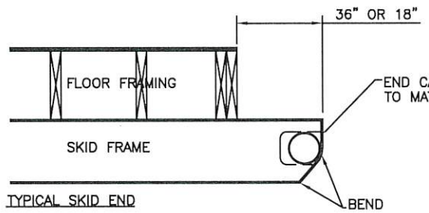
Listing Agency Approval
PYRAMID1, INC.

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

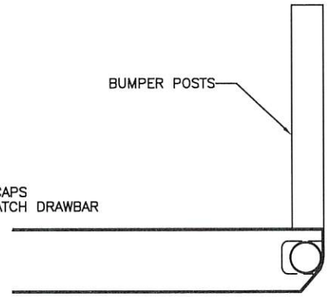
Construction Type: VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



TYPICAL OUTRIGGER



TYPICAL SKID END



TYPICAL SKID END



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

(Structural Aspects Only)

REV	DATE	DESCRIPTION	BY
ø	30JAN20	ISSUE FOR PRODUCTION	JLG

ITB 26-52 Southport Fire Station #8 Relocation

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BY: _____

DATE: _____

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DRAWN BY: TT
CHECKED BY: BS
DATE: 02FEB20
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' X 64'
TOOL PUSH

SPECIFICATION NUMBER
719107.02

DRAWING TITLE:
SUGGESTED FOUNDATION
PLAN & DETAILS
–

DRAWING NO:
96002–01–F01

ATCO Structures & Logistics

FIRE ALARM BILL OF MATERIALS

QTY.	SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION
1	FACP	PFC-4064 FIRE ALARM CONTROL PANEL	1	T	BUTTERBALL TAMPER SWITCH (BBH5C502)
3		MHT-1224W WHITE MINI HORN			
1	W	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

SEQUENCE OF EVENTS:

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

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

SHEET INDEX

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

CAUSE AND EFFECT MATRIX

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

YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

By Yuri at 9:56:26 AM, 3/18/2020

(Structural Aspects Only)

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

REVISIONS

REV	DATE	COMMENTS	DRWN	DSGN	REVIEW
0	03.02.20	SUBMITTAL	MD	EG	EG

ATCO
13'x64' TOOL PUSH
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

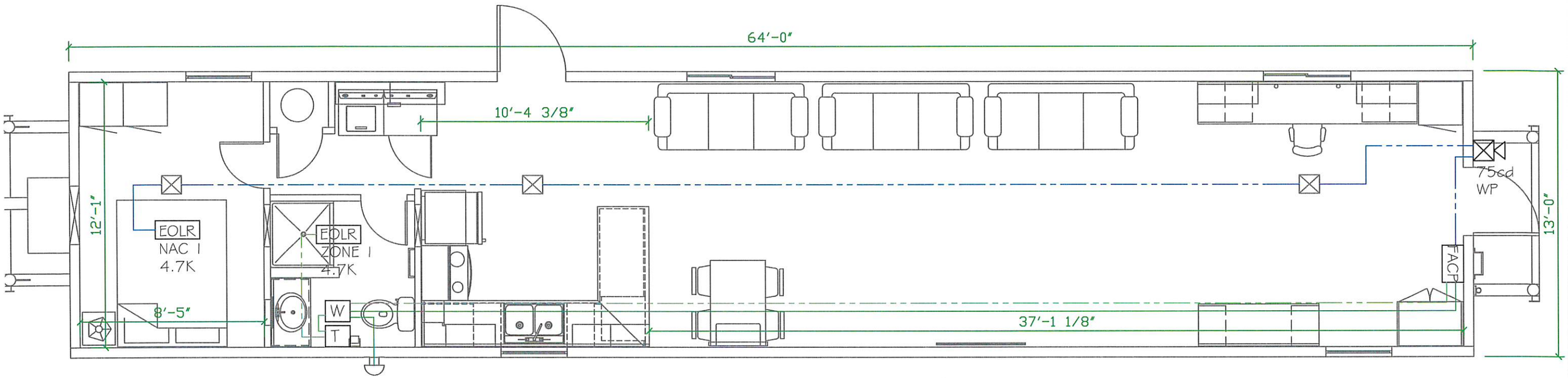
DRAWING BY
MMD

SHEET NUMBER
FA 1.0

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



YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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

(Structural Aspects Only)

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

REVISIONS

REV	DATE	COMMENTS	DRWN	DSGN	REVIEW
0	03.02.20	SUBMITTAL	MD	EG	EG

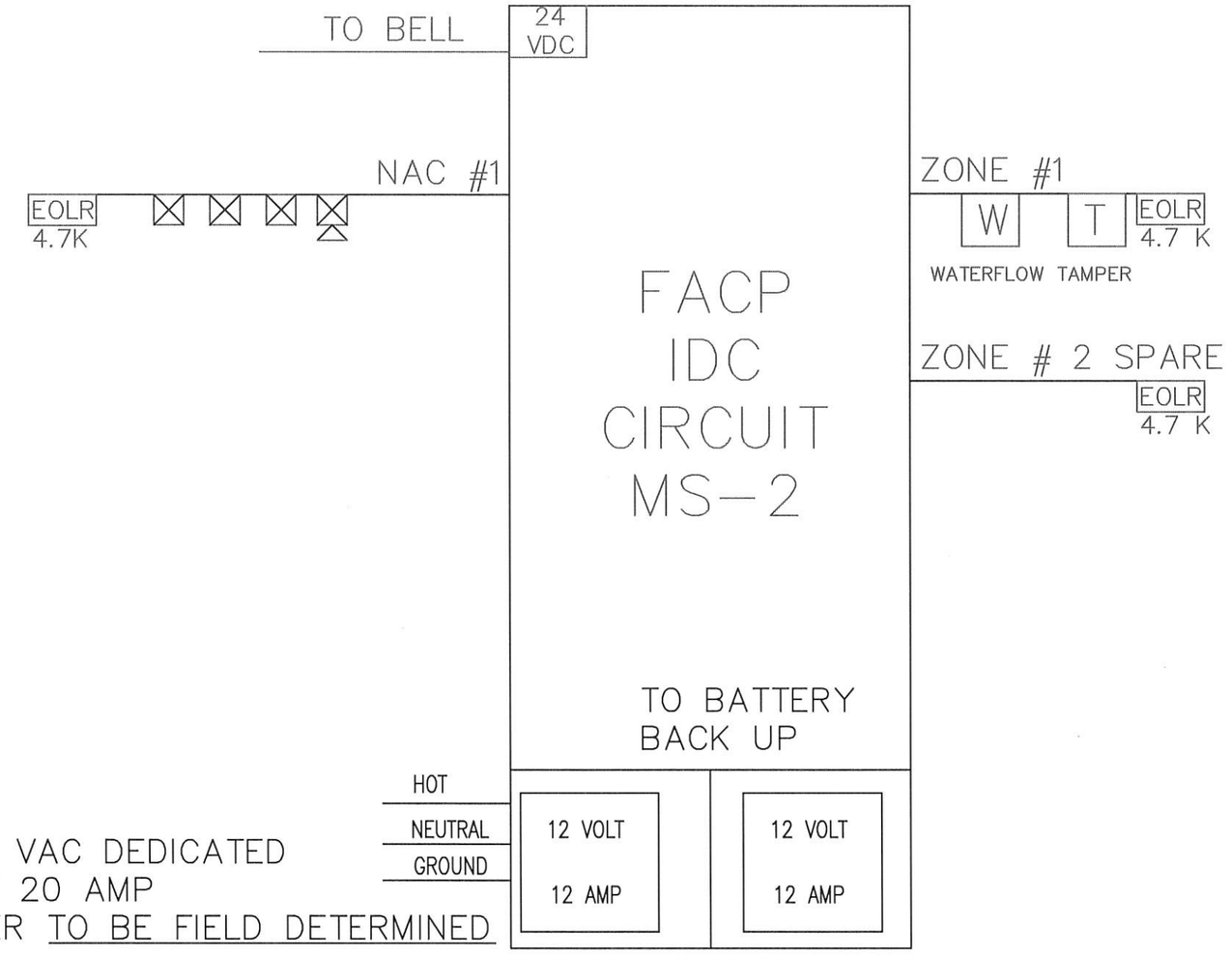
ATCO
13'x64' TOOL PUSH
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
FA 1.1

FIRE ALARM SYSTEM LAYOUT



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

YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

By Yuri at 9:56:28 AM, 3/18/2020

(Structural Aspects Only)

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

REVISIONS

REV	DATE	COMMENTS	DRAWN	DESIGN	REVIEW
0	03.02.20	SUBMITTAL	MJD	EG	EG

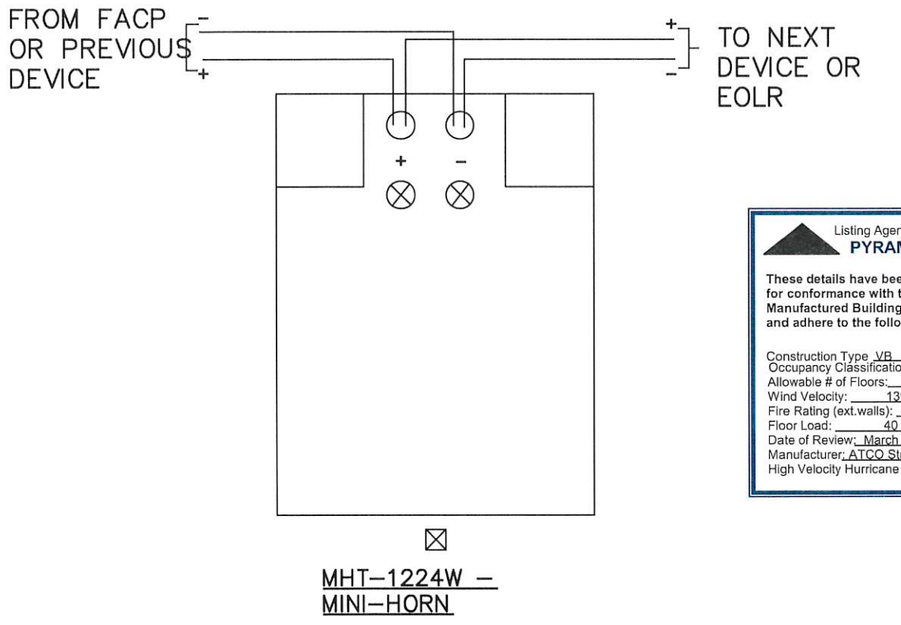
ATCO
13'x64' TOOL PUSH
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
FA 1.2

FACP RISER

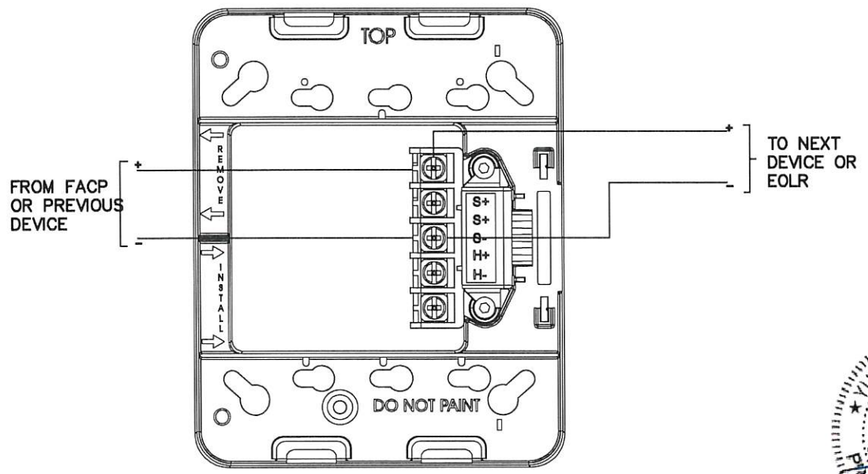


MHT–1224W – MINI–HORN

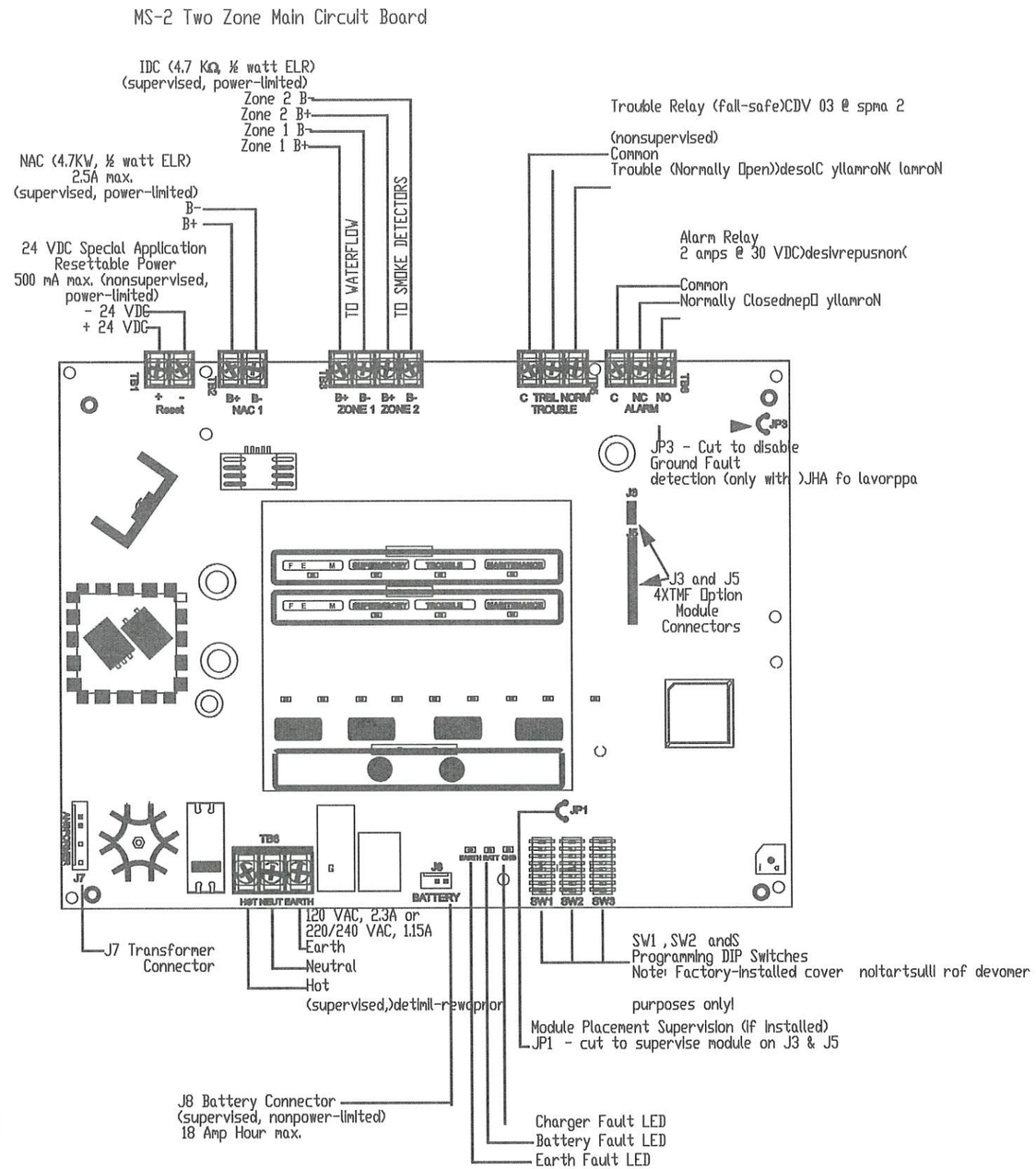
Listing Agency Approval
PYRAMID1, INC.

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Construction Type VB
Occupancy Classification: R-2
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Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO



HORN STROBE



YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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

(Structural Aspects Only)

REVISIONS

REV	DATE	COMMENTS	DRWN	DSGN	REVIEW
0	03.02.20	SUBMITTAL	MJD	EG	EG

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

ATCO
13'x64' TOOL PUSH
FIRE ALARM SYSTEM DESIGN

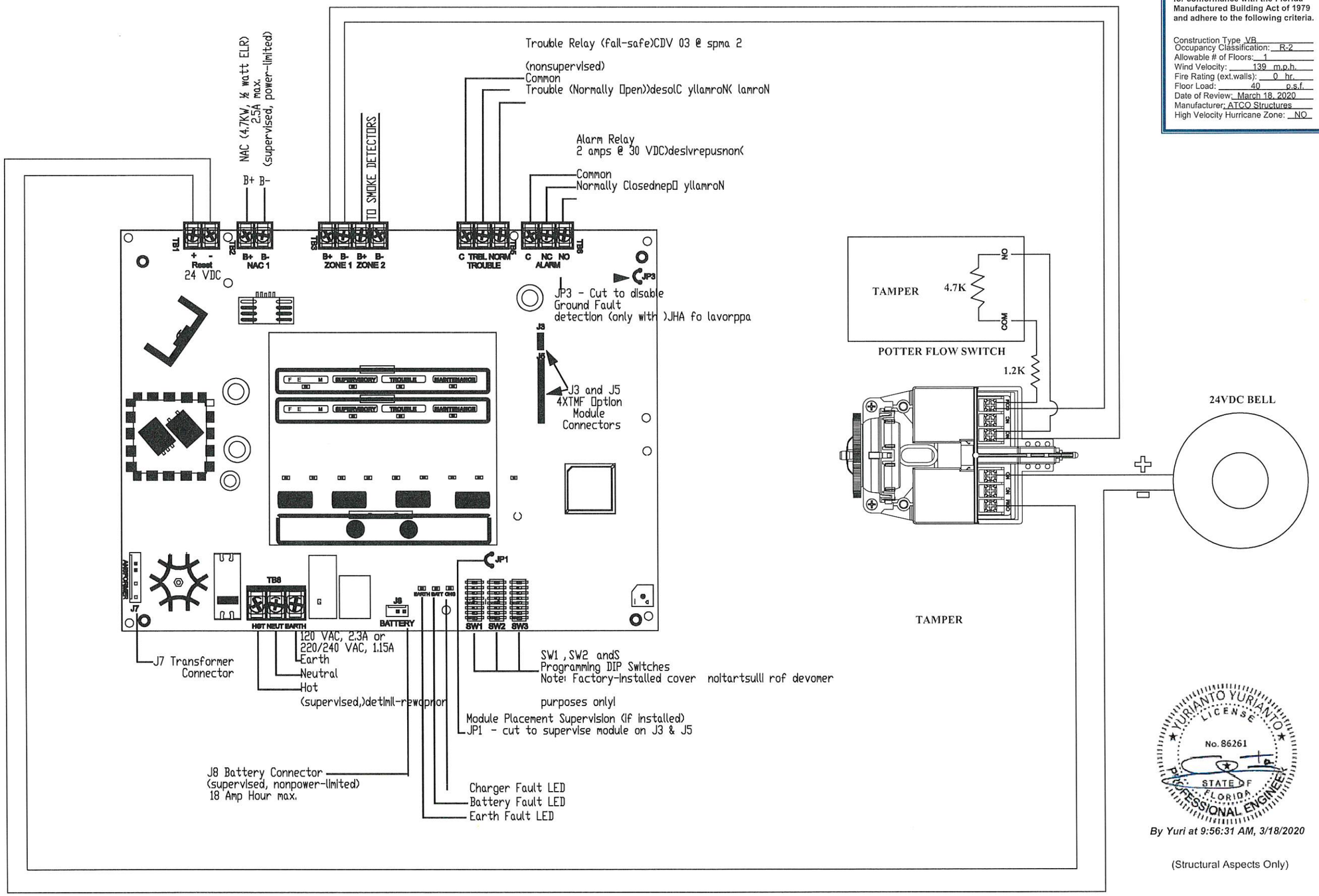
DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
FA 1.3

GENERAL DETAILS

MS-2 Two Zone Main Circuit Board



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

By Yuri at 9:56:31 AM, 3/18/2020

(Structural Aspects Only)

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

REVISIONS

REV	DATE	COMMENTS	DRAWN	DESIGN	REVIEWED
0	03.02.20	SUBMITTAL	M.D.	E.G.	E.G.

