Addendum #1

Fire Station No 4 Renovation and Addition

Date: February 18, 2021

To: All Bidders

From: City of Waukesha Engineering Department
201 Delafield St.
Waukesha, WI 53188

Bids Due: Friday March 12, 2021 at 11:00 a.m.
(The Bid Date Has Changed)

This addendum is issued to modify the bid date for this project and to clarify Specifications and Plan Sheets for this project and is hereby made a part of the Contract Documents. It is incorporated therein and made a part of those Contract Documents by this Reference. If receipt of the Addendum is not acknowledged by reference to it in Item #3. A. of the Bid Proposal Form, the Bid will be rejected.

PLEASE INCLUDE THIS ADDENDUM IN THE CONTRACT DOCUMENTS.

Bid Date Change:

The Bid Date has changed from Friday, February 26, 2021 to Friday, March 12, 2021. Bids will be received by 11:00 a.m. on Friday, March 12, 2021, at the Engineering Office on the 2nd Floor. Bids will then be opened in a socially distant manner on the first floor in Room 162.

Clarifications to Plans and Specifications:

1. The prebid meeting was not mandatory. Below is a list of contracts that attended the meeting.
    a. Level Up Construction – Tim Scheckel – tscheckel@levelupci.com
    b. DBFP – Aaron Friske – aaronf@DBFP.net
    c. Automatic Fire – Cole Kone- cole@automaticfiresystems.com
    d. Sackerson Construction – John Sackerson – John@sackersoncc.com
    e. Roblee Electric – Steve Roblee- steve@RobleeElectricLLC.com
    f. Ford Construction – Bob Ford – bob@fordconstructioninc.com
    g. D&L Grading – Nate Ihlefeld – nate@dandlgrading.com
    h. Absolute Construction – Jake Stacy – Jakes@absoluteconstruct.com
    i. J.H.Hassinger – John Kamuchey – John.Kamuchey@jhhassinger.com
    j. Ray Stadler Construction – John Stadler – John@Raystadler.com

There will be 30 pages, including this cover sheet. If you have any questions, please call:

Name: Katie Jelacic, P.E.
Phone: 262-524-3587

THRIVE ARCHITECTS

ADDENDUM A

02-18-2021
Waukesha Fire Station #4 Storage Addition #20018

Addendum #A - Sheet Revisions:

Architectural

Revised rafter to framing to coordinate with Structural.
Revised top of masonry as required to framing.
Indicated blown attic insulation at Gear Storage.
Sheets affected: **A3.0**

Structural

Revised rafter framing to 2x12.
Sheets affected: **S1.2**

Electrical

Removed integral emergency fixtures in gear storage & detail.
Added occupancy sensors in gear storage, storage, meeting room & laundry room.
Specified new outdoor fixture above storage overhead door, the other fixture originally specified is discontinued (cutsheet attached).
Added a vertical dimension for 2" sleeves in garage.
Minor nomenclature.
Sheets affected: **E2.0, E2.1, E3.0, E5.0**

Addendum #A - Specification Revisions:

07 21 00	Section 2.5 LOOSE-FILL INSULATION added.
07 21 40	Section 1.04 (E) Insurance requirements omitted.
08 36 00	Section 2.1, alternate manufacturer added for overhead door

SECTION 07 21 00 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Perimeter insulation under slabs-on-grade.
2. Perimeter wall insulation (supporting backfill).
3. Concealed building insulation.
4. Vapor retarders.
5. Sound attenuation insulation.

B. Related Sections include the following:

1. Division 06 Section "Sheathing" for foam-plastic board sheathing over wood framing.
2. Division 07 Section "Cold Fluid-Applied Waterproofing" for insulation and insulated drainage panels installed with waterproofing.
3. Division 07 Section "Water-Drainage Exterior Insulation and Finish System (EIFS)" for insulation specified as part of these systems.
4. Division 07 Section "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing for insulation specified as part of roofing construction.
5. Division 07 Section "Fire-Resistive Joint Systems" for insulation installed as part of a perimeter fire-resistive joint system.
6. Division 09 Section"Gypsum Board" for installation in metal-framed assemblies of insulation specified by referencing this Section.
7. Division 21 Section "Fire-Suppression Systems Insulation."
8. Division 22 Section "Plumbing Insulation."
9. Division 23 Section "HVAC Insulation."
10. Division 33 Section "Subdrainage" for insulated drainage panels.

1.3 DEFINITIONS

A. Mineral-Fiber Insulation: Insulation composed of rock-wool fibers, slag-wool fibers, or glass fibers; produced in boards and blanket with latter formed into batts (flat-cut lengths) or rolls.

1.4 PERFORMANCE REQUIREMENTS

A. Plenum Rating: Provide glass-fiber insulation where indicated in ceiling plenums whose test performance is rated as follows for use in plenums as determined by testing identical products

per "Erosion Test" and "Mold Growth and Humidity Test" described in UL 181, or on comparable tests from another standard acceptable to authorities having jurisdiction.

1. Erosion Test Results: Insulation shows no visible evidence of cracking, flaking, peeling, or delamination of interior surface of duct assembly, after testing for 4 hours at 2500-fpm air velocity.
2. Mold Growth and Humidity Test Results: Insulation shows no evidence of mold growth, delamination, or other deterioration due to the effects of high humidity, after inoculation with Chaetomium globosium on all surfaces and storing for 60 days at 100 percent relative humidity in the dark.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Verification: Full-size units for each type of exposed insulation indicated.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for insulation products.

D. Research/Evaluation Reports: For foam-plastic insulation.

1.6 QUALITY ASSURANCE

A. Source Limitations: Obtain each type of building insulation through one source from a single manufacturer.

B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test- response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Surface-Burning Characteristics: ASTM E 84.
2. Fire-Resistance Ratings: ASTM E 119.
3. Combustion Characteristics: ASTM E 136.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

B. Protect plastic insulation as follows:

1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.

3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.2 FOAM-PLASTIC BOARD INSULATION

A. Extruded-Polystyrene Board Insulation: ASTM C 578, of type and density indicated below, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively:

1. Manufacturers:

a. DiversiFoam Products.
b. Dow Chemical Company.
c. Owens Corning.
d. Pactiv Building Products Division.
e. Approved Manufacturer.

2. Type VI, 1.80 lb/cu. ft., unless otherwise indicated.

B. Extruded-Polystyrene Drainage Panels: ASTM C 578, of type and density indicated below and fabricated with one side having a matrix of drainage and edge channels.

1. Manufacturers:

a. DiversiFoam Products.
b. Dow Chemical Company.
c. Owens Corning.
d. Approved Manufactuerer.

2. Type VI, 1.80 lb/cu. ft.

2.3 GLASS-FIBER BOARD INSULATION

A. Manufacturers:

1. CertainTeed Corporation.
2. Johns Manville.
3. Knauf Fiber Glass.
4. Owens Corning.
5. Approved Manufacturer.

B. Foil-Faced, Flexible Glass-Fiber Board Insulation: ASTM C 612, Type IA or ASTM C 553, Types I, II, and III; faced on 1 side with foil-scrim-kraft vapor retarder; with maximum flame- spread and smoke-developed indexes of 25 and 50, respectively; and of the following nominal density and thermal resistivity:

1. Nominal density of 1.0 lb/cu. ft. , thermal resistivity of 3.7 deg F x h x sq. ft./Btu x in. at 75 deg F.

2.4 GLASS-FIBER BLANKET INSULATION

A. Manufacturers:

1. CertainTeed Corporation.
2. Guardian Fiberglass, Inc.
3. Johns Manville.
4. Knauf Fiber Glass.
5. Owens Corning.
6. Approved Manufacturer.

B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

C. Where glass-fiber blanket insulation is indicated by the following thicknesses, provide blankets in batt or roll form with thermal resistances indicated:

1. 3-1/2 inches thick with a thermal resistance of 13 deg F x h x sq. ft./Btu at 75 deg F.
2. 5-1/2 inches (140 mm) thick with a thermal resistance of 19 deg F x h x sq. ft./Btu at 75 deg F.

2.5 LOOSE-FILL INSULATION

A. Glass-Fiber Loose-Fill Insulation : ASTM C764, [**Type I for pneumatic application**].

1. Basis-of-Design Product: Subject to compliance with requirements, provide CertainTeed Corporation; [**InsulSafe®SP Premium Loosefill Insulation**] or comparable product by one of the following:

a. Johns Manville; a Berkshire Hathaway company.
b. Knauf Insulation.

2. Flame-Spread Index: Not more than 5 when tested in accordance with ASTM E84.

3. Smoke-Developed Index: Not more than 5 when tested in accordance with ASTM E84.

2.6 RADIANT BARRIERS

A. Sheet Radiant Barriers: ASTM C 1313 and as follows:

1. Products:

   a. Innovative Energy, Inc.; R+Heatshield Commercial Solid.
   b. Innovative Insulation, Inc.; Super R Premium (Commercial).
   c. Approved Product.

2. Sheet Construction: For adherence to existing glass, color to match window frames.
3. Surface-Burning Characteristics: Maximum flame-spread and smoke-developed indexes of 5 and 10, respectively.
4. Tear Resistance: Manufacturer's standard.
5. Water-Vapor Transmission: 1 perm, maximum.
6. Sheet Width: 48"

2.7 VAPOR RETARDERS

A. Polyethylene Vapor Retarders: ASTM D 4397, 8 mils thick, with maximum permeance rating of 0.13 perm.

B. Reinforced-Polyethylene Vapor Retarders: 2 outer layers of polyethylene film laminated to an inner reinforcing layer consisting of either nylon cord or polyester scrim and weighing not less than 25 lb/1000 sq. ft., with maximum permeance rating of 0.0507 perm.

