



1000 FedEx Drive  
Moon Township, PA 15108

**October 19, 2021**

To: Martha's Vineyard Commission  
The Olde Stone Building  
33 New York Avenue  
Oak Bluffs, MA 02557

**FedEx Confidential and Proprietary Business Information provided solely for the Martha's Vineyard Commission's consideration of the FedEx Ground project in Martha's Vineyard Business Park. Please do not publish or distribute.**

FedEx Ground contracts with independent, incorporated businesses to provide package pickup and delivery services. Those independent businesses provide services with their own vehicles operated by their own employees. The vehicles are leased to FedEx Ground only for purposes of providing the contracted-for services.

**1. All Electric Facility**

FedEx Ground's proposed facility is all electric.

**2. Onsite Solar**

The FedEx Ground facility will consist of premanufactured units that cannot support the weight of traditional rooftop mounted solar installations. However, FedEx Ground is investigating the installation of on-site solar but is unable to commit to the installation due to the unique nature of this project. To further explain, the FedEx Ground Modular Docks are pre-manufactured buildings governed by the State of Massachusetts, which specifically comply with State statutes and the rules/regulations adopted by the Board of Building Regulation and Standard Forms. As such, incidental Dead Roof Loading is not accommodated and applicable laws and regulations require that 10psf (reference Exhibit 'B') be utilized. The attached calculations support the legally required dead roof loading and further demonstrate that if additional dead roof loading is added, the roof structure system would fail (reference Exhibit 'C'). Because this has the potential to be a Life Safety issue, traditional rooftop mounted solar installations are not feasible.

Until such time as on-site solar is feasible to install, if ever, FedEx Ground shall purchase Renewable Energy Credits (RECs) originating from a project(s) sited in the New England ISO region. The amount of RECs purchased annually shall be commensurate with the estimated production of a system that could physically fit within the footprint of roof space of the proposed facility. This production estimate has been found to be 43 MWh annually.

Please understand, this is by no means a deviation from our commitment to continually explore, investigate, and innovate for solutions to bring our facilities and fleets into a sustainable and zero emission goal for the future to come.

### **3. Electric Vehicle Charging Infrastructure**

FedEx Ground will install infrastructure to enable the charging of electric vehicles.

### **4. Zero Emission Service Provider Vehicles**

FedEx Ground shall take reasonable efforts to ensure that companies with which FedEx Ground contracts to provide services for FedEx Ground use zero emission vehicles/delivery vans/trucks (Class 2 through 6) as follows: For any vehicle (Class 2 through 6) used in connection with the FedEx Ground station, FedEx Ground shall take reasonable efforts to ensure that service providers satisfy the following thresholds: (i) 33% of service provider vehicles will be zero emission vehicles by December 31, 2025, or when commercially available, whichever date is later, (ii) 66% of service provider vehicles will be zero emission vehicles by December 31, 2028, or when commercially available, whichever date is later, and (iii) 100% of service provider vehicles will be zero emission vehicles by December 31, 2030, or when commercially available, whichever date is later.

This requirement shall apply to service provider vehicles operating under FedEx Ground's operating authority that the service providers use to provide services more than 70% of the calendar year and excludes supplemental, spare or rental vehicles that service providers may use when maintaining their fleet or servicing volume surges.

In the event that there is a disruption in the manufacturing of zero emission vehicles/trucks or that sufficient vehicles/trucks are not commercially available for the intended application, the timeline may be adjusted to accommodate the manufacturing disruption or unavailability of commercially available vehicles/trucks.

DocuSigned by:

*Bob Ranallo*

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Robert Ranallo

Managing Director Facilities Project Engineering  
FedEx Ground

**EXHIBIT 'B'**  
**MODULAR DOCK PLANS**

MANUFACTURER INFORMATION

NAME: WHITLEY EAST LLC
ADDRESS: 64 HESS RD
LEOLA, PA 17540

DESIGN CODES:

7TH EDITION 780 CMR MASS. BUILDING CODE (2015 IBC w/ STATE AMENDMENTS)
7TH EDITION 780 CMR MASS. BUILDING CODE (2015 IMC w/ STATE AMENDMENTS)
248 CMR 10.00 UNIFORM STATE PLUMBING CODE
7TH EDITION 780 CMR MASS. BUILDING CODE (2018 IECC w/ STATE AMENDMENTS)
527 CMR 1.00 MASS COMPREHENSIVE FIRE SAFETY CODE (2015 NFPA 1 w/ STATE AMENDMENTS)
527 CMR 12.00 MASS ELECTRICAL CODE (2020 NEC w/ STATE AMENDMENTS)
521 CMR ARCHITECTURAL ACCESS BOARD

MANUFACTURER INFORMATION

NAME: WHITLEY EAST LLC
ADDRESS: 64 HESS RD
LEOLA, PA 17540

CERTIFICATION NUMBER: MC 460
EXPIRATION DATE: 9-26-2021

BUILDING INFORMATION

PROJECT NAME: FEDEX GROUND PACKAGE FACILITY
MODEL DESIGNATION: 7721
SITE ADDRESS: 15 NORTH LINE ROAD, EDGARTOWN, MA 02539
OCCUPANCY TYPE: S-2
CONSTRUCTION TYPE: V-B (STEEL CONSTRUCTION - UNPROTECTED)
BUILDING AREA: 1176 SQ. FT.
ENCLOSED SPACE: 10584 CU. FT.
BUILDING HEIGHT ABOVE GRADE: 13'-9" (APPROXIMATE)
OCCUPANT LOAD: 3, OR LESS
SPECIAL SYSTEMS: NONE

FIRE ALARM: SYSTEM SUPPLIED AND INSTALLED ON SITE BY CERTIFIED INSTALLER
FIRE SUPPRESSION: NONE

BUILDING DESIGN LOADS

Table listing various building design loads such as FLOOR LIVE LOAD UNIFORM (125 PSF), FLOOR LIVE LOAD CONCENTRATED (N/A LBS), ROOF LIVE LOAD (18 PSF), etc.

SPECIAL USE PROVISIONS

- 1) THIS BUILDING SHALL NOT BE USED AS AN ADDITION TO ANOTHER BUILDING IF IT WILL DOWNGRADE THE CONSTRUCTION TYPE, OR REDUCE THE OPEN PERIMETER, OR IN ANY WAY JEOPARDIZE LIFE SAFETY FEATURES OF THE EXISTING BUILDING
2) THIS BUILDING IS LIMITED TO PLACEMENT IN AREA WITH DESIGN CONDITIONS LESS THAN OR EQUAL TO THOSE NOTED ABOVE.
3) TOILET FACILITIES FOR THE BUILDING ARE TO BE PROVIDED IN ACCORDANCE WITH 248 CMR 10.00 BY CERTIFIED INSTALLER.

METHOD OF VENTILATION

COMBINATION OF NATURAL AND MECHANICAL

MECHANICAL INFORMATION

TYPE OF HVAC: RADIANT ELECTRICAL RESISTANCE
OTHER FUEL BURNING EQUIPMENT: NONE
TYPE OF CHIMNEY/VENTING SYSTEM: NONE

ENERGY COMPLIANCE

U-VALUES FOR BUILDING THERMAL ENVELOPE

- WALLS - SET MODULES ON FOUNDATION AND CONNECT TO PIERS
FLOOR - INSTALL FLOOR, WALL AND ROOF CLOSE-UP MATERIAL
ROOF - INSTALL ALL SITE-SUPPLIED EQUIPMENT
DOORS - CONNECT UTILITIES TO BUILDING AND CROSS SEAM ELECTRIC
WINDOWS - INSTALL EXTERIOR MATELINE CLOSE-UP MATERIAL
INSTALL SKIRTING, CRAWL SPACE VENTILATION AND CRAWLSPACE ACCESS

NOTE: ITEMS TO BE INSTALLED AT SITE ARE SUBJECT TO INSPECTIONS BY LOCAL AUTHORITY HAVING JURISDICTION

NOTES:

- 1) 48 HOUR NOTIFICATION TO LOCAL AUTHORITY HAVING JURISDICTION IS REQUIRED TO BE GIVEN PRIOR TO THE BUILDING SET
2) THIS BUILDING IS SOLAR READY PER 780 CMR 13 C403.2
3) THIS BUILDING TO BE LOCATED MORE THAN 10 FEET FROM PROPERTY LINE OR ASSUMED PROPERTY LINE, AND 20' BETWEEN BUILDINGS

THIRD PARTY INSPECTION AGENCY INFORMATION

NAME: TR ARNOLD ASSOCIATES

THIRD PARTY INSPECTION AGENCY INFORMATION

NAME: TR ARNOLD ASSOCIATES

AUTHORIZATION NUMBER: TPIA-03
EXPIRATION DATE: 04-30-2022

VORTEX ENGINEERING INC.
FEDEX GROUND PACKAGE FACILITY

SITE ADDRESS:

15 NORTH LINE ROAD, EDGARTOWN, MA 02539

Table with columns: Module Serial Number, Module Number, Module Size, Module Shipping Height, Module Shipping Weight, Allowable Ship Loose Weight / Ballast, Axle Quantity, Tire Size, Coupler Type, Coupler Size, Coupler MFR., Coupler Height Above Grade

MODULE SIZES INCLUDE HITCH AND OVERHANGS. SIZES SUBJECT TO GROWTH DURING CONSTRUCTION. DIMENSIONS TO BE FIELD VERIFIED BEFORE UNIT SHIPS AND DEALER TO BE NOTIFIED WITH FINAL FIELD VERIFIED DIMENSIONS

INDEX (11 SHEETS TOTAL):

- C1.0 COVER SHEET
A0.0 SPECIFICATIONS
A1.0 EXTERIOR ELEVATIONS
A2.0 SUGGESTED BLOCKING PLAN
A2.1 FLOOR PLAN
A3.1 REFLECTED CEILING PLAN
E2.1 ELECTRICAL PLAN
E6.1 CONDUIT FILL CHART
E7.0 ELECTRICAL SCHEDULES
S1.1 FRAME PLAN
S2.1 BUILDING SECTIONS
S4.1 ROOF FRAMING PLAN

GENERAL CONTRACTOR NOTES:

- 1. WHITLEY MFG. IS NOT RESPONSIBLE FOR LIQUIDATED DAMAGES.
2. WHITLEY MFG. IS NOT RESPONSIBLE FOR FEDERAL OR LOCAL CODES.
3. MANUFACTURERS LIMITED WARRANTY IS FOR 1 YEAR FROM THE DATE OF THE MANUFACTURERS INVOICE DATE ONLY.
4. WHITLEY STANDARD WARRANTY APPLIES UNLESS STATED OTHERWISE. WARRANTY CLAIMS NOT REPORTED AND APPROVED WILL NOT BE CONSIDERED FOR REIMBURSEMENT.
5. IN THE EVENT THAT ANY WARRANTY REPAIRS ARE REQUIRED FOR A WHITLEY BUILDING, WE ASK THAT YOU PLEASE CONTACT OUR REPRESENTATIVE TO RESOLVE ANY ISSUES. WE RESERVE THE RIGHT TO REPAIR OR REPLACE THE ISSUE FIRST IN A TIMELY MANNER AGREED UPON WITH OUR LABOR RATES, NOT SITE RATES.
6. A COPY OF OUR WARRANTY SHIPS WITH BUILDING. PLEASE LET US KNOW IF YOU WOULD LIKE A COPY IN ADVANCE.
7. ALL BUILDINGS HAVE STANDARD SET-UP ITEMS THAT NEED TO BE COMPLETED BY SET-UP SUBCONTRACTOR (I.E. - DOOR ADJUSTMENTS, HVAC BALANCING, CROSS SEAM CONNECTIONS, ETC.)
8. WHITLEY MFG. IS NOT RESPONSIBLE FOR ANY DAMAGES RESULTING FROM ACCIDENTAL OR NEGLIGENT ACTS BY THE TRANSPORTATION COMPANIES. DRIVER'S WILL SIGN A RELEASE OF RESPONSIBILITIES AND SUGGESTED TRAVEL SPEED MUST BE ADHERED TO.
9. ANY GAS LINES WILL NEED TO BE BY CERTIFIED INSTALLER AND PLUMBED BY A SITE LICENSED PLUMBER, NOT BY WHITLEY.
10. ANY DRAWING, PURCHASING, CUSTOMER CHANGE OR IN-CONSTRUCTION CHANGE DETERMINED NOT AFFECTING CODE APPROVAL (EX: CHANGE OF BRAND NAME MATERIALS) MAY BE CHANGED AT DISCRETION OF WHITLEY MANUFACTURING, SO LONG AS DRAWINGS REFLECT THE APPROPRIATE REVISION MARKS TO INDICATE WHERE THE REVISION HAS TAKEN PLACE ON THE DRAWING AND IS DATED ELECTRONICALLY IN THE MANUFACTURERS ELECTRONIC FILE FOR THE PROJECT
11. DIMENSIONS LISTED HEREIN TO BE HELD TO STANDARD CONSTRUCTION TOLERANCES AT DISCRETION OF WHITLEY MANUFACTURING UNLESS NOTED OTHERWISE.
12. TERMINOLOGY USED WITHIN THE MODULAR BUILDING INDUSTRY AND / OR COMPANY MAY DIFFER FROM COMMON NOMENCLATURE IN THE CONSTRUCTION INDUSTRY. WHILE WHITLEY STRIVES TO USE COMMON CONSTRUCTION TERMINOLOGY, WHITLEY RESERVES THE RIGHT TO USE AND INTERPRET LANGUAGE IT DEEMS NECESSARY TO CONVEY IT'S METHODS OF CONSTRUCTION

ABBREVIATIONS

Table mapping abbreviations to words: Abbv., Word. Includes entries like UP #\* A.F.F., AMP, ABOVE FINISHED FLOOR, etc.

GENERAL SYMBOL LEGEND

Table mapping symbols to descriptions: VIEW NUMBER, NAME AND SCALE; ELEVATION SYMBOL; SECTION SYMBOL; REVISION TAG; WINDOW TAG; DOOR TAG; ROOM NAME, NUMBER AND AREA; WELD SYMBOL

HATCH LEGEND

Table mapping hatch patterns to materials: BATT INSULATION, CONCRETE, STEEL, WOOD, RIGID INSULATION, PLYWOOD / OSB, GYPSUM

Approval stamp for WHITLEY EAST LLC, 64 HESS RD, LEOLA, PA 17540, 717-656-2081. Includes fields for APPROVED, APPROVED AS NOTED, RETURN FOR CORRECTION, BY, DATE.

THIS DRAWING AND ALL INFORMATION CONTAINED HEREON IS THE PROPERTY OF WHITLEY MFG. CO., INC. AND IS NOT TO BE REPRODUCED WITHOUT THE EXPRESS PERMISSION OF WHITLEY MFG. CO., INC.



Whitley East, LLC
64 HESS ROAD
LEOLA, PA 17540
PHONE: 717.656.2081
www.whitleyman.com

Drawn By: EP
Checked By: CZ/DL
Rev: 4

Seal reservation areas: SPACE RESERVED FOR STATE SEAL ONLY, SPACE RESERVED FOR THIRD PARTY INSPECTION SEAL ONLY, SPACE RESERVED FOR P.E. SEAL ONLY. Includes engineer information for Kevin M. Finn, P.E., Inc.



Revision table with columns: No., Revision Description, Date. Includes entries for Customer approval drawings, Corrections per PE mark-ups, Corrections per TPIA deviations.

COVER SHEET
VORTEX ENGINEERING, INC.
FEDEX GROUND PACKAGE FACILITY
(2) 50'-0"x11'-9" MODULES

Serial No: 2443-44
Quote No: 47615-99
Model No: 7721
Job No: 2021-005-WP
Date: 5/14/2021 8:52:43 AM
Scale: As indicated
Page No: C1.0

CERTIFIED INSTALLER: VORTEX ENGINEERING, INC.  
 PROJECT NAME: FEDEX GROUND PACKAGE FACILITY  
 SERIAL NUMBER: 2443-44  
 MODEL NUMBER: 7721  
 JOB I.D. #: 2021-005-WP  
 MODEL SIZE: 100'x12' (2) 54'-2"x12'-0" MODULES

APPROX. MODULE SHIPPING HEIGHT (PEAK OF ROOF): 13'-6"

**A-FRAME:**  
 1 TYPE: OUTRIGGER  
 2 MAIN BEAM: W10"x12# I-BEAM (ROLLED)  
 3 X-MEMBER: W8"x10# I-BEAM (ROLLED) AT 48" O.C.  
 4 OUTRIGGERS: W8"x9# I-BEAM (ROLLED) AT 48" O.C. WITH 7/12" x 2" 14ga (MIN) FORMED ZEE  
 5 HITCH: BOLT-ON COUPLER  
 6 AXLES: FOUR - TANDEM LEADING AND TRAILING  
 7 SPRINGS: MULTI-LEAF, OVERSLUNG  
 8 TIRES: w/ 41# HANGERS, EQUALIZERS, AND AXLE ATTACHING PARTS  
 9 TIE DOWN: 8'00 X 14.5, 14 PLY OVER THE FRAME  
 NOTE: PROVIDED & INSTALLED BY CERTIFIED INSTALLER.  
 10 MISC: SEE SUGGESTED BLOCKING PLAN FOR THE DOWN LOCATIONS  
 11 MISC: PUNCH OR DRILL 1/2"DIA. HOLE 32" O.C. TOP FLANGE OF FRAME FOR EXTERIOR WALL ATTACHMENT  
 12 MISC: PUNCH OR DRILL 1/2"DIA. HOLE 48" O.C. BOTTOM FLANGE AT EXTERIOR FRONT/REAR BUMPER FOR SKIRTING ATTACHMENT  
 13 MISC: 1 1/2" x 1 1/2" 14ga STEEL ANGLE AT ENDS OF MODULES FOR B-DECK CAP  
 14 UNDER COATING: THIS UNIT WILL HAVE STEEL POSTS RUST INHIBITIVE LATEX TYPE PAINT, BLACK. 100% COVERAGE OF STRUCTURAL MEMBERS.