ATCO
13'x64' TOOL PUSH
FIRE ALARM SYSTEM DESIGN

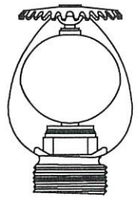
DATE
03.02.2020

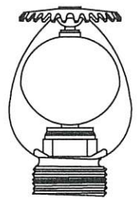
DRAWING BY
MMD

SHEET NUMBER
FA 1.4

PANEL-WATERFLOW CONNECTION

ATCO
13'x64' TOOL PUSH
13D Fire Sprinklers System





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

GENERAL FIRE SPRINKLER SYSTEMS NOTES

1. 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.
2. ALL FIRE RATED PENETRATIONS SHALL BE FIRE STOPPED USING AN APPROVED AND EQUALLY RATED MATERIAL. (BY OTHERS)
3. POINT OF CONNECTION SHALL BE THE DEDICATED WATER SUPPLY LINE .
4. PIPING SHALL BE DESIGNED AND INSTALLED CONFORMING TO NFPA 13D STANDARDS.
5. SYSTEM SHALL BE A WET PIPE SYSTEM.
6. DEFLECTOR DISTANCE SHALL BE IN ACCORDANCE WITH THE ADOPTED EDITION OF NFPA 13D AND LOCAL CODES.
7. OBSTRUCTIONS TO ANY FIRE SPRINKLER SHALL BE FIELD VERIFIED FOR COMPLIANCE WITH NFPA 13D AND MANUFACTURERS GUIDELINES.
8. PIPING SHALL BE INSTALLED TO DRAIN COMPLETELY. INSTALL AUXILIARY DRAINS WITH DRAIN VALVE WHERE NECESSARY.
9. HANGER AND BRACING LOCATIONS ARE APPROXIMATE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA-13D AND MANUFACTURERS GUIDELINES.
10. 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.
11. 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.
12. COORDINATE SPRINKLER SYSTEM TAMPER AND FIRE ALARM SUPERVISION WIRING AND THE WIRING WITH FIRE ALARM INSTALLATION PERSONNEL.
13. ELECTRICAL WIRING 48 VOLT AND LARGER BY OTHERS.
14. IT IS THE RESPONSIBILITY OF THE OWNER TO MAINTAIN THE INTEGRITY OF THE FIRE ALARM AND SPRINKLER SYSTEM.
15. 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.
16. 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.
17. A STOCK OF SPARE FIRE SPRINKLERS OF EACH TYPE AND TEMPERATURE ALONG WITH SPRINKLER WRENCHES, SHALL BE LOCATED AT THE MAIN RISER.
18. FOR THIS SYSTEM TO WORK WHEN ALL 4 HEADS ACTIVATED A MINIMUM OF 32GPM @ 15PSI IS REQUIRED
19. 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								

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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: — Time:

** Calculated Flowing 2 Heads

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

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

REVISIONS

DESCRIPTION	DATE	BY
PLAN REVISIONS	08/21/21	JMS
PLAN REVISIONS	09/14/21	JMS

ATCO
13'x64' TOOL PUSH
FIRE SPRINKLERS SYSTEM

DATE
02.27.2020

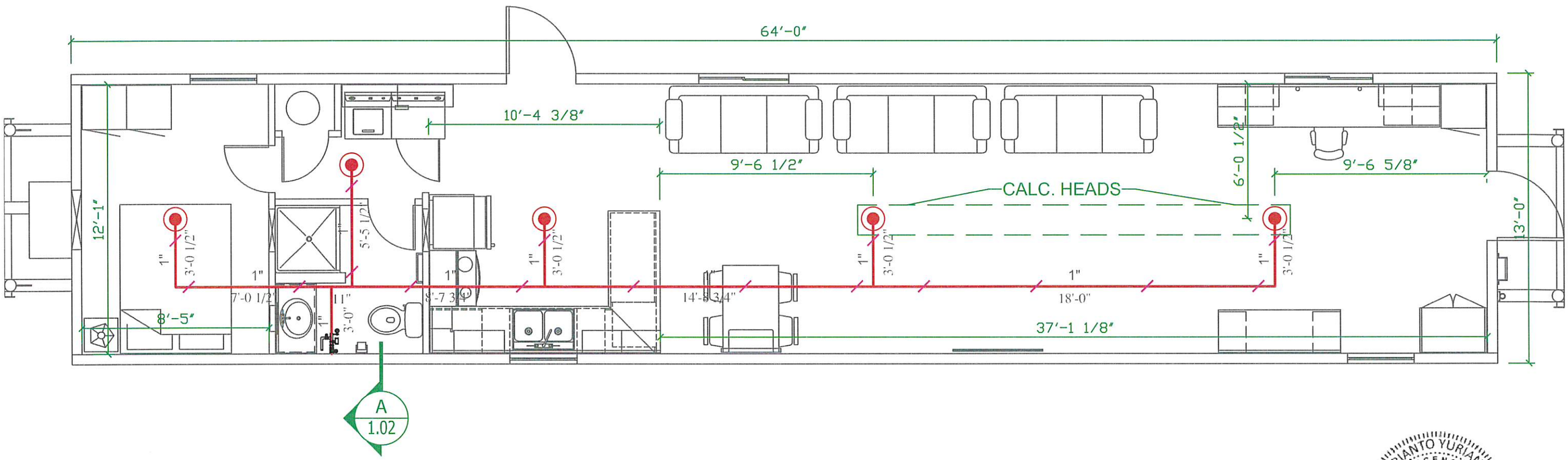
DRAWING BY
MMD

SHEET NUMBER
FS1.00

Listing Agency Approval
PYRAMID1, INC.

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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 9:56:33 AM, 3/18/2020

(Structural Aspects Only)

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

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	3/18/20	PER PLAN REVIEW	MD
2	04.21.20	PER PLAN REVIEW	MD

ATCO
13'x64' TOOL PUSH
FIRE SPRINKLERS SYSTEM

DATE
02.27.2020

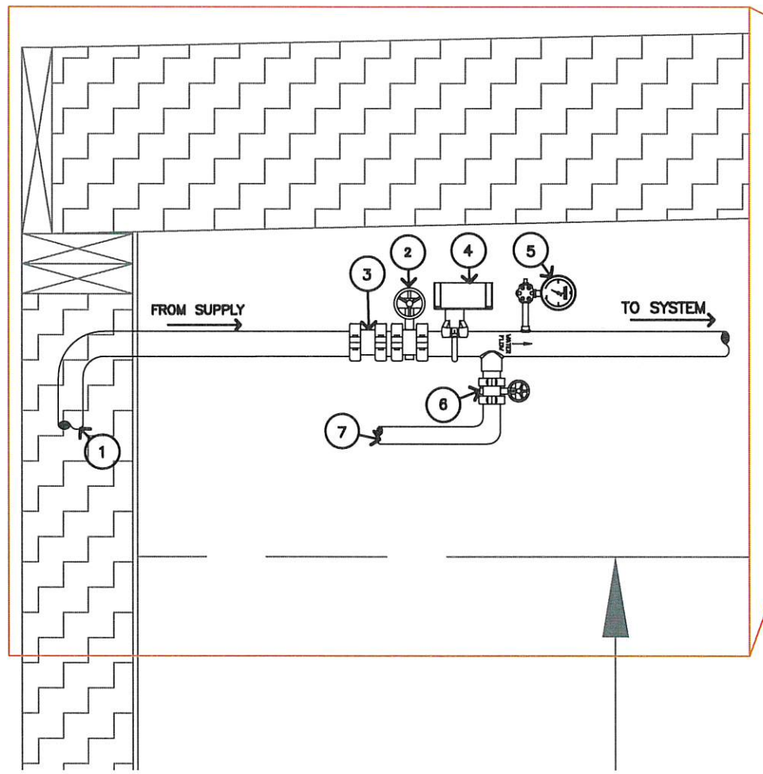
DRAWING BY
MMD

SHEET NUMBER
FS1.01

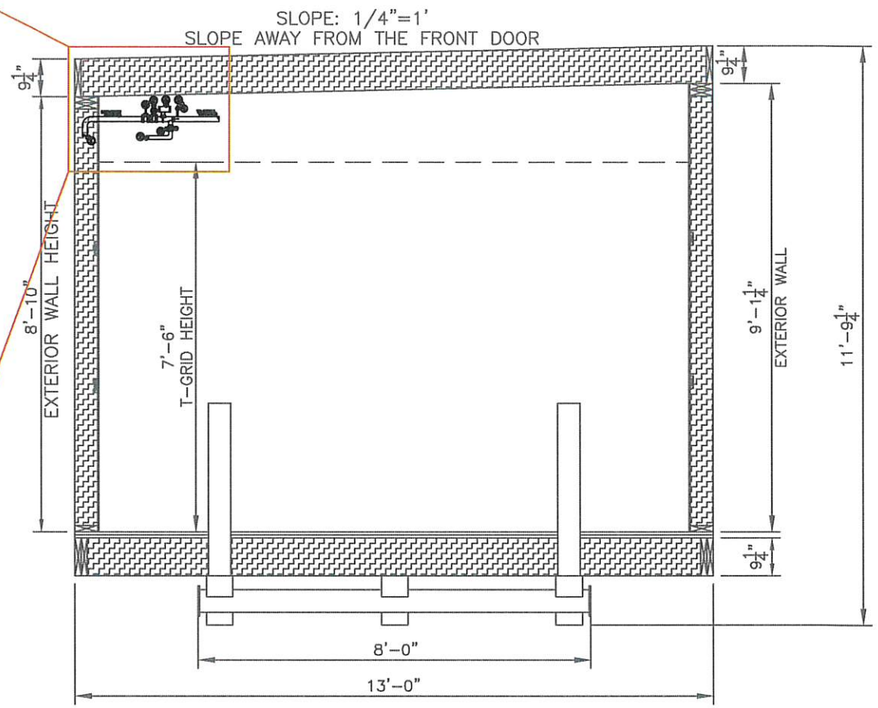
FIRE SPRINKLERS SYSTEM LAYOUT

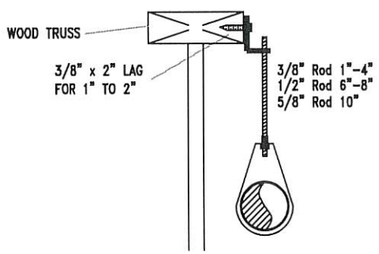
RISER LEGEND

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





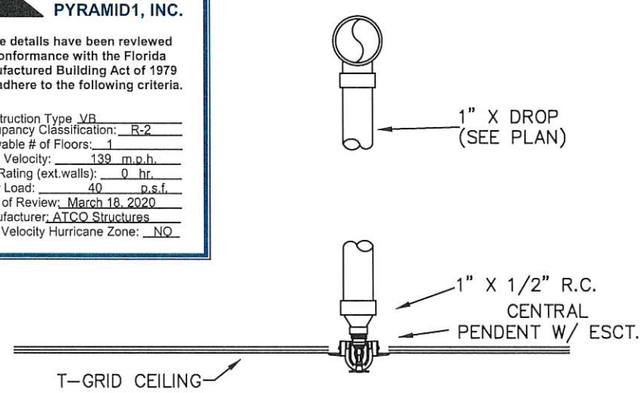
2 1/2" TO 4" PIPE
1 -- 1/2" SIDE BEAM CONNECTOR
1 -- 1/2"x 3" LAG SCREW
1 -- PIPE RING

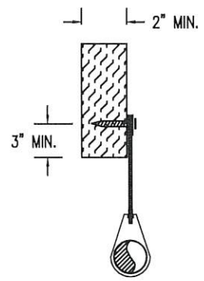
SIDE BEAM
NO SCALE

Listing Agency Approval
PYRAMID1, INC.

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High Velocity Hurricane Zone: NO





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)

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

REVISIONS

NO.	DATE	DESCRIPTION	BY
1	1.15.20	PER PLAN REVIEW	MMD
2	2.11.20	PER PLAN REVIEW	MMD

ATCO
13'x64' TOOL PUSH
FIRE SPRINKLERS SYSTEM

DATE
02.27.2020

DRAWING BY
MMD

SHEET NUMBER
FS1.02

GENERAL DETAILS

ATCO Structures & Logistics

WCC SERVICES

Panama City – FL
(Wind–Borne Debris Region)

13'X65' 5 MAN SLEEPER
PROJECT # 96002–01

SQUARE FOOTAGE: 845
OCCUPANT LOAD: 7

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. INTERNATIONAL 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 —— 40 PSF CORRIDOR LIVE LOAD — 110 PSF ROOF LIVE LOAD —— 20 PSF WIND LOAD ——— 139 MPH @ 3–SECOND GUSTS WIND COMPONENT & CLADDING ——(–)32 psf/ +26.4 psf (ASD)
SEISMIC DESIGN —— CATEGORY B SITE DESIGN CLASSIFICATION——D RISK CATEGORY ——————— =II
MANUFACTURE & ADDRESS ATCO STRUCTRURES & 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.

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

By Yuri at 9:36:27 PM, 3/17/2020

Plan Design # 20-0209
Date March 18, 2020
Approved By Andrew R. Carlson
Modular Buildings Plans Examiner
Florida License No. SMP-0000032

Listing Agency Approval
PYRAMID1, INC.

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Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

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# (9277) 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

DRAWING INDEX

CS	COVER SHEET
S01	SPECIFICATIONS
A01	CONSTRUCTION PAGE
A02	FIRE WALL DETAILS
A03	EXTERIOR ELEVATIONS
D01	CROSS SECTION
D02	FASTENING SCHEDULE & DETAILS
D03	ROOFING FASTENING PATTERN
D04	SIDING FASTENING PATTERN
E01	ELECTRICAL LAYOUT & CEILING GRID LAYOUT
E02	ELECTRICAL LEGEND, CALCULATIONS, AND PANEL SCHEDULE
M01	HVAC LAYOUT
M02	DOMESTIC WATER LAYOUT & SCHEMATICS
M03	SANITARY DRAINAGE LAYOUT & SCHEMATICS
F01	SUGGESTED FOUNDATIONS PLAN & DETAILS

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

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

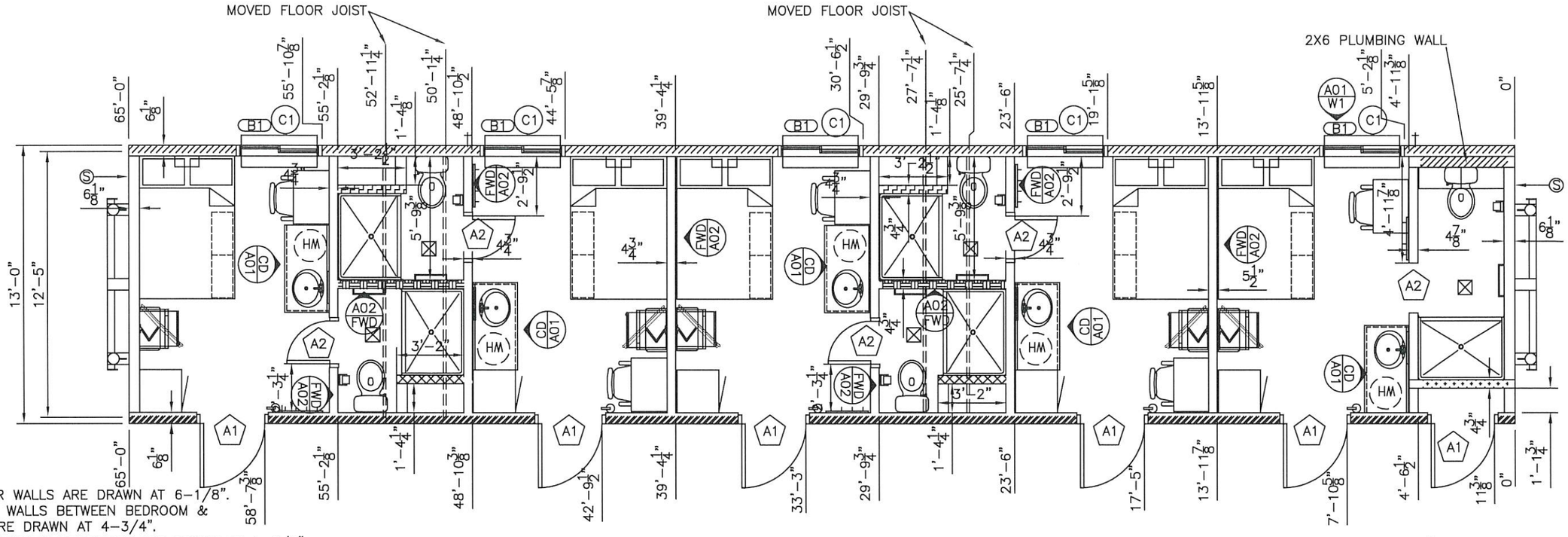
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
–
COVER SHEET
–

DRAWING NO:
96002–01–CS

ATCO Structures & Logistics



NOTES:
1. 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.
2. ALL DOOR JAMBS ARE 3" AWAY FROM WALL UNLESS OTHERWISE NOTED.
3. ALL WALLS TO HAVE FIRE BLOCKING @ FINISHED CEILING HEIGHT, UNLESS VCG IS A FULL SHEET FROM BOTTON TO TOP PLATE.
4. SEE A02 FOR FIRE WALL DETAILS AND NOTES.
5. 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.

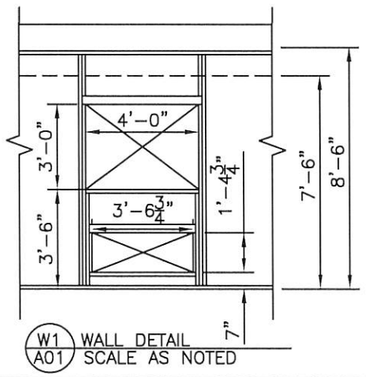
NOTES ON SHEAR WALLS:
- EXTERIOR OF SHEAR WALL TO BE COVERED WITH 1/2" CDX
- INTERIOR OF SHEAR WALL, IF WITHIN A PLENUM, TO BE COVERED WITH 1/2" PLAIN GYPSUM.
- INTERIOR OF SHEAR WALL, WITHOUT A PLENUM, TO BE COVERED WITH 5/8" VCG

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. RE: A02 FOR DETAILS AND NOTES

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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



W1 / A01 WALL DETAIL
SCALE AS NOTED

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

DOORS (A)

NO.	QTY.	RO	SILL HEIGHT
A1	6	36"x80"	N/A
A2	5	25 1/4"x81"	N/A

WINDOWS (B)

NO.	QTY.	RO	SILL HEIGHT
B1	5	48"x36"	42"

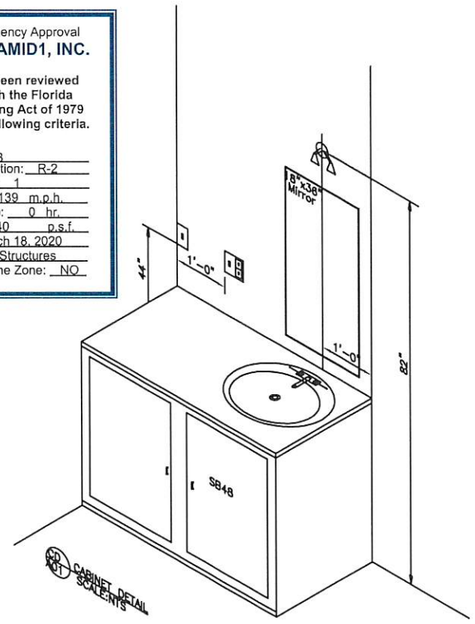
MECH (C)

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



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

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BY: _____

DATE: _____

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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

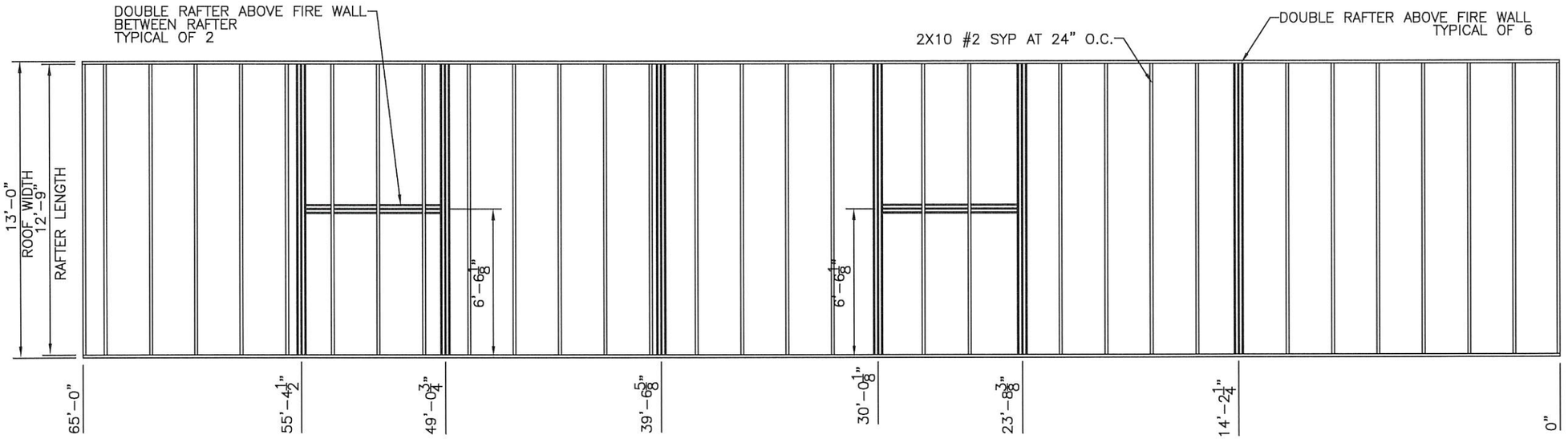
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
CONSTRUCTION PAGE
–
–

DRAWING NO:
96002–01–A01

ATCO Structures & Logistics



DOUBLE RAFTER LOCATIONS

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

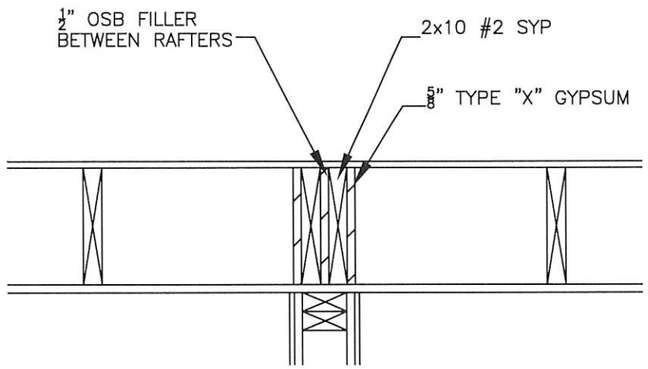
Listing Agency Approval
PYRAMID1, INC.

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

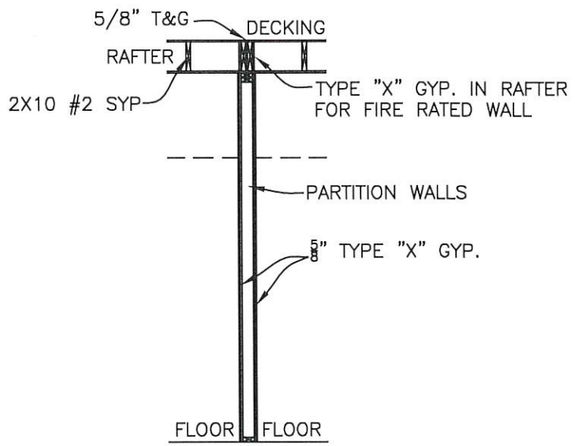
Construction Type VB
Occupancy Classification: R-2
Allowable # of Floors: 1
Wind Velocity: 139 m.p.h.
Fire Rating (ext.walls): 0 hr.
Floor Load: 40 p.s.f.
Date of Review: March 18, 2020
Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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



RD / A02 RAFTER DETAIL AT FIRE WALL
SCALE AS NOTED



FWD / A02 1 HOUR FIRE WALL DETAIL
SCALE AS NOTED

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.