1. Products:

   a. Raven Industries Inc.; DURA-SKRIM 6WW.
   b. Reef Industries, Inc.; Griffolyn T-65.
   c. Approved Product.

C. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

D. Vapor-Retarder Fasteners: Pancake-head, self-tapping steel drill screws; with fender washers.

E. Single-Component Nonsag Urethane Sealant: ASTM C 920, Type I, Grade NS, Class 25, Use NT related to exposure, and Use O related to vapor-barrier-related substrates.

F. Adhesive for Vapor Retarders: Product recommended by vapor-retarder manufacturer and with demonstrated capability to bond vapor retarders securely to substrates indicated.

2.8 AUXILIARY INSULATING MATERIALS

A. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed and sized to fit between roof framing members and to provide cross ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements of Sections in which substrates and related work are specified and for other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of substances harmful to insulation or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.

3.3 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice, rain, and snow.

C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Water-Piping Coordination: If water piping is located within insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.

E. For preformed insulating units, provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF PERIMETER AND UNDER-SLAB INSULATION

A. On vertical surfaces, set insulation units in adhesive applied according to manufacturer's written instructions. Use adhesive recommended by insulation manufacturer.

1. If not otherwise indicated, extend insulation a minimum of 24 inches below exterior grade line.

B. On horizontal surfaces, loosely lay insulation units according to manufacturer's written instructions. Stagger end joints and tightly abut insulation units.

C. Protect below-grade insulation on vertical surfaces from damage during backfilling by applying protection course with joints butted. Set in adhesive according to insulation manufacturer's written instructions.

D. Protect top surface of horizontal insulation from damage during concrete work by applying protection course with joints butted.

3.5 INSTALLATION OF GENERAL BUILDING INSULATION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Seal joints between foam-plastic insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.

C. Set vapor-retarder-faced units with vapor retarder to warm-in-winter side of construction, unless otherwise indicated.

1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.

D. Install mineral-fiber insulation in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Maintain 3-inch clearance of insulation around recessed lighting fixtures.
4. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.
5. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
6. For wood-framed construction, install mineral-fiber blankets according to ASTM C 1320 and as follows:

    a. With faced blankets having stapling flanges, secure insulation by inset, stapling flanges to sides of framing members.
    b. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to maintain continuity of vapor retarder once finish material is installed over it.

E. Install board insulation on concrete substrates by adhesively attached, spindle-type insulation anchors as follows:

1. Fasten insulation anchors to concrete substrates with insulation anchor adhesive according to anchor manufacturer's written instructions. Space anchors according to insulation manufacturer's written instructions for insulation type, thickness, and application indicated.
2. Apply insulation standoffs to each spindle to create cavity width indicated between concrete substrate and insulation.
3. After adhesive has dried, install board insulation by pressing insulation into position over spindles and securing it tightly in place with insulation-retaining washers, taking care not to compress insulation below indicated thickness.
4. Where insulation will not be covered by other building materials, apply capped washers to tips of spindles.

3.6 INSTALLATION OF INSULATION IN CEILINGS FOR SOUND ATTENUATION

A. Install 3-inch- thick, unfaced glass-fiber blanket insulation over suspended ceilings at partitions in a width that extends insulation 48 inches on either side of partition.

3.7 INSTALLATION OF RADIANT BARRIERS

A. Install sheet radiant barriers in locations indicated according to ASTM C 1158.

3.8 INSTALLATION OF VAPOR RETARDERS

A. General: Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage system as indicated. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

B. Seal vertical joints in vapor retarders over framing by lapping not less than two wall studs. Fasten vapor retarders to wood framing at top, end, and bottom edges; at perimeter of wall openings; and at lap joints. Space fasteners 16 inches o.c.

C. Before installing vapor retarder, apply urethane sealant to flanges of metal framing including runner tracks, metal studs, and framing around door and window openings. Seal overlapping joints in vapor retarders with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Seal butt joints with vapor-retarder tape. Locate all joints over framing members or other solid substrates.

D. Firmly attach vapor retarders to metal framing and solid substrates with vapor-retarder fasteners as recommended by vapor-retarder manufacturer.

E. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarder.

F. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarder.

3.9 PROTECTION

A. Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 07 21 00

SECTION 07 21 40 – FOAMED IN PLACE MASONRY WALL INSULATION

PART 1 -GENERAL

1.02 SUMMARY

A. Extent of insulation work is shown on drawings and indicated by provisions of this section.

B. Applications of insulation specified in this section include the following:
1. Foamed-in-Place masonry insulation for thermal, sound and fire resistance values

1.03 SUBMITTALS

A. Product and technical presentation as provided by the manufacturer.

B. Certified Test Reports: With product data, submit copies of certified test reports showing compliance with specified performance values, including R-values, fire performance and sound abatement characteristics.

C: Material Safety Data Sheet: Submit Material Safety Data Sheet complying with OSHA Hazard Communication Standard, 29 CRF 1910 1200.

1.04 QUALITY ASSURANCE

A. Manufacturing Standards: Provide insulation produced by a single and approved manufacturer. The product must come from the manufacturer pre-mixed to ensure consistency.

B. Installer Qualifications for Foamed-In-Place Masonry Insulation: Engage an experienced dealer/applicator who has been trained and licensed by the product manufacturer and which has not less than ten years direct experience in the installation of the product used.

C. Warranty: Upon request, a one year product and installation warranty will be issued by both the manufacturer and installer.

D: Fire Performance Characteristics: Provide insulation materials which are identical to those whose fire performance characteristics, as listed for each material or assembly of which insulation is a part, have been determined by testing, per methods indicated below, by a testing agency acceptable to authorities having jurisdiction. Product must be classified by Underwriters Laboratory ® ("UL") as to Surface Burning Characteristics Fire Resistance Ratings: ASTM E-119 Surface Burning Characteristics: ASTM E-84 Combustion Characteristics: ASTM E-136

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Manufacturers of Foamed-in-Place Masonry Insulation: Subject to compliance with requirements, provide products from the following:

a. "Core-Fill 500™"- Tailored Chemical Products,
P.O. Drawer 4186,

Hickory, N.C. 28663
(800) 627-1687

1. Florida & Georgia Distributor Tailored Foam of Florida, Inc.
   3900 Saint Johns Parkway
   Sanford, FL 32771
   Telephone: 407-332-0333
   Fax: 407-830-9174

b. Air Krete, Inc
P.O. Box 380 Weedsport, NY 13166

c. CP Chemical Co. (Tripolymer)
White Plains, NY.

2.02 INSULATING MATERIALS

A. General: Provide insulating materials which comply with requirements indicated for materials, compliance with referenced standards, and other characteristics. I

B. Foamed-in-Place Masonry Insulation: Two component thermal insulation produced by combining a plastic resin and catalyst foaming agent surfactant which, when properly ratioed and mixed, together with compressed air produce a cold-setting foam insulation in the hollow cores of hollow unit masonry walls.

1. Fire-Resistance Ratings: Core-Fill 500™ masonry insulation is a thermal foam insulation product. It is not intended and should never be used to increase the fire rating of a concrete masonry unit.

2. Surface Burning Characteristics: Maximum flame spread, smoke developed and fuel contributed of 0, 5 and 0 respectively.

3. Combustion Characteristics: Must be noncombustible, Class A building material.

4. Thermal Values: "R" Value of 4.91/inch @ 32 degrees F mean; ASTM C-177

5. Sound Abatement: Minimum Sound Transmission Class ("STC") rating of 53 and a minimum Outdoor Indoor Transmission Class (“OITC”) rating of 44 for 8” wall assembly (ASTM E 90-90)

PART 3 - EXECUTION

3.01 INSPECTION AND PREPARATION

A. Application Assemblies: Block Walls: 6", 8", 10" or 12" concrete masonry units Cavity Walls: 2" cavity or greater

3.02 INSTALLATION OF FOAMED-IN-PLACE INSULATION

A. General: Install foamed-in-place insulation from interior, or as specified, prior to installation of interior finish work and after all masonry and structural concrete work is in place; comply with manufacturer's instructions.

B. Installation: Fill all open cells and voids in hollow concrete masonry walls where shown on drawings. The foam insulation shall be pressure injected through a series of 5/8” to 7/8” holes drilled into every vertical column of block cells (every 8” on center) beginning at an approximate height of four (4) feet from finished floor level. Repeat this procedure at an approximate height of ten (10) feet above the first horizontal row of holes (or as needed) until the void is completely filled. Patch holes with mortar and score to resemble existing surface.

END OF SECTION 07 21 40

SECTION 08 36 00 – SECTIONAL OVERHEAD DOORS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes electric overhead sectional door and operating hardware.

B. Related Sections:
1. Section 03300 - Cast-In-Place Concrete: Prepared opening in concrete. Execution requirements for placement of anchors in concrete wall construction.
2. Section 04200 - Unit Masonry Systems: Prepared opening in masonry. Execution requirements for placement of anchors in masonry wall construction.
3. Section 05500 - Metal Fabrications: Steel channel opening frame.
4. Section 06100 – Rough Carpentry Work: Rough wood framing and blocking for door opening.
5. Section 07900 - Joint Sealers: Perimeter sealant and backup materials.
6. Section 08712 - Door Hardware: Cylinder locks.
7. Section 08800 – Glass and Glazing: Glass for door lights.
8. Section 09900 - Paints and Coatings: Field paint finish.
9. Section 16010 – General Electrical Provisions: Conduit from control stations to door operator and electrical service to disconnect located near door operator.