**B-FLOOR:**  
 1 BOTTOM BOARD: NONE  
 2 INSULATION: R-28 (4" NOMINAL) SPRAYED CLOSED-CELL FOAM INSULATION  
 NOTE: NOT REQUIRED TO HAVE AN IGNITION BARRIER PER U.E.S. EVALUATION REPORT # 146  
 3 JOISTS: NONE. DECKING TO BE APPLIED DIRECTLY TO CROSS MEMBERS  
 4 DECKING: 3/4" ADVANTECH UNDERLAYMENT OVER 20 GAUGE METAL DECK W/ 1 1/2" RIBS  
 (HOLD BACK ADVANTECH DECKING 10" AT MATELINE)  
 5 COVERING: NONE. PLYWOOD DECK TO BE PAINTED BY CERTIFIED INSTALLER.  
 NOTE: CLEAR SILICONE SEALANT TO BE APPLIED BETWEEN INTERIOR WALL COVERING AND FLOOR COVERING

**C-EXTERIOR WALLS:**  
 NOTE: AT OPEN MATELINE AREAS TO BE COVERED W/ VISQUEEN, INSTALL PANELING STRIPS AT 2' O.C. VERTICALLY, FOR THE FIRST SIX-FOOT LENGTH OF OPEN AREA.  
 NOTE: DO NOT REMOVE TEMPORARY ROOF BRACING SUPPORTS AT MODULE SIDES UNTIL MODULE IS SET ON PERMANENT FOUNDATION.  
 1 STUDS: 1 5/8" X 6" (18 GA.) STEEL 18" O.C.  
 WIDBL. STUDS EACH END OF SIDEWALLS  
 3"x6" 18ga JAMBSTUD AND HEADER TO BE INSTALLED AT DOOR OPENINGS, OPENINGS TO BE WRAPPED WITH LUMBER  
 2 BOTTOM PLATE: 1 1/4" X 6" (18 GA.) STEEL TRACK  
 3 TOP PLATE: 1 1/4" X 6" (18 GA.) STEEL TRACK  
 4 COVERING: 29ga COMMERCIAL STEEL SIDING w/ 3/4" HIGH RIB AND 29ga STEEL TRIMS  
 NOTE: APPLY HORIZONTAL 3"W 16ga FLAT STEEL STRAP TO INTERIOR SIDE OF STUDS FOR FASTENING WALL COVERING AT 32" O.C. VERTICALLY  
 5 SHEATHING: 1/2" F.R.T. PLYWOOD  
 6 SHEATHING: AIR INFILTRATION BARRIER (TYVEK OR EQUAL)  
 7 INSULATION: R-19 UNFACED FIBERGLASS BATT  
 8 SIDING: 29ga COMMERCIAL STEEL SIDING w/ 3/4" HIGH RIB  
 NOTE: START SIDING 2" BELOW FINISHED FLOOR  
 9 EXT. TRIM: 29ga COMMERCIAL STEEL  
 J-CHANNEL - DOORS  
 BOTTOM STARTER  
 TOP SIDE STARTER  
 OUTSIDE CORNERS  
 10 SKIRTING: NONE, SUPPLIED AND INSTALLED BY CERTIFIED INSTALLER  
 COLUMNS: HSS 4x4x1/4 SHEAR BENT COLUMNS

**D-INTERIOR WALLS:** NONE

**E-ROOF:**  
 1 RAFTERS: 2" x 8" 12ga COLD-FORMED "C" AT 48" O.C.  
 WITH 2" x 8" 12ga COLD-FORMED TRACK OVER SIDEWALLS  
 2 MATE BEAM: STEEL C-CHANNEL C10"x15.3#  
 NOTE: 1/2" DIA. HOLES 32" O.C. IN BOTTOM CHORD OF BEAM TO ATTACH SHIPPING WALLS  
 3 CEILING: NONE. RAFTERS TO BE PAINTED AND EXPOSED  
 4 INSULATION: TAPERED RIGID INSULATION (MIN. 5" THICK; R-30)  
 5 SHEATHING: 20ga METAL DECK WITH 1 1/2" RIBS  
 6 COVERBOARD: 1/2" DENSDECK OVER TAPERED RIGID INSULATION  
 7 ROOFING: EPDM RUBBER 1-PC MEMBRANE. 45 mil. BLACK  
 8 GUTTER: NONE. GUTTER, DOWNSPOUTS, ETC. TO BE PROVIDED AND INSTALLED BY CERTIFIED INSTALLER

**F-DOORS:** SEE DOOR SCHEDULE ON A0.0

**G-WINDOWS:** NONE

**H-ELECTRICAL:**  
 1 LOAD CENTER: 120/208 V., 3-PHASE-WYE, 60 HZ, 4-WIRE, 200 AMP MAIN BREAKER TYPE, 10KAIC  
 2 SERV ENT: 2" EMT THRU FLOOR  
 NOTE: ALL SERVICE ENT. WIRING TO BE TYPE THWN COPPER.  
 NOTE: MAIN DISTRIBUTION PANEL, & OR MAIN DISCONNECT SWITCH, TO BE PROVIDED AND INSTALLED BY CERTIFIED INSTALLER-INCLUDING ALL REQUIRED FEEDER WIRING, CONDUIT, ETC., TO CONNECT INSTALLED LOAD CENTERS.  
 3 WIRING: EMT (#12 MIN WIRE SIZE) - TYPE THHN  
 NOTE: EMT TO BE USED WHERE EXPOSED  
 3a WIRING: MC CABLE W/ INTERLOCKING TAPE SHEATH (#12 MIN WIRE SIZE) - TYPE THHN  
 NOTE: MC CABLE TO BE USED IN WALL CAVITIES  
 3b CROSS-SEAM WIRING: PIGTAIL AND JUNCTION BOX  
 4 INT. LIGHTS: 48" LED SURFACE MOUNT, LOW PROFILE  
 5 EXT. LIGHTS: LUMAX DKLED2L4K48-9FA, OR EQUAL LED WALL PACK - WEATHERPROOF WITH PHOTOCELL LITHONIA OLWP, OR EQUAL UP 74" TO BOTTOM  
 6 EXT. LIGHTS: 40 WATT LED FLOOD LIGHT - WEATHERPROOF RADIANCE LIGHTING FLOOD LIGHT OR EQUAL MOUNTED TO THE TOP CORNER OF EACH ROLL-UP DOOR OPENING  
 7 EGRESS LIGHTS: EXIT/EMERGENCY LIGHT W/ BATTERY PACK & EXTERIOR REMOTE HEAD (W.P.) - UP 84" TO BOTTOM  
 NOTE: EXT. HEAD SHIPPED LOOSE. FOR INSTALLATION BY CERTIFIED INSTALLER.  
 8 RECEPTS: 125V/20A TAMPER-RESISTANT DUPLEX  
 UP 18" TO BOTTOM OF BOX UNLESS NOTED OTHERWISE  
 9 RECEPTS: 125V/20A WEATHER RESISTANT DUPLEX; TOP AND BOTTOM SEPARATED INTO TWO GFCI PROTECTED CIRCUITS WITH WEATHERPROOF IN-USE COVER - UP 6" TO BOTTOM  
 NOTE: ALL RECEPTS ARE TO BE GROUNDING TYPE  
 10 SWITCHES: 120V/20A SINGLE POLE - UP 44" TO BOTTOM  
 11 SWITCHES: 120V/20A CEILING-MOUNTED OCCUPANCY SENSOR  
 12 SWITCHES: 120V/20A 3-WAY - UP 44" TO BOTTOM  
 13 MISC: PERSONNEL DOOR ALARMS (F1 DOORS ONLY) - HARD WIRED INTO THE ELECTRICAL SYSTEM  
 DETEX ACDXEX-2500S1S-X EASY KIT WITH MAGNETIC SWITCH, POWER SUPPLY, HORN/STROBE, AND EXIT ALARM WALL-MOUNTED TIMER SWITCH (FOR HEATERS) - UP 44" TO BOTTOM INTERMATIC KM2ST-1G OR EQUAL  
 14 MISC: 30 AMP DEFINITE PURPOSE 3 POLE CONTACTOR WITH 120V COIL FOR TIMER CONTROL OF HEATERS  
 15 MISC: (2) CONTACTORS TO BE MOUNTED IN 8"x8"x6"D PULL BOX  
 NOTE: CLEAR SILICONE SEALANT TO BE APPLIED BETWEEN INTERIOR WALL COVERING AND FLOOR COVERING

**J-PLUMBING:** NONE

**K-H.V.A.C.:**  
 1 HEATING: 48" 4KW 3PH INFRARED HEATERS  
 BBC INDUSTRIES BLACK BODY I43-4000-240V  
 2 COOLING: 2600 CFM CEILING-MOUNTED FAN WITH YOKE MOUNT PATTERSON H14A w/ YOKE MOUNT

**L-FURNITURE & INTERIOR FURNISHINGS:** NONE

**M-MISCELLANEOUS:**  
 1 10# ABC FIRE EXTINGUISHER W/BRACKETS  
 2 EXTERIOR & INTERIOR MATELINE CLOSE-UP MATERIAL SHIPPED LOOSE FOR INSTALLATION BY CERTIFIED INSTALLER.

**UNIT LABELS:**  
 THIRD PARTY LABEL  
 STATE OF MA LABEL  
 DATA PLATES AND LABELS LOCATED ON LOAD CENTER COVER, UNLESS OTHERWISE SPECIFIED.  
 MBI LABEL

**GENERAL SPECIFICATION NOTES:**  
 1) BUILDING NOT TO BE LOCATED IN A DESIGNATED FIRE ZONE.  
 2) THIS BUILDING SHALL BE LOCATED MORE THAN 30 FEET AWAY FROM ANY PROPERTY LINE OR ANY INTERIOR LOT LINE BETWEEN IT AND ANY OTHER BUILDING.  
 3) THIS BUILDING NOT TO BE LOCATED IN A FLOOD PRONE AREA.  
 4) WHITLEY MFG. CO., INC. IS NOT RESPONSIBLE FOR THE LOCAL BUILDING CODE REQUIREMENTS OVER AND ABOVE THE ENCLOSED SPECIFICATIONS. THE SPECIFICATIONS ARE BASED ON THE DESIGN PARAMETERS OF THE CODES LISTED ABOVE.  
 5) THIS BUILDING DOES NOT HAVE FIRE-RATED EXTERIOR WALLS.  
 6) THIS BUILDING SHALL NOT BE LOCATED IN AREAS WITH SNOW, WIND, AND /OR SEISMIC LOADS IN EXCESS OF THOSE NOTED ABOVE IN BUILDING DESIGN LOADS.

**Modular Manufacturers Scope Clarifications**  
**Section**  
**Floor**  
 Insulation: Insulation for mate lines ships loose for installation by certified installer  
 Decking: Decking held back at mate lines, installation at mate lines by certified installer  
 Floor Covering: Floor decking to be painted by certified installer  
**Walls and Partitions**  
 Wall: Wall covering run to mateline; 29ga steel tee shipped loose for install by certified installer  
 Siding: Siding run to mateline; 29ga steel tee shipped loose for install by certified installer  
 Insulation: Insulation for seam closures ships loose for installation by certified installer  
 Skirt: Provided and installed by certified installer  
**Roof**  
 Roofing: Mate line flashing ships loose for installation by certified installer  
 Roofing: Self Bridging mate line flashing with backer rod ships loose for installation by certified installer  
 Insulation: Insulation for mate line ships loose for installation by certified installer  
**Doors**  
 Adjustments: Final adjustments of doors after modules are set is by certified installer  
**Electric**  
 Load Center: One load center per module, interconnect and MDP by certified installer  
 Crossovers: Junction boxes with flexible metal conduit whips installed and tagged by factory; certified installer to terminate on site  
 Egress Lighting: Connection of batteries required on site by certified installer  
 Switches: Occupancy sensors may require adjustment by certified installer  
**HVAC**  
 Controls: Circuit breaker to be switch for fans  
 Controls: Timers installed by factory, testing by certified installer  
**Warranty**  
 Warranty: Manufacturers standard warranty applies, documents ship loose in warranty pack  
 Warranty: Component manufacturers extended warranty are passed to end user  
 Warranty: Manufacturing plant must be notified of any warranty claims  
 Warranty: Warranty claims will not be reimbursed without notification and prior approval

Mark	Description	Count	Width	Height	Rough Width	Rough Height	Frame Type	Frame Throat	Lite	Fire Rating	Hardware Set	Comments
F1	16ga STEEL INSULATED DOOR	4	3' - 0"	6' - 8"	3' - 2"	6' - 9"	14ga STEEL KD	6 1/8"	N/A	N/A	A	
F2	ROLL UP OVERHEAD COIL DOOR	18	4' - 6"	6' - 8"	4' - 6"	6' - 9"	FINISHED OPENING	N/A	N/A	N/A	B	WAYNE DALTON DS-350 OR EQUAL
(F3)	ROLL UP OVERHEAD COIL DOOR	2	8' - 0"	7' - 6"	8' - 0"	7' - 7"	FINISHED OPENING	N/A	N/A	N/A	B	WAYNE DALTON DS-350 OR EQUAL

Hardware Set	Description	Comments
A	SCHALGE N070BD LEVER LOCKSET WITH SPARTA 628 LOCK	CONSTRUCTION CORES ONLY - FINAL KEYING BY CERTIFIED INSTALLER - GRADE 1
	LCN 4041 DOOR CLOSER	WITH CUSH 689 - GRADE 1
	DETEX DOOR ALARM	ACDXEAX-2500S1S-X EASY KIT
	4.5" x 4.5" BB NRP HINGES	STAINLES STEEL
	WEATHERSTRIPPING	
	THRESHOLD	
	DOOR SWEEP	
B	INTERIOR SLIDE BOLT	
	MANUAL PUSH UP WITH PULL ROPE	
	WEATHER STRIPPING	
	THRESHOLD	

Material	Color	Comments
29ga INTERIOR SIDING	TO BE WHITE	WITH 3/4" HIGH RIB
29ga INTERIOR SIDING TRIMS	TO BE WHITE	
29ga EXTERIOR SIDING	TO BE SELECTED FROM MFRS. STD. COLORS	WITH 3/4" HIGH RIB
29ga EXTERIOR TRIM	TO BE SELECTED FROM MFRS. STD. COLORS	
MAN DOORS AND FRAMES	TO BE SELECTED FROM MFRS. STD. COLORS	SHERWIN WILLIAMS DTM PAINT
ROLL-UP OVERHEAD DOOR	TO BE SELECTED FROM MFRS. STD. COLORS	
EXPOSED RAFTERS AND DECK, MOUNTING CHANNELS, AND CLIPS	TO BE BLACK	
EPDM ROOF MEMBRANE	TO BE BLACK	
ELECTRICAL DEVICES	TO BE WHITE	
GALVANIZED ELECTRICAL DEVICE COVER PLATES	TO BE MILL FINISH	
INFRARED HEATERS	TO BE BLACK	
CEILING MOUNT FANS	TO BE BLUE	



No.	Revision Description	Date
1	Customer approval drawings	03.01.2021
2	Customer verification changes	04.06.2021