REV	DATE	DESCRIPTION	BY
		ITB 26-52 Southport Fire Station #8 Relocation	
0	08MAY19	ISSUE FOR PRODUCTION	GS

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BY: _____

DATE: _____

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DRAWN BY: TT
CHECKED BY: BS
DATE: 11MAR2020
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

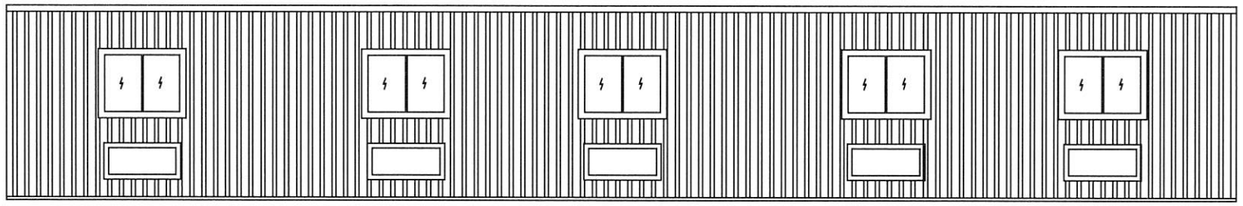
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

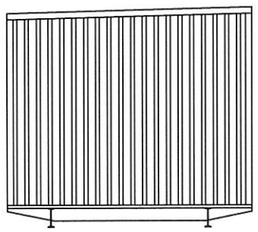
DRAWING TITLE:
FIRE WALL DETAILS
–
–

DRAWING NO:
96002–01–A02

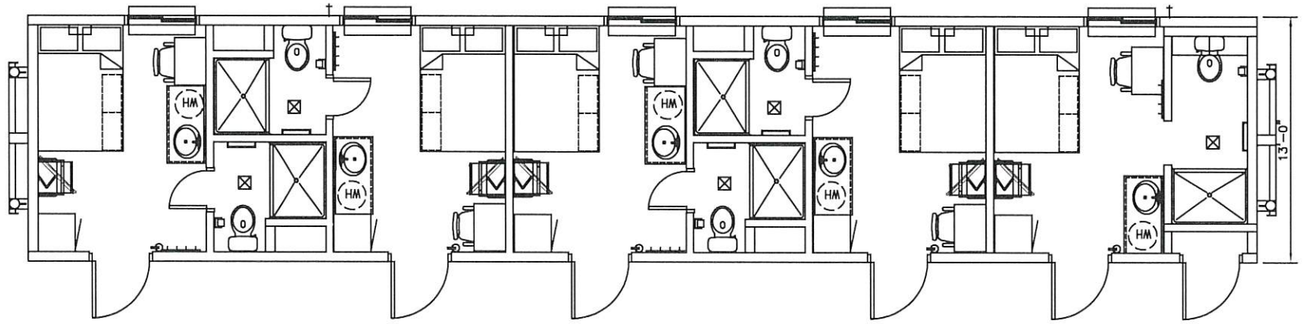
ATCO Structures & Logistics

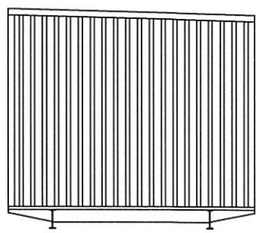


BACK VIEW

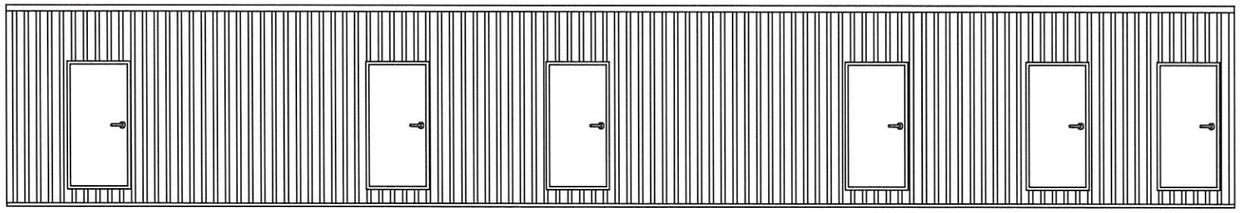


LEFT SIDE VIEW





RIGHT SIDE VIEW



FRONT VIEW

YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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

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
–	–	~~ITB 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: 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

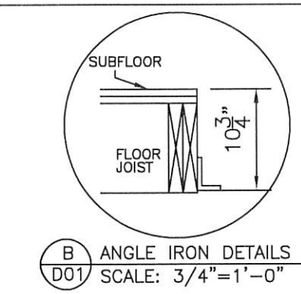
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
–
EXTERIOR ELEVATIONS
–

DRAWING NO:
96002–01–A03

ATCO Structures & Logistics



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

MIN. SLOPE: 1/4" / 12

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

12'-9"
RAFTER LENGTH

9 1/4"

A / D01

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

2X4 FIRE BLOCKING

8'-6" STRUCTURAL WALL HEIGHT

7'-6" FINISHED CEILING HEIGHT

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

3/8" GYPSUM TO UNDERSIDE OF RAFTERS MINIMUM 1/4" DENSDECK OVER 19/32" PLYWOOD

TYPICAL TO BOTH SIDES

TPO-c ROOFING DOWN TO HONEYCOMB VENT

HONEYCOMB VENTING 1" THICK

1 1/2"

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

2X10 RAFTER

9 1/4"

TO BOTH LONG SIDES OF ROOF

A / D01 ROOFING VENTING DETAIL
SCALE: AS NOTED

B / D01

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

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)

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

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

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:	3/8"=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

ATCO Structures & Logistics

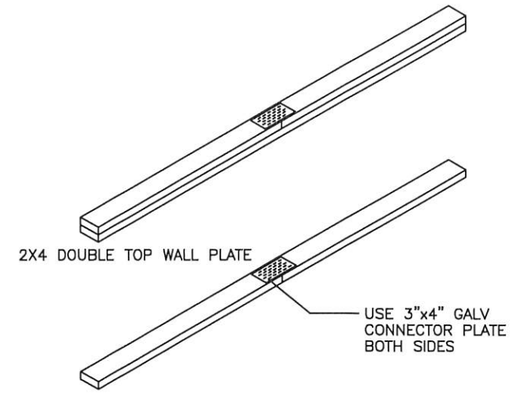
FASTENING SCHEDULE FOR PANELING, SHEATING, & TRIMS

FASTENING SCHEDULE			FASTENER		SPACING OF FASTENERS o/c ("P"–Perimeter, "F"–Field)					
					FLOOR		WALL/PARTITION		ROOF	
DESCRIPTION		COMMENTS	SIZE	TYPE	"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 #8 x 1–3/4	44G BAB STAPLE LOW ROOT WOOD SCREW	4	8	4	8	3	6
5/8	T & G PLYWOOD		1/2 x 2–1/2 #8 x 1–3/4	63G BAB STAPLE LOW ROOT WOOD SCREW	4 16	8 16			6	12
3/4	T & G PLYWOOD		1/2 x 2–1/2 #8 x 1–3/4	63G BAB STAPLE LOW ROOT WOOD SCREW	4 16	8 16			6	12
1 1/8	T & G PLYWOOD	FASTENING TO METAL FLOOR JOIST	8d RING SHANK #12x24x2-1/2" SCREW	HARDENED NAIL SELF-DRILLING METAL SCREW	6 6	6 6				
3/8	V.C. DRYWALL		1 x 1–1/4 1–1/4	31G BAB STAPLE FOAM ADHESIVE			8	24		
1/2	PLAIN DRYWALL		#6 x 1–1/4 #6 x 1–5/8	DRYWALL SCREW DRYWALL SCREW			12	12	12	12
1/2	V.C. DRYWALL		1 x 1–1/2 #6 x 1 5/8	38G BAB STAPLE FOAM ADHESIVE			8		8	24
5/8	PLAIN DRYWALL		#6 x 1–5/8	DRYWALL SCREW			12	12	12	12
5/8	V.C. DRYWALL		1 x 1–1/2 #6 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	24	10	24
5.2mm	LUAN PANELLING	STUD 16 o/c	7/32 x 1	351G BAB BROWN STAPLE			6	12		
3.2mm	LUAN PANELLING	STUD 16 o/c	7/32 x 5/8	355/8G BROWN STAPLE			6	12		
1/4	V.C. LUAN PANELLING	STUD 16 o/c	7/32 x 1 1–1/4	351G BABN WHITE STAPLE FOAM ADHESIVE			4	24	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		#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		#9 X 1–1/2 #14 X 7/8	WOOD SCREW LAP SCREW			12	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.

		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	#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

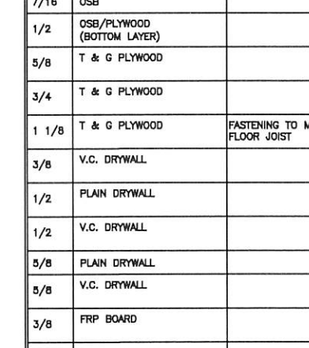
* NOTE:
INTER CONNECTION OF ALL SIZES OF MULTIPLE MEMBERS ARE TO FOLLOW THE INTER CONNECTIONS as listed ABOVE (IN 2x4 to 2x4)



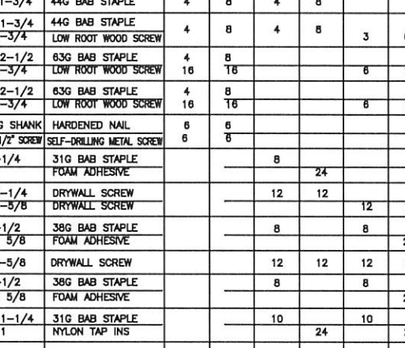
2x4 SINGLE BOTTOM WALL PLATE,

NOTES:
1. DOUBLE SIDE PLATE JOINTS TO BE SPACED WITH A MINIMUM OF 4' APART
2. USE GALV. STEEL 'CONNECTOR PLATE' GAUGE 20G. (EAGLE METAL–E20 STRUCTURAL CONNECTOR PLATE OR EQUAL)
3. PRESS PLATES TO CONNECT DIMENSIONAL LUMBER TO CREATE DESIRED PLATE LENGTH.
4. PLATES MAY BE INSTALLED WITH A 1/4" VARIANCE FROM CENTER OF JOINT.
5. NAILING THROUGH CONNECTOR PLATES INTO STUD END MEMBERS IS PERMISSIBLE.
6. DOUBLE TOP PLATES ARE FASTENING TOGETHER USING 3"X0.131"ø NAILS @ 8" O.C.

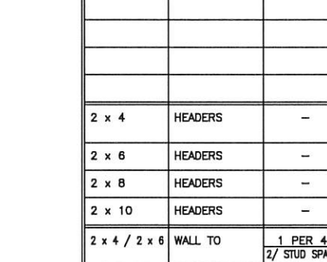
D02 LUMBER CONNECTIONS
SCALE: NTS



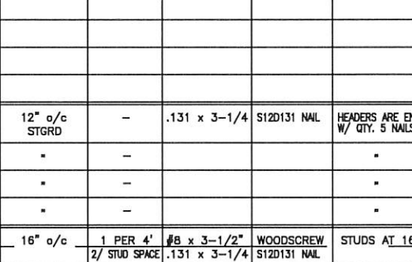
D02 PARTITION WALL TO CEILING ATTACHMENT
SCALE: 1" = 1'–0"



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



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

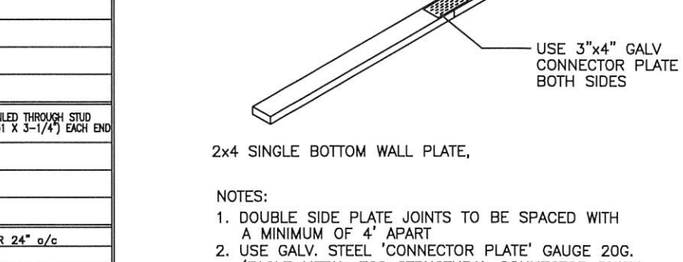


* NOTE:
SEE SCHEUDLE FOR FASTENING.

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

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 FASTNING, SEE SCHEDULE



NOTE: BUILT–UP HEADER TO BE FILLED TO SIZE OF WALL STUDS

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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

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

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DATE: _____

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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

ATCO Structures & Logistics

NOTES:

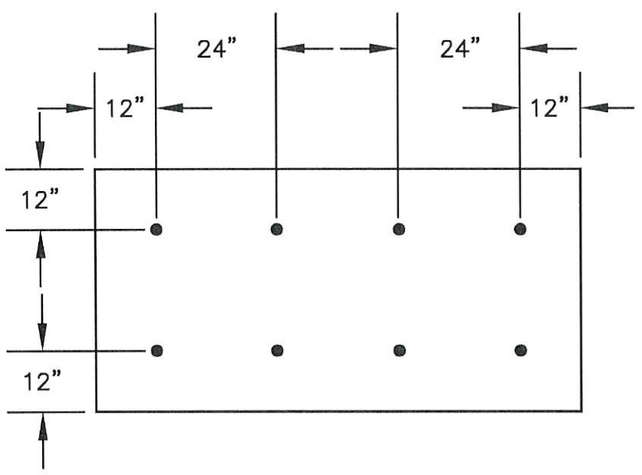
1. 8 FASTENERS PER 4' X 8' BOARDS (1 FASTENER EVERY 4 SQUARE FEET) IN THE FIELD IS APPROVED FOR INSULATIONS 2" OR MORE THICK WHEN USED AS THE TOP LAYER.
2. PERIMETER AND CORNER DIMENSIONS ARE TO BE A MINIMUM OF 8' WIDE UNLESS THE PROJECT REQUIRES FACTORY MUTUAL COMPLIANCE. CONTACT MULE-HIDE TECHNICAL 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.

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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



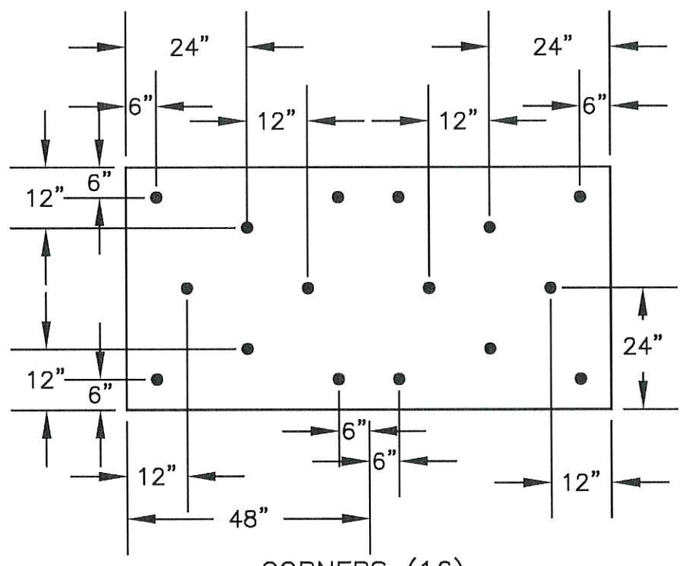
FIELD (8)
1 FASTENER PER EVERY 4 SQ. FT.



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

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

DENSEDECK FASTENING PATTERN



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

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

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

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

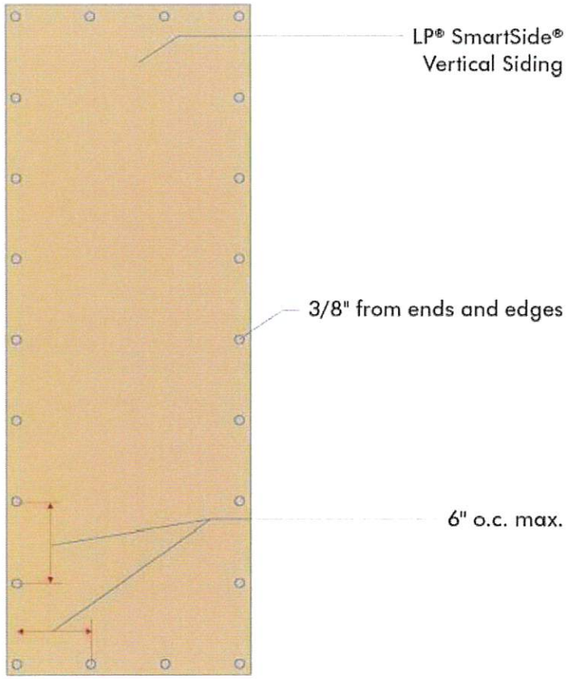
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
–
ROOF FASTENING PATTERN
–

DRAWING NO:
96002-01-D03

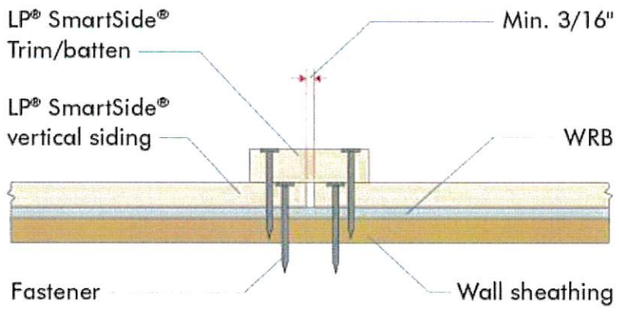
ATCO Structures & Logistics

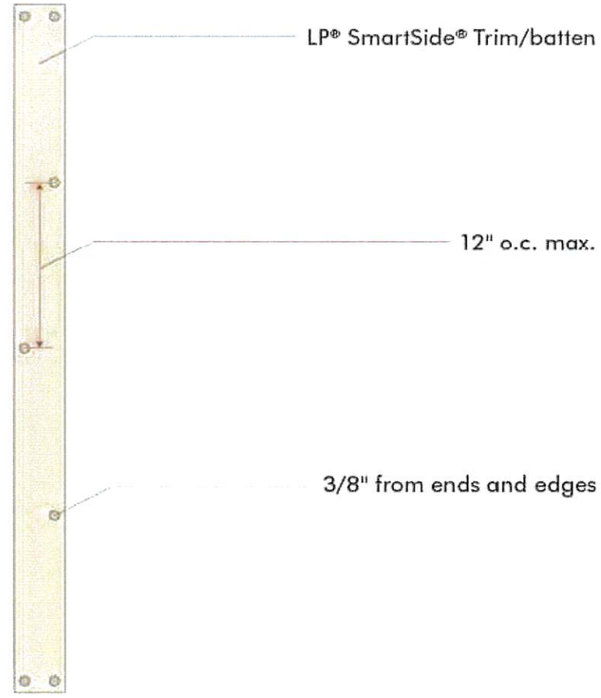


Listing Agency Approval
PYRAMID1, INC.

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Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO





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Ta□le □a□ Panel S□d□n□ □nstalled □ert□cally □t□ 0.113" □a□ls – **Max. Allowable Wind Speed, V_{asd}**

Per□r□ance Cate□□ry	Ma□ Stud Spac□n□(1) (□nc□es)	□astener Spac□n□(1) (□nc□es □c)		Ma□ All□□a□le □ □nd Pressure (ps□)	Ma□ All□□a□le □ □nd Speed □asd(1) (□p□)		
		□d□es	□□eld		□ □nd □□p□sure Cate□□ry		
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- 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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

□□r Sl□ □ncl□ □ □□□□ □ □ □□ps□□ □□□□□ Pa□□ □p□ □ □□□□□ □ □s□

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(2) □ all studs □ust □a□e a □in□u□ spec□c □a□ity □□□□□□□

(3) T□ree sec□nd□ust□□ased □n □□nd pressures act□n t□ard and a□ay □□□ □u□d□n□ sur□aces□at □□□t □e□□□t□n □□ne □ □t□ s□allest e□ect□□e area □n acc□rdance □□t□ C□apter □ □□ASC□ □□□□□Sect□n R□□□□□□□ □□t□e □□□□ and □□□□□RC□ and Sect□n □□□□□□□□□ □t□e □□□□ □C□

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

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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

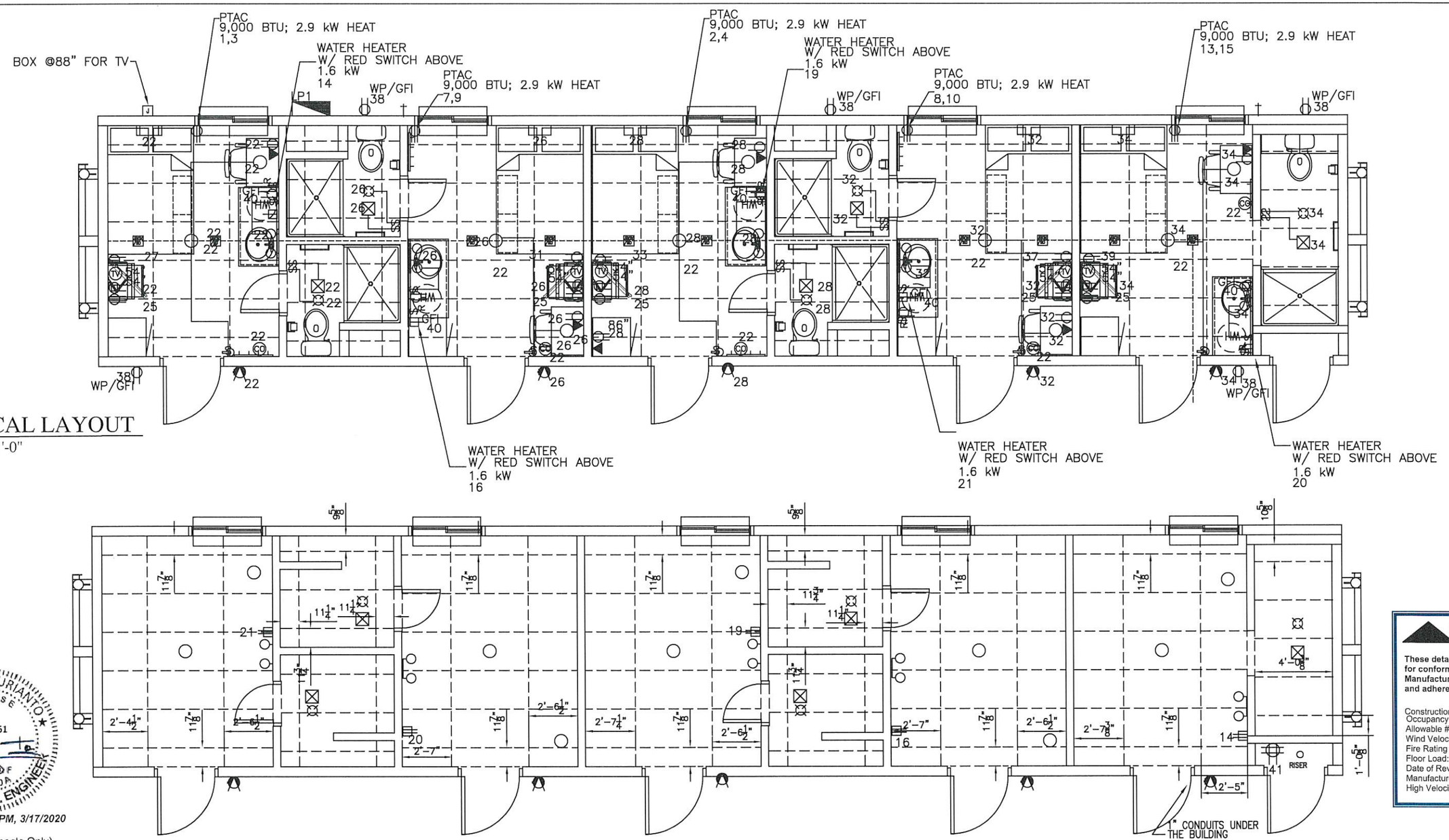
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
–
SIDING FASTENING PATTERN
–