1.2 REFERENCES

A. American National Standards Institute:
1. ANSI A135.4 - Basic Hardboard.

B. ASTM International:
1. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
3. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

C. National Electrical Manufacturers Association:
1. NEMA MG 1 - Motors and Generators.

1.3 SYSTEM DESCRIPTION

A. Panels: Flush steel, insulated.

B. Lift Type: Standard lift operating style with track and hardware.

C. Operation: electric

D. Wind Loads: Design and size components to withstand loads caused by pressure and suction of wind acting normal to plane of wall as calculated in accordance with applicable code.

1.4 SUBMITTALS

A. Section 01300 - Submittals: Submittal procedures.

B. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

C. Product Data: Submit component construction, anchorage method, and hardware.

D. Manufacturer's Installation Instructions: Submit special procedures, and perimeter conditions requiring special attention.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 – Project Closeout: Closeout procedures.

B. Operation and Maintenance Data:
1. Include electrical control adjustment recommendations.
2. Include data for motor and transmission, shaft and gearing, lubrication frequency, periodic adjustments required, and spare part sources.

1.6 QUALITY ASSURANCE

A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories, Inc., as suitable for purpose specified.

B. Surface Burning Characteristics:
1. Foam Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

C. Apply label from agency approved by authority having jurisdiction to identify each foam plastic insulation board.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

1.8 WARRANTY

A. Section 01700 – Project Closeout: Product warranties and product bonds.

B. Furnish (10) ten year manufacturer warranty for electric operating equipment.

PART 2 PRODUCTS

2.1 SECTIONAL OVERHEAD DOORS

A. Product Description: Steel overhead sectional doors, electric operation, stock configuration and hardware.

1. Basis of Design: Clopay Commercial Energy Series Door
Clopay Building Products Company
8585 Duke Blvd.
Mason, OH 45040

Or

Overhead Door Thermacore model 592
Overhead Door Metro Milwaukee
5969 S Pennsylvania Ave
Cudahy, WI 53110

2. Manufacturer Substitutions: Permitted. Must be submitted for approval in during bidding process.
3. Door Nominal Thickness: 1-3/4 inches thick.
4. Insulation: CFC and HCFC-free polyuerethane
5. Flush Steel Panel Construction: Outer steel sheet of minimum 27 gauge thick, stucco embossed minor ribbed profile; inner steel sheet of minimum 28 gauge thick, flat profile; core reinforcement of sheet steel roll formed to channel or Z-shape, rabbeted weather joints at meeting rails; insulated.
6. Exterior Door Color: To be chosen by Owner.

2.2 COMPONENTS

A. Sheet Steel: ASTM A653 galvanized to G90, pre-coated with manufacturer’s standard thermosetting finish, stucco embossed surface.

B. Insulation: Rigid polystyrene or polyurethane, nominal R-Value of 16.2, bonded to facing.

C. Metal Primer Paint: Zinc chromate type.

D. Glazing: Tempered, Insulated Glazing.

2.3 ACCESSORIES

A. Track: Rolled galvanized steel, 0.120 inch thick; 3 inch wide, continuous one piece for each side; galvanized steel mounting brackets minimum 1/4 inch

B. Hinge and Roller Assemblies: High Performance Hardware with Heavy duty 10 gauge end hinges and adjustable 3" sealed roller with 5/8" stem of stainless steel; floating hardened heavy duty steel bearing rollers, located at top and bottom of each panel, each side.

C. Lift Mechanism: Torsion spring on cross head shaft, with braided stainless steel lifting cables. Manual operation to require maximum exertion of 25 lbs force.

D. Sill Weather-stripping: Resilient neoprene strip, one piece; fitted to bottom of door panel, full length contact.

E. Jamb Weather-stripping: Roll formed steel section full height of jamb, fitted with resilient weather-stripping, placed in moderate contact with door panels.

F. Head Weather-stripping: EPDM rubber seal, one piece full length.

G. Panel Joint Weather-stripping: Neoprene foam seal, one piece full length.

H. Lock: Inside center mounted, adjustable keeper, spring activated latch bar with feature to retain in locked or retracted position; interior and exterior handle; lock keyed with Section 08712.

2.4 ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Electrical Characteristics: In accordance with Section 16010 and the following:
   1. 1/2 hp; manually operable in case of power failure; transit speed of nominal 12 inches per second.
   2. 115 volts, single phase, 60 Hz.

B. Motor Type: NEMA MG1.

C. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated.

D. Disconnect Switch: Omit

E. Electric Operator: Jackshaft hoist, Side wall mounted, adjustable safety friction clutch; brake system actuated by independent voltage solenoid controlled by motor starter; enclosed gear driven limit switch; enclosed magnetic cross line reversing starter; mounting brackets and hardware. Provide means to disengage motor to allow manual operation in event of power failure.

F. Control Station: Standard three button (open-close-stop) momentary pressure] type, control for each electric operator; 24 volt circuit, surface mounted.

G. Safety Edge: At bottom of door panel, full width; electro-mechanical sensitized type, wired to reverse door upon striking object; hollow neoprene covered to provide weatherstrip seal.

H. Photoelectric Sensor: Furnish system which detects obstruction and reverses door without requiring door to contact obstruction.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01039 – Coordination and Meetings: Coordination and project conditions.

B. Verify wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

C. Verify electric power is available and of correct characteristics.

3.2 PREPARATION

A. Prepare opening to permit correct installation of door unit to perimeter air and vapor retarder seal.

B. Apply primer to wood frame.

3.3 INSTALLATION

A. Anchor assembly to wall construction and building framing without distortion or stress.

B. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

C. Fit and align door assembly including hardware.

D. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

E. Coordinate installation of sealants and backing materials at frame perimeter as specified in Section 07900.

F. Install perimeter weather-stripping.

3.4 ERECTION TOLERANCES

A. Maximum Variation from Plumb: 1/16 inch.

B. Maximum Variation from Level: 1/16 inch.

C. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 foot straight edge.

D. Maintain dimensional tolerances and alignment with adjacent work.

3.5 ADJUSTING

A. Section 01700 – Project Closeout: Testing, adjusting, and balancing.

B. Adjust door assembly to smooth operation and in full contact with weather-stripping.

3.6 CLEANING

A. Section 01700 – Project Closeout: Final cleaning.

B. Clean doors, frames and glazing.

C. Remove temporary labels and visible markings.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01700 – Project Closeout: Protecting installed construction.

B. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

END OF SECTION 08 36 00

Type WE - Above garage door.

XSP Series

XSPW™ LED Wall Mount Luminaire featuring Cree TrueWhite® Technology

Rev. Date: VersionB V4 02/25/2020

Product Description

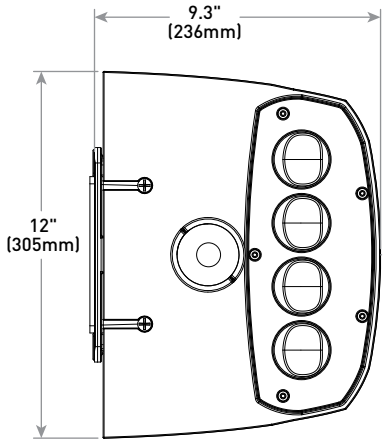
The XSPW™ LED wall mount luminaire has a slim, low profile design intended for outdoor wall mounted applications. The rugged lightweight aluminum housing and mounting box are designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes. The luminaire allows for through-wired or conduit entry from the top, bottom, sides and rear. The housing design is intended specifically for LED technology including a weathertight LED driver compartment and thermal management. Optic design features industry-leading NanoOptic® Precision Delivery Grid™ system in multiple distributions.

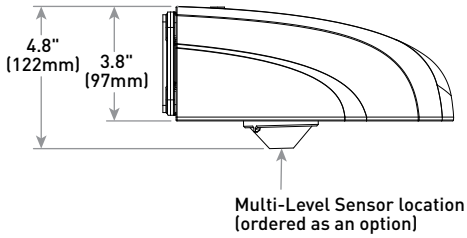
Applications: General area and security lighting

Performance Summary

- NanoOptic® Precision Delivery Grid™ optic
- Assembled in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI (3000K, 4000K & 5700K); 90 CRI (5000K)
- **CCT:** 3000K, 4000K, 5000K, 5700K
- **Limited Warranty†:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://creelighting.com/warranty for warranty terms





Multi-Level Sensor location (ordered as an option)

Accessories

Field-Installed	
Beauty Plate WM-PLT12** - 12" (305mm) Square WM-PLT14** - 14" (356mm) Square - Covers holes left by incumbent wall packs	**Hand-Held Remote** XA-SENSREM - For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

** Must specify color

Lumen Package	Weight
2L, 4L, 6L	11.0 lbs. (5.0kg)
8L	11.8 lbs. (5.4kg)

Ordering Information

Example: XSPW-B-WM-2ME-2L-30K-UL-BK

XSPW	B	WM	3ME	6L	40K	UL	BZ	P
Product	**Version**	**Mounting**	**Optic**	**Lumen Package***	**CCT**	**Voltage**	**Color Options**	**Options**
XSPW	**B**	**WM** Wall	**2ME** Type II Medium **3ME** Type III Medium **4ME** Type IV Medium	**2L** 2,490 lumens **4L** 4,270 lumens **6L** 6,100 lumens **8L** 8,475 lumens	**30K** 3000K - 70 CRI **40K** 4000K - 70 CRI **50K** 5000K - 90 CRI **57K** 5700K - 70 CRI	**UL** Universal 120-277V **UH** Universal 347-480V **34** 347V - For use with P option only	**BK** Black **BZ** Bronze **SV** Silver **WH** White	**ML** **Multi-Level** - Refer to ML spec sheet for details - Available with UL voltage only **P** **Button Photocell** - Not available with ML or PML options - Available with UL and 34 voltages only **PML** **Programmable Multi-Level** - Refer to PML spec sheet for details - Available with UL voltage only

* Lumen Package selection codes identify approximate light output only. Actual lumen output levels may vary depending on CCT and optic selection. Refer to Initial Delivered Lumen tables for specific lumen values

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

Product Specifications

CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics and lifelong color consistency, all while maintaining high luminous efficacy – a true no compromise solution.