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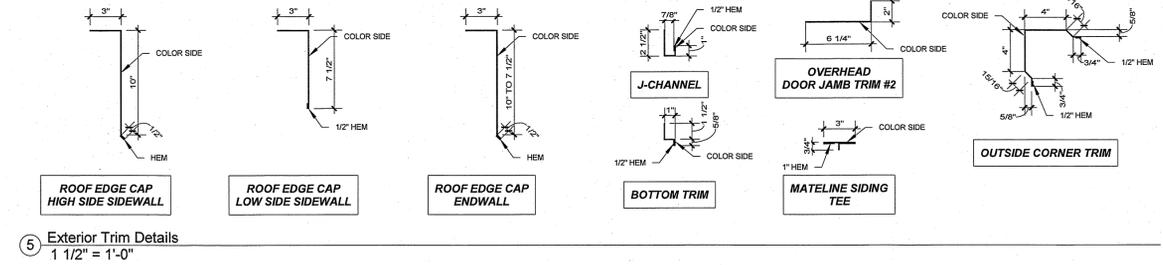
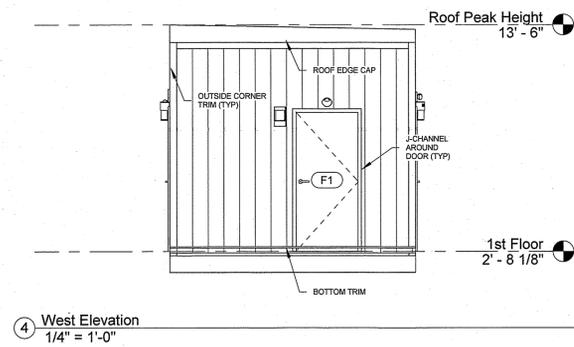
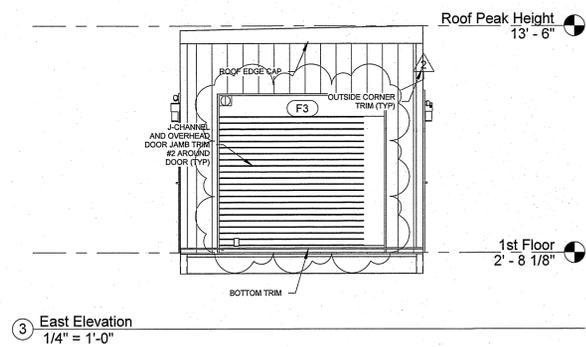
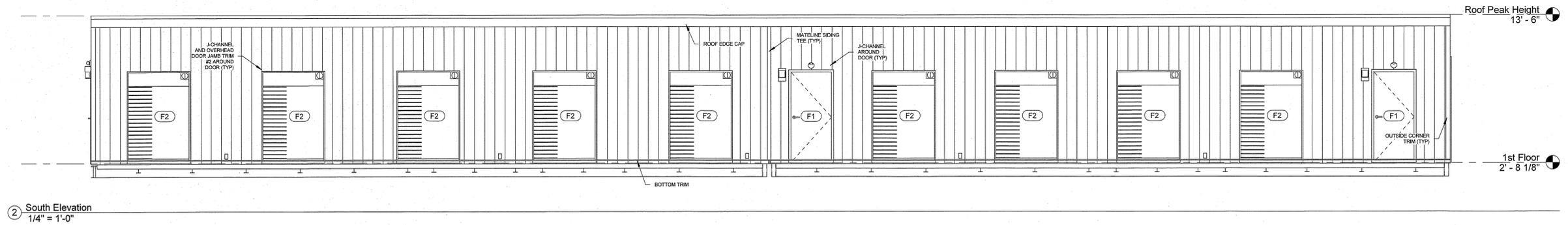
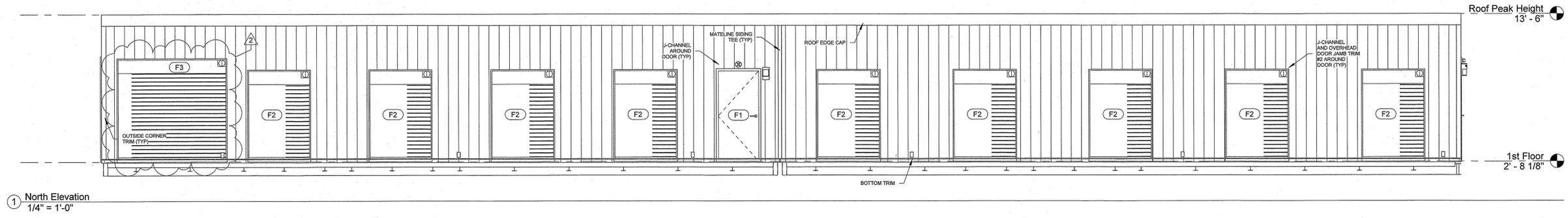


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Drawn By: EP  
 Checked By: CZ/DL  
 Rev: 2

**SPECIFICATIONS**  
**VORTEX ENGINEERING, INC.**  
**FEDEX GROUND PACKAGE FACILITY**  
**(2) 50'-0"x11'-9" MODULES**

Serial No. 2443-44  
 Quote No. 47615-99  
 Model No. 7721  
 Job No. 2021-005-WP  
 Date: 5/14/2021 8:52:38 AM  
 Scale:  
 Page No.  
**A0.0**



No.	Revision Description	Date
1	Customer approval drawings	03.01.2021
2	Customer verification changes	04.06.2021

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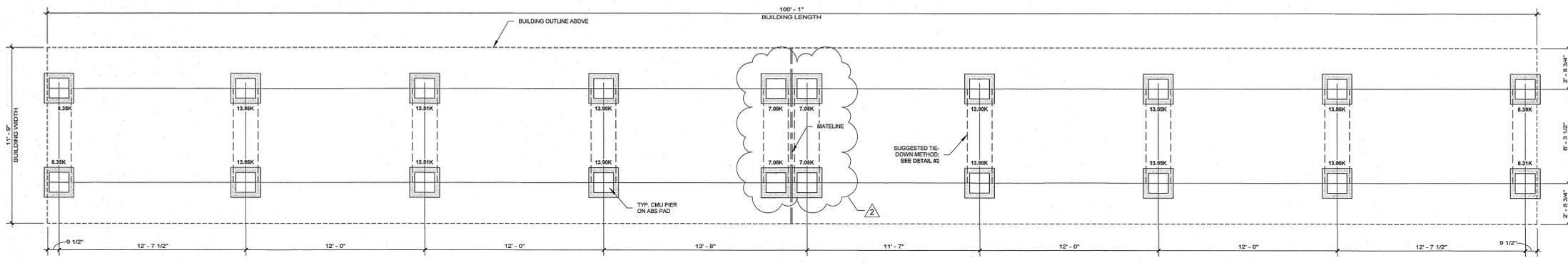
Whitley East, LLC  
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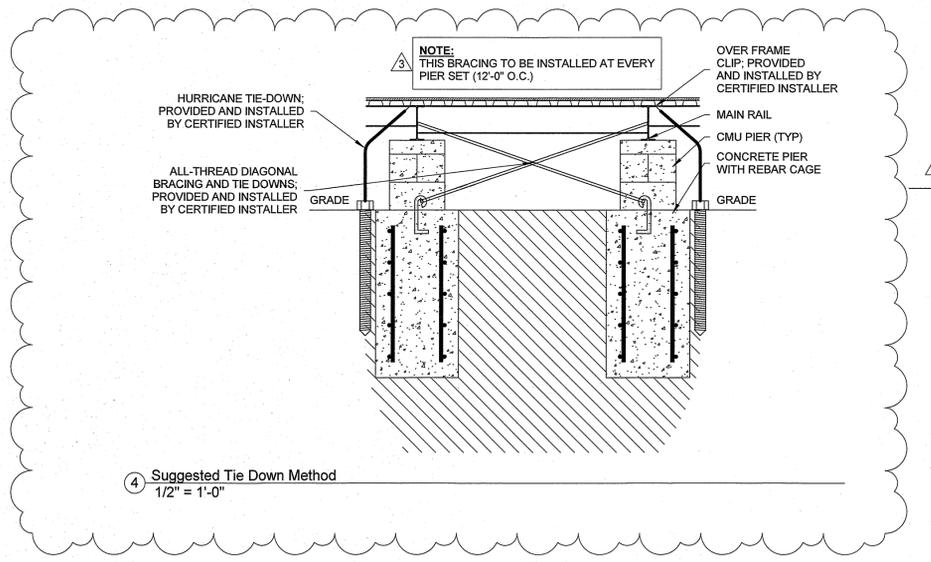
EXTERIOR ELEVATIONS  
VORTEX ENGINEERING, INC.  
FEDEX GROUND PACKAGE FACILITY  
(2) 50'-0"x11'-9" MODULES

Serial No.	2443-44	Date	5/14/2021
Quote No.	47615-99	Scale	As indicated
Model No.	7721	Page No.	A1.0
Job No.	2021-005-WP		

NOTE:  
TIE DOWN METHOD AT ENDWALLS  
OF THIS BUILDING TO BE PROVIDED  
BY REGISTERED DESIGN PROFESSIONAL  
RESPONSIBLE FOR FOUNDATION DESIGN



3 Suggested Blocking Plan  
1/4" = 1'-0"



4 Suggested Tie Down Method  
1/2" = 1'-0"

**FOUNDATION DISCLAIMER:**  
BLOCKING PLAN GIVEN BY WHITLEY MANUFACTURING IS A SUGGESTED DESIGN.  
WORKING FOUNDATION TO BE DESIGNED BY PROFESSIONAL ENGINEER PER LOCAL SOIL AND CLIMATE CONDITIONS AND SUBJECT TO REVIEW AND INSPECTION BY THE LOCAL AUTHORITY HAVING JURISDICTION.

- FOUNDATION NOTES:**
- LOADS ARE IN 1000 LBS.
  - CRAWL SPACE VENTILATION SHALL NOT BE LESS THAN 1/150TH OF THE CRAWL SPACE HORIZONTAL AREA.
  - PROVIDE ACCESS TO CRAWL SPACE. (MINIMUM 22" x 24")
  - MINIMUM FOOTING DEPTH 3'-6" OR AS REQUIRED BY LOCAL CONDITIONS
  - WEIGHTS LISTED REPRESENT COMBINED VERTICAL LIVE AND DEAD LOADS ON SUGGESTED PIER LAYOUT



No.	Revision Description	Date
1	Customer approval drawings	03.01.2021
2	Customer verification changes	04.06.2021
3	Corrections per PE mark-ups	05.07.2021

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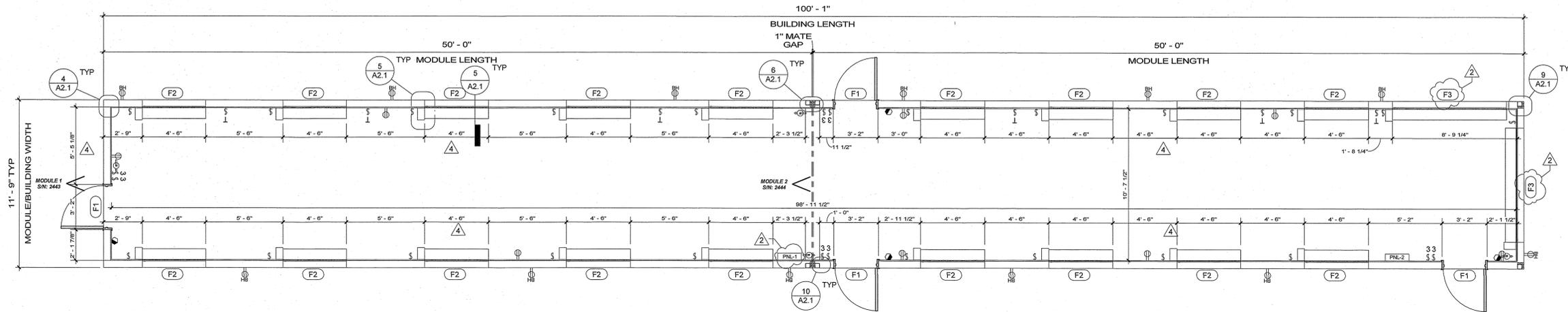


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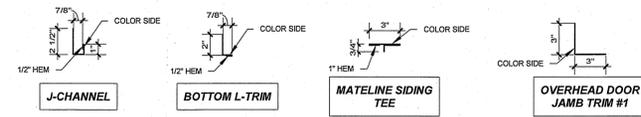
Drawn By: EP  
Checked By: CZ/DL  
Rev: 3

**SUGGESTED BLOCKING PLAN**  
VORTEX ENGINEERING, INC.  
FEDEX GROUND PACKAGE FACILITY  
(2) 50'-0"x11'-9" MODULES

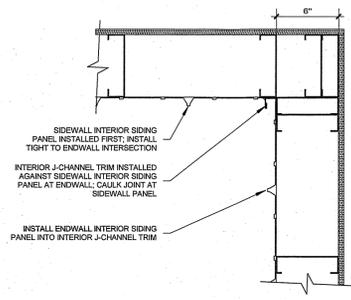
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Quote No. 47615-99	Scale: As indicated
Model No. 7721	Page No.
Job No. 2021-005-WP	<b>A2.0</b>



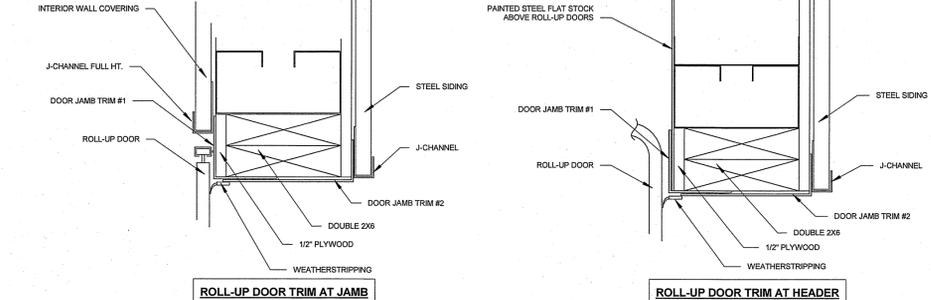
1 Floor Plan  
1/4" = 1'-0"



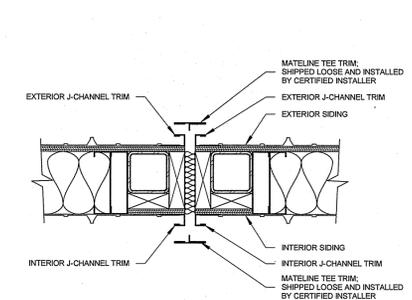
3 Interior Siding Trim Details  
1 1/2" = 1'-0"



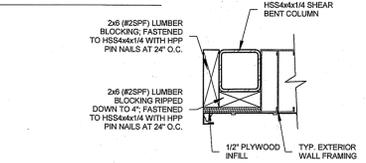
4 Interior Corner Detail - Typical  
1 1/2" = 1'-0"



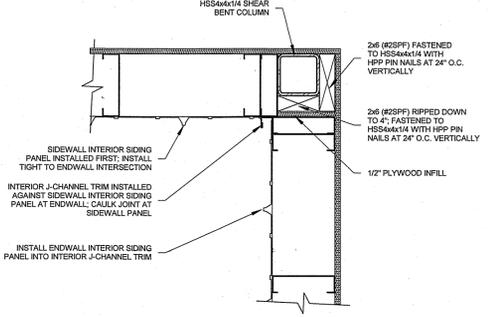
5 Roll-Up Door Trim Details  
3" = 1'-0"



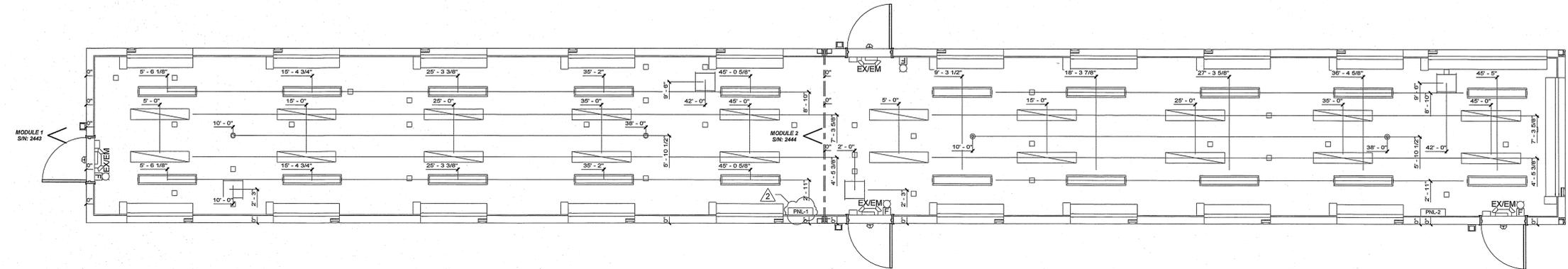
6 Mateline Close Up Detail - Walls  
1 1/2" = 1'-0"



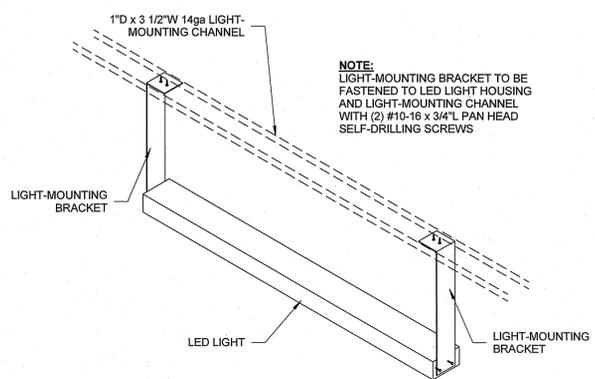
10 Column Pack-Out at Mateline  
1 1/2" = 1'-0"



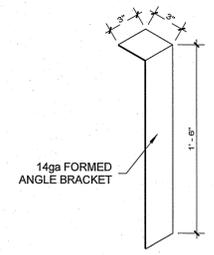
9 Interior Corner Detail - At Shear Bent Column  
1 1/2" = 1'-0"