DRAWING NO:
96002–01–D04

ATCO Structures & Logistics



ELECTRICAL LAYOUT

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

CEILING GRID LAYOUT

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

YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

By Yuri at 9:36:59 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

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

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

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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
–

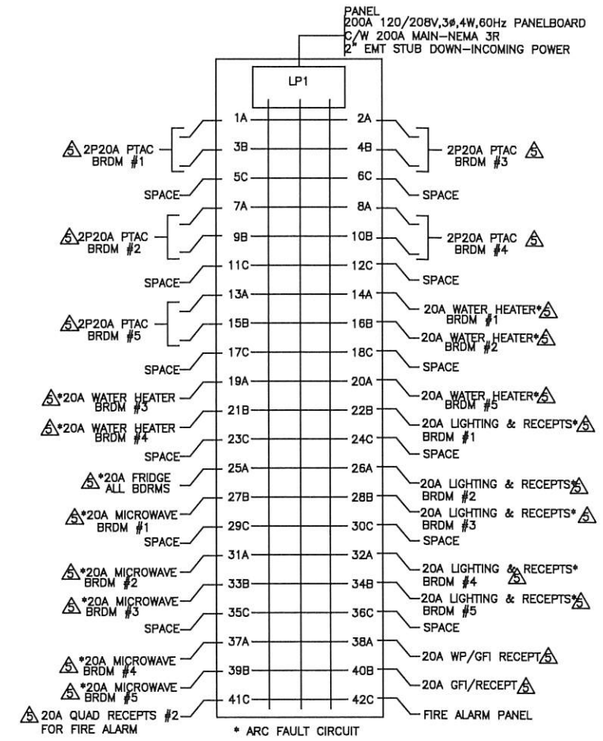
DRAWING NO:
96002–01–E01

ATCO Structures & Logistics

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	–	–	–	–
CO	120V CO DETECTOR W/ BATTERY BACKUP	–	–	–	–
	80 CFM EXHAUST FAN	–	1.5A	N.A.	N.A.
	POWER PANEL – NEMA3R	–	–	–	–
$	20A/125V SINGLE POLE SWITCH	–	–	–	–
$R	20A/125V SINGLE POLE SWITCH–RED FOR WATER HEATER	–	–	–	–
	20A/125V DUPLEX RECEPTACLE	180W	1.5A	–	–
GFI	20A/125V GFCI RECEPTACLE	180W	3.0A	–	–
WP/GFI	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	TV OUTLET RG59 C/W QUAD RECEPTACLE	–	–	–	–
J	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
1 – 4 AWG THHN WIRE
2 – 6 AWG THHN WIRE
3 – 8 AWG THHN WIRE
4 – 10 AWG THHN WIRE
5 – 12 AWG THHN WIRE
6 – 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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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
–	–	TTB 26-52 Southport Fire Station #8 Relocation	–
–	28JAN20	ISSUE FOR AWARDS	GA

NOTES:
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☐ – ACCEPTANCE EXCEPT AS NOTED

BY: _____

DATE: _____

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DRAWN BY:	GS
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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

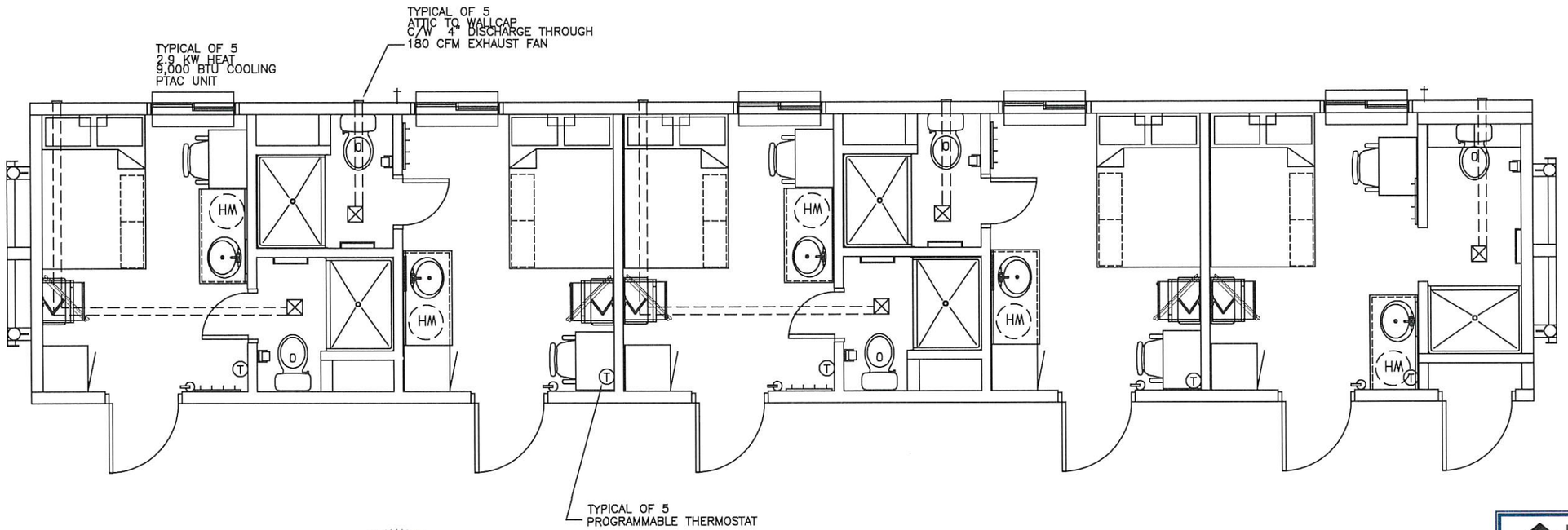
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
ELECTRICAL LEGEND, CALCULATIONS, & PANEL SCHEDULE

DRAWING NO:
96002–01–E02

ATCO Structures & Logistics



YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

By Yuri at 9:37:01 PM, 3/17/2020

(Structural Aspects Only)

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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
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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

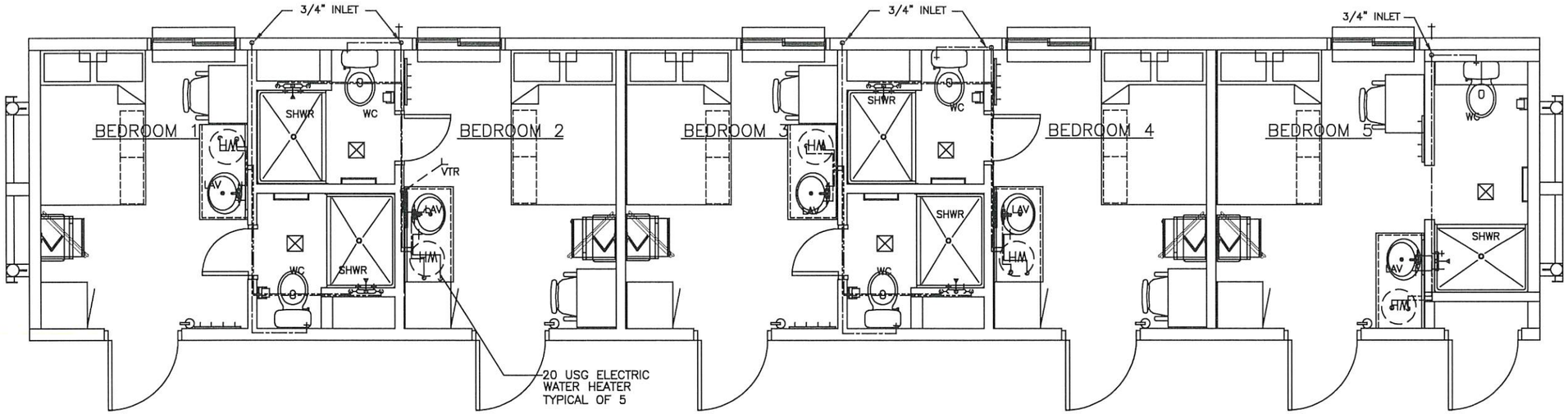
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
HEATING, VENTILATING,
& AIR CONDITIONING
LAYOUT

DRAWING NO:
96002–01–M01

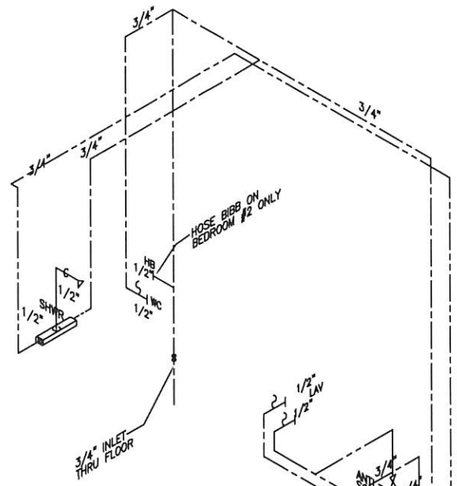
ATCO Structures & Logistics

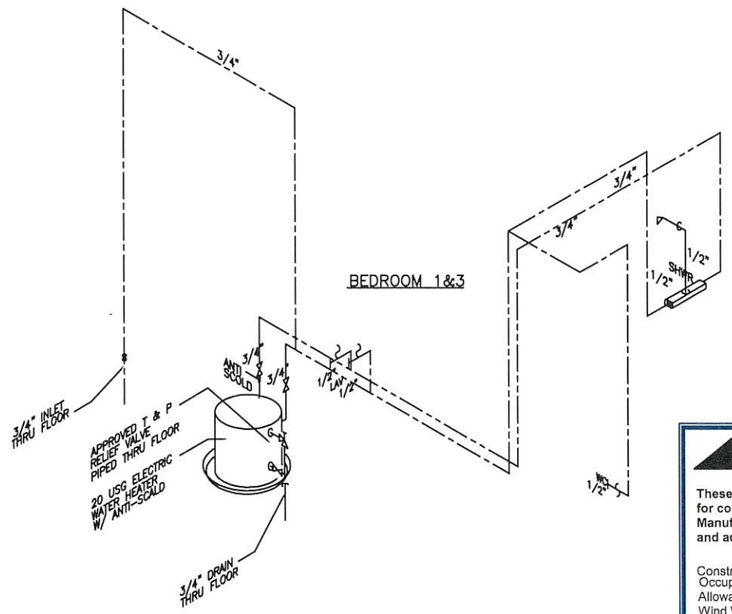


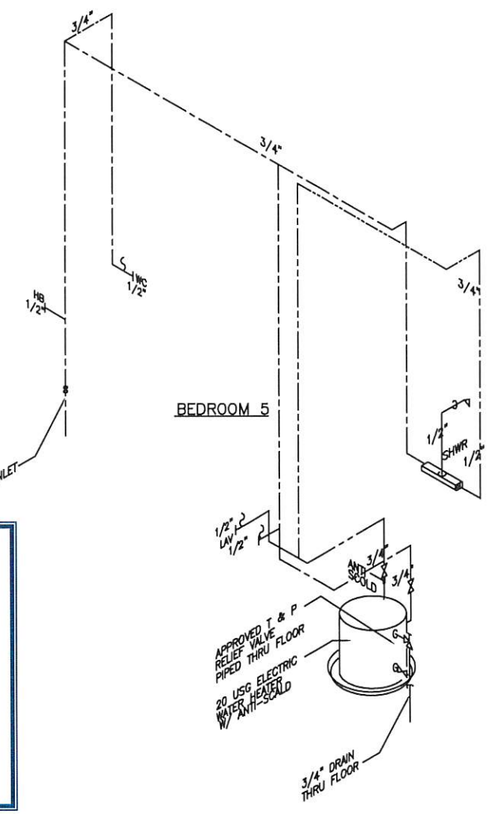
LEGEND

—— - ——	– 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.

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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

(Structural Aspects Only)

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:	BS
CHECKED BY:	GS
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

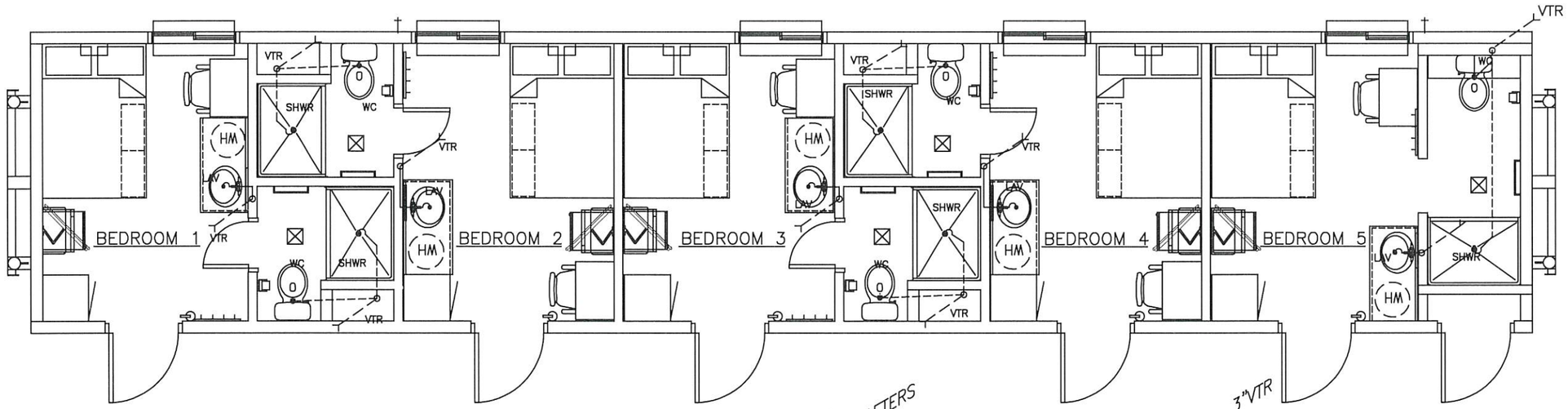
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
DOMESTIC WATER
LAYOUT & SCHEMATICS
–

DRAWING NO:
96002–01–M02

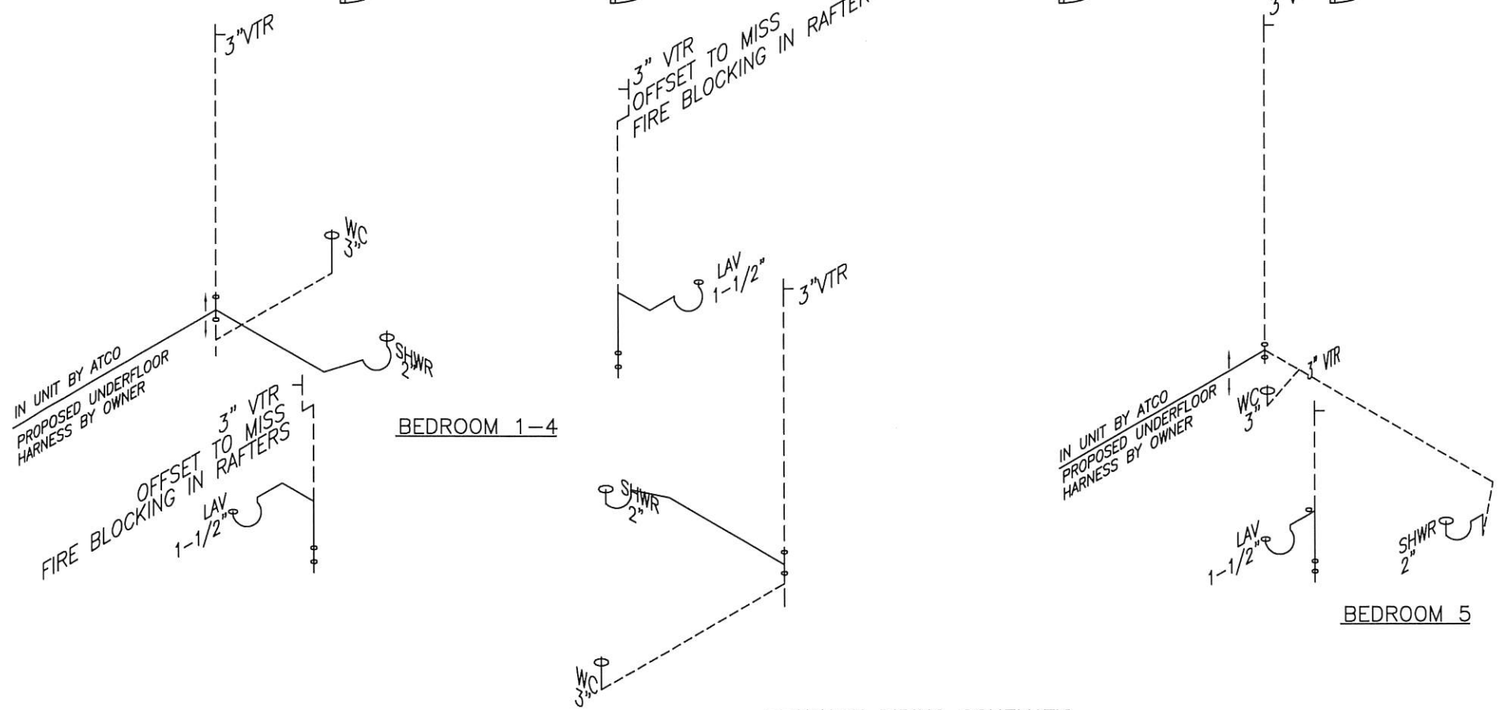
ATCO Structures & Logistics



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



DRAINAGE PIPING SCHEMATIC

- DRAIN LINES EXPOSED PVC
- ALL DRAIN LINES TO CONCEALED WHERE POSSIBLE
- DRAIN LINES TO BE STUBBED THROUGH FLOOR W/ MULTIPLE DROP FOR SITE CONNECTION

HARNESS & INSULATION BY OTHERS

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

(Structural Aspects Only)

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Manufacturer: ATCO Structures
High Velocity Hurricane Zone: NO

REV	DATE	DESCRIPTION	BY
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–	28JAN20	ISSUE FOR AWARDS	GA

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DATE:	07FEB2020
SCALE:	3/16"=1'–0"

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DIBOLL, TEXAS 75941
3370 POLE LINE RD. BLD. #36
POCATELLO, IDAHO 83201

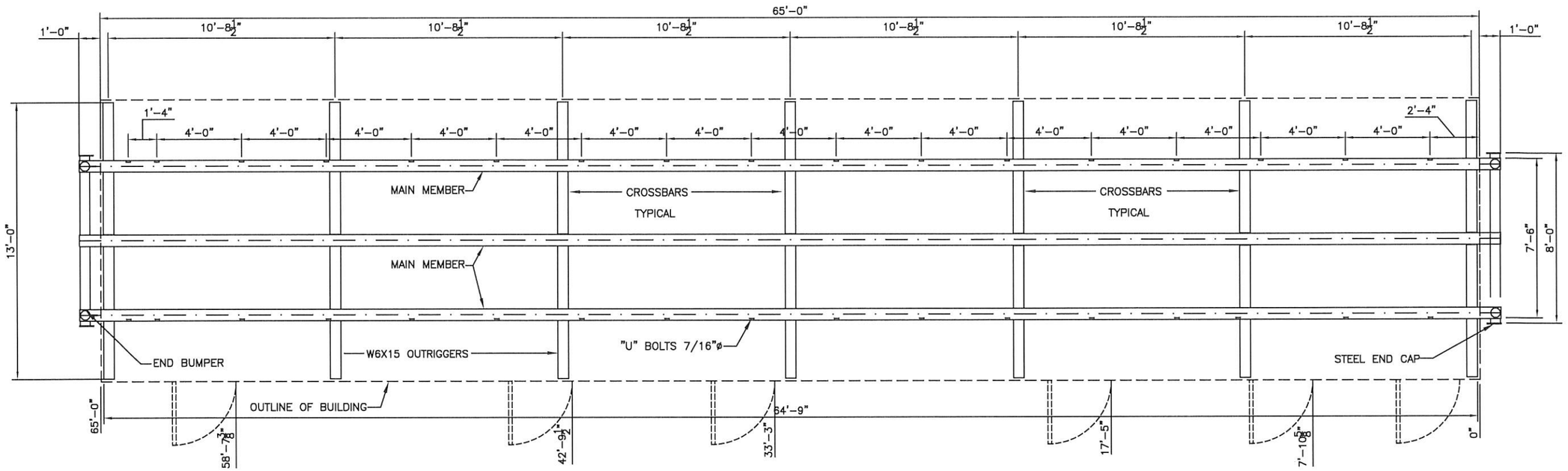
PROJECT:
WCC SERVICES
13'X65'
5 MAN SLEEPER

SPECIFICATION NUMBER
719119.02

DRAWING TITLE:
SANITARY DRAINAGE
LAYOUT & SCHEMATICS
–

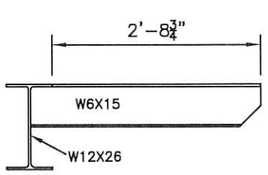
DRAWING NO:
96002–01–M03

ATCO Structures & Logistics

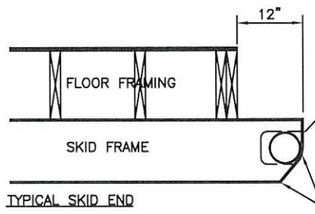


GENERAL NOTES

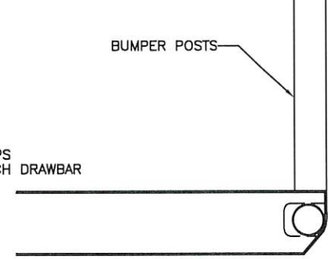
1. MAIN MEMBERS – 12" WF @ 26 lbs/lft (TYPICAL OF 3)
2. CROSSBARS – W6X15 WIDE FLANGE
3. OUTRIGGERS – W6X15 WIDE FLANGE
4. DRAWBARS – 5" SCH 80
5. BUMPER POSTS – 5" SCH 80 42" TALL
6. FLOOR BOLTING – EVERY 4'–0"
7. ALL SHARP EDGES TO BE ROUNDED OFF & GROUND SMOOTH
8. WELD ELECTRODES TO BE E7014 & E7018 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.