CONSTRUCTION & MATERIALS

- Slim, low profile design
- Luminaire housing specifically designed for LED applications with advanced LED thermal management and driver
- Luminaire mounting box designed for installation over standard single gang J-Boxes and mud ring single gang J-Boxes
- Luminaire can also be direct mounted to a wall and surface wired
- Secures to wall with four 3/16" (5mm) screws (by others)
- Conduit entry from top, bottom, sides, and rear
- Exclusive Colorfast DeltaGuard® finish features an E-coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Silver, black, white and bronze are available
- **Weight:** 2L, 4L, 6L - 11.0 lbs. (5.0kg); 8L - 11.8 lbs. (5.4kg)

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Designed with 0-10V dimming capabilities. Controls by others
- **10V Source Current:** 0.15 mA
- Refer to Dimming spec sheet for details
- **Operating Temperature Range:** -40˚C - +50˚C (-40˚F - +122˚F)

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Designed for downlight applications only
- Enclosure rated IP66 per IEC 60598
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA
- RoHS compliant. Consult factory for additional details
- Dark Sky Friendly, IDA Approved when ordered with 30K CCT. Please refer to https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/ for most current information
- DLC and DLC Premium qualified versions available. Please refer to https://www.designlights.org/search/ for most current information
- ⚠ **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

Lumen Package	CCT/CRI	System Watts 120-480V	Efficacy	Total Current (A) 120V	208V	240V	277V	347V	480V
2L	30K/70 CRI	20	125	0.17	0.10	0.08	0.07	0.06	0.05
	40K/70 CRI	19	131	0.16	0.09	0.08	0.07	0.06	0.04
	50K/90 CRI	24	104	0.20	0.11	0.10	0.08	0.07	0.05
	57K/70 CRI	19	131	0.16	0.09	0.08	0.07	0.06	0.04
4L	30K/70 CRI	33	129	0.28	0.16	0.14	0.13	0.10	0.07
	40K/70 CRI	31	138	0.27	0.15	0.13	0.12	0.09	0.07
	50K/90 CRI	40	107	0.34	0.20	0.17	0.16	0.12	0.09
	57K/70 CRI	31	138	0.26	0.15	0.13	0.12	0.09	0.07
6L	30K/70 CRI	51	120	0.43	0.25	0.22	0.19	0.14	0.11
	40K/70 CRI	47	130	0.40	0.23	0.20	0.18	0.14	0.10
	50K/90 CRI	60	102	0.51	0.29	0.25	0.23	0.17	0.13
	57K/70 CRI	47	130	0.40	0.23	0.20	0.17	0.14	0.10
8L	30K/70 CRI	77	110	0.65	0.38	0.32	0.28	0.22	0.16
	40K/70 CRI	72	118	0.61	0.35	0.31	0.27	0.21	0.15
	50K/90 CRI	78	89	0.66	0.37	0.33	0.29	0.22	0.16
	57K/70 CRI	71	119	0.60	0.35	0.30	0.26	0.20	0.15

* Electrical data at 25˚C (77˚F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347- 480V +/- 10%

XSPW Series Ambient Adjusted Lumen Maintenance Factors[1]

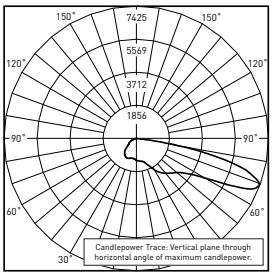
Ambient	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Estimated[3] LMF	100K hr Estimated[3] LMF
5˚C (41˚F)	1.03	0.98	0.96	0.94	0.92
10˚C (50˚F)	1.03	0.98	0.96	0.94	0.92
15˚C (59˚F)	1.02	0.97	0.95	0.93	0.92
20˚C (68˚F)	1.01	0.96	0.95	0.93	0.91
25˚C (77˚F)	1.00	0.96	0.94	0.92	0.90
30˚C (86˚F)	0.99	0.95	0.93	0.91	0.89
35˚C (95˚F)	0.98	0.94	0.92	0.90	0.88
40˚C (104˚F)	0.97	0.93	0.91	0.89	0.87

[1] Lumen maintenance values at 25˚C (77˚F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.
[3] Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

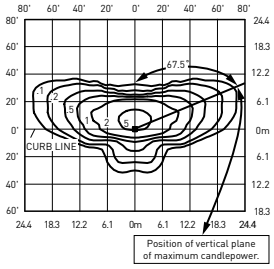
Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/wall-mount/xsp-series-wall

2ME



CESTL Test Report #: PL12798-001A
XSPW-B-**-2ME-8L-40K-UL
Initial Delivered Lumens: 8,622

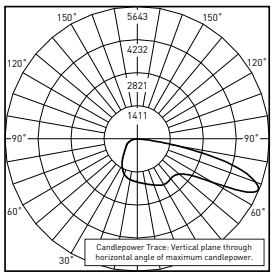


XSPW-B-**-2ME-8L-40K-UL
Mounting Height: 15' (4.6) A.F.G.
Initial Delivered Lumens: 8,475
Initial FC at grade

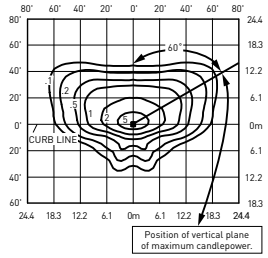
Type II Medium Distribution								
Lumen Package	3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
2L	2,490	B1 U0 G1	2,490	B1 U0 G1	2,490	B1 U0 G1	2,490	B1 U0 G1
4L	4,270	B1 U0 G1	4,270	B1 U0 G1	4,270	B1 U0 G1	4,270	B1 U0 G1
6L	6,100	B1 U0 G2	6,100	B1 U0 G2	6,100	B1 U0 G2	6,100	B1 U0 G2
8L	8,475	B2 U0 G2	8,475	B2 U0 G2	6,925	B1 U0 G2	8,475	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

3ME



CESTL Test Report #: PL12366-007A
XSPW-B-**-3ME-8L-40K-UL
Initial Delivered Lumens: 8,543



XSPW-B-**-3ME-8L-40K-UL
Mounting Height: 15' (4.6m) A.F.G.
Initial Delivered Lumens: 8,475
Initial FC at grade

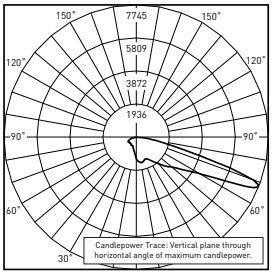
Type III Medium Distribution								
Lumen Package	3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
2L	2,490	B1 U0 G1	2,490	B1 U0 G1	2,490	B1 U0 G1	2,490	B1 U0 G1
4L	4,270	B1 U0 G1	4,270	B1 U0 G1	4,270	B1 U0 G1	4,270	B1 U0 G1
6L	6,100	B1 U0 G2	6,100	B1 U0 G2	6,100	B1 U0 G2	6,100	B1 U0 G2
8L	8,475	B2 U0 G2	8,475	B2 U0 G2	6,925	B1 U0 G2	8,475	B2 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

Photometry

All published luminaire photometric testing performed to IES LM-79-08 standards. To obtain an IES file specific to your project consult: http://creelighting.com/products/outdoor/wall-mount/xsp-series-wall

4ME



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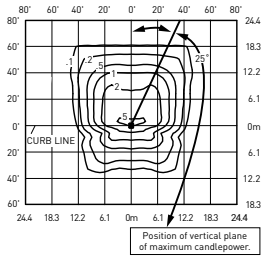
Initial Delivered Lumens: 8,763