2 Reflected Ceiling Plan  
1/4" = 1'-0"



7 Light Mounting Detail  
1" = 1'-0"



8 Light-Mounting Bracket  
1 1/2" = 1'-0"

Legend	
[Symbol]	LOADCENTER
[Symbol]	48" SURFACE-MOUNT LOW-PROFILE INTERIOR LIGHT
[Symbol]	WEATHERPROOF LED WALL PACK WITH PHOTOCELL
[Symbol]	40 WATT LED FLOOD LIGHT
[Symbol]	EXEM EXTREMELY LIGHT WITH BACK-UP BATTERY
[Symbol]	REMOTE HEAD
[Symbol]	120V20A TAMPER-RESISTANT DUPLEX RECEPTACLE
[Symbol]	120V20A WEATHER-RESISTANT DUPLEX WITH WEATHERPROOF BUZE COVER, TOP AND BOTTOM OF RECEPT SEPARATED INTO TWO GFCI CIRCUITS
[Symbol]	120V20A SINGLE POLE LIGHT SWITCH
[Symbol]	120V20A CEILING-MOUNTED OCCUPANCY SENSOR
[Symbol]	120V20A THREE-WAY LIGHT SWITCH
[Symbol]	DOOR ALARM POWER SUPPLY
[Symbol]	DOOR ALARM HORN/STROBE
[Symbol]	DOOR ALARM EXIT ALARM
[Symbol]	WALL-MOUNTED TIMER SWITCH FOR HEATERS
[Symbol]	4KW INFRARED CEILING-MOUNTED HEATERS
[Symbol]	2600 CFM CEILING-MOUNTED FAN WITH YOKE MOUNT
[Symbol]	10# ABC FIRE EXTINGUISHER WITH MOUNTING BRACKET, SHIPPED LOOSE

ITEMS REPRESENTED BY DASHED LINES TO BE SHIPPED LOOSE FOR INSTALL ON SITE BY OTHERS

No.	Revision Description	Date
1	Customer approval drawings	03.01.2021
2	Customer verification changes	04.06.2021
4	Corrections per TPIA deviations.	05.14.2021

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Rev:	4

FLOOR PLAN / REFLECTED CEILING PLAN  
VORTEX ENGINEERING, INC.  
FEDEX GROUND PACKAGE FACILITY  
(2) 50'-0"x11'-9" MODULES

Serial No.	2443-44	5/14/2021	Date:	8:52:42 AM
Quote No.	47615-99	Scale:	As indicated	
Model No.	7721	Page No.		
Job No.	2021-005-WP			

A2.1

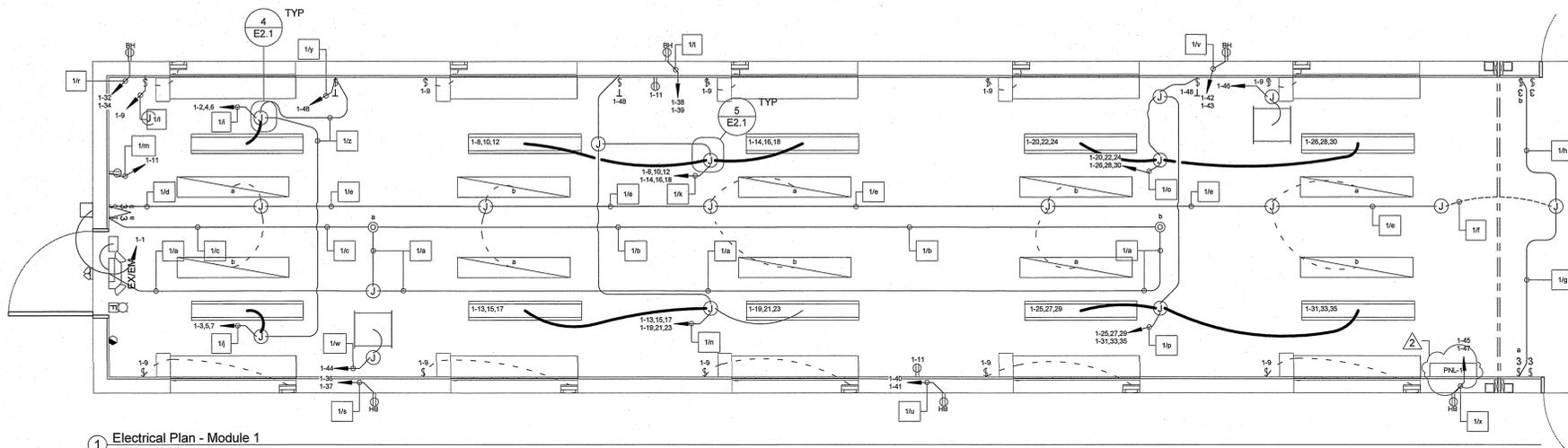
5/14/2021 8:52:42 AM

**ELECTRICAL GENERAL NOTES:**

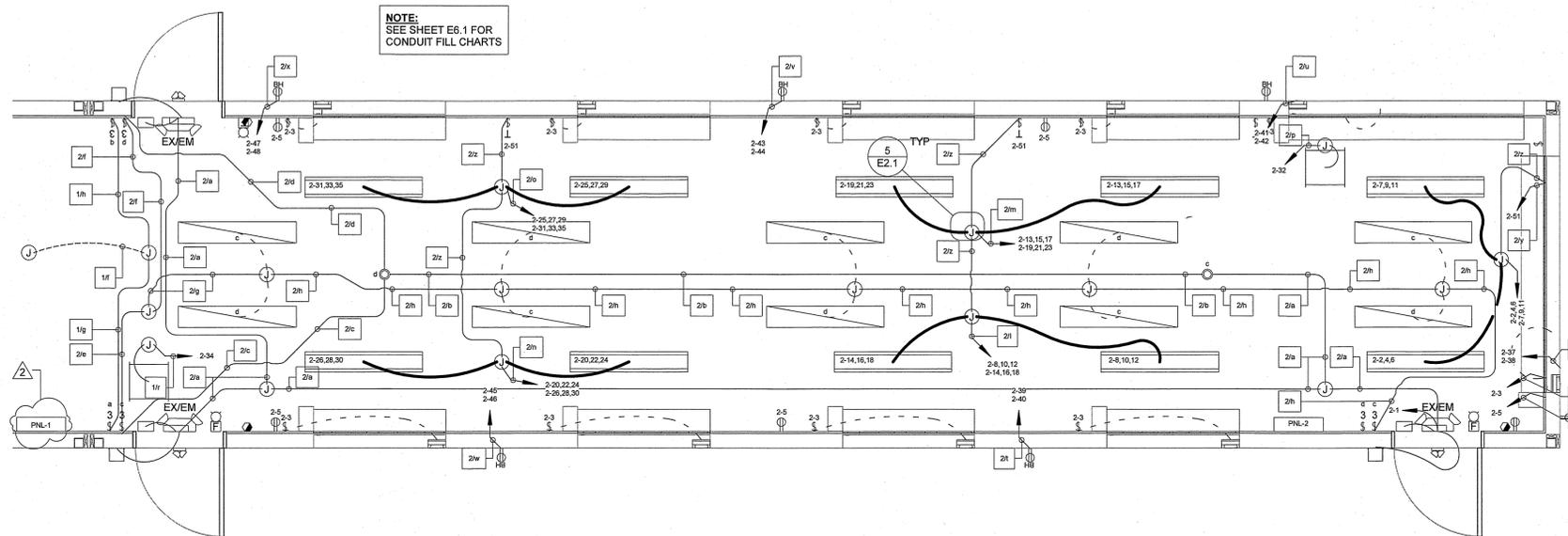
1. ALL RECEPTACLES TO BE GROUNDING TYPE
2. ALL WIRING TO BE PER N.E.C. THHN (CU) WITH GROUND (90) IN EMT CONDUIT IF EXPOSED AND MC CABLE WITH TAPE SHEATH IF CONCEALED IN WALLS.
3. MAIN PANEL TO BE MARKED "SUITABLE FOR USE AS SERVICE EQUIPMENT" AND HAVE BREAKER / FUSE TYPE OVERCURRENT PROTECTION
4. PROPER THERMAL OVERLOAD PROTECTION TO BE PROVIDED FOR ALL MOTORS
5. DISCONNECTING MEANS WITHIN SIGHT REQUIRED FOR ALL MOTORS
6. WEATHERPROOF PROTECTION REQUIRED FOR ALL OUTDOOR LIGHTS AND / OR RECEPTACLES
7. PROPER WORKING CLEARANCES TO BE PROVIDED AND MAINTAINED ABOUT ALL ELECTRICAL EQUIPMENT
8. ALL EMERGENCY LIGHTING (IF REQUIRED) AND EXIT SIGNS WILL BE CONNECTED AHEAD OF ANY LOCAL SWITCHES PER N.E.C. ARTICLE 700
9. ALL EMERGENCY LIGHTING HAS A BATTERY PACK TO ASSURE CONTINUED ILLUMINATION
10. GROUNDING ELECTRODE SHALL BE INSTALLED IN ACCORDANCE WITH ARTICLE 250 N.E.C.
11. MAIN DISTRIBUTION PANEL (S) SHALL BE INSTALLED ON SITE PER CERTIFIED INSTALLER CONTRACTUAL AGREEMENT
12. SERVICE ENTRANCE CONDUCTORS TO BE 75 DEG. CELSIUS COPPER TYPE THWN

**ELECTRICAL FIELD NOTES:**

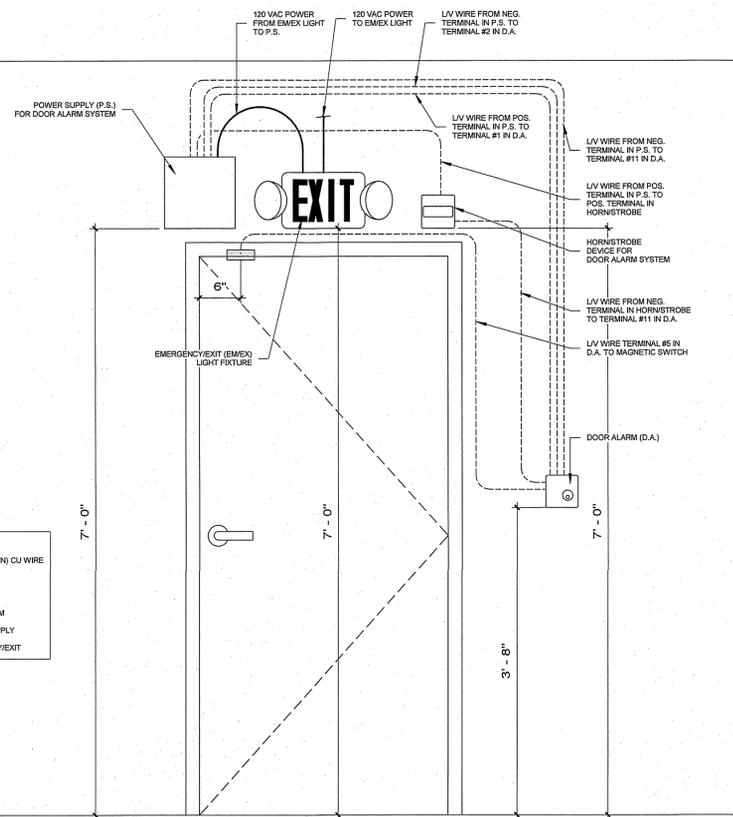
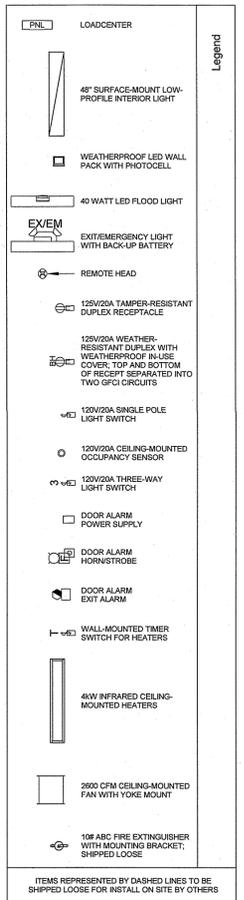
1. ELECTRICAL SERVICE ENTRANCE CONDUCTORS TO BE PROVIDED AND INSTALLED BY CERTIFIED INSTALLER PER CONTRACTUAL AGREEMENT
2. GROUNDING ELECTRODES TO BE PROVIDED AND INSTALLED BY CERTIFIED INSTALLER PER CONTRACTUAL AGREEMENT



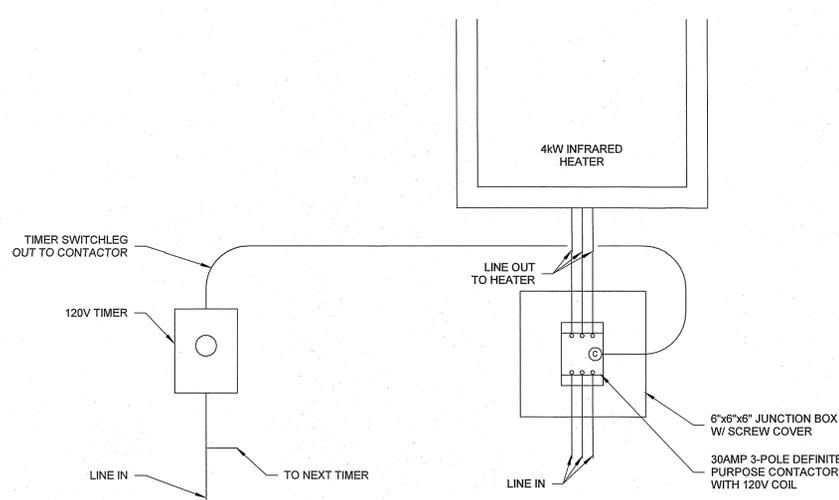
1 Electrical Plan - Module 1  
3/8" = 1'-0"



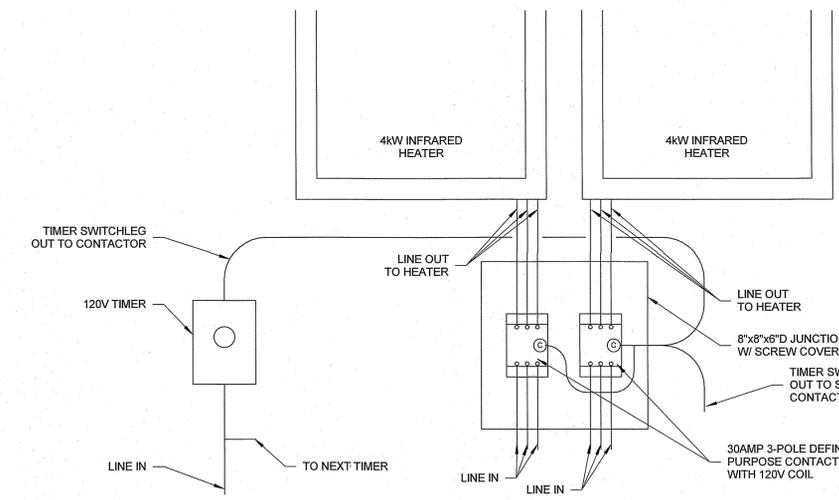
2 Electrical Plan - Module 2  
3/8" = 1'-0"



3 Door Alarm Wiring Schematic  
1" = 1'-0"



4 Heater Contactor Diagram - Single  
3" = 1'-0"



5 Heater Contactor Diagram - Double  
3" = 1'-0"

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1	Customer approval drawings	03.01.2021
2	Customer verification changes	04.05.2021

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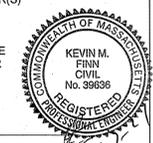


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Drawn By: EP  
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Rev: 2

**ELECTRICAL PLAN**  
**VORTEX ENGINEERING, INC.**  
**FEDEX GROUND PACKAGE FACILITY**  
**(2) 50'-0"x11'-9" MODULES**

Serial No. 2443-44  
Quote No. 47615-99  
Model No. 7721  
Job No. 2021-005-WP  
Date: 5/14/2021 8:52:45 AM  
Scale: As indicated  
Page No. E2.1



5/14/2021 8:52:45 AM

CONDUIT WIRE FILL CHART										PAGE #	1		
SERIAL #:		JOB: FEDEX GROUND PACKAGE FACILITY								JOB #:		2021-005-WP	
MOD. # 7721													
CONDUIT RUN ID. NO./LETTER	CIRC. NUMBER	CONDUIT TYPE/SIZE (1/2" EMT, UN-LESS NOTED)	WIRE SIZE #12, UN-LESS NOTED	WIRE COLORS		L: LINE		N: NEUTRAL		USE			
				B: BLACK BL: BLUE G: GREEN PK: PINK	R: RED BR: BROWN O: ORANGE GR: GRAY P: PURPLE	G: GROUND	SL: SWITCH LEG	CN: COMMON NEUTRAL		T: TRAVELER IG: ISOL. GROUND			
1/a	1-1	1/2" EMT	#12	B	L								
1/b	1-1	1/2" EMT	#12	O	SL-b								
1/c	1-1	1/2" EMT	#12	Y	SL-a								
1/d	1-1	1/2" EMT	#12	P	T-a								
1/e	1-1	1/2" EMT	#12	PK	T-b								
1/f	1-1	1/2" GREENFIELD	#12	Y	SL-a								
1/g	1-1	1/2" EMT	#12	W	N								
1/h	1-1	1/2" EMT	#12	G	G								
1/i	1-2,4,6	1/2" EMT	#12	R	L								
1/j	1-3,5,7	1/2" EMT	#12	W	N								