TYPICAL OUTRIGGER



TYPICAL SKID END



TYPICAL SKID END



By Yuri at 9:37:05 PM, 3/17/2020

Listing Agency Approval
PYRAMID1, INC.

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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
		ITB 26-52 Southport Fire Station #8 Relocation	
0	30JAN20	ISSUE FOR PRODUCTION	JLG

NOTES:
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CUSTOMER ACCEPTANCE

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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

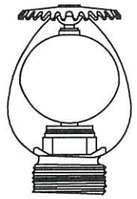
SPECIFICATION NUMBER
719119.02

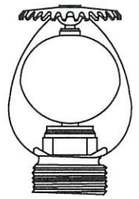
DRAWING TITLE:
SUGGESTED FOUNDATION
PLAN & DETAILS
–

DRAWING NO:
96002–01–F01

ATCO Structures & Logistics

ATCO
13'x65' 5 PERSON SLEEPER
13D Fire Sprinklers System





GENERAL FIRE SPRINKLER SYSTEMS NOTES

1. 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.
2. ALL FIRE RATED PENETRATIONS SHALL BE FIRE STOPPED USING AN APPROVED AND EQUALLY RATED MATERIAL. (BY OTHERS)
3. POINT OF CONNECTION SHALL BE THE DEDICATED WATER SUPPLY LINE .
4. PIPING SHALL BE DESIGNED AND INSTALLED CONFORMING TO NFPA 13D STANDARDS.
5. SYSTEM SHALL BE A WET PIPE SYSTEM.
6. DEFLECTOR DISTANCE SHALL BE IN ACCORDANCE WITH THE ADOPTED EDITION OF NFPA 13D AND LOCAL CODES.
7. OBSTRUCTIONS TO ANY FIRE SPRINKLER SHALL BE FIELD VERIFIED FOR COMPLIANCE WITH NFPA 13D AND MANUFACTURERS GUIDELINES.
8. PIPING SHALL BE INSTALLED TO DRAIN COMPLETELY. INSTALL AUXILIARY DRAINS WITH DRAIN VALVE WHERE NECESSARY.
9. HANGER AND BRACING LOCATIONS ARE APPROXIMATE AND SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA-13D AND MANUFACTURERS GUIDELINES.
10. 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.
11. 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.
12. COORDINATE SPRINKLER SYSTEM TAMPER AND FIRE ALARM SUPERVISION WIRING AND THE WIRING WITH FIRE ALARM INSTALLATION PERSONNEL.
13. ELECTRICAL WIRING 48 VOLT AND LARGER BY OTHERS.
14. IT IS THE RESPONSIBILITY OF THE OWNER TO MAINTAIN THE INTEGRITY OF THE FIRE ALARM AND SPRINKLER SYSTEM.
15. 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.
16. 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.
17. A STOCK OF SPARE FIRE SPRINKLERS OF EACH TYPE AND TEMPERATURE ALONG WITH SPRINKLER WRENCHES, SHALL BE LOCATED AT THE MAIN RISER.
18. FOR THIS SYSTEM TO WORK WHEN ALL 4 HEADS ACTIVATED A MINIMUM OF 32GPM @ 15PSI IS REQUIRED
19. EACH SPRINKLER HEAD REQUIRES 8GPM @ 7.1PSI.

Listing Agency Approval
PYRAMID1, INC.

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High Velocity Hurricane Zone: NO

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								

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

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

** Calculated Flowing 2 Heads

Date:
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

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

REVISIONS

DESCRIPTION	DATE	BY
CHANGES PER PLAN REVIEW	3/6/20	MD
NOTE ADDED	3/17/20	MD

ATCO
13'x65' 5 PERSON SLEEPER
FIRE SPRINKLERS SYSTEM

DATE
02.28.2020

DRAWING BY
MMD

SHEET NUMBER
FS1.00

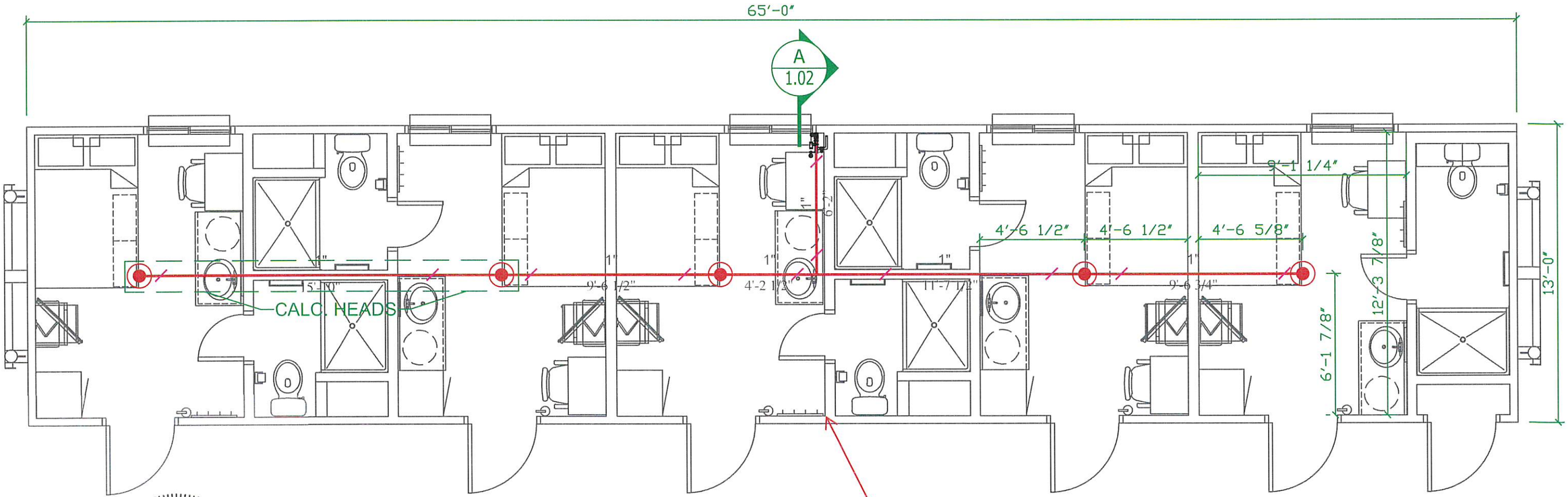
Listing Agency Approval
PYRAMID1, INC.

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

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

REVISIONS



YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

By Yuri at 9:37:07 PM, 3/17/2020

(Structural Aspects Only)

ATCO
13'x65' 5 PERSON SLEEPER
FIRE SPRINKLERS SYSTEM

DATE
02.28.2020

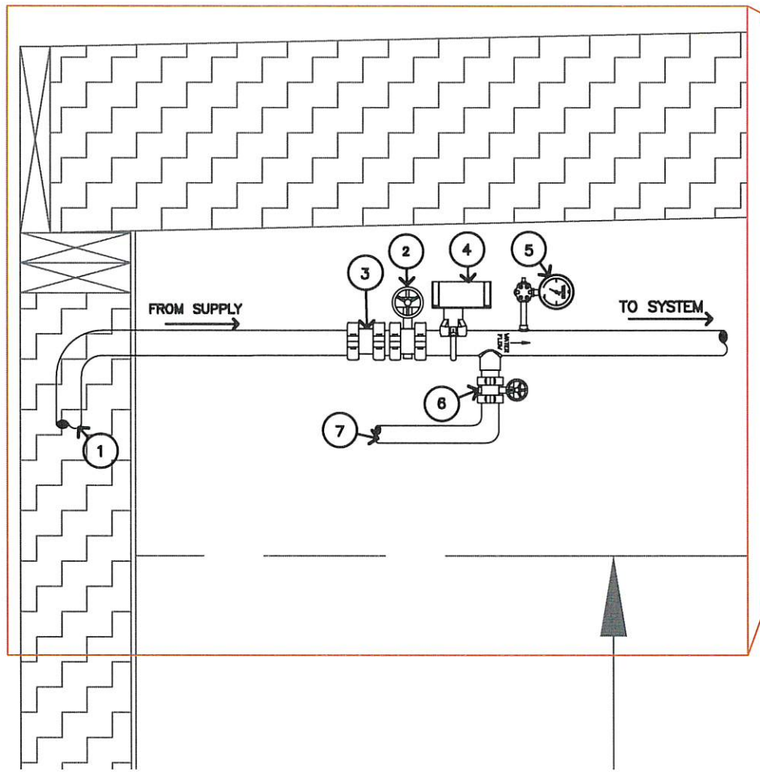
DRAWING BY
MMD

SHEET NUMBER
FS1.01

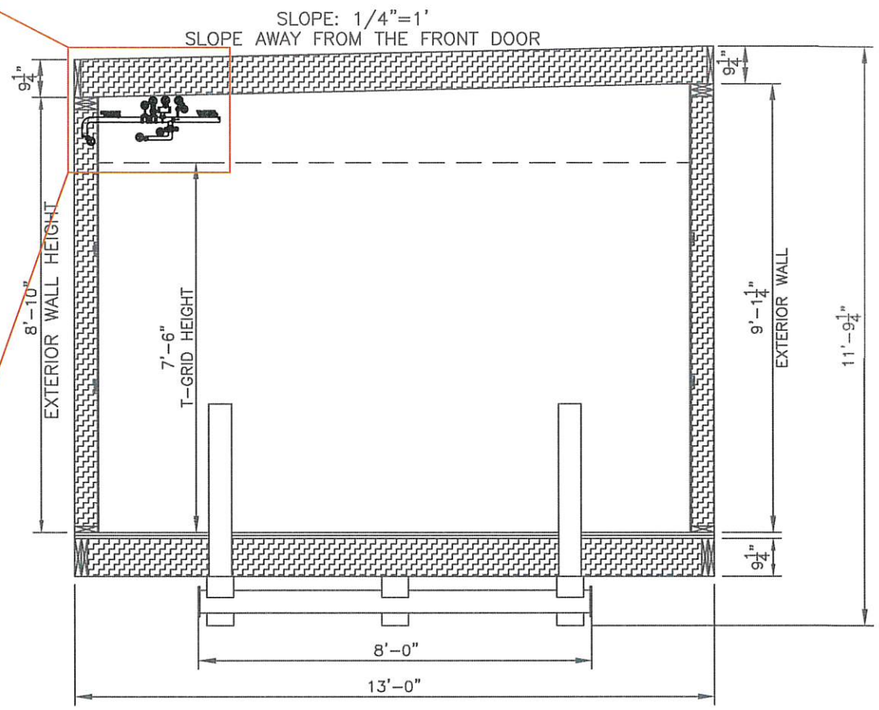
FIRE SPRINKLERS SYSTEM LAYOUT

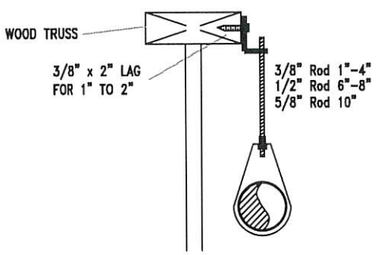
RISER LEGEND

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



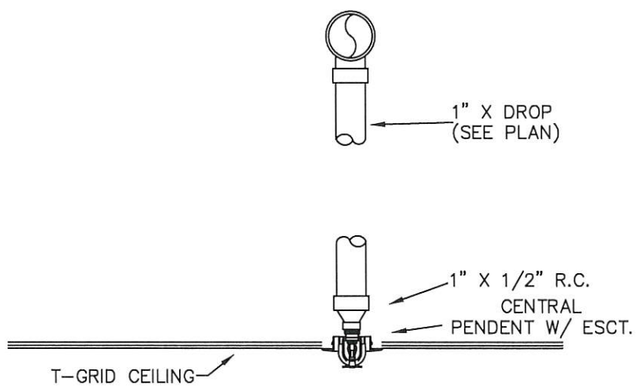
A CROSS SECTION
SCALE: NTS

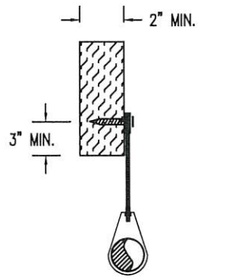




2 1/2" TO 4" PIPE
1 -- 1/2" SIDE BEAM CONNECTOR
1 -- 1/2"x 3" LAG SCREW
1 -- PIPE RING

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

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



TYPICAL HANGER
NO SCALE

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

YURIANTO YURIANTO
LICENSE
No. 86261
STATE OF FLORIDA
PROFESSIONAL ENGINEER

By Yuri at 9:37:10 PM, 3/17/2020

(Structural Aspects Only)

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

REVISIONS

DESCRIPTION	DATE	BY
PER CITY COMMENTS	3/5/20	BEC
PER CITY COMMENTS	3/10/20	BEC

ATCO
13'x65' 5 PERSON SLEEPER
FIRE SPRINKLERS SYSTEM

DATE
02.28.2020

DRAWING BY
MMD

SHEET NUMBER
FS1.02

GENERAL DETAILS

FIRE ALARM BILL OF MATERIALS

QTY.	SYMBOL	DESCRIPTION	QTY.	SYMBOL	DESCRIPTION
1	FACP	FIRE LITE MS-2 FIRE ALARM CONTROL PANEL	1	T	BUTTERBALL TAMPER SWITCH (BBH5C502)
5		MHT-1224W 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

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	X		
WATER FLOW			X
TAMPER		X	

SEQUENCE OF EVENTS:

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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

By Yuri at 9:37:11 PM, 3/17/2020

(Structural Aspects Only)

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

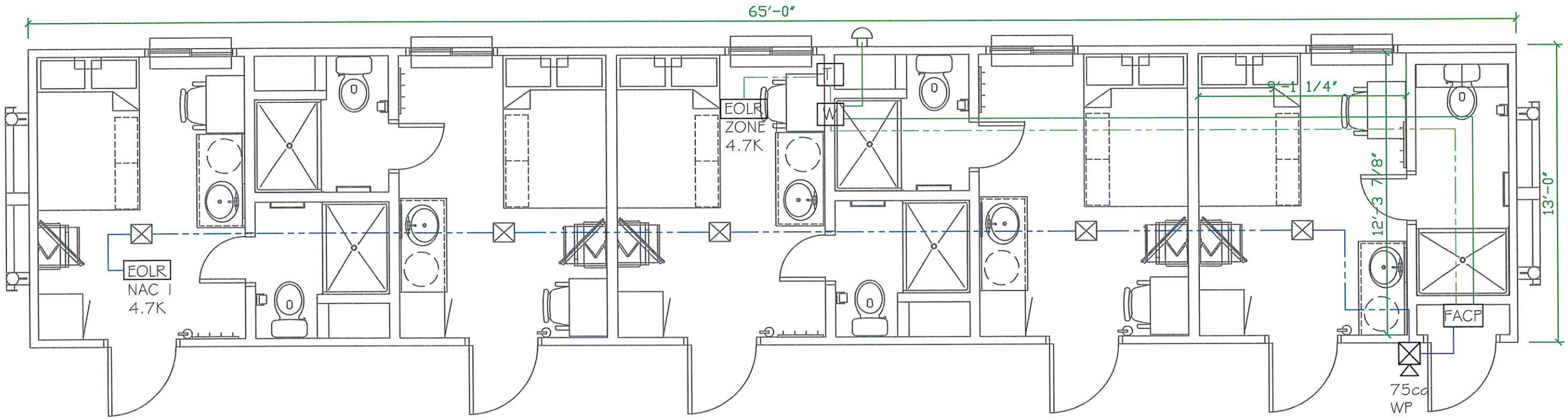
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0	03.02.20	SUBMITAL	MJ	EH	EG

ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
FA 1.0





By Yuri at 9:37:13 PM, 3/17/2020

(Structural Aspects Only)

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	COMMENTS	DRAWN	DESIGN	REVIEW
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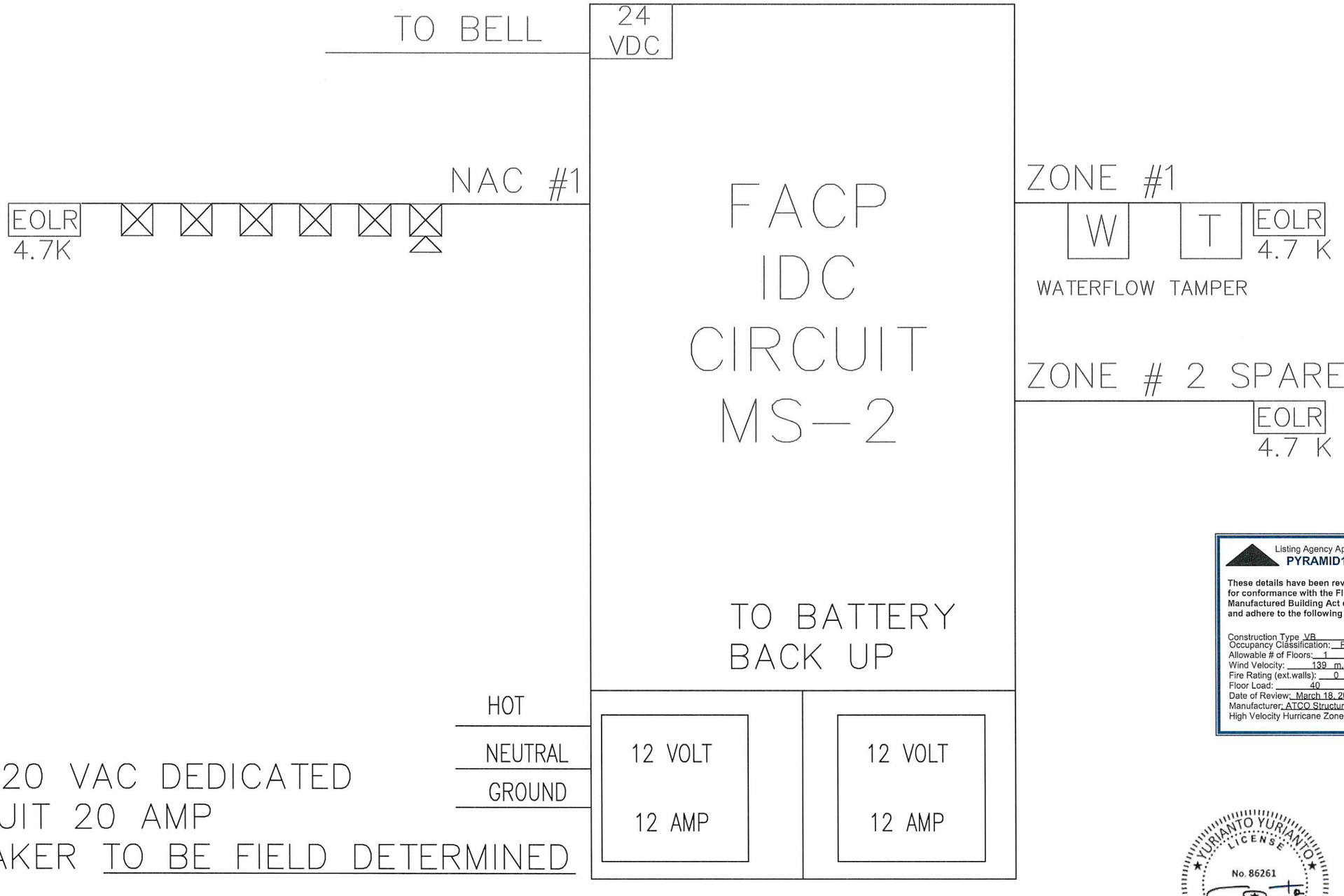
ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN

DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
FA 1.1

FIRE ALARM SYSTEM LAYOUT



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

YURIANTO YURIANTO LICENSE No. 86261 STATE OF FLORIDA PROFESSIONAL ENGINEER

By Yuri at 9:37:14 PM, 3/17/2020

(Structural Aspects Only)

FACP RISER

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

REVISIONS

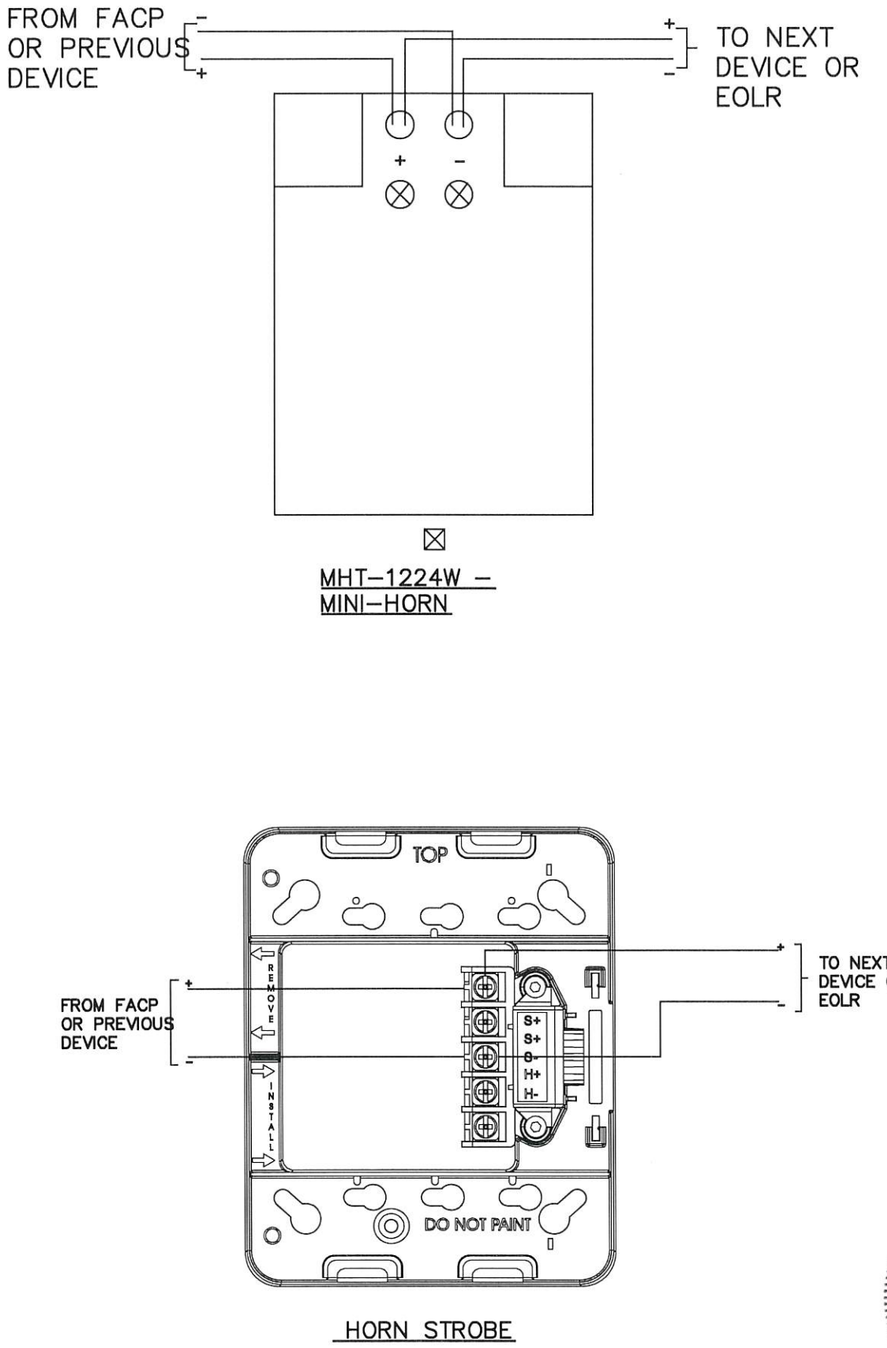
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0	03.02.20	SUBMITTAL	MJ	EF	EG