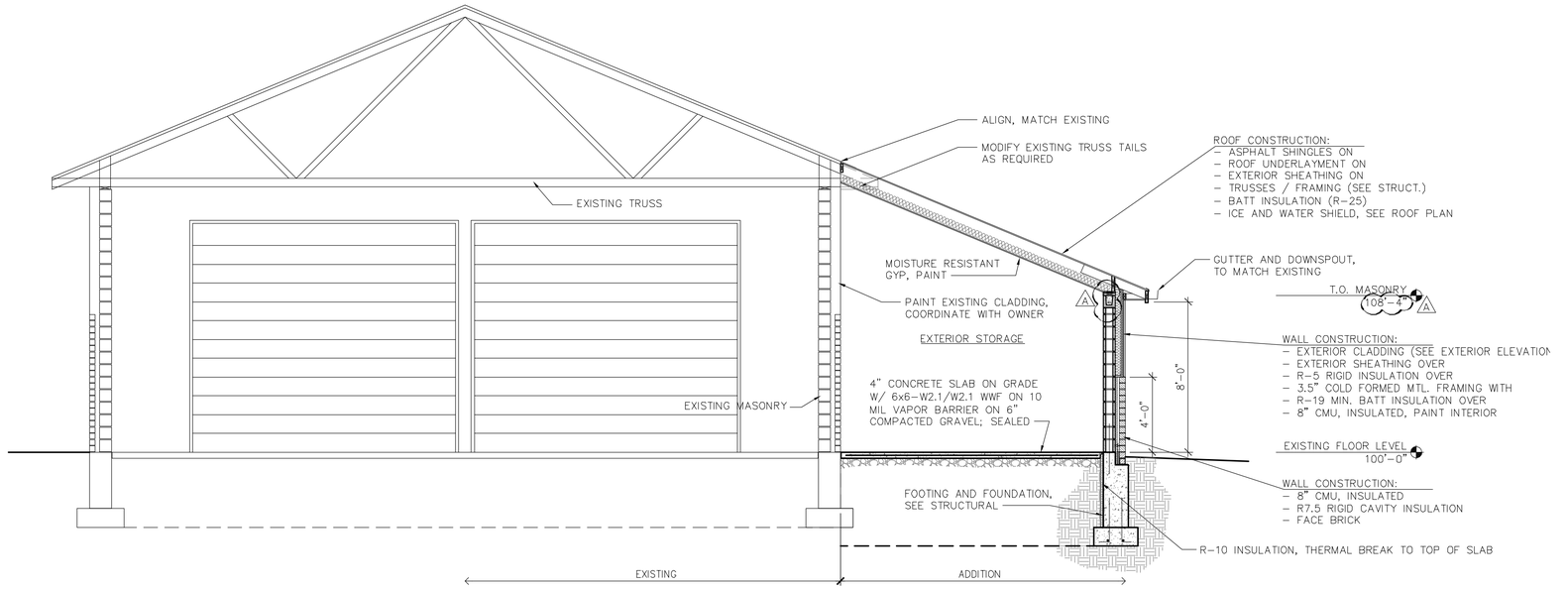
XSPW-B-**-4ME-8L-40K-UL
Mounting Height: 15' (4.6m) A.F.G.
Initial Delivered Lumens: 8,475
Initial FC at grade

Type IV Medium Distribution								
Lumen Package	3000K		4000K		5000K		5700K	
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11
2L	2,490	B1 U0 G1	2,490	B1 U0 G1	2,490	B1 U0 G1	2,490	B1 U0 G1
4L	4,270	B1 U0 G1	4,270	B1 U0 G1	4,270	B1 U0 G1	4,270	B1 U0 G1
6L	6,100	B1 U0 G2	6,100	B1 U0 G2	6,100	B1 U0 G2	6,100	B1 U0 G2
8L	8,475	B1 U0 G2	8,475	B1 U0 G2	6,925	B1 U0 G2	8,475	B1 U0 G2

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit: https://www.ies.org/wp-content/uploads/2017/03/TM-15-11BUGRatingsAddendum.pdf

CREE LIGHTING
A COMPANY OF IDEAL INDUSTRIES, INC.

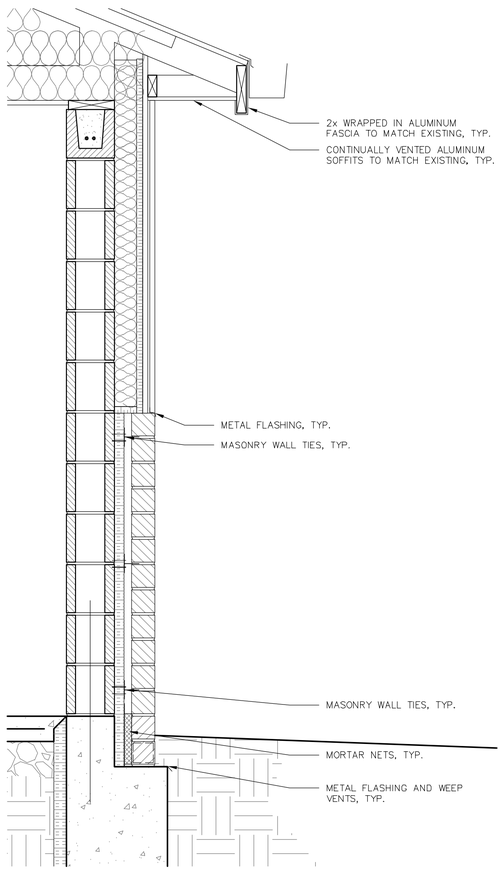
US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234



BUILDING SECTION

SCALE: 1/4" = 1'-0" @ 34x22 (1/8" @ 11x17)

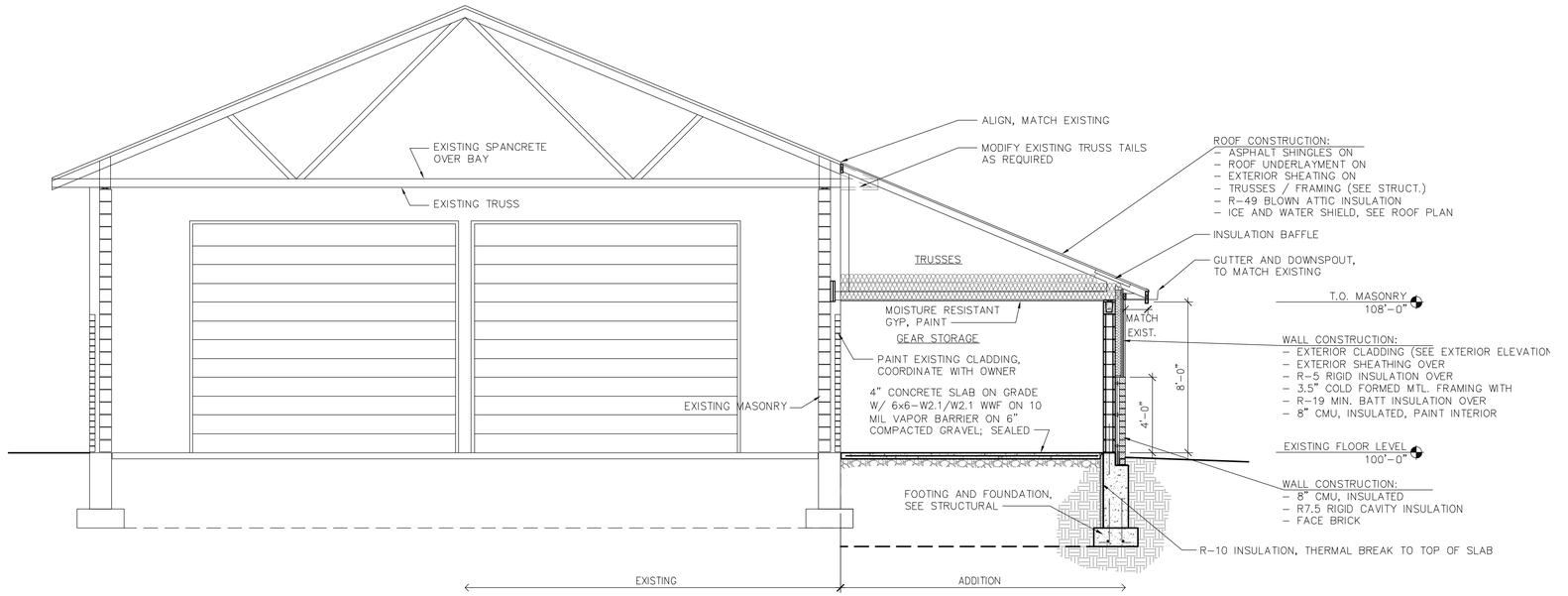
3



ENLARGED WALL SECTION

SCALE: 1" = 1'-0" @ 34x22 (1/2" @ 11x17)

2



BUILDING SECTION

SCALE: 1/4" = 1'-0" @ 34x22 (1/8" @ 11x17)

1

THRIVE ARCHITECTS
Architect
259 South Street, Suite A
Waukesha, WI 53186
p: 833-380-6180
e: jdb@thrive-architects.com

Project Info. — 20018

WAUKESHA FIRE STATION #4

RENOVATIONS & ADDITION

1700 Northview Road,
Waukesha, WI 53188

Sheet Title

BUILDING SECTION

Revisions

No.	Date	Description
	12-28-20	P.C. Submittal
	02-05-21	Bid & Permit Set
1	02-18-21	Addendum A

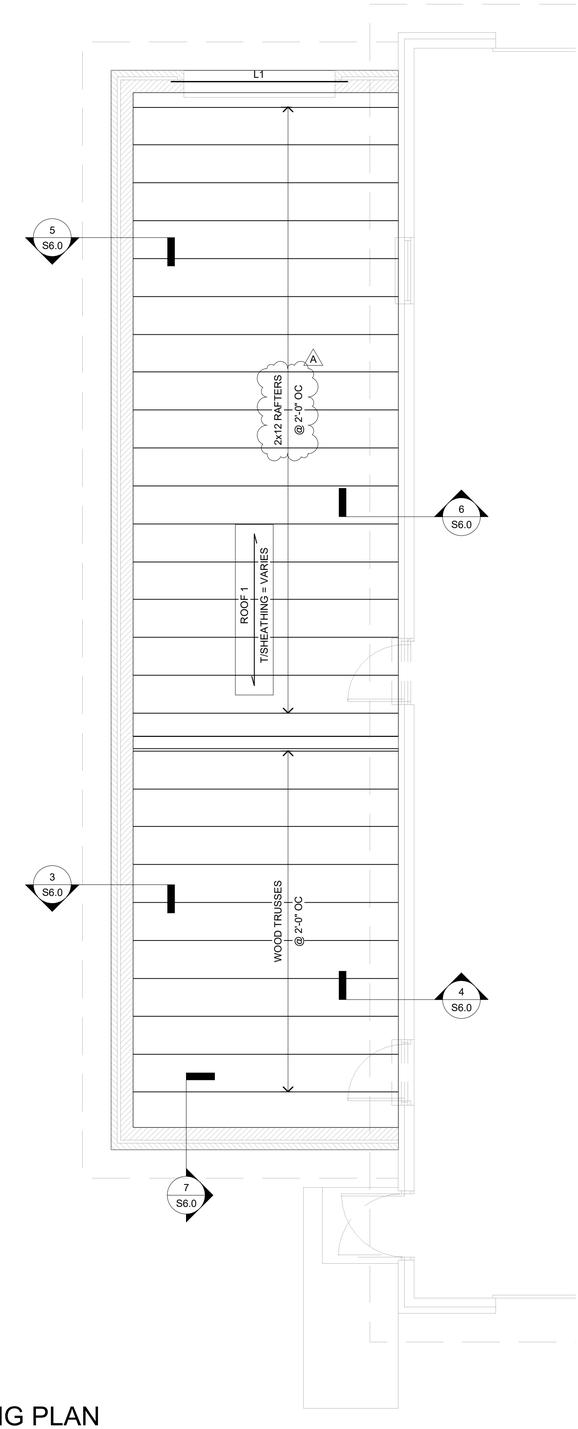
2021-02-18 Addendum A

Sheet No.