CONDUIT WIRE FILL CHART										PAGE #	2		
SERIAL #:		JOB: FEDEX GROUND PACKAGE FACILITY								JOB #:		2021-005-WP	
MOD. # 7721													
CONDUIT RUN ID. NO./LETTER	CIRC. NUMBER	CONDUIT TYPE/SIZE (1/2" EMT, UN-LESS NOTED)	WIRE SIZE #12, UN-LESS NOTED	WIRE COLORS		L: LINE		N: NEUTRAL		USE			
				B: BLACK BL: BLUE G: GREEN PK: PINK	R: RED BR: BROWN O: ORANGE GR: GRAY P: PURPLE	G: GROUND	SL: SWITCH LEG	CN: COMMON NEUTRAL		T: TRAVELER IG: ISOL. GROUND			
1/k	1-8,10,12	3/4" EMT	#12	B	L								
1/l	1-14,16,18	3/4" EMT	#12	W	N								
1/m	1-9	1/2" EMT	#12	R	L								
1/n	1-13,15,17	3/4" EMT	#12	B	L								
1/o	1-19,21,23	3/4" EMT	#12	W	N								
1/p	1-20,22,24	3/4" EMT	#12	B	L								
1/q	1-26,28,30	3/4" EMT	#12	W	N								
1/r	1-25,27,29	3/4" EMT	#12	B	L								
1/s	1-31,33,35	3/4" EMT	#12	W	N								
1/t	1-32	1/2" EMT	#12	B	L								
1/u	1-34	1/2" EMT	#12	W	N								

CONDUIT WIRE FILL CHART										PAGE #	3		
SERIAL #:		JOB: FEDEX GROUND PACKAGE FACILITY								JOB #:		2021-005-WP	
MOD. # 7721													
CONDUIT RUN ID. NO./LETTER	CIRC. NUMBER	CONDUIT TYPE/SIZE (1/2" EMT, UN-LESS NOTED)	WIRE SIZE #12, UN-LESS NOTED	WIRE COLORS		L: LINE		N: NEUTRAL		USE			
				B: BLACK BL: BLUE G: GREEN PK: PINK	R: RED BR: BROWN O: ORANGE GR: GRAY P: PURPLE	G: GROUND	SL: SWITCH LEG	CN: COMMON NEUTRAL		T: TRAVELER IG: ISOL. GROUND			
1/v	1-36	1/2" EMT	#12	B	L								
1/w	1-37	1/2" EMT	#12	W	N								
1/x	1-38	1/2" EMT	#12	R	L								
1/y	1-39	1/2" EMT	#12	W	N								
1/z	1-40	1/2" EMT	#12	R	L								
2/a	1-41	1/2" EMT	#12	W	N								
2/b	1-42	1/2" EMT	#12	B	L								
2/c	1-43	1/2" EMT	#12	W	N								
2/d	1-44	1/2" EMT	#12	R	L								
2/e	1-45	1/2" EMT	#12	W	N								
2/f	1-46	1/2" EMT	#12	B	L								
2/g	1-47	1/2" EMT	#12	W	N								
2/h	1-48	1/2" EMT	#12	R	L								
2/i	1-48	1/2" EMT	#12	W	N								

CONDUIT WIRE FILL CHART										PAGE #	4		
SERIAL #:		JOB: FEDEX GROUND PACKAGE FACILITY								JOB #:		2021-005-WP	
MOD. # 7721													
CONDUIT RUN ID. NO./LETTER	CIRC. NUMBER	CONDUIT TYPE/SIZE (1/2" EMT, UN-LESS NOTED)	WIRE SIZE #12, UN-LESS NOTED	WIRE COLORS		L: LINE		N: NEUTRAL		USE			
				B: BLACK BL: BLUE G: GREEN PK: PINK	R: RED BR: BROWN O: ORANGE GR: GRAY P: PURPLE	G: GROUND	SL: SWITCH LEG	CN: COMMON NEUTRAL		T: TRAVELER IG: ISOL. GROUND			
2/a	2-1	1/2" EMT	#12	B	L								
2/b	2-1	1/2" EMT	#12	W	N								
2/c	2-1	1/2" EMT	#12	Y	SL-c								
2/d	2-1	1/2" EMT	#12	O	SL-d								
2/e	2-1	1/2" EMT	#12	P	T-c								
2/f	2-1	1/2" EMT	#12	PK	T-d								
2/g	2-1	1/2" EMT	#12	W	N								
2/h	2-1	1/2" EMT	#12	G	G								
2/i	2-2,4,6	3/4" EMT	#12	B	L								
2/j	2-7,9,11	3/4" EMT	#12	W	N								
2/k	2-3	1/2" EMT	#12	R	L								
2/l	2-5	1/2" EMT	#12	W	N								

CONDUIT WIRE FILL CHART										PAGE #	5		
SERIAL #:		JOB: FEDEX GROUND PACKAGE FACILITY								JOB #:		2021-005-WP	
MOD. # 7721													
CONDUIT RUN ID. NO./LETTER	CIRC. NUMBER	CONDUIT TYPE/SIZE (1/2" EMT, UN-LESS NOTED)	WIRE SIZE #12, UN-LESS NOTED	WIRE COLORS		L: LINE		N: NEUTRAL		USE			
				B: BLACK BL: BLUE G: GREEN PK: PINK	R: RED BR: BROWN O: ORANGE GR: GRAY P: PURPLE	G: GROUND	SL: SWITCH LEG	CN: COMMON NEUTRAL		T: TRAVELER IG: ISOL. GROUND			
2/m	2-8,10,12	3/4" EMT	#12	B	L								
2/n	2-14,16,18	3/4" EMT	#12	W	N								
2/o	2-13,15,17	3/4" EMT	#12	B	L								
2/p	2-19,21,23	3/4" EMT	#12	W	N								
2/q	2-20,22,24	3/4" EMT	#12	B	L								
2/r	2-26,28,30	3/4" EMT	#12	W	N								
2/s	2-25,27,29	3/4" EMT	#12	B	L								
2/t	2-31,33,35	3/4" EMT	#12	W	N								
2/u	2-32	1/2" EMT	#12	B	L								
2/v	2-34	1/2" EMT	#12	W	N								
2/w	2-37	1/2" EMT	#12	B	L								
2/x	2-38	1/2" EMT	#12	W	N								

CONDUIT WIRE FILL CHART										PAGE #	6		
SERIAL #:		JOB: FEDEX GROUND PACKAGE FACILITY								JOB #:		2021-005-WP	
MOD. # 7721													
CONDUIT RUN ID. NO./LETTER	CIRC. NUMBER	CONDUIT TYPE/SIZE (1/2" EMT, UN-LESS NOTED)	WIRE SIZE #12, UN-LESS NOTED	WIRE COLORS		L: LINE		N: NEUTRAL		USE			
				B: BLACK BL: BLUE G: GREEN PK: PINK	R: RED BR: BROWN O: ORANGE GR: GRAY P: PURPLE	G: GROUND	SL: SWITCH LEG	CN: COMMON NEUTRAL		T: TRAVELER IG: ISOL. GROUND			
2/y	2-39	1/2" EMT	#12	R	L								
2/z	2-40	1/2" EMT	#12	W	N								
3/a	2-41	1/2" EMT	#12	B	L								
3/b	2-42	1/2" EMT	#12	W	N								
3/c	2-43	1/2" EMT	#12	B	L								
3/d	2-44	1/2" EMT	#12	W	N								
3/e	2-45	1/2" EMT	#12	R	L								
3/f	2-46	1/2" EMT	#12	W	N								
3/g	2-47	1/2" EMT	#12	B	L								
3/h	2-48	1/2" EMT	#12	W	N								
3/i	2-51	1/2" EMT	#12	R	L								
3/j	2-51	1/2" EMT	#12	W	N								



No.	Revision Description	Date
1	Customer approval drawings	03.01.2021

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Whitley East, LLC  
64 HESS ROAD  
LEOLA, PA 17540  
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www.whitleyman.com

Drawn By: EP  
Checked By: CZ/DL  
Rev: 1

CONDUIT FILL CHART  
VORTEX ENGINEERING, INC.  
FEDEX GROUND PACKAGE FACILITY  
(2) 50'-0"x11'-9" MODULES

Serial No. 2443-44  
Quote No. 47615-99  
Model No. 7721  
Job No. 2021-005-WP  
5/14/2021 Date: 8:52:48 AM  
Scale:  
Page No. E6.1

5/14/2021 8:52:48 AM

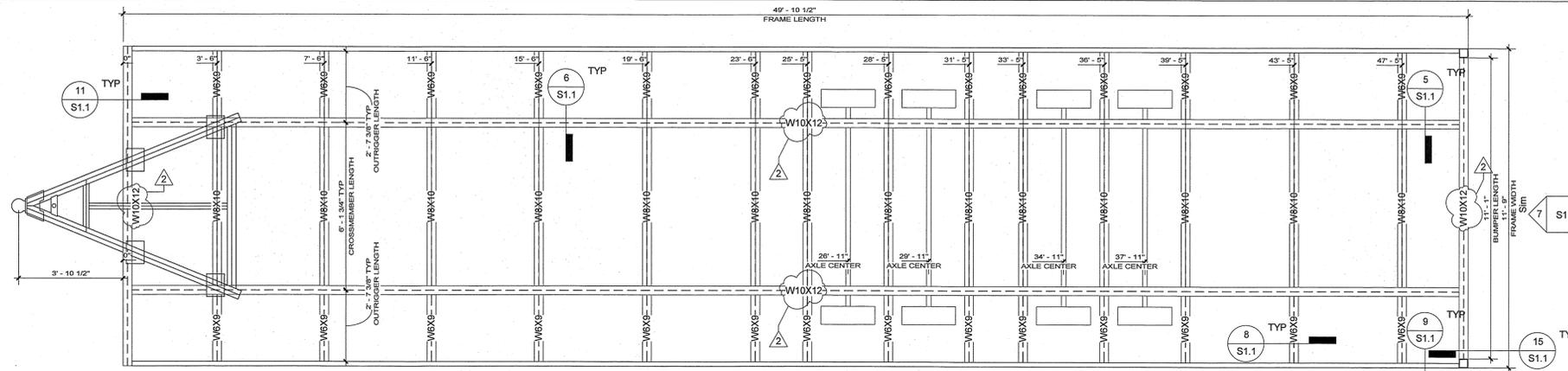
MODEL # 7721  
PANEL # 1  
UNIT WIDTH: 11.75 FT.  
UNIT LENGTH: 50 FT.  
TOTAL SQUARE FOOTAGE: 587.5 SQ. FT.  
TOTAL CALCULATED LIGHTING LOAD: 2056.25 WATTS  
TOTAL CONNECTED LIGHTING LOAD: 1041 WATTS  
TOTAL WATTS (w/ FACTOR) FOR LOADCENTER: 6470.17 WATTS

MODEL # 7721  
PANEL # 2  
UNIT WIDTH: 11.75 FT.  
UNIT LENGTH: 50 FT.  
TOTAL SQUARE FOOTAGE: 587.5 SQ. FT.  
TOTAL CALCULATED LIGHTING LOAD: 2056.25 WATTS  
TOTAL CONNECTED LIGHTING LOAD: 1073 WATTS  
TOTAL WATTS (w/ FACTOR) FOR LOADCENTER: 65130.17 WATTS

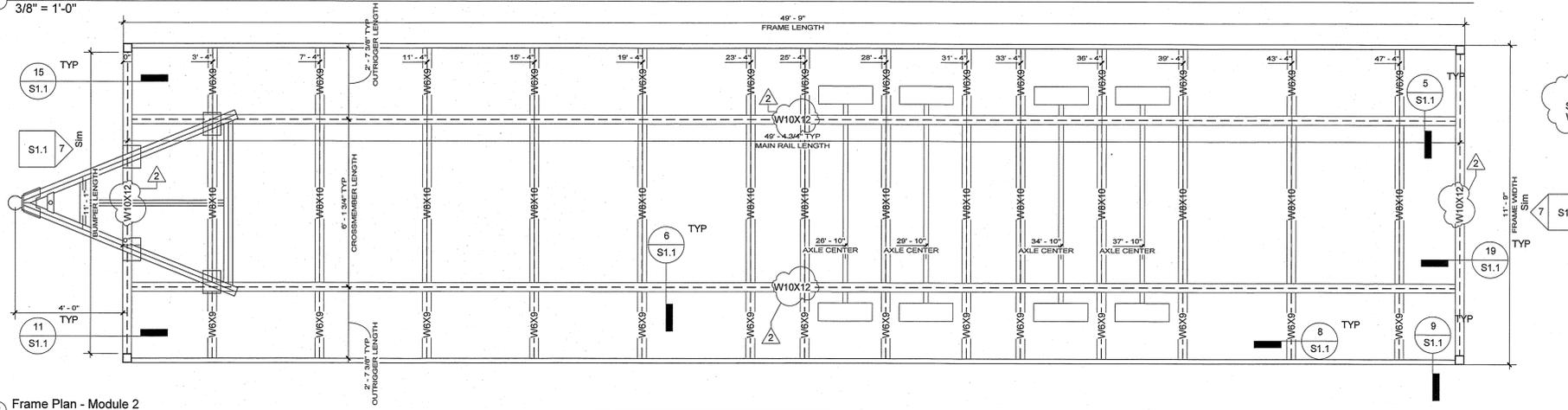
WIRE SIZE	PNL #	CIRC #	BRKR. SIZE	DESCRIPTION	DEVICES QTY	PHASE A	PHASE B	PHASE C	WATTAGE OF DEVICES	TOTAL WATTS	FACTOR NEC 210-22c	TOTAL WATTS w/ FACTOR
#12	1-1	20A1P		EXIT/EMERGENCY LT.	1	3.8		4	1.25	5		14
#12				LED EXT. LT.	1	29.0		29	29	1.25		36
#12				1x4 LED LT.	10	400.0		400	400	1.25		500
#12	1-2	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-3	20A3P		4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-4			4KW INFRARED HEATER	1			1150.5	1150	1.25		1438
#12	1-5			4KW INFRARED HEATER	1			1150.5	1150	1.25		1438
#12	1-6			4KW INFRARED HEATER	1			1150.5	1150	1.25		1438
#12	1-7			4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-8	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-9	20A1P		LED DOCK LT.	10	400.0		400	400	1.25		500
#12	1-10			4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-11	20A1P		RECEPTS	3		540.0	180	540	1.00		540
#12	1-12			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-13	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-14	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-15			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-16			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-17			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-18			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-19	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-20	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-21			4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-22			4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-23			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-24			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-25	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-26	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-27			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-28			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-29			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-30			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-31	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	1-32	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-33			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-34	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-35			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	1-36	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-37	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-38	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-39	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-40	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-41	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-42	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-43	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-44	20A1P		PATTERSON H14a FAN	1	336.0		336	336	1.00		336
#12	1-45	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-46	20A1P		PATTERSON H14a FAN	1	336.0		336	336	1.00		336
#12	1-47	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	1-48	20A1P		HEATER TIMER	3		360.0	120	360	1.00		360
#12	1-49	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	1-50	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	1-51	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	1-52	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	1-53	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	1-54	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0

WIRE SIZE	PNL #	CIRC #	BRKR. SIZE	DESCRIPTION	DEVICES QTY	PHASE A	PHASE B	PHASE C	WATTAGE OF DEVICES	TOTAL WATTS	FACTOR NEC 210-22c	TOTAL WATTS w/ FACTOR
#12	2-1	20A1P		EXIT/EMERGENCY LT.	3	11.4		4	1.25	14		14
#12				LED EXT. LT.	3	87.0		29	87	1.25		109
#12				1x4 LED LT.	10	400.0		400	400	1.25		500
#12	2-2	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-3	20A1P		LED DOCK LT.	9		360.0	40	360	1.25		450
#12	2-4			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-5	20A1P		RECEPTS	6		1150.5	180	1150	1.00		1150
#12	2-6			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-7	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-8	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-9			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-10			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-11			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-12			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-13	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-14	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-15			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-16			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-17			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-18			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-19	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-20	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-21			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-22			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-23			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-24			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-25	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-26	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-27			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-28			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-29			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-30			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-31	20A3P		4KW INFRARED HEATER	1	1150.5		1150	1150	1.25		1438
#12	2-32	20A1P		PATTERSON H14a FAN	1	336.0		336	336	1.00		336
#12	2-33			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-34	20A1P		PATTERSON H14a FAN	1	336.0		336	336	1.00		336
#12	2-35			4KW INFRARED HEATER	1		1150.5	1150	1150	1.25		1438
#12	2-36	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	2-37	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-38	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-39	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-40	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-41	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-42	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-43	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-44	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-45	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-46	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-47	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-48	20A1P GFCI		BLOCK HEATER RECEPT.	1	1500.0		1500	1500	1.00		1500
#12	2-49	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	2-50	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	2-51	20A1P		HEATER TIMER	3		360.0	120	360	1.00		360
#12	2-52	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	2-53	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0
#12	2-54	N/A		UNUSED SPACE	0	0.0		0	0	1.00		0

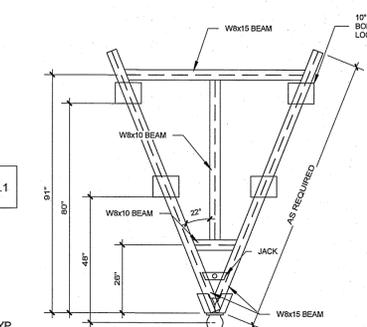
TOTAL WATTAGE, PHASE "A" = 18273.3 WATTS  
TOTAL WATTAGE, PHASE "B" = 18240.5 WATTS  
TOTAL WATTAGE, PHASE "C" = 18404.5 WATTS