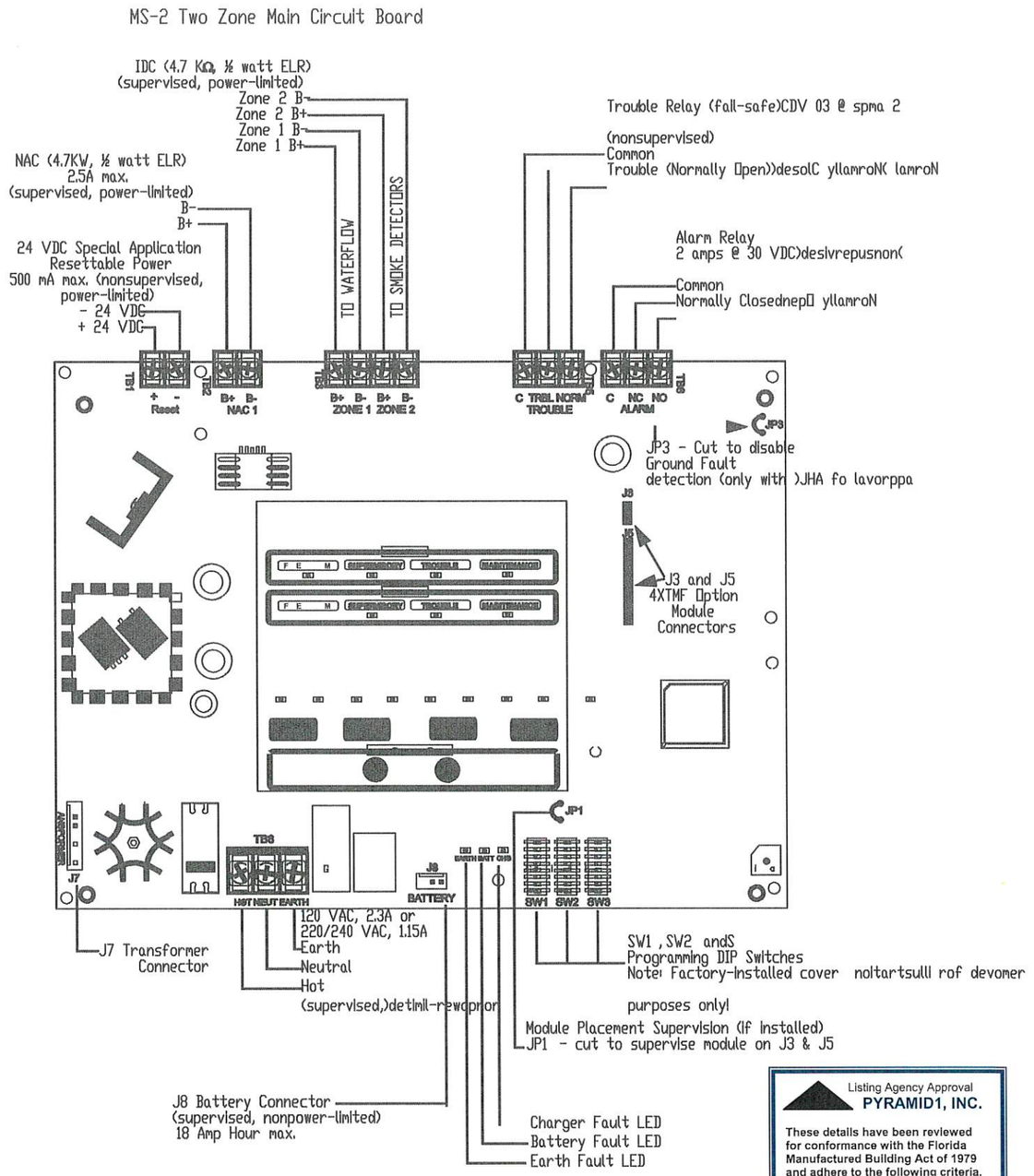
ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN

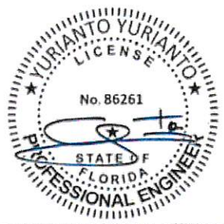
DATE
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DRAWING BY
MMD

SHEET NUMBER
FA 1.2







By Yuri at 9:37:15 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

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

REVISIONS

REV	DATE	COMMENTS	DRN	CHK'D	REV'D
0	6.30.20	SUBMITTAL	MJP	EG	EG

ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN

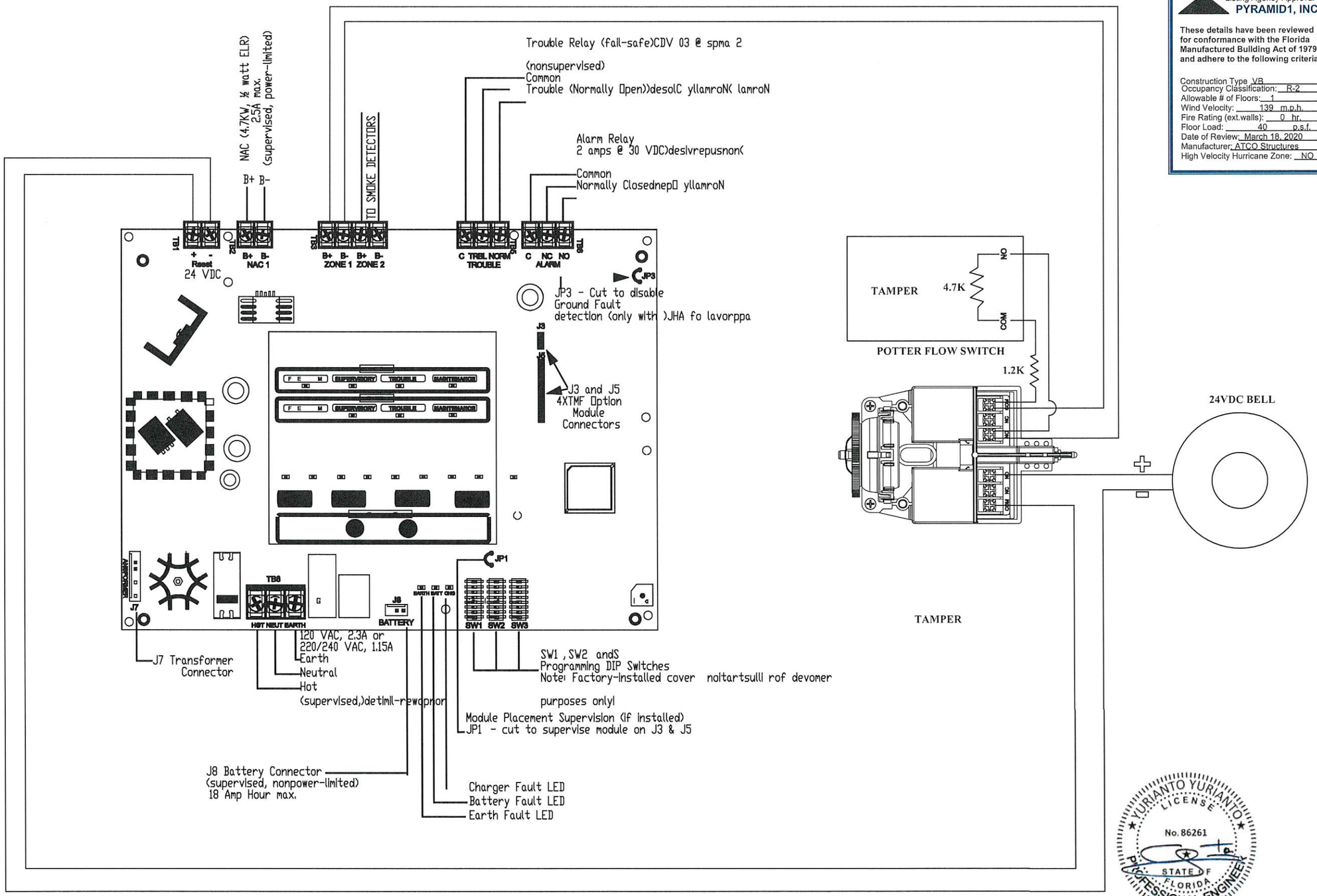
DATE
03.02.2020

DRAWING BY
MMD

SHEET NUMBER
FA 1.3

GENERAL DETAILS

MS-2 Two Zone Main Circuit Board



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: V/B
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	COMMENTS	DRWN	DSGN	REVIEW
0	03.02.20	SUBMITTAL	MD	EG	EG

ATCO
13'x65' 5 PERSON SLEEPER
FIRE ALARM SYSTEM DESIGN



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

(Structural Aspects Only)

DATE
03.02.2020

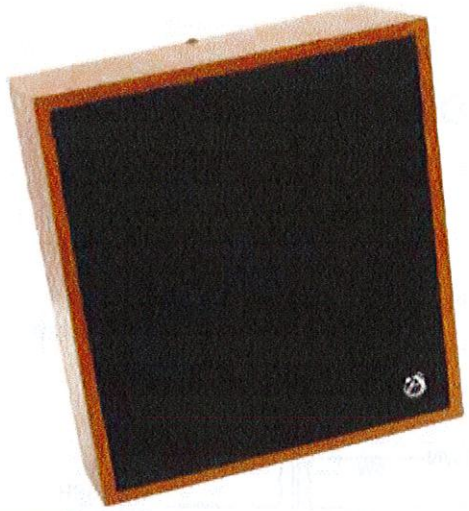
DRAWING BY
MMD

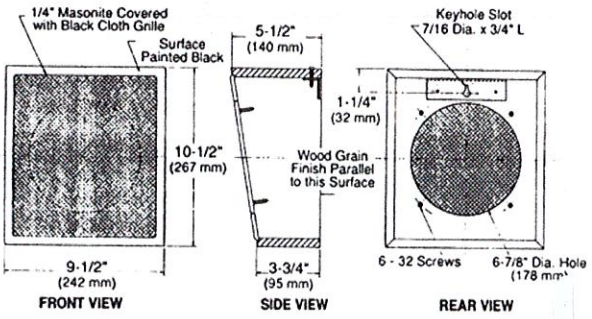
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FA 1.4

PANEL-WATERFLOW CONNECTION

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 Pos 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	½" x ⅝" (13 x 16 MM)	½" x ⅝" (13 x 16 MM)
TAPS	C, ½, 1, 2, 5	C, ½, 1, 2, 5
POWER	5 Watts	4 Watts
LEADS	Color Coded, Stripped & Tinned	

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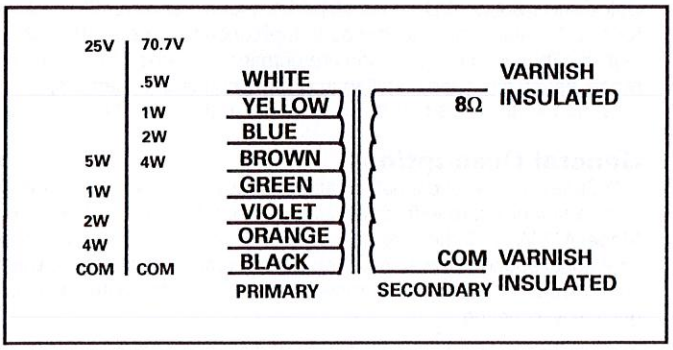
Atlas Sound
1601 JACK MCKAY BLVD. ENNIS, TEXAS 75119 U.S.A.
TELEPHONE: (800) 876-3333
FAX (800) 765-3435

Architect & Engineering Specifications

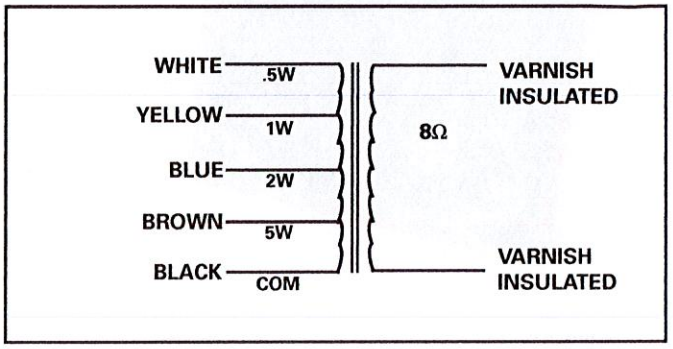
WD Series. The loudspeaker/transformer/baffle package shall be Atlas Sound WD Series Model _____. Loudspeaker shall be an 8" (203mm) dia. cone type with a 5-ounce (132g) ceramic magnet. Frequency response shall be 50Hz-15kHz with a sensitivity of 96dB at 1 watt, 1 meter. Voice coil diameter shall be 1" (25mm) with an 8Ω impedance. Power handling capacity shall be 15 watts program. The transformer shall have a ½" x ⅝" core with primary taps of ½, 1, 2 and 5 watts or ½, 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 9-½" (242 mm) wide and 10-½" (267mm) high with a projection of 5-½" (140mm) at the top and 3-¾" (95mm) at the bottom.

TRANSFORMER COLOR CODE DIAGRAMS

WD417-72(V)



WD417-25



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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 (±5dB)
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 8¾" x W 7⅞" x D 9⁵⁄₁₆"
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 (+5dB). 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 8¾" x W 7⅞" x D 9⁵⁄₁₆".

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).

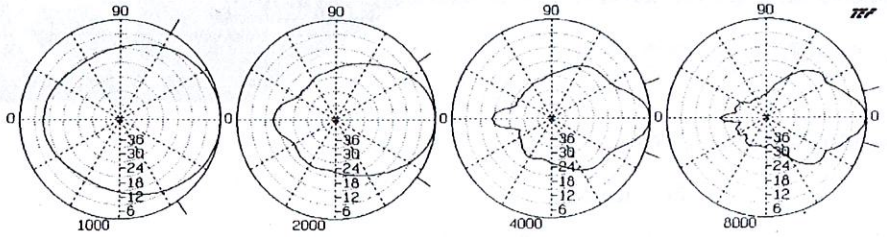
Accessories

BX-2A  Vandal resistant cover plate for armored cable and conduit connection. Constructed of cast aluminum.

APXBK-N  Optional Mounting Base

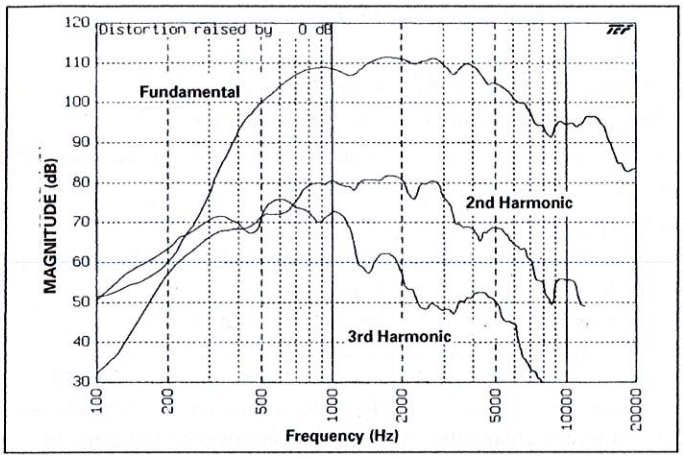
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Atlas Sound
1601 JACK MCKAY BLVD. ENNIS, TEXAS 75119 U.S.A.
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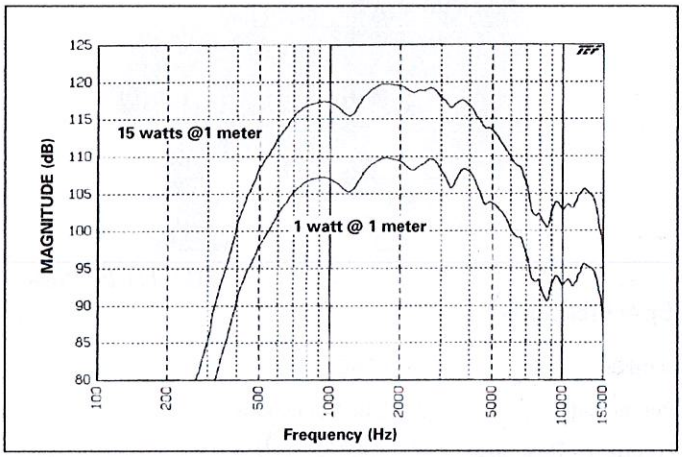


Polars Are Normalized To Zero On Axis

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)



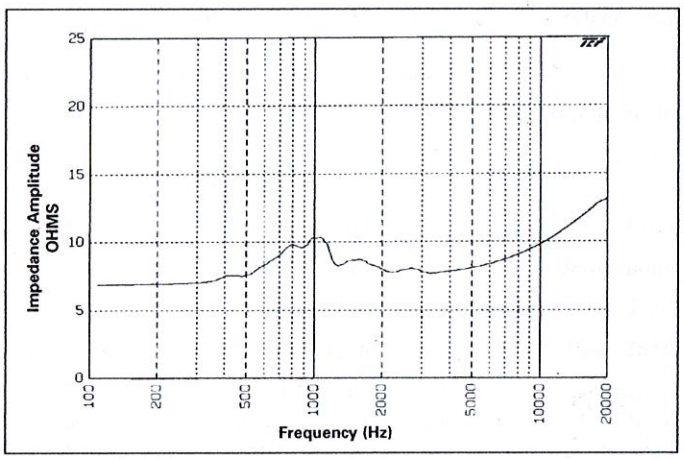
AP-15(T) Frequency Response

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).

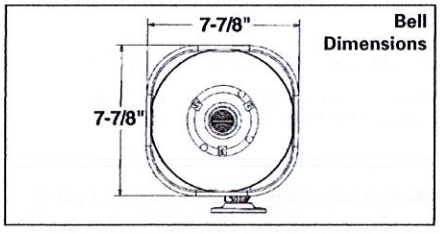
Typical Capacitor Values			
8 Ohm Driver	25 Volt Line	70 Volt Line	100 Volt Line
70 mfd	15 mfd	2 mfd	1 mfd

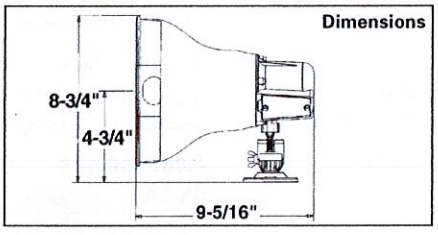
AP-15T Vari-Tap® Control Connect Center Xfmr. Power Taps				
Switch Position	Impedance (Ohms)	Watts @ 25V	Watts @ 70.7V	Watts @ 100V
1	5000	–	1	2
2	2500	–	2	4
3	1300	.48	3.8	8
4	666	.94	7.5	15
5	333	1.8	15	X*
6	89	7.5	X*	X*
7	45	15	X*	X*

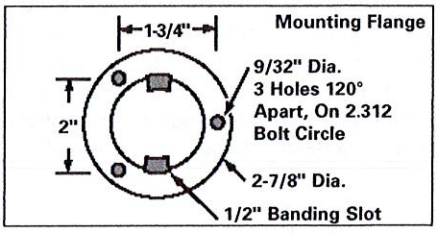
* Do Not Use



AP-15 (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 Techron® TEF 20® audio analyzer. Atlas Sound is proud to be a beta site for TEF software.

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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 preajusted 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.

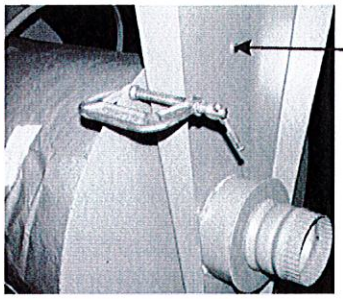


PHOTO 2



PHOTO 3

Make sure gasket is in place between tube and reel flange

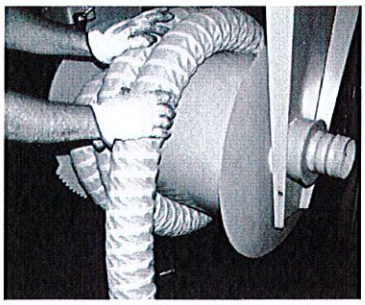


PHOTO 4

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Web Site: www.car-mon.com e-mail: info@car-mon.com

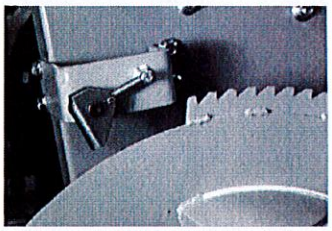
7. If tubing storage reel is equipped with attached CMW-F fan, it should now be wired and tested. Please refer to operation instructions that were included for fan. If reel is duct connected, make sure all connections are made to central fan.

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.**

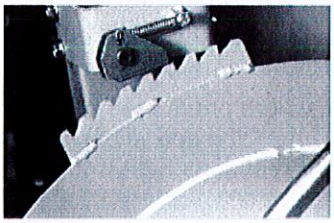
NOTE: SEE PAGE 7 FOR ADDITIONAL INSTALLATION PHOTOS.

RATCHET AND DRUM POSITIONS



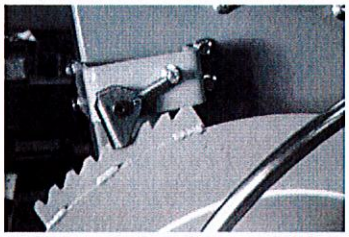
FULLY RETRACTED STOP POSITION

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.