A3.0

ROOF PLAN NOTES:

1. SEE SHEET S0.1 FOR GENERAL NOTES AND S0.2 FOR SCHEDULES.
2. SEE SHEET S4.0 FOR TYPICAL MASONRY SECTIONS AND DETAILS, INCLUDING TYPICAL WALL REINFORCING.
3. SEE SHEET S6.0 FOR TYPICAL WOOD SECTIONS AND DETAILS.
4. SEE ARCHITECTURAL DRAWINGS FOR TRUSS PROFILES, HEEL HEIGHTS, TRUSS BEARING ELEVATIONS AND ROOF SLOPES.
5. COORDINATE FINAL SIZE AND LOCATION OF OPENINGS, EQUIPMENT AND ROOF DRAINS WITH MECHANICAL AND PLUMBING CONTRACTORS.
6. DESIGN JOISTS FOR A NET UPLIFT OF 15 PSF.



1 / S1.2 ROOF FRAMING PLAN

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

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Project Info. 20018

WAUKESHA FIRE STATION #4

RENOVATIONS & ADDITION

1700 Northview Road,
Waukesha, WI 53188

Sheet Title

PARTIAL ROOF FRAMING PLAN

Revisions

No.	Date	Description
	02-05-21	Bid & Permit Set
A	02-18-21	Addendum A

2021-02-05 Bid & Permit Set

Sheet No.

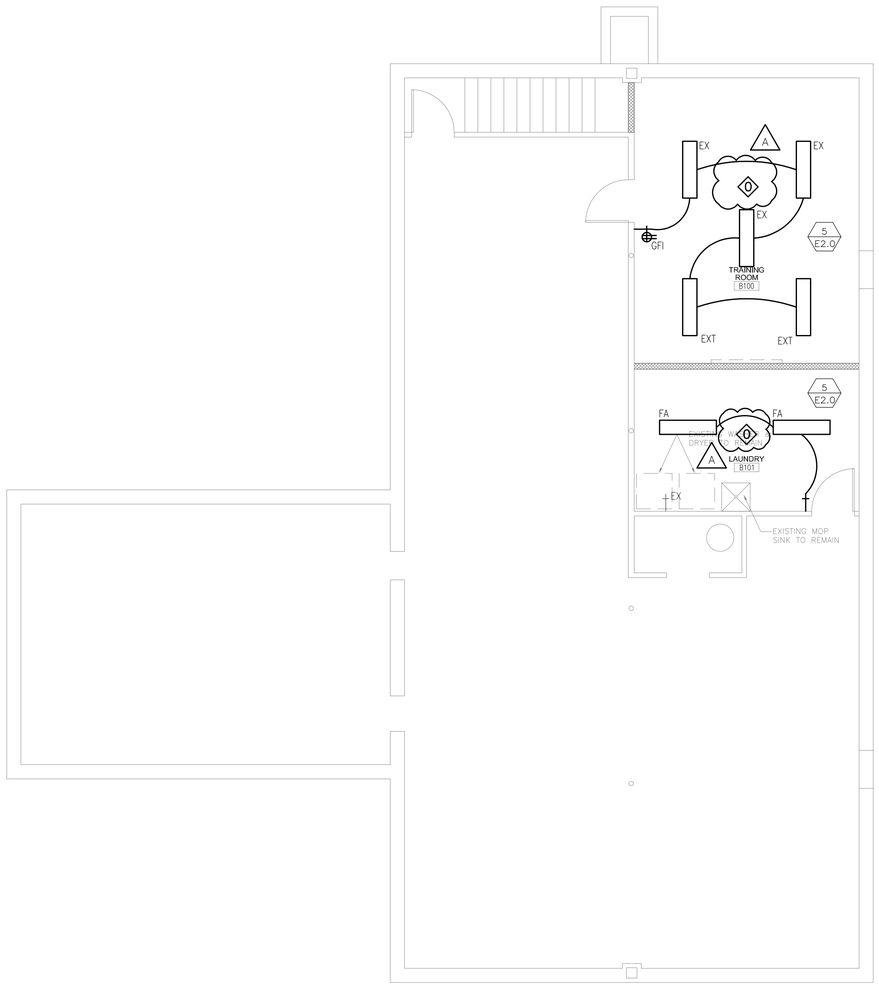
S1.2

CORE4engineering
| Client-focused | Creative |
| Collaborative | Communicative |
12308 Corporate Pkwy, Suite 450
Mequon, WI 53092 | 262.236.9372
C4E Project #: 20181

2/18/2021 1:05:48 PM

PLAN NOTES:

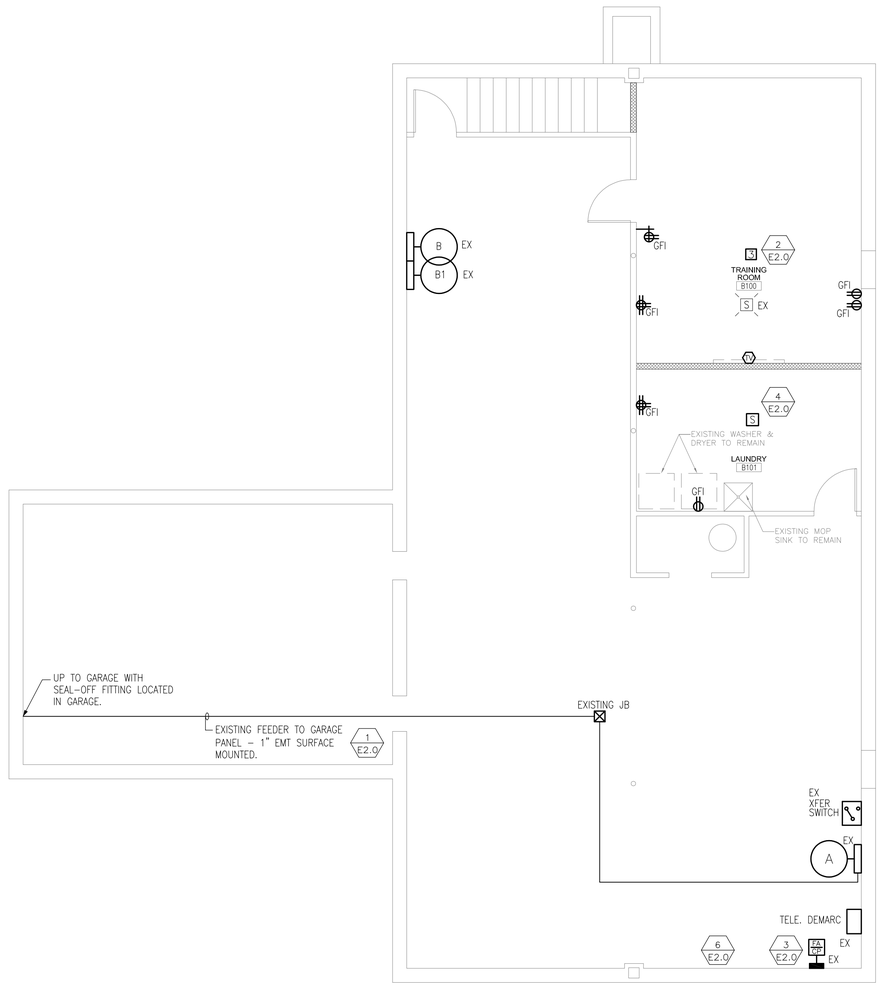
1. UTILIZE EXISTING CONDUIT AND FEEDER FOR NEW GARAGE PANEL.
2. FROM MONITOR WALL CAVITY, PROVIDE A SURFACE MOUNTED RACEWAY (HBLFMR6DG) AND FLOOR BOX (HBLFMD2P1D), HUBBELL FLOOR TRACK PRO SERIES OR APPROVED EQUAL. ROUTE DATA AND POWER CABLING BETWEEN MONITOR AND FLOOR BOX. PROVIDE ANY ADDITIONAL MATERIAL NEEDED FOR A COMPLETE INSTALLATION OF SELECTED SYSTEM. PROVIDE (2) DUPLEX RECEPTACLE FOR POWER AND (2) CAT 6 DATA COMMUNICATION OUTLETS MOUNTED IN A THREE-GANG PARTITIONED BOX. COORDINATE FINAL DATA REQUIREMENTS WITH IT CONSULTANT PRIOR TO ROUGH-IN.
3. THE EXISTING FIRE ALARM SYSTEM CONTROL PANEL IS AN INTELLIGENT ADDRESSABLE FIKE CYBERCAT SYSTEM.
4. EXTEND EXISTING FIRE ALARM SYSTEM CIRCUIT TO NEW DEVICE.
5. REUSE AND MODIFY EXISTING LIGHTING CIRCUIT TO ACCOMMODATE NEW FIXTURE LAYOUT AND CONTROL SCHEME.
6. EXISTING INCOMING WATER MAIN LOCATION.