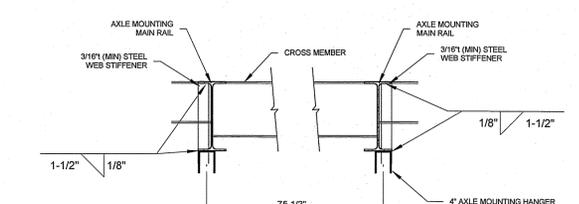
1 Frame Plan - Module 1  
3/8" = 1'-0"



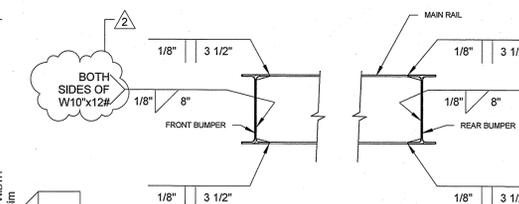
2 Frame Plan - Module 2  
3/8" = 1'-0"



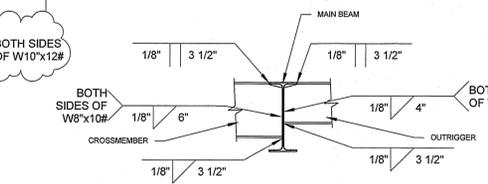
3 Standard Hitch Detail  
3/8" = 1'-0"



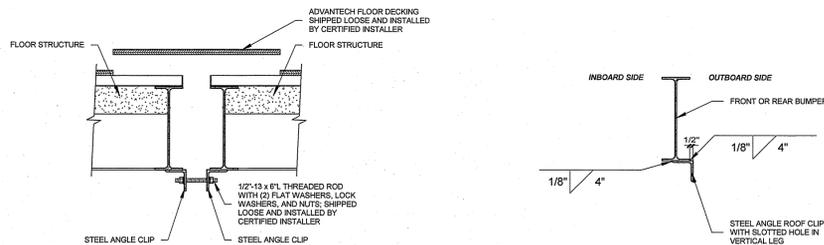
4 Axle Mounting Bracket Reinforcement  
1" = 1'-0"



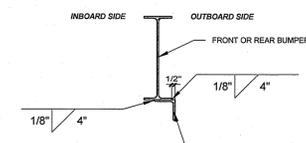
5 Connection Detail - Front/Rear Bumper  
1" = 1'-0"



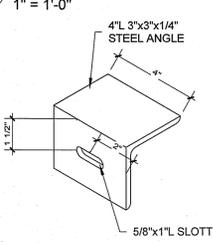
6 Connection Detail - Crossmember  
1" = 1'-0"



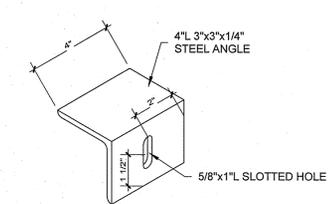
14 Mateline Connection Detail - Floor  
1" = 1'-0"



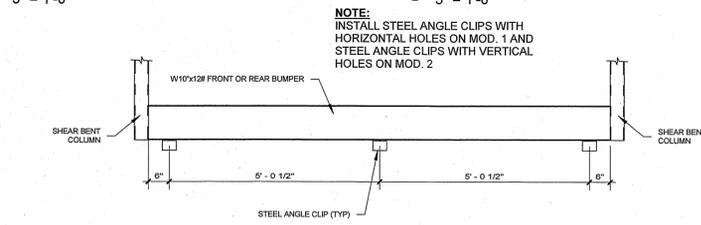
15 Steel Angle Clip Install  
1" = 1'-0"



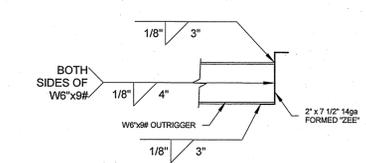
16 Steel Angle Clip with Horizontal Slotted Hole  
3" = 1'-0"



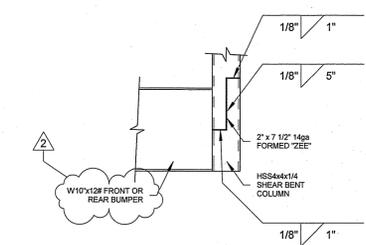
17 Steel Angle Clip w/ Vertical Slotted Hole  
3" = 1'-0"



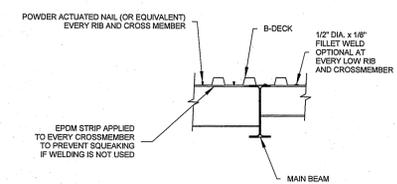
18 Steel Angle Clip Pattern  
1/2" = 1'-0"



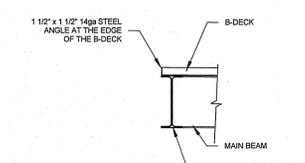
8 Connection Detail - Zee to Outrigger  
1" = 1'-0"



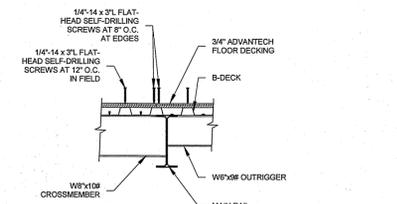
9 Connection Detail - Zee to Shear Bent Column  
1" = 1'-0"



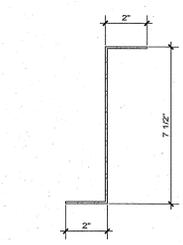
10 Connection Detail - B-Deck to Frame  
3/4" = 1'-0"



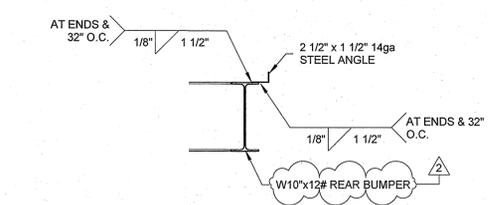
11 Connection Detail - B-Deck Edge Protection  
3/4" = 1'-0"



12 Connection Detail - Plywood to B-Deck  
3/4" = 1'-0"



13 7 1/2" x 2" 14ga Steel Zee  
3" = 1'-0"



19 Connection Detail - Extension Angle  
1" = 1'-0"



7 Connection Detail - Shear Bent Columns  
3/8" = 1'-0"

No.	Revision Description	Date
1	Customer approval drawings	03.01.2021
2	Customer verification changes	04.06.2021

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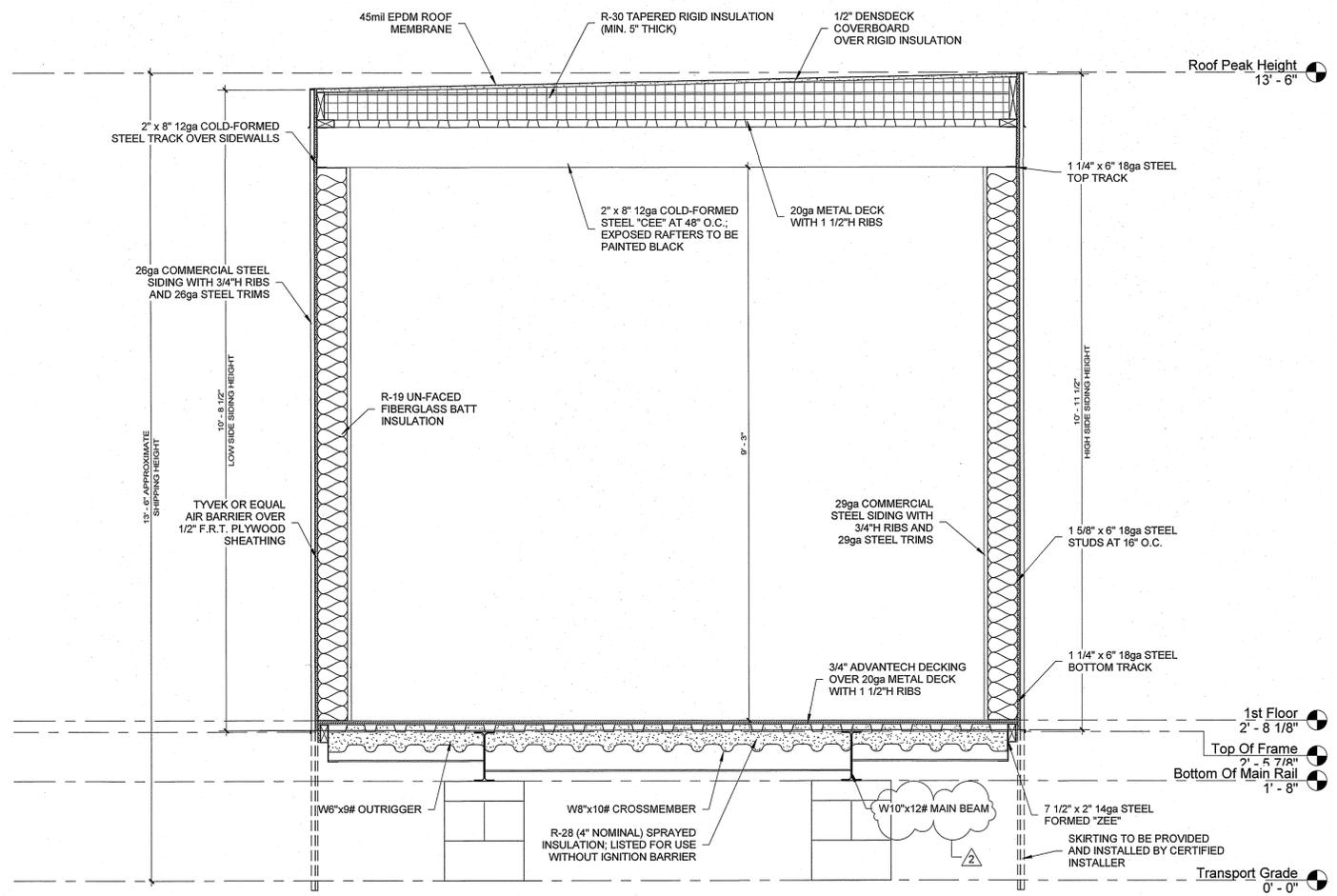


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Drawn By: EP  
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Rev: 2

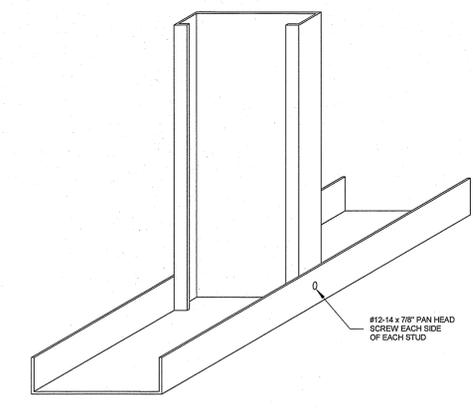
FRAME PLAN  
VORTEX ENGINEERING, INC.  
FEDEX GROUND PACKAGE FACILITY  
(2) 50'-0"x11'-9" MODULES

Serial No. 2443-44  
Quote No. 47615-99  
Model No. 7721  
Job No. 2021-005-WP  
5/14/2021 Date: 8:52:52 AM  
Scale: As indicated  
Page No. S1.1

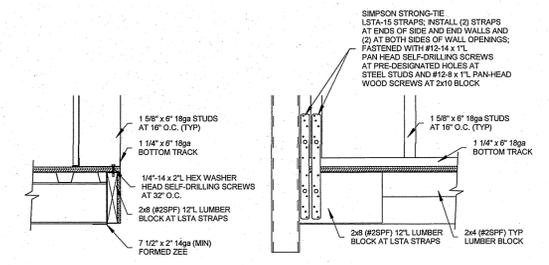


1 Cross Section  
3/4" = 1'-0"

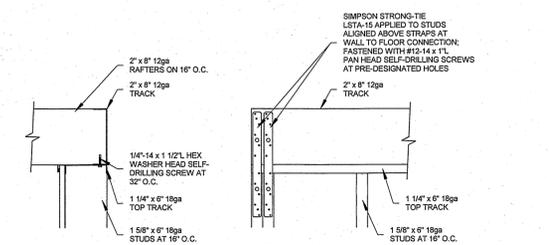
FASTENING SCHEDULE		
ROOF		
MATERIAL	FASTENER	PATTERN
EPDM	MULE-HIDE ACRYLIC WATER-BASED ADHESIVE	FULL COVERAGE
RIGID INSULATION	SCREWS AT CORNERS OF INSULATION BOARDS TO HOLD IN PLACE	
5/8" DENSDECK	SEE DETAIL MHT-FM-728 ON SHEET S4.1	
STEEL DECK	SEE DETAIL #6 ON SHEET S4.1	
RAFTERS TO TRACK	SEE DETAIL #3 ON SHEET S4.1	
RAFTER FRAME TO C10x15.3#	SEE DETAIL #4 ON S2.2	
WALLS		
MATERIAL	FASTENER	PATTERN
STUDS TO TRACK	SEE DETAIL #2 ON S2.1	
INTERIOR SIDING	PER MFRS. INSTALLATION INSTRUCTIONS	
1/2" NON-COMB. PLYWOOD SHEATHING	#10-16 x 1 1/4" FLAT HEAD SELF-TAPPING SCREWS	3" O.C. AT PANEL EDGES AND 12" O.C. IN FIELD
INTERIOR HORIZONTAL FLAT STRAPPING	#6-18 x 1" PAN HEAD SELF-TAPPING SCREWS	(2) AT EACH STUD
SIDING	SEE MFRS. INSTALLATION INSTRUCTIONS FOR HIGH WIND	
FLOOR		
MATERIAL	FASTENER	PATTERN
PLYWOOD TO B-DECK	SEE DETAIL #12 ON S1.1	
B-DECK TO FRAME	SEE DETAIL #10 ON S1.1	
FRONT/REAR BUMPER TO MAIN BEAM	SEE DETAIL #5 ON S1.1	
OUTRIGGER TO MAIN BEAM	SEE DETAIL #6 ON S1.1	
CROSSMEMBER TO MAIN BEAM	SEE DETAIL #6 ON S1.1	
ALL FASTENERS LISTED ABOVE MAY BE SUBSTITUTED WITH FASTENERS OR FASTENING METHODS OF EQUAL OR GREATER STRENGTH		



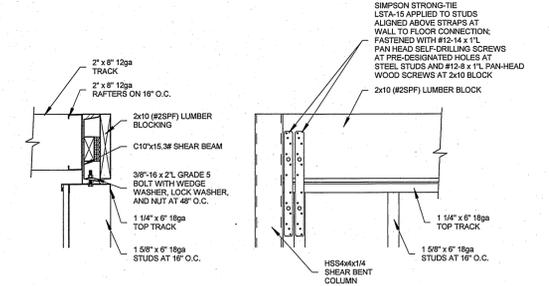
2 Steel Stud to Track  
3" = 1'-0"



3 Connection Detail - Ext. Walls to Floor  
(Typical)  
1" = 1'-0"



4 Connection Detail - Ext. Walls to Roof  
(Typical)  
1" = 1'-0"



5 Connection Detail - Ext. Walls to Roof (At Shear Bent End)  
1" = 1'-0"



No.	Revision Description	Date
1	Customer approval drawings	03.01.2021
2	Customer verification changes	04.06.2021

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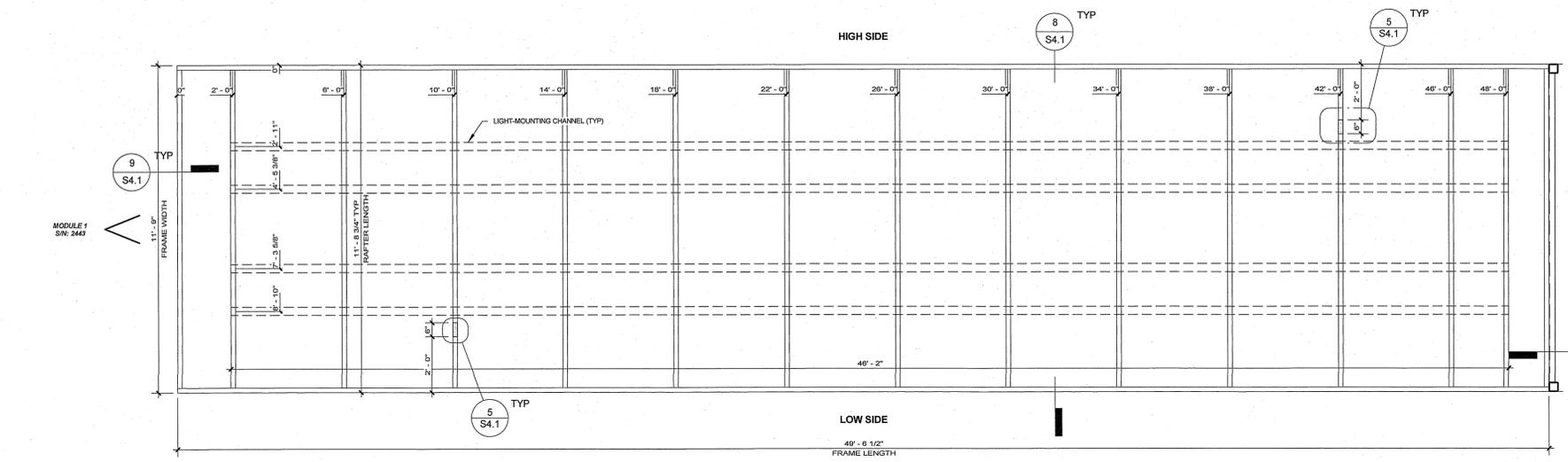