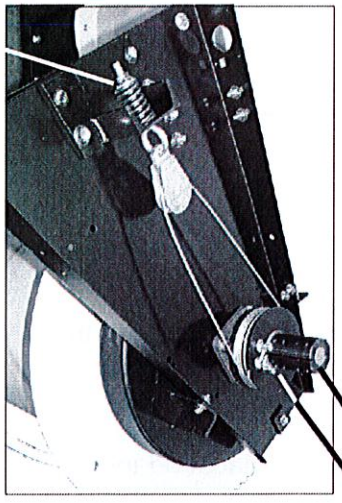
DESIRED LENGTH STOP POSITION

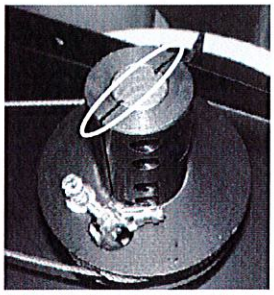
The position the reel stop mechanism is in when the tubing is in the extended down and locked position.

PROCEDURE TO ADD TENSION TO SPRING OPERATED TUBING STORAGE REEL

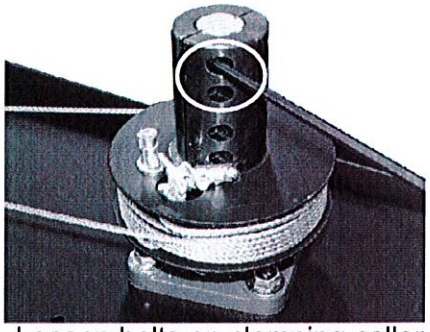
NOTE: REELS ARE FACTORY ADJUSTED TO THE LENGTHS OF HOSE THAT ARE TO BE WOUND ON THE REEL AND WILL NORMALLY HAVE 5-7' OF HOSE HANGING DOWN WHEN THE HOSE IS FULLY RETRACTED. DO NOT MAKE ANY ADJUSTMENTS TO TRY TO WIND THIS PORTION OR DAMAGE TO THE HOSE MAY OCCUR.

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.





Mark the collar and shaft so you have a reference point for a full revolution.

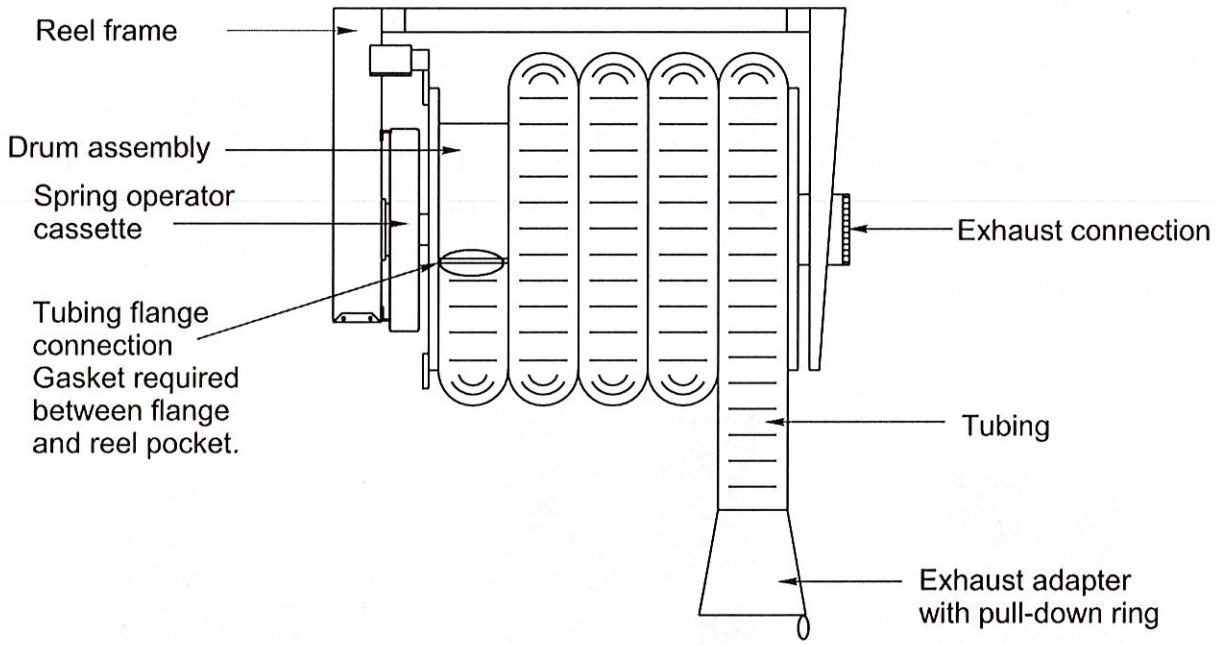


Loosen bolts on clamping collar to rotate drum on reel. After adjustment is made, all 8 bolts must be tightened to 14.5 lbs of torque.

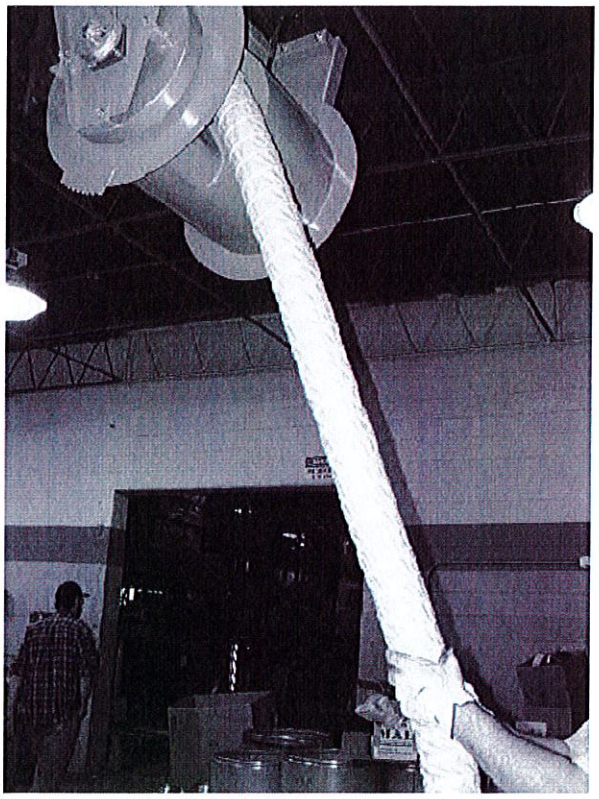
MAINTENANCE

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 damagaed.

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 ¾ 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

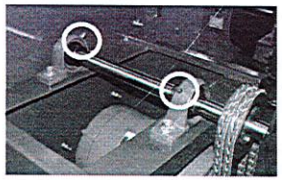
	RATED SPEED - RPM		
NEMA (IEC) FRAME SIZE	3600	1800	1200
Up to 210 including (132)	5500 hrs.	12000 hrs.	18000 hrs.
Over 210 to 2690 including (180)	3600 hrs.	9500 hrs.	15000 hrs.

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.)

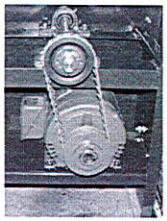
BEARINGS



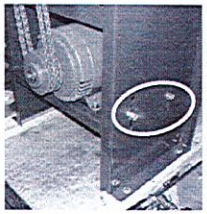
Bearings are greased at factory before the fan is tested. Under normal use, bearings need not be greased at regular intervals, but if needed, use a high quality bearing grease and grease at points indicated.

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.

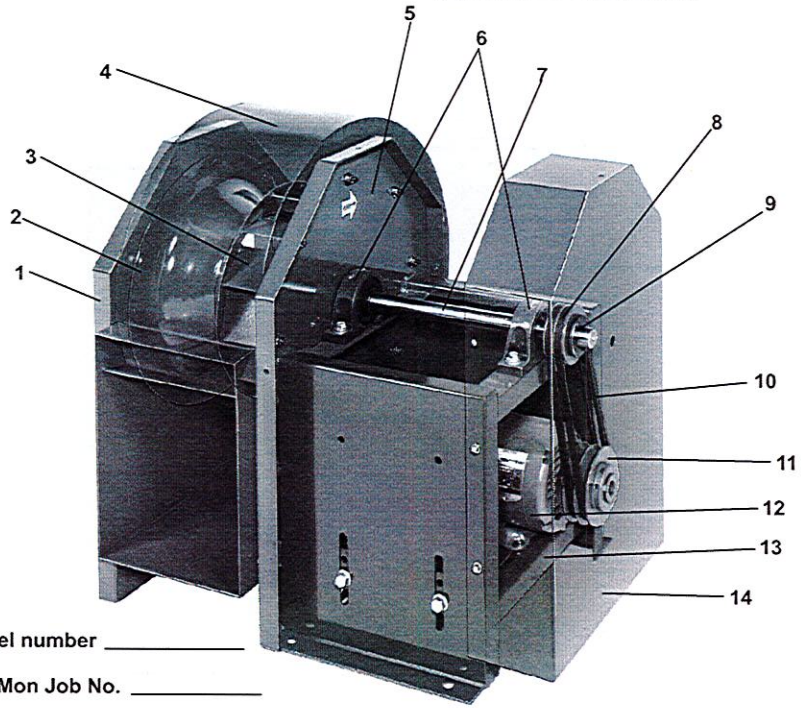


To change the fan belts, loosen the bolts on both sides of the motor base, raise base up several inches until belts are clear of drives. Remove old belts and install new belts. Untighten motor base and drop until tight. Make sure that belts are tight and aligned.

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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** _____

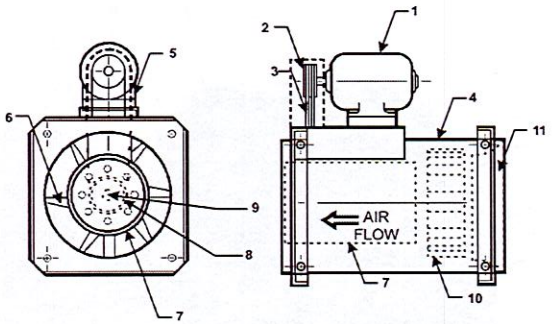
1. **Inlet support**
2. **Inlet spinning**
3. **Wheel**
4. **Housing**
5. **Fan Frame**
6. **Shaft bearings (Consult Factory)**
7. **Shaft**
8. **Shaft sheave***_____
9. **Split tapered bushing**
10. **Pulley belts***_____
11. **Motor sheave***_____
12. **Motor***_____
13. **Motor base**
14. **Belt Guard**

Weather cover not shown

*Indicates recommended spare parts

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CMSL FAN PARTS LIST



MODEL #_____SL CAR-M0N #_____

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 imprint 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.

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.

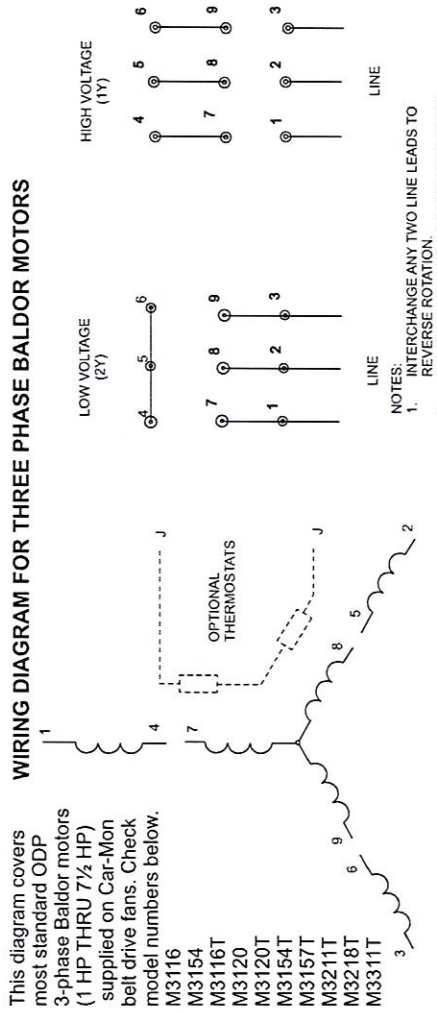
After 24 hours of satisfactory operation, shut down the equipment and check all foundation bolts and setscrews for looseness, tightening where required.

SOME CAUSES OF VIBRATION

1. Bearings: Misaligned or worned 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

WIRING DIAGRAM FOR THREE PHASE BALDOR MOTORS



NOTES:
1. INTERCHANGE ANY TWO LINE LEADS TO REVERSE ROTATION.
2. OPTIONAL THERMOSTATS ARE PROVIDED ONLY WHEN SPECIFIED.
3. ACTUAL NUMBER OF INTERNAL PARALLEL CIRCUITS MAY BE A MULTIPLE OF THOSE SHOWN ABOVE.

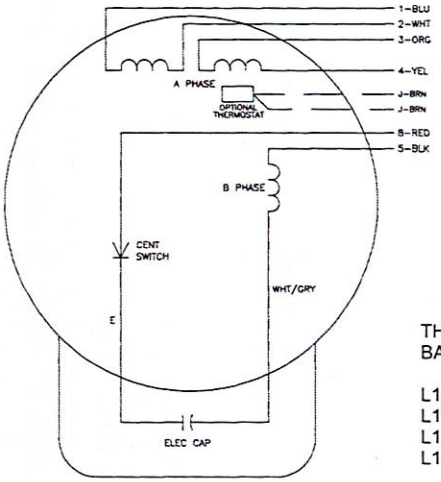
DIAGRAM SUPPLIED BY BALDOR ELECTRIC
3PH DV, 9 LEADS

This diagram covers most standard ODP 3-phase Baldor motors (1 HP THRU 7½ HP) supplied on Car-Mon belt drive fans. Check model numbers below.
M3116
M3154
M3116T
M3120
M3120T
M3154T
M3157T
M3211T
M3218T
M3311T

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



	LINE A	LINE B	JOIN
HIGH STD	1	4,5	2,3,8
HIGH OPP	1	4,8	2,3,5
LOW STD	1,3,8	2,4,5	–
LOW OPP	1,3,5	2,4,8	–

NOTES:
1. STANDARD ROTATION IS CCW FACING END OPPOSITE SHAFT EXTENSION.
2. OPTIONAL THERMOSTAT IS PROVIDED WHEN SPECIFIED.
3. MULTIPLE CAPACITORS ARE CONNECTED IN PARALLEL UNLESS OTHERWISE SPECIFIED.
4. LEAD COLORS ARE OPTIONAL. LEADS MUST ALWAYS BE NUMBERED AS SHOWN.

THIS DIAGRAM IS FOR THE FOLLOWING BALDOR MOTOR MODELS

L1304, L1304T
L1307, L1307T
L1318, L1318T
L1319, L1319T

IF THE MOTOR ON YOUR FAN IS NOT LISTED IN THE MODEL NUMBERS LISTED BELOW, SEE PAGE 12

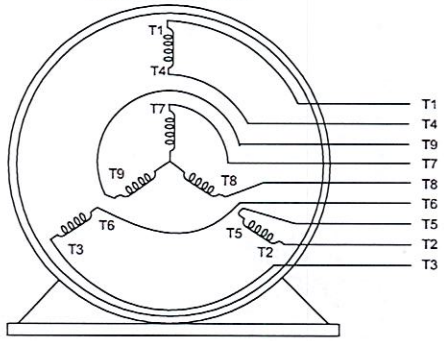
HIGH VOLTAGE

T1 — L1
T2 — L2
T3 — L3
T4
T7
T5
T8
T6
T9

LOW VOLTAGE

T1
T7 — L1
T2
T8 — L2
T3
T9 — L3
T4
T5
T6

MARATHON THREE PHASE DUAL VOLTAGE MOTOR



VIEW OF TERMINAL END

DIAGRAM IS FOR THE FOLLOWING MARATHON MOTORS: E716, E717, E718, E719

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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, BE 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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Web Site: www.car-mon.com e-mail: info@car-mon.com

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 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".

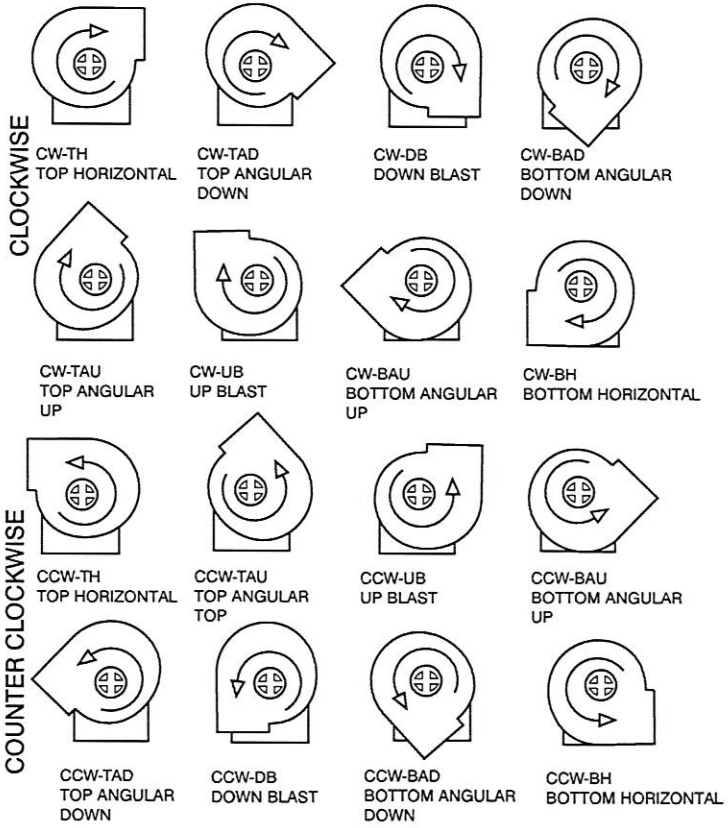
No warranty is made regarding the suitability or compatibility of any Car-Mon product for a particular application or purpose unless specifically stated. The Customer is responsible for the final selection and utilization of Car-Mon products for their use. The Customer assumes all liability for the consequences 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.

ROTATION AND DISCHARGE GUIDE

When determining rotation and discharge, you will be looking at the fan from the MOTOR end.



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

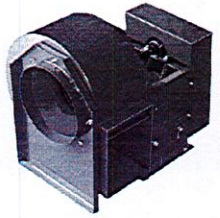
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CAR-MON

INSTALLATION, OPERATION, & MAINTENANCE FOR CAR-MON EXHAUST FANS SERIES CMB, SL, & BXi

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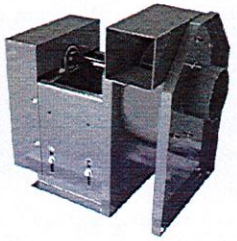
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SERIES CMB



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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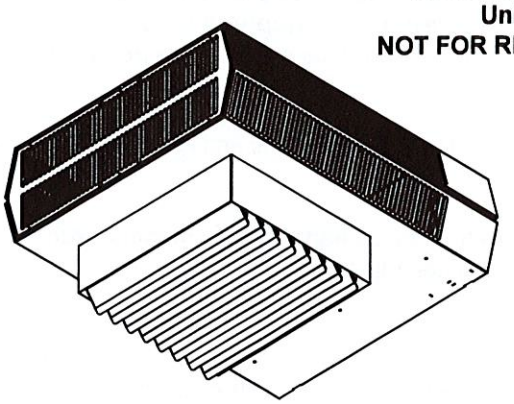
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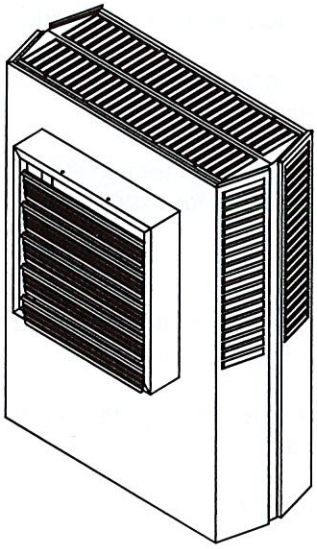
TASKMASTER
5100 SERIES

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 chock 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 damage 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).

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

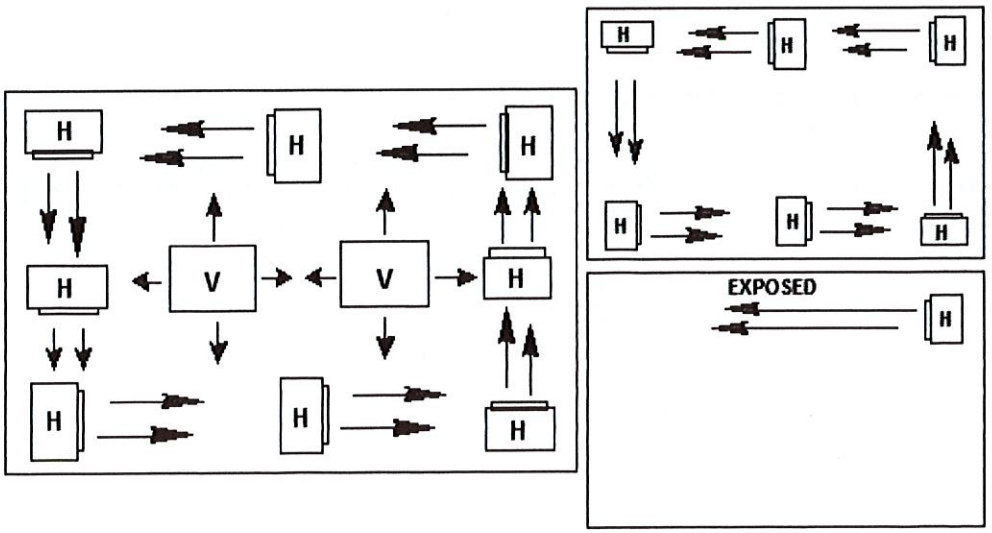
Check heater voltage and phase on rating label to confirm that it matches the electric service supply.

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.

Figure 1



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.

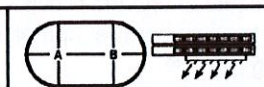
When the accessory fan switch is placed in the ON position (for summer air circulation), the unit heater fan motor shall be energized.

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.

MOUNTING CLEARANCE

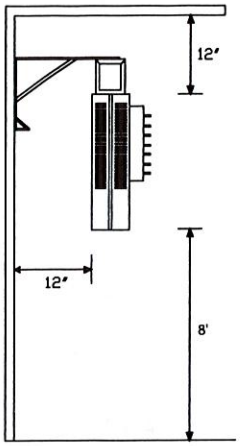


FIG. 1
HORIZONTAL DISCHARGE

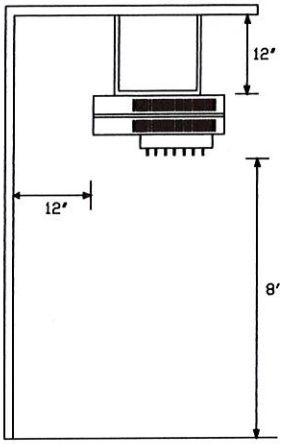


FIG. 2
VERTICAL DISCHARGE

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.