1 BASEMENT LIGHTING PLAN

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

NORTH



2 BASEMENT POWER AND SYSTEMS PLAN

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

NORTH

THRIVE ARCHITECTS

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Project Info. — 20018

WAUKESHA FIRE STATION #4

RENOVATIONS & ADDITION

1700 Northview Road,
Waukesha, WI 53188

Sheet Title

ELECTRICAL BASEMENT FLOOR PLAN

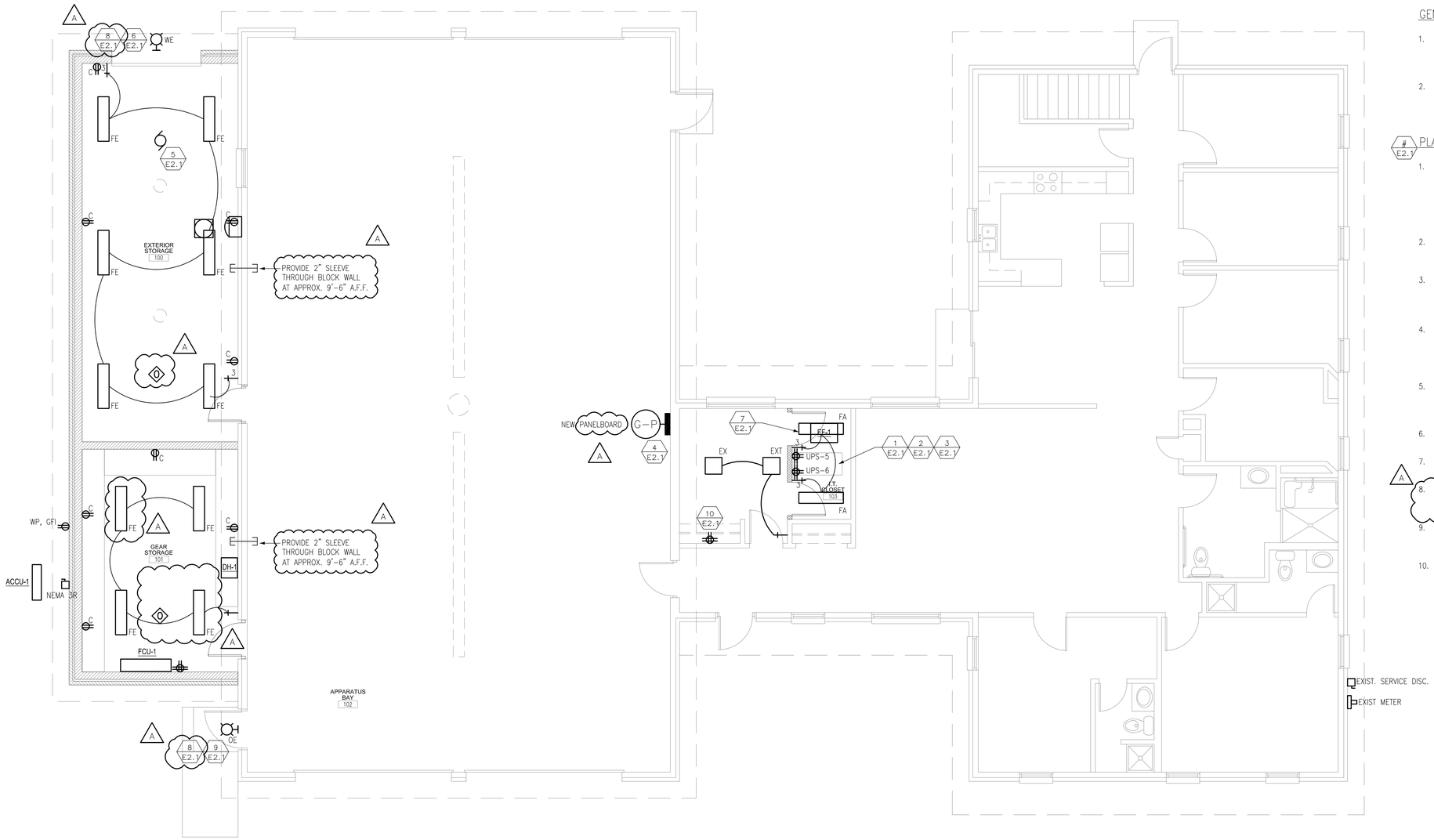
Revisions

No.	Date	Description
	12-28-20	P.C. Submittal
	02-05-21	Bid & Permit Set
A	02-18-21	Addendum A

2021-02-18 Addendum A

Sheet No.

E2.0



1 ELECTRICAL FIRST FLOOR PLAN

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

NORTH

GENERAL NOTES:

1. CIRCUIT ALL LIGHTING FIXTURES AND RECEPTACLES IN NEW ADDITION TO NEW GARAGE PANEL 'G-P', UNLESS NOTED OTHERWISE. REFER TO PANEL SCHEDULE FOR CIRCUIT NUMBERS.
2. REFER TO SHEET ME1.0 FOR MECHANICAL EQUIPMENT REQUIREMENTS. CONTRACTOR TO COORDINATE INSTALLATION

E2.1 PLAN NOTES:

1. NEW IT CLOSET. NEW IT RACKS, EQUIPMENT ENCLOSURES, CABLING, TERMINATIONS AND TESTING PROVIDED BY OTHERS. INSTALLATION OF EQUIPMENT RACKS AND CONDUIT SLEEVES BY THIS CONTRACTOR. PROVIDE (2) DOUBLE DUPLEX RECEPTACLES FED FROM UPS PANEL LOCATED IN BASEMENT. COORDINATE LOCATION WITH THE IT CONTRACTOR PRIOR TO ROUGH-IN AND FINAL EQUIPMENT SELECTIONS.
2. PROVIDE A NEW GROUNDING BAR. FIELD LOCATE ADJACENT TO NEW EQUIPMENT RACK. SEE DETAIL 4, SHEET E5.0. PROVIDE A MIN #6 EGC TO WATER MAIN.
3. CORE DRILL CONCRETE FLOOR TO THE CRAWLSPACE AND PROVIDE (3) 2" HOLES ADJACENT TO NEW TELECOM RACK. PROVIDE (3) 2" SLEEVES ABOVE RACK INTO ATTIC SPACE. COORDINATE LOCATION WITH IT CONTRACTOR.
4. PROVIDE NEW 120/240V, 1PH, 3W, 100A MLO, 24 SPACE PANELBOARD IN EXISTING LOCATION. REWORK/EXTEND EXISTING CONDUITS AND PROVIDE NEW BRANCH CIRCUIT WIRING TO ACCOMMODATE NEW PANEL SIZE. FIELD VERIFY PRIOR TO BIDDING. SEE DETAIL SHEET E4.0 FOR ADDITIONAL INFORMATION.
5. OVERHEAD POWER DOOR OPERATOR. EC TO INSTALL AND WIRE A PUSHBUTTON STATION AT EACH MAN-DOOR. PUSHBUTTON STATIONS PROVIDED BY OTHERS. COORDINATE AND VERIFY CONNECTION REQUIREMENTS WITH SELECTED EQUIPMENT.
6. PROVIDE TYPE 'WE' LIGHT FIXTURE MOUNTED ON CENTER ABOVE OVERHEAD DOOR.
7. MOUNT FIXTURE BELOW EF-1 AND ABOVE TOP OF DOOR ELEVATION. COORDINATE INSTALLATION WITH MC.

A 8. PROVIDE INTEGRAL PHOTOCELL FOR OUTDOOR FIXTURES UNLESS SOME OTHER MEANS OF CODE REQUIRED AUTOMATIC SHUT-OFF EXISTS. FIELD VERIFY PRIOR TO ORDERING FIXTURE.

9. FIELD LOCATE TYPE 'OE' OUTDOOR EGRESS FIXTURE ABOVE DOOR AT APPROXIMATELY 12-15' A.F.G. COORDINATE LOCATION WITH ANY POSSIBLE INTERIOR WALL CONFLICTS.
10. EXTEND EXISTING ROOM RECEPTACLE CIRCUIT TO NEW DOUBLE DUPLEX RECEPTACLE LOCATION. COORDINATE RECEPTACLE MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.

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Project Info. — 20018

WAUKESHA FIRE STATION #4

RENOVATIONS & ADDITION

1700 Northview Road,
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Sheet Title

ELECTRICAL FIRST FLOOR PLAN

Revisions

No.	Date	Description
	12-28-20	P.C. Submittal
	02-05-21	Bid & Permit Set
A	02-18-21	Addendum A

2021-02-18 Addendum A

Sheet No.

E2.1

PANELBOARD G-P

6.7	CONNECTED KVA
27.8	CONNECTED AMPS
6.7	DEMAND KVA
28.1	DEMAND AMPS

JOB NAME: **WAUKESHA FS #4**

JOB NUMBER: 20-1140.00
PANEL: LOAD CENTER
TUB NUMBER: 1
ROOM LOCATION: ROOM 102
STARTING CIRCUIT 1

120	VOLTAGE L-G
240	VOLTAGE L-L
1	PHASE
3	WIRE
100	BUS RATING (AMPS)
MLO	MAIN DEVICE TYPE (MCB/MLO)
	MAIN CIRCUIT BREAKER (AMPS)
10	FAULT DUTY (KAIC RATING)
SURFACE	MOUNTING (SURFACE/FLUSH)

SUBFED:	CONNECTED KVA:
1	0
2	0
3	0
4	0

COMMENTS:
A-
B-
C-
D-
E-

COM.	CCT BRKR NO.	P	AMPS	LOAD DESCRIPTION	LOAD KVA	PANEL LOAD	A 3.18	B 3.50	PANEL LOAD	LOAD KVA	LOAD DESCRIPTION	AMPS	P	NO	COM.
	1	1	50	EXISTING EXHAUST FAN		0.0	0.00		0.0		EXISTING COMPRESSOR	20	1	2	
	3					0.0		0.00	0.0					4	
	5	1	20	EXISTING RED LIGHT		0.0	0.00		0.0		EXISTING WASHER	20	1	6	
	7	1	20	EXISTING UNIDENTIFIED LOAD		0.0		0.00	0.0					8	
	9	1	20	EF-1, EXHAUST FAN	0.70	0.0	1.30		0.0	0.60	DH-1, DEHUMIDIFIER	20	1	10	
	11	1	15	ACCU-1, OUTDOOR -	0.98	0.0		2.18	0.0	1.20	STORAGE OH DOOR OPERATOR	20	1	12	
	13			FCU-1, INDOOR	0.98	0.0	1.88		0.0	0.90	RECEPTACLES, STORAGE	20	1	14	
	15	1	20	RECEPTACLES, GEAR ROOM	1.08	0.0		1.32	0.0	0.24	LIGHTING	20	1	16	
	17	1	20	SPARE		0.0	0.00		0.0		SPARE	20	1	18	
	19	1	20	SPARE		0.0		0.00	0.0		SPARE	20	1	20	
	21	1	20	SPARE		0.0	0.00		0.0		SPARE	20	1	22	
	23	1	20	SPARE		0.0		0.00	0.0		SPARE	20	1	24	

LIGHTING FIXTURE SCHEDULE

HARWOOD ENGINEERING CONSULTANTS
255 North 21st Street Milwaukee Wisconsin 53233
414.475.5554 414.773.9299 fax harwood@HECI.COM

DES.	DESCRIPTION	LED DATA TYPE/LUMEN/KELVIN	LED DATA WATTS	VOLT	DEPTH	LIGHTING FIXTURE MFR.	LIGHTING FIXTURE SERIES	LIGHTING FIXTURE OPTIONS/ACCESSORIES	DRIVER TYPE	MTG.	MTG. SURF	SEE NOTE LF___
FA	4' LED STRIP LIGHT DIFFUSE ACRYLIC LENS	ADJUSTABLE 3,000-5,000LM, 40K	36	MVOLT	2.2"	LITHONIA	CSS	13	DDRV	SURF	VAR	X
FE	4' VAPORTIGHT FIXTURE FROSTED ACRYLIC, RIBBED LENS	4000 LUMENS, 40K	24	MVOLT	4.4"	LITHONIA	FEM	X	DDRV	EXP	VAR	X
OE	CUT-OFF EGRESS WALL PACK TEMPERED GLASS LENS (2)MODULES/(2)DRIVERS	6070 LUMENS, 40K	53	120	2"	PERFORMANCE IN LIGHTING	SHIELD+2, TYPE 3	19	DDRV	SURF	WM	X
WE	LOW PROFILE WALL MOUNT LED, TYPE III DISTRIBUTION	6100 LUMENS, 40K	47	120	9.3"	CREE	XSPW-B-WM-3ME-6L-40K-UL-BZ-P	19	DDRV	SURF	WM	X

A

ABBREVIATIONS:

EXP	EXPOSED STRUCTURE	REC	RECESSED	WM	WALL MOUNTED	STD	STANDARD	VAR	VARIES
LIG	LAY-IN GRID	SURF	SURFACE	GRD	GROUND	SPEC	SPECIAL	LAS	LENGTH AS SHOWN
GYP	GYPSUM BOARD	PEND	PENDANT	CONC BASE	CONCRETE BASE	AR	AS REQUIRED	DRV	LED DRIVER
VER	VERIFY	AC	AIRCRAFT CABLE SUSP.	MTD	MOUNTED	NA	NOT APPLICABLE	DDRV	LED DIMMABLE DRIVER

OPTIONS/ACCESSORIES CODE LISTING:

01. 0.125" PATTERN 12 ACRYLIC LENS
02. 0.156" PATTERN 19 ACRYLIC LENS
03. FLUSH STEEL DOOR FRAME
04. FLUSH ALUMINUM DOOR FRAME
05. SEMI-SPECULAR REFLECTOR
06. LOW IRIDESCENT REFLECTOR
07. REFLECTOR MATCHING TRIM RING
08. DAMP LOCATION LISTED
09. WET LOCATION LISTED
10. STD. FINISH TO BE SELECTED BY ARCHITECT
11. CUSTOM COLOR
12. FURNISH w/ CHAIN HANGERS
13. FURNISH w/ STEM/SWIVEL CANOPY
14. FURNISH w/ AIRCRAFT CABLE
15. FURNISH w/ NEMA HOOK, CORD & PLUG
16. FURNISH w/ SAFETY CHAIN
17. FURNISH w/ WIREGUARD
18. FURNISH w/ AUXILIARY EMERGENCY DRIVER
19. FURNISH w/ INTEGRAL PHOTOCELL
20. FURNISH WITH UNIVERSAL ARROWS AND RED STENCIL FACE
21. FURNISH w/ LEAD CALCIUM BATTERY
22. FURNISH w/ NICAD BATTERY
23. FURNISH w/ SELF-DIAGNOSTICS
24. FURNISH w/ LED DRIVER, NON-DIMMED
25. FURNISH w/ LED DRIVER, STEP-DIMMED
26. FURNISH w/ LED DRIVER, DIMMABLE TO 10%
27. FURNISH w/ LED DRIVER, DIMMABLE TO 5%
28. FURNISH w/ LED DRIVER, DIMMABLE TO 1%
29. FURNISH w/ LED DRIVER, DIMMABLE TO 0.1%
30. FURNISH w/ PAINT AFTER FABRICATION

LIGHTING FIXTURE SCHEDULE NOTES:

NOTES LF1 – LF21 ARE GENERAL NOTES APPLICABLE TO ENTIRE LIGHTING FIXTURE SCHEDULE WHERE APPROPRIATE.

LF1 – PROVIDE ALL PAINTED FIXTURES WITH PAINT AFTER FABRICATION WITH POLYESTER PAINT.

LF2 – PROVIDE ALL NECESSARY COMPONENTS AND ACCESSORIES FOR A COMPLETE OPERATING INSTALLATION PER APPLICABLE CODES AND MANUFACTURER'S RECOMMENDATIONS.

LF3 – PROVIDE CEILING SPACERS AS REQUIRED FOR ALL SURFACE MOUNTED FIXTURES UNLESS FIXTURE IS LABELED AS SUITABLE FOR DIRECT MOUNTING TO A LOW DENSITY CEILING.

LF4 – PROVIDE SLOPE ADAPTERS FOR ALL SURFACE MOUNTED, RECESSED, SUSPENDED FIXTURES AND LIGHT TRACK AS NEEDED TO ACCOMMODATE THE SLOPE OF THE CEILING.

LF5 – INCLUDE IN THE BASE BID THE COST FOR FURNISHING, INSTALLING, WIRING AND CONNECTING FOR A COMPLETE OPERATING INSTALLATION AN ADDITIONAL EXIT FIXTURE OF EACH TYPE INDICATED IN THE LIGHTING FIXTURE SCHEDULE.

LF6 – CONTRACTOR SHALL REVIEW THE ENTIRE LIGHTING FIXTURE SCHEDULE INCLUDING THE DESCRIPTION AND CATALOG NUMBER. CONTRACTOR SHALL NOTIFY THE A/E OF ANY DISCREPANCIES PRIOR TO BIDDING.

LF7 – VERIFY ALL FINISHES/COLORS OF FIXTURES WITH A/E PRIOR TO ORDERING.

LF8 – CONTRACTOR SHALL VERIFY THAT THE FIXTURE INSTALLATION TYPE IS COMPATIBLE WITH CEILING CONSTRUCTION PRIOR TO INSTALLATION.

LF9 – FIELD VERIFY THE EXACT LOCATIONS OF THE LIGHTING FIXTURES TO AVOID CONFLICT WITH MECHANICAL EQUIPMENT, DUCTWORK, PIPES, STRUCTURAL MEMBERS, ARCHITECTURAL FEATURES, ETC. ANY CONFLICT SHALL BE BROUGHT TO THE ATTENTION OF THE A/E PRIOR TO ROUGH IN.

LF10 – IN ALL INSULATED CEILINGS, WALLS, AND WHERE RECESSED FIXTURES PENETRATE THE BUILDING ENVELOPE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AN AIRTIGHT INSTALLATION AND PROPER CLEARANCES BETWEEN RECESSED FIXTURES AND THE INSULATION. THIS CAN BE ACCOMPLISHED BY PROPER TENTING OR BOXING-OUT AROUND RECESSED FIXTURES THAT DO NOT HAVE IC RATINGS, OR REPLACEMENT OF THOSE FIXTURES WITH EQUAL FIXTURES HAVING PROPER IC AND AIRTIGHT RATINGS. REFER TO THE ARCHITECTURAL PLANS FOR APPLICABLE AREAS.

LF11 – IN ALL FIRE-RATED CEILINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE FIRE RATING. REFER TO ARCHITECTURAL PLANS FOR APPLICABLE AREAS.

LF12