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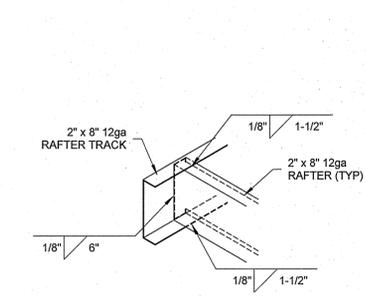
Drawn By:	EP
Checked By:	CZ/DL
Rev:	2

BUILDING SECTIONS  
VORTEX ENGINEERING, INC.  
FEDEX GROUND PACKAGE FACILITY  
(2) 50'-0"x11'-9" MODULES

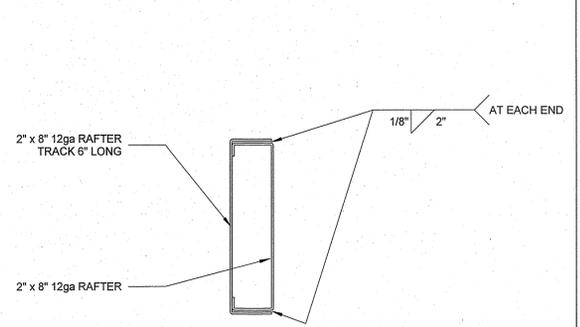
Serial No.	2443-44	Date:	5/14/2021
Quote No.	47615-99	Scale:	As indicated
Model No.	7721	Page No.	S2.1
Job No.	2021-005-WP		



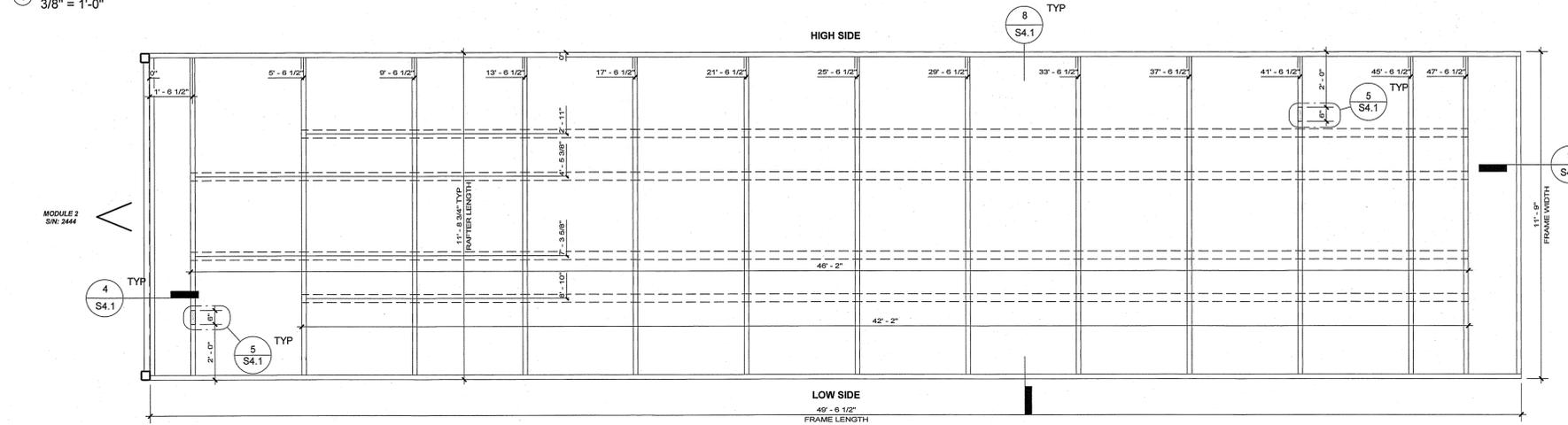
1 Roof Framing Plan - Module 1  
3/8" = 1'-0"



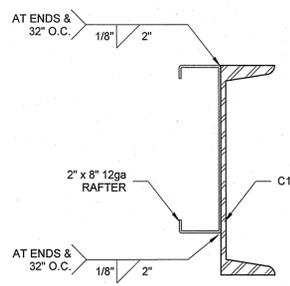
3 Connection Detail - Rafter to Track  
1" = 1'-0"



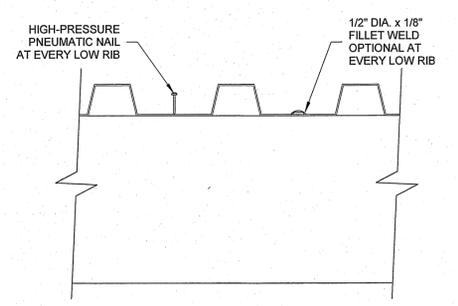
5 Fan Mounting Reinforcement Detail  
3" = 1'-0"



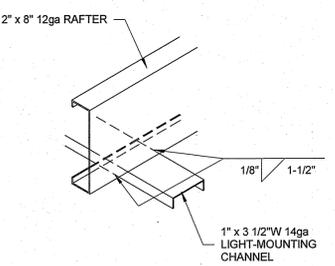
2 Roof Framing Plan - Module 2  
3/8" = 1'-0"



4 Connection Detail - Roof Frame to C10\"/>



6 Connection Detail - Deck to Rafter  
3" = 1'-0"



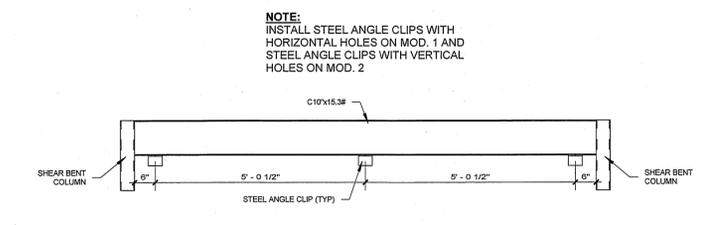
7 Light-Mount Channel to Rafter  
1 1/2" = 1'-0"

**NOTES:**

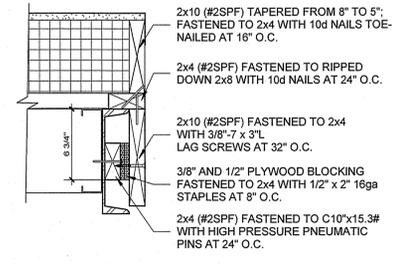
- THESE FASTENING PATTERNS ARE TO BE USED WHEN THE PROJECT REQUIRES A FACTORY MUTUAL RATED SYSTEM. CONTACT MULE-HIDE TECHNICAL DEPARTMENT FOR APPROPRIATE USE OF THESE PATTERNS.
- MULE-HIDE INSULATION FASTENERS AND 3" DIAMETER PLATES MUST BE USED FOR INSULATION ATTACHMENT.
- REFER TO MULE-HIDE WIND UPLIFT RATINGS FOR APPROPRIATE FASTENER DENSITY REQUIRED.
- FASTENER DENSITY INCREASES BASED ON THE FOLLOWING:
  - 50% FOR PERIMETERS WITH A MINIMUM OF 1 FASTENER EVERY 2 SQUARE FEET NOT TO EXCEED 1 FASTENER EVERY 1 SQUARE FEET
  - CONSTANT DENSITY OF 1 FASTENER EVERY 1 SQUARE FEET FOR CORNERS.

FIELD (16) 1 FASTENER PER EVERY 2 SQ. FT.  
PERIMETER (24) 1 FASTENER PER EVERY 1.33 SQ. FT.  
CORNERS (32) 1 FASTENER PER EVERY 1 SQ. FT.

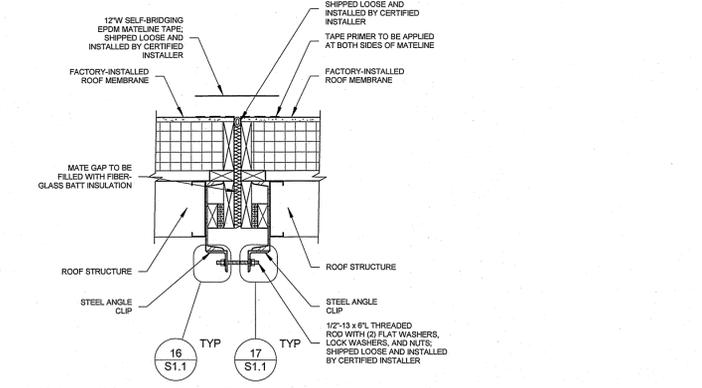
**MULE-HIDE PRODUCTS CO., INC.**  
FM - 16 FIELD FASTENERS PER 4' X 8' BOARD PATTERN LAYOUT SYSTEMS: FULLY ADHERED  
DETAIL NO.: MHT-FM-726  
REVISION DATE: 10/2013



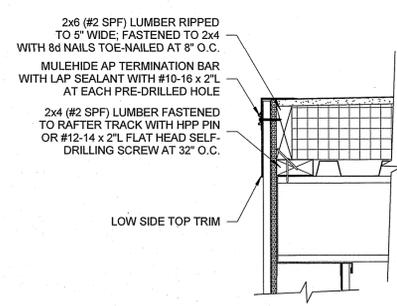
11 Steel Angle Clip at Roof Pattern  
1/2" = 1'-0"



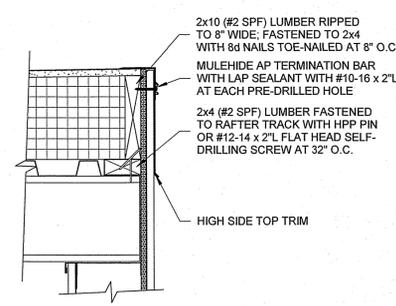
12 Roof Edge Detail - Mateline Endwall  
1 1/2" = 1'-0"



10 Mateline Connection Detail - Roof  
1" = 1'-0"



8 Roof Edge Detail - Sidewalls  
1 1/2" = 1'-0"



9 Roof Edge Detail - Endwall  
1 1/2" = 1'-0"

No.	Revision Description	Date
1	Customer approval drawings	03.01.2021

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Drawn By: EP  
Checked By: CZ/DL  
Rev: 1

**ROOF FRAMING PLAN**  
VORTEX ENGINEERING, INC.  
FEDEX GROUND PACKAGE FACILITY  
(2) 50'-0"x11'-9" MODULES

Serial No: 2443-44  
Quote No: 47615-99  
Model No: 7721  
Job No: 2021-005-WP  
5/14/2021 8:52:56 AM  
Date: 5/14/2021  
Scale: As indicated  
Page No: S4.1



**EXHIBIT 'C'**  
**MODULAR DOCK CALCULATIONS**

WHITLEY EAST  
TRIUMPH

Subj: Seismic Vs. Wind

Engr: Kevin M. Finn, P.E., Inc.  
815 Waterbury Park Drive  
Elkhart, IN 46517  
MA P.E. Lic. No. 39636

LOCATION - LIMITED TO SEISMIC SPECIFICATIONS - MA

2015 INTERNATIONAL BUILDING CODE  
2017 MA 9TH EDITION BUILDING CODE

MODEL - 7721 / SN 2443-44  
FEDEX - GROUND

35 psf GROUND SNOW LOAD - 35 PSF FLAT LIVE LOAD

$$TW (wt) = l \times w \times [(15 \text{ psf}) + (35 \text{ psf} - 30) \times .25]$$
$$= 19093.75 \text{ LBS}$$

Cs IS THE MINIMUM Cs VALUE CALCULATED TO  
THE LEFT

Sds = 0.145 Cd = 2  
S = 1.30  
Sd1 = 0.08 IE = 1  
R = 2

$$Vr = CsW = 1384.3 \text{ LBS}$$

$$Cs = Sds / (R/IE) = 0.0725$$

$$Cs = SD1 / ((R/IE)T) = 0.41 \leftarrow \text{need not exceed}$$
$$Cs = 0.044SdsIE = 0.00638 \text{ (abs. Min)}$$

SITE CLASS - D SEISMIC DESIGN CATEGORY - B

$$V = 1384.30 \text{ lbs} \quad T = 0.1N = 0.1000$$

WALL HEIGHT = 12.25 FT  
WALL LENGTH = 100 FT

Fa = 1.6  
Fv = 2.4

SEISMIC VS. WIND

WIND BASED ON WIND - WALL LOAD CALC - 140 MPH, EXP. B

$$q = 12.894 \quad B \text{ to } B = 1 \text{ (15' HT)} \quad W = q(GCp) = 12.89 \text{ PSF}$$
$$\text{TOTAL WIND FORCE ON LONGITUDINAL WALL} = 15794.9 \text{ LBS}$$

(WIND CONTROLS)

$$\text{TOTAL FORCE ON END WALL} = 1855.90 \text{ LBS (WIND CONTROLS)}$$
$$\text{VS. SEISMIC} = 1384.30 \text{ LBS - OK FOR ENDWALLS}$$

$$\text{TOTAL BASE SHEAR} = 4300.00 \text{ LBS (CONSERVATIVE)}$$

SEISMIC USE GROUP - I

$$Sd1 = 0.082$$

$$Sds = 0.145$$

SEISMIC DESIGN CATEGORY - B

BASIC SEISMIC FORCE RESISTING SYSTEM  
- BEARING WALL - B-2

ANALYSIS PROCEDURE  
- EQUIVALENT LATERAL FORCE PROCEDURE



THIS CALCULATION CONSIDERS THE COLUMN SUPPORTING THE HORIZONTAL DIAPHRAGM FOR WIND RESISTANCE.

WIND SPEED - 140 MPH, EXP. B  
ENCLOSED BUILDING FACTOR =

BUILDING CODE REFERENCE: 2020 FL BC (2018 IBC)  
IMPORTANCE FACTOR = 1

qs = 13.19 PSF - INTERIOR ZONE  
VS END ZONES - USE WORST CASE USED

TOTAL WIND LOAD USED FOR LATERAL RESISTANCE DESIGN = 13.19 PSF

TOTAL HORIZONTAL FORCE APPLIED AT TOP OF ROOF TO TOP PLATE CONNECTION -

ROOF PROJECTION = 0.1 FT  
WALL / ROOF PROJECTION = 10.25 FT

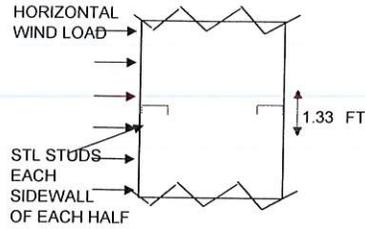
FORCE (PLF) AT AT WALL COL = 17.54 PLF

APPLIED HORIZ. FORCE AT POST OR COLUMN LINE (STD STUD TRIB WIDTH) = W = 1.8 PLF

EFFECT OF LEEWARD FRAMING NOT INCLUDED BELOW  
VERY CONSERVATIVE

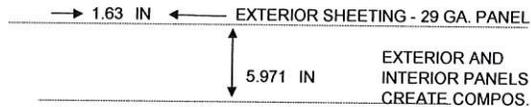
USE END FRAME AS CANTILEVERED BEAM IN PLACE OF THE END SHEARWALL

APPLIED BENDING MOMENT TO EACH END FRAME  $W \times L^2 / 2$  (EACH STUD) = 921.6 FT-LBS



WALL STUD EQUIVALENT = USE 1-5/8" x 6" x 18GA STEEL STUD

lo = 2.316 in t = 0.0451 IN  
Sx = 0.772 in d = 5.971 IN  
A = 0.447 in width = 1.63 IN  
Fy = 33 ksi LDF = 1.3  
r = 1.1



RESULTANT BENDING STRESS = fb = M/Sx = 14325 psi  
NOTE - EFFECTIVELY LEEWARD AND WINDARD ARE IN EFFECT.  
LEEWARD IS NOT USED IN THIS CASE.

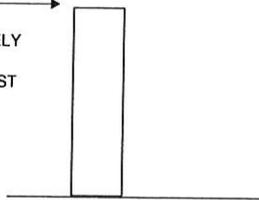
ALLOWABLE Fb = 25740 psi

REACTION SCREW CONNECTION STUD TO TRACK = 1852.1 LBS  
#12 SCREW - 662 LBS - EACH STUD  
#10 SCREW - 475 - 3" O.C. (5 USED)  
TWO NO. 10 / 1 NO. 12 = 1612.0 LBS x 1.3  
35.25 LBS LBS - EACH STUD

DEAD LOAD OVERTURNING =

DEFLECTION =  $PL^3/3EI$  = 0.494 IN VS. ALLOWABLE DEFLECTION =  $2L/180$  = 1.367 IN - ok STEEL FINISH

1.75 lbs TO EACH POST CONSERVATIVELY APPLIED TO WINDWARD POST



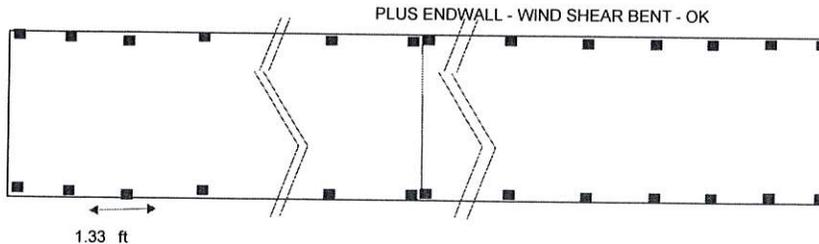
Cc = 127  
I = 123 IN  
K = 1 IN  
Kl/r = 111.82  
Kl/r / Cc = 0.8805  
Fa = 3.87402



DEAD LOAD - Pa = 154.6875 LBS fa = 346.057 PSI fa / Fa < 15%

COMBINED - fa / Fa + fb / Fb = 0.64584 < 1.0 - ok

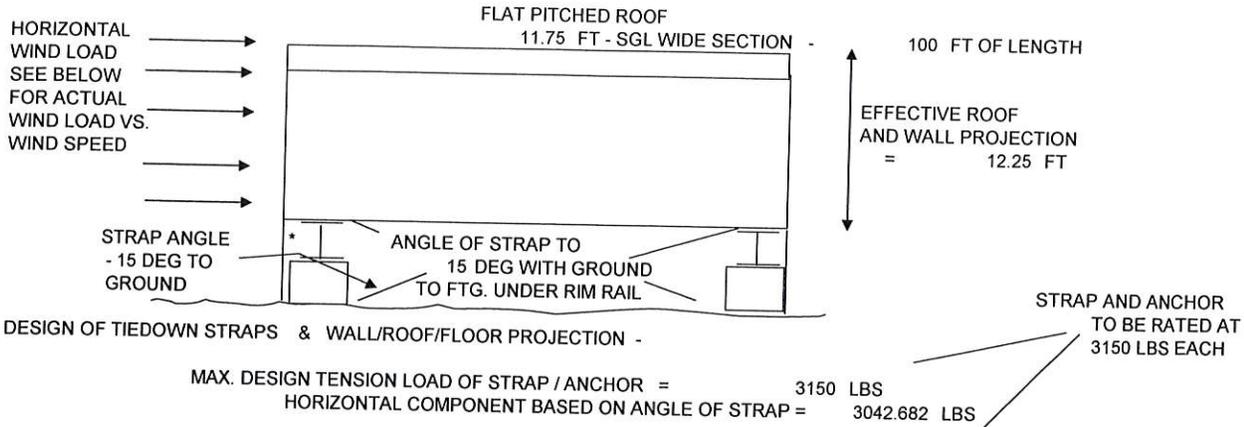
SHEAR - fv = 3.9 PSI



THE LOAD CONDITIONS FOR THE TIEDOWN SYSTEM ARE BASED ON THE INDICATED WIND SPEED  
 THE BUILDING CODE REFERENCE IS 9TH ED MA BC 2015 INTERNATIONAL BUILDING CODE

THIS CALCULATION IS FOR DEVELOPMENT OF THE GROUND ANCHORING TIE DOWN  
 SYSTEM FOR A MANUFACTURED MODULAR STRUCTURE.

WIND LOAD IS BASED ON THE CONDITION OF A MAX.  
 15' BUILDING HT. OFF THE GROUND



**MAXIMUM SPACING OF STRAP TIEDOWN -**

WIND SPEED	HORIZONTAL WIND LOAD	LATERAL LOAD APPLIED TO FLOOR RIM	FRICTIONAL RESISTANCE	SPACING OF GROUND ANCHORS
140 MPH, EXP. B	12.89376 PSF	157.95 PLF	12.24	20.88 FT O.C.

STRAP - ANCHOR SPECIFICATIONS - RATED AT MIN. 3150 LBS

ANCHOR - ANCHOR-SUR DIVISION MODEL 48SH OR MINUTE MAN ANCHORS MODEL 650-DH  
 STRAP - FEDERAL SPECIFICATION QQ-S-781H, TYPE 1, CLASS B, GRADE 1 - 1-1/4" x 0.035"



VERTICAL TIEDOWN -

WIND UPLIFT = 11.5 PSF

VERTICAL UPLIFT COMP.

= 815.2213 LBS  
 810.75 LBS - APPLIED WIND UPLIFT LOAD

MIN. ACTUAL DEAD LOAD = 30 PSF - 100% X 60% APPLIED FOR FRICTIONAL DEAD LOAD RESISTANCE - SEE BELOW

OVERTURNING -

REACTION AT SIDEWALL = (WIND PRESS. x WALL HT.^2 / 2 - 60% (DEAD LOAD) x UNIT WIDTH^2 / 2) / UNIT WIDTH  
 = -23.42 LBS PER LINEAL FT. OF LENGTH OF BUILDING  
 THEREFORE, SINCE NEGATIVE NO VERTICAL TIEDOWN REQUIRED

WHITLEY MANUFACTURING CO., INC.  
CALCULATION INDEX

<b>MODEL #:</b>		<b>7721</b>
<b>SHEET</b>	<b>CALCULATION</b>	
<b>NO.</b>	<b>DESCRIPTION</b>	
1	COVER SHEET	
2	OUTRIGGER MAIN BEAM CALCULATION	
3	SHEAR BENT TUBE COLUMN CALCULATION	
4	ROOF FRAMING CALCULATION	
5 - 9	COMcheck	
10	STEEL DECK SPAN CHART	
10	<b>SHEETS TOTAL</b>	

WHITLEY MANUFACTURING CO., INC.

DATE: 05/05/21

MODEL # 7721

OUTRIGGER FRAME, MAIN RAIL STRUCTURAL CALCULATION

=====

DESIGN SPECIFICATIONS

-----

YIELD OF STEEL =	36 ksi	E OF STEEL =	29000 ksi
ROOF DEAD LOAD =	10 psf	FLOOR DEAD LOAD =	18 psf
ROOF LIVE LOAD =	40 psf	FLOOR LIVE LOAD =	125 psf
WALL DEAD LOAD =	54 plf	CONC LIVE LOAD =	2000 lbs
ESTIMATED TOTAL WEIGHT OF UNIT IS	=		23178 lbs

FRAMING CONFIGURATION

-----

WIDTH OF UNIT =	11.8 ft	XMEMB SPACING =	48 ins
LENGTH OF UNIT =	50.0 ft	XMEMB LENGTH =	138 ins
PIER SPACING =	12.7 ft	UNBRACED LENGTH =	12 ins

MAIN FRAME STRINGER

SECTION: W10X12

ALLOWABLE BENDING STRESS $F_b$ =	21.01 ksi
ACTUAL BENDING STRESS $f_b$ =	20.99 ksi SECTION OK
ALLOWABLE SHEAR STRESS $F_v$ =	14.40 ksi
ACTUAL SHEAR STRESS $f_v$ =	4.01 ksi SECTION OK
ALLOWABLE DEFL = SPAN/ 360 =	0.42 ins
ACTUAL MAXIMUM DEFL. =	0.23 DEFLECTION OK



WHITLEY MANUFACTURING CO., INC

DATE: 05/05/21

MODEL # 7721

**STEEL TUBE SHEAR BENT COLUMN CALCULATION**

DESIGN SPECIFICATIONS

YIELD OF STEEL = 46 ksi      E OF STEEL = 29000 ksi

HEIGHT @ HIGH SIDE OF ROOF 10.39 FT.    RIBUTARY LENGTH 30.00 FT.  
 LATERAL PRESSURE: 14.800 PSF      TOTAL LATERAL FORCE: 4611.50 LB's

FRAMING CONFIGURATION: VERTICAL TUBE, WELDED TO TRANSVERSE W12"x14 # @ BOTTOM AND TC  
 C10"x 15.3 @ TOP. SEE DWG. S1.1 FOR DETAIL

TUBE COLUMN HEIGHT = 10.927 ft      COLUMN / STUD SPACING = 360 ins MAX.  
 EFFECTIVE LENGTH 9.095 Ft TO BRACED CONNECTION\*\*

STEEL TUBE COLUMN

SECTION: 4x4x1/4 TUBE

ALLOWABLE BENDING STRESS  $F_b =$  31.61 ksi  
 ACTUAL BENDING STRESS  $f_b =$  14.12 ksi SECTION OK

ALLOWABLE SHEAR STRESS  $F_v =$  18.40 ksi  
 MAXIMUM SHEAR FORCE  $V =$  2.02 kips  
 ACTUAL SHEAR STRESS  $f_v =$  1.01 ksi SECTION OK

LENGTH OF 0.188 WELD REQD = 5.04 ins EACH END

ALLOWABLE DEFL = SPAN/ 360 = 0.35 ins  
 ACTUAL MAXIMUM DEFL. = 0.29 DEFLECTION OK

**CHECK WELDING OF COLUMNS TO BASE W10"x12 LB/FT & TOP C10"x15.3 LB/FT**

Column size/type: 4"x 4"x 1/4" HSS ASTM A500, GRADE B, 46KSI  
 Max. column span: 30.00 Ft.      Max. Horiz. Pressure on column: 4611.5 lb's  
 Welding Electrode: E70XX      Max. Uplift resisted by column: -3341.7 lb's  
 Bead length, per weld: 3.00 In. MIN.      Total force applied to column: 7953.2 lb's  
 No. of welds @ ea. End of col: ( 2 )      Total shear resistance, per connection: 8352.7 lb's  
 Bead size: 3/16 In      Base shear, per weld: 1.392 Kip/In.\*

\* Note: Total shear includes addn'l reduction (safety) factor of 2:1

**OK, WELD STRENGTH EXCEEDS FORCE APPLIED TO COLUMN**

**NOTE: SAME WELDING REQUIREMENTS FOR BOTH COLUMN BASE AND COLUMN TOP.**



WHITLEY MANUFACTURING CO., INC.

DATE: 05/05/21

MODEL #

7721

**ROOF BEAM CALCULATIONS**

DESIGN SPECIFICATIONS

YIELD OF STEEL =	36 ksi	E OF STEEL =	29000 ksi
ROOF DEAD LOAD =	10 psf		
ROOF LIVE LOAD =	40 psf		

FRAMING CONFIGURATION

WIDTH OF UNIT =	11.8 ft	RAFTR SPACING =	48 ins
LENGTH OF UNIT =	60 ft	RAFTR LENGTH =	138 ins
FRAMING SPACING =	1.3 ft	UNBRACED LENGTH =	141 ins
SPAN CONDITION:	SINGLI-SPAN	SPECIFY LAG BOLT INSTRUCTION	
		AT EVERY OTHER FLOOR JOIST	

ROOF SPAN BEAM

SECTION: CD 800T200-12ga

ALLOWABLE BENDING STRESS $F_b =$	21.60 ksi
ACTUAL BENDING STRESS $f_b =$	0.14 ksi SECTION OK
ALLOWABLE SHEAR STRESS $F_v =$	14.40 ksi
ACTUAL SHEAR STRESS $f_v =$	0.25 ksi SECTION OK
ALLOWABLE DEFL = SPAN/ 240 =	0.07 ins
ACTUAL MAXIMUM DEFL. =	0.00 DEFLECTION OK



STEEL RAFTER TYPE

SECTION: CD 800S200-12ga

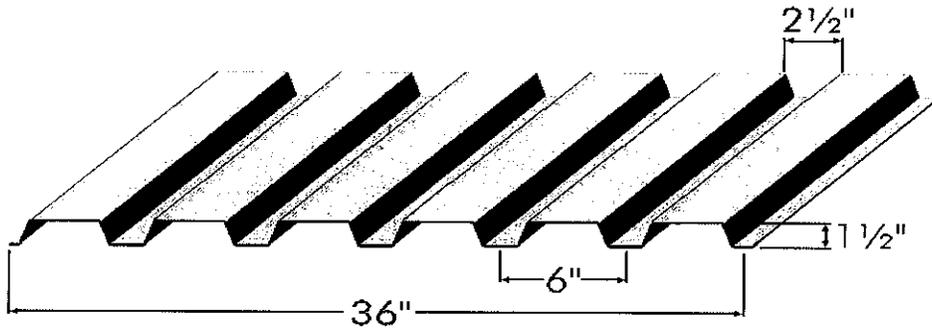
ALLOWABLE BENDING STRESS $F_b =$	21.60 ksi
ACTUAL BENDING STRESS $f_b =$	14.16 ksi SECTION OK
ALLOWABLE SHEAR STRESS $F_v =$	14.40 ksi
MAXIMUM SHEAR FORCE $V =$	1.18 kips
ACTUAL SHEAR STRESS $f_v =$	1.52 ksi SECTION OK
LENGTH OF 0.125 WELD REQD =	2.00 ins EACH END
ALLOWABLE DEFL = SPAN/ 240 =	0.58 ins
ACTUAL MAXIMUM DEFL. =	0.23 DEFLECTION OK

TOES ON FORMED CHANNELS MUST BE TWO INCHES LONG

**SECTION PROPERTIES**

$f_y = 33 \text{ ksi}$

GAGE	t (in)	Wd (psf)	I <sub>p</sub> (in <sup>4</sup> )	I <sub>n</sub> (in <sup>4</sup> )	S <sub>p</sub> (in <sup>3</sup> )	S <sub>n</sub> (in <sup>3</sup> )	R <sub>be</sub> (lb/ft)		R <sub>bi</sub> (lb/ft)		V <sub>a</sub> (lb/ft)	
							LRFD	ASD	LRFD	ASD	LRFD	ASD
22	0.0295	1.7	0.162	0.187	0.194	0.202	597	430	1404	1013	2587	1794
20	0.0358	2.0	0.209	0.227	0.240	0.250	828	597	2167	1563	3140	2177
18	0.0474	2.7	0.299	0.304	0.327	0.335	1344	969	3815	2751	4157	2882
16	0.0598	3.3	0.383	0.383	0.420	0.422	2028	1462	5919	4269	5245	3636



**MAXIMUM ALLOWABLE UNIFORM TOTAL LOADS, (psf) \*\***

GAGE	SINGLE SPAN								DOUBLE SPAN								TRIPLE SPAN							
	22		20		18		16		22		20		18		16		22		20		18		16	
span	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD	LRFD	ASD
3'-0"	398	284	400	352	400	400	400	400	374	270	400	349	400	400	400	400	400	307	400	400	400	400	400	400
3'-6"	257	209	330	259	400	352	400	400	321	211	400	260	400	348	400	400	365	259	400	319	400	400	400	400
4'-0"	176	160	224	198	317	270	400	347	256	162	315	200	400	269	400	339	315	200	388	247	400	331	400	400
4'-6"	126	126	161	157	226	213	286	274	204	129	251	159	337	213	400	269	229	160	294	197	400	264	400	333
5'-0"	95	95	120	120	167	167	211	211	166	105	204	129	274	174	346	219	170	130	217	160	306	215	389	271
5'-6"	74	74	92	92	128	128	161	161	137	87	169	107	227	144	287	182	130	108	165	133	232	179	295	225
6'-0"	59	59	74	74	101	101	126	126	116	73	143	90	191	121	242	153	103	91	130	112	181	151	229	190
6'-6"			60	60	82	82	102	102	99	63	122	77	164	103	206	131	83	78	104	96	145	129	182	162
7'-0"			50	50	67	67	83	83	84	54	105	67	141	89	178	113	68	67	85	83	118	111	148	140
7'-6"					57	57	70	70			88	58	122	78	153	98			71	71	98	97	122	122
8'-0"					48	48	59	59			75	51	102	69	128	87			60	60	82	82	103	103
8'-6"							51	51					87	61	109	77					70	70	87	87
9'-0"							44	44					75	54	93	68					61	61	75	75
9'-6"													65	49	81	61					53	53	65	65
10'-0"															71	56							57	57
10'-6"															62	50							51	51
11'-0"																								

**MAXIMUM CONSTRUCTION SPANS**

span	5'-9"	6'-6"	7'-9"	8'-10"	6'-9"	7'-8"	9'-2"	10'-5"	6'-9"	7'-8"	9'-2"	10'-5"
cantilever	2'-0"	2'-4"	2'-8"	3'-0"	2'-0"	2'-4"	2'-8"	3'-0"	2'-0"	2'-4"	2'-8"	3'-0"
FM	6'-0"	6'-6"	7'-5"	-	6'-0"	6'-6"	7'-5"	-	6'-0"	6'-6"	7'-5"	-

LRFD ASD ← design method

3'-0"	398	284
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← maximum allowable uniform total (dead+live) load \*\*  
↑ span (center-to-center of supports)

- t Design thickness of deck
- Wd Weight of deck (uncoated)
- As Average area of steel of deck per foot width
- I<sub>p</sub> Moment of inertia of deck for positive bending
- I<sub>n</sub> Moment of inertia of deck for negative bending
- S<sub>p</sub> Section modulus of deck for positive bending
- S<sub>n</sub> Section modulus of deck for negative bending
- R<sub>be</sub> Allowable exterior web crippling value per foot of deck (based on 2" of end bearing)
- R<sub>bi</sub> Allowable interior web crippling value per foot of deck (based on 4" of interior bearing)
- V<sub>a</sub> Allowable shear value per foot of deck
- span Maximum single or multiple span during construction
- cantilever Maximum cantilever during construction
- FM Maximum allowable span per Factory Mutual
- f<sub>y</sub> 33 ksi (for determining maximum loads)
- f span 26 ksi (for determining maximum spans)
- \*\* An assumed 10 psf dead load is added to deflection