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

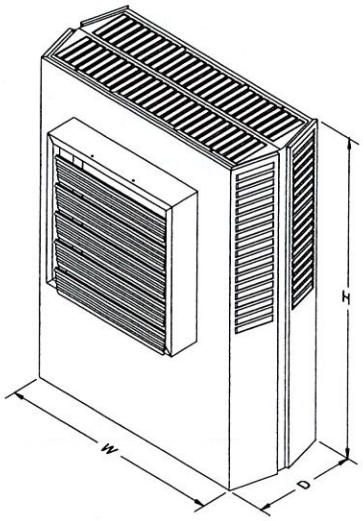
Heaters may be mounted in the horizontal or vertical air discharge configuration using factory optional supplied accessory mounting equipment or using special hardware facilities supplied by others.

After the installation is complete, replace the access panel.

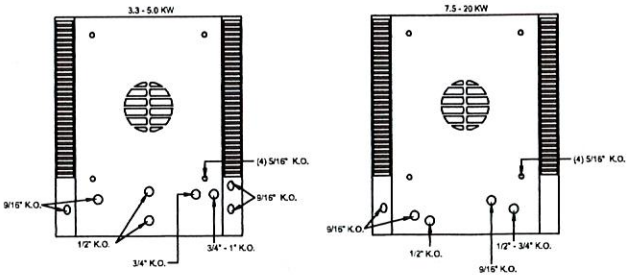
Set the controls (thermostat, switch) at their desired control point and apply power to the unit.

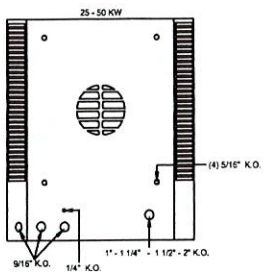
Check correct operation.

DIMENSIONS



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





★ For vertical discharge mounting bracket

Diagrams not to scale

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

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 5
WALL MOUNT
HORIZONTAL DISCHARGE

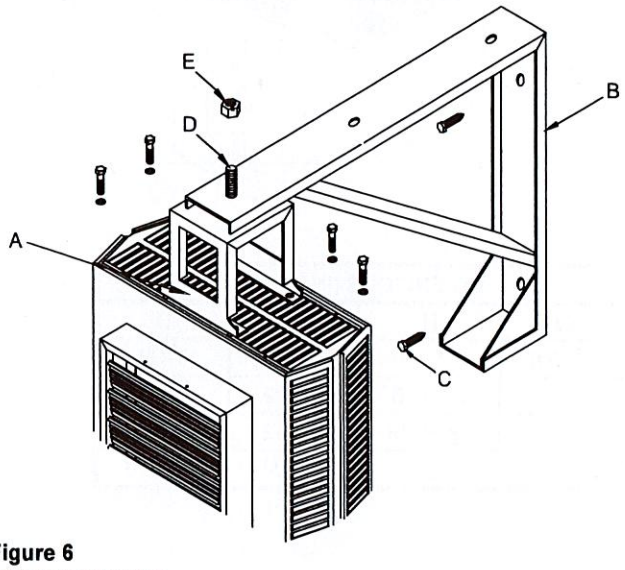


Figure 6
CEILING MOUNT
HORIZONTAL DISCHARGE

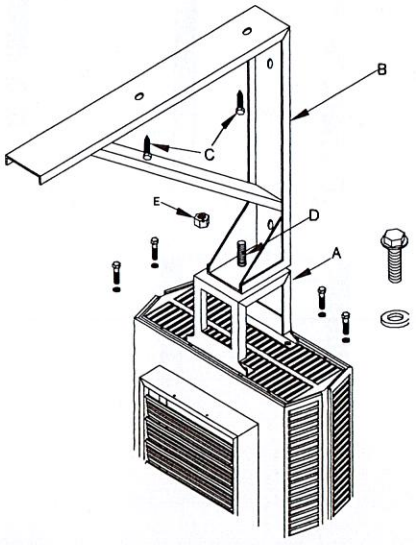
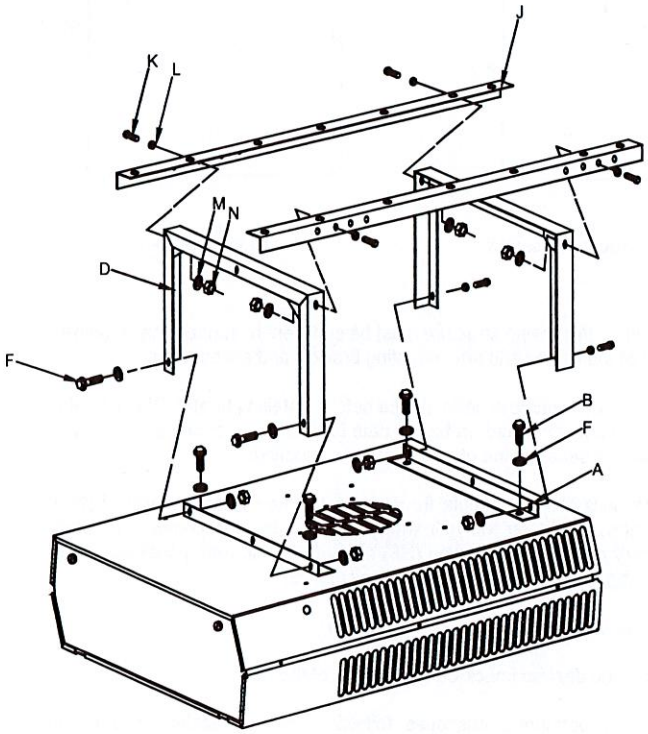


Figure 7
CEILING MOUNT
VERTICAL DISCHARGE



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 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.	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	170.0	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. HORIZONTAL	MAX. MTG. VERTICAL	THROW	AIR LBS.
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	14	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

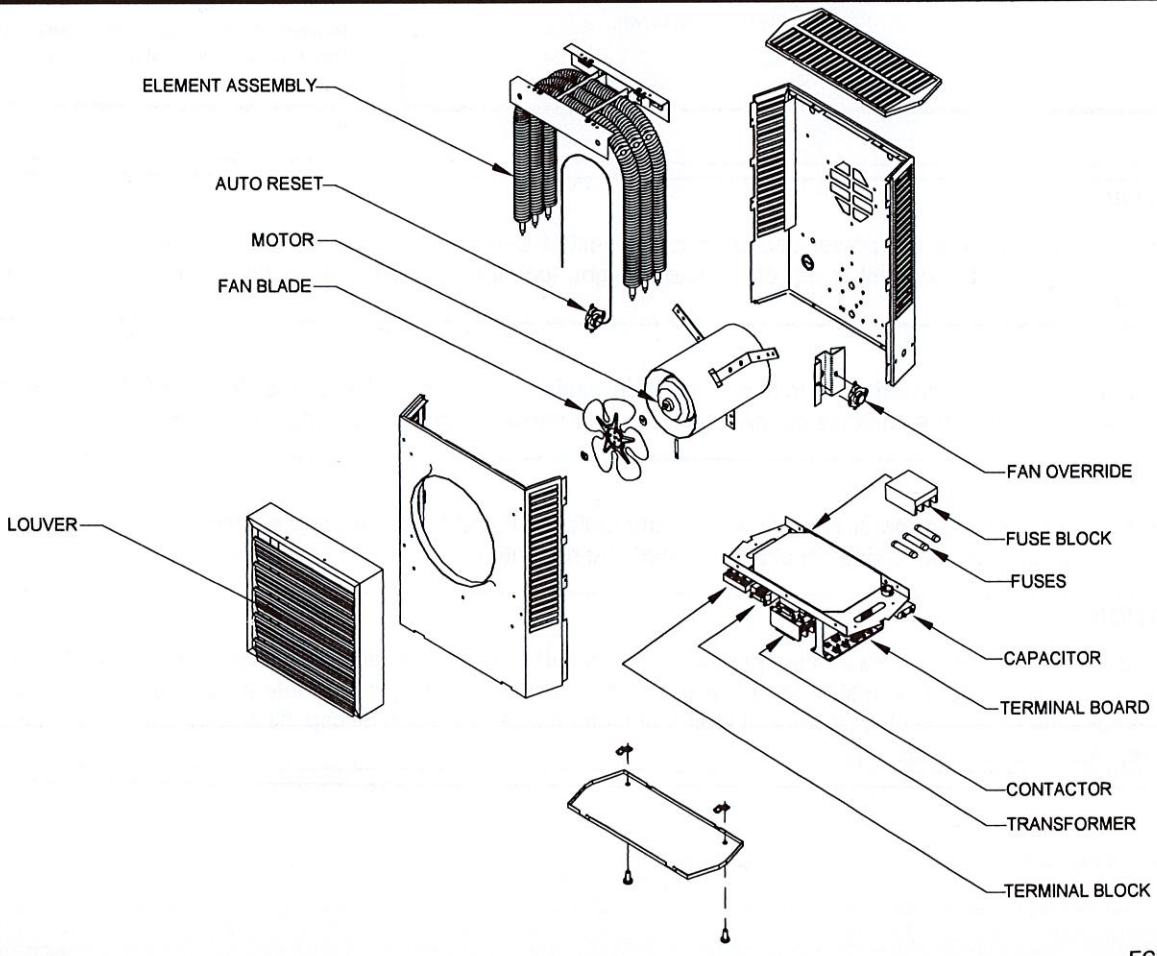
Clean the unit casing, fan and motor once a year. A dirty motor will tend to run hot and eventually will be damaged internally. Any rust spots on the casing should be cleaned and repainted.

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 of 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

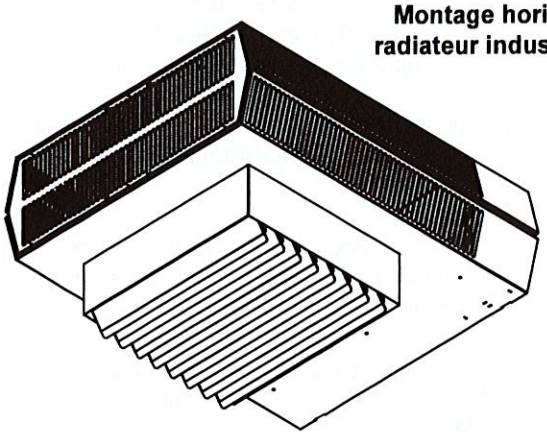
	U3H5105CA4N	U3H5107CA4N	U3H5110CA4N	U3H5115CA4N	U3H5120CA4N
MOTOR	56592-017	56823-012	56823-012	56825-002	56825-002
ELEMENT ASS'Y.	56954-029	56954-030	56954-031	56954-032	56954-035
AUTO RESET LIMIT	57640-003	57640-003	57640-003	57640-004	57640-004
FAN OVERRIDE	56811-001	56811-001	56811-001	56811-001	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	

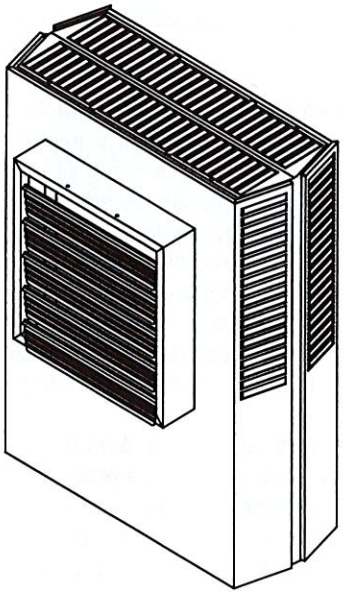
TASKMASTER
5100 SERIES

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 ulterieure.

CARACTERISTIQUES

- Radiateur electrique 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' a 50.0 KW/170, 600 BTUH.
- Les modeles unipolaires de 3.3 jusqu a 10.0 Kw de 240/208 volts peuvent se transformer sur le chantier en modele tripolaire. (Les modeles uipolaires de 3.3, 5.0, 7.5 et 10 Kw de 277 volts ne peuvent etre transformes).
- Le volet interieur specialement concu permet au ventilateur d'appeler l'air uniformement a travers l'element massif en acier.
- Le diffuseur concu vers l'exterieur et les volets montes dirigent plug encore uniformement la propulsion de l'air afin de repondre aux exigences specifiques du montage horizontal ou vertical de l'appareil.
- Supports de montage mur/lafond ou verticaux en option. (comme requis).
- Quatre ecrous soudes sont disposes au dessus et a l'arriere du boitier pour le montage de l'appareil au chantier avec des tiges filetees ou des boulons aveu chaine. (visserie fournie par d'autres).
- Diffuseur anemostat ou radial (en option), donnant une propultion d'air diversifiee lors du montage vertical de l'appareil.
- Instruments de controle varies pour installation sur le chantier. Interrupteur, thermostat, interrupteur du ventilateur pour la saison estivale, thermostat pour recuperation de chaleur. Tous ont leurs conducteurs equippes de serre-fils a lame. (a l'exception de l'interrupteur).
- Tableau de branchement de la filerie de tous les instruments de controle integres, en un seul endroit.
- Circuit de controle standard basse tension de 24 volts sur tous les modeles avec transformateur ou contracteur.
- Boite de controle spacieuse ayant une porte d'acces fermee a l'aide de deux attaches 1/4 de tour pour rendre l'intallation 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 diffusers 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

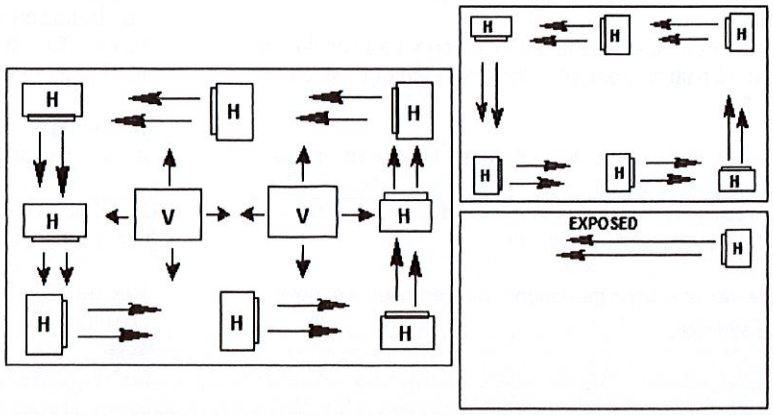
Vérifiez que la source de pouvoir conforme aux exigences de votre équipement. Voir la Table 2 sur la page 6 pour la grandeur de circuit et le fil

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 Figue 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 chronomètrent 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.

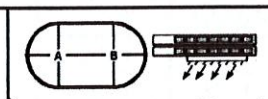
Quand le changement de fan auxiliaire est placé dans le SUR la position (pour la circulation aérienne d'été), le moteur de fan de chauffage d'unité sera stimulé.

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 Appliquable

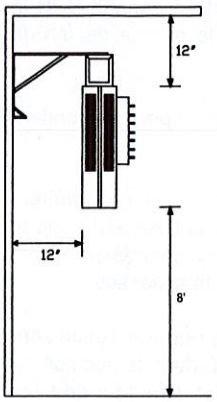
Diffusers optionnels prêtent l'adaptabilité de dessin aérienne ajoutée à l'individu vertical font en bas voler des installations comme montré dans le susdit illustations.

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 Figue 1 et 2 pour les déblayages de plafond et de mur minimaux.

AUTORISATION
de montage



La FIGUE 1
RENVOI HORIZONTAL

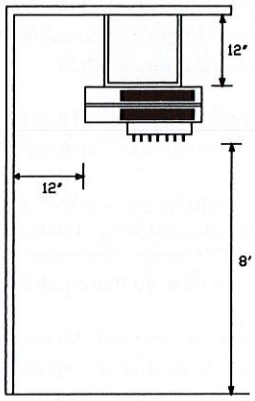


FIG. 2
RENVOI VERTICAL

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

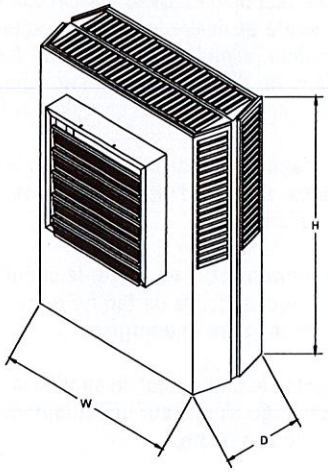
Les chauffages peuvent être montés dans la configuration de renvoi aérienne horizontale ou verticale en utilisant l'équipement montant auxiliaire fourni optionnel d'usine ou en utilisant l'équipement de matériel spécial fourni par d'autres.

Après que l'installation est complète, remplacer le comité d'approche.

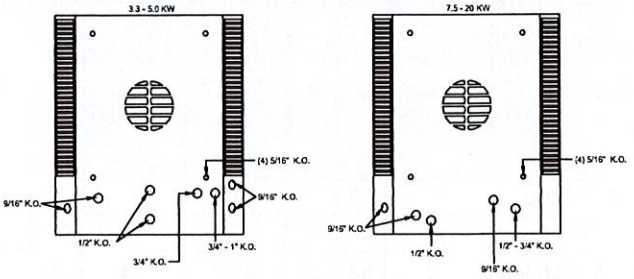
Mettez les commandes (le thermostat, le changement) à leur contrôle désiré montrent et appliquent le pouvoir de l'unité.

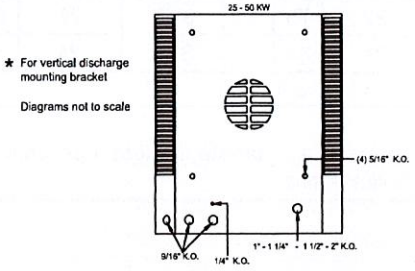
Vérifiez l'opération correcte.

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

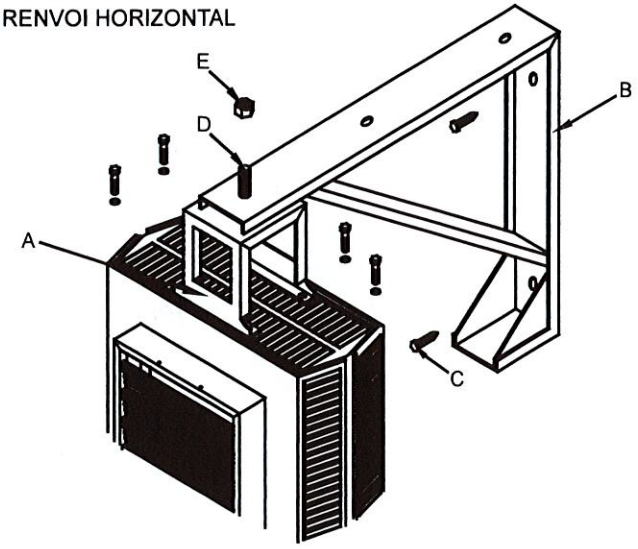
Pivotez les parenthèses de cintre peuvent être utilisées pour suspendre des chauffages d'unité du mur (la figure 5) ou du plafond (la figure 6). Faites partie le cintre basent "A" au haut de chauffage avec quatre 5/16 X 18 vis de bonnets et lockwashers (fourni dans l'enveloppe).

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).

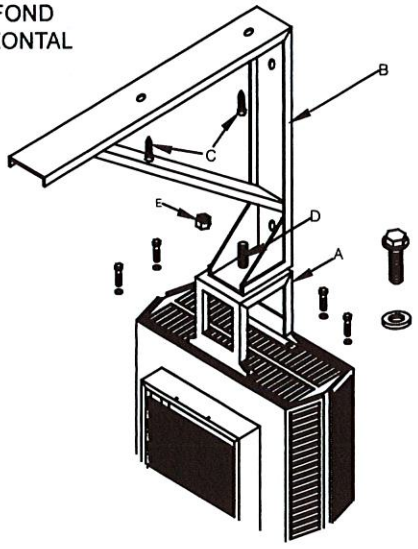
Le chauffage d'ascenseur dans la position insérant le clou "D" par le trou dans le cintre principal encadre et attache la noix de serrure "fourni dans l'enveloppe) "E" serrant à dans deux tours d'être serré.

Faites pivoter le chauffage à la position désirée, serrez la noix de serrure.

Le chiffre 5
MONT MURAL
RENVOI HORIZONTAL



Le chiffre 6
MONT DE PLAFOND
RENVOI HORIZONTAL

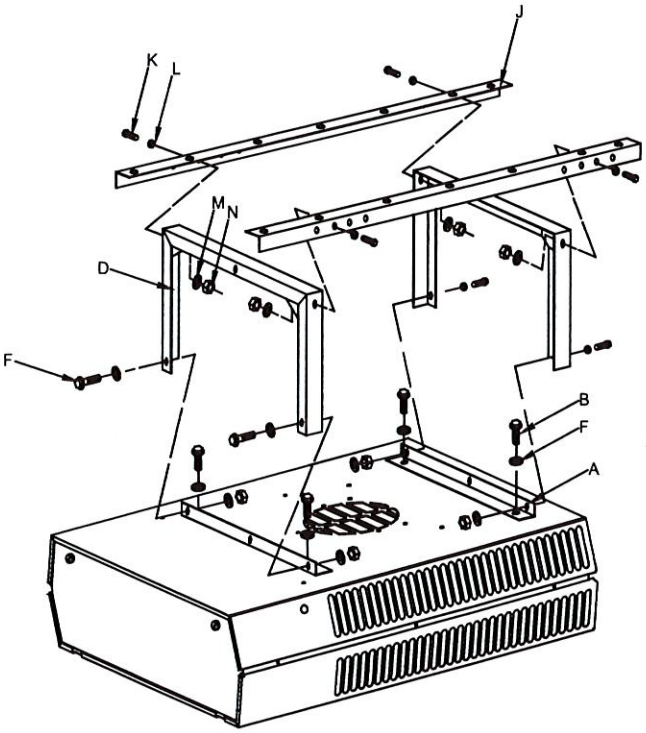


VERTICAL - LE RENVOI AÉRIEN MONTANT
MONTRÉ DANS : LA FIGURE 7

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
RENVOI 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

TPI Corporation

America's Comfort Conditioning Company

P.O. Box 4973
Johnson City, TN
37602-4973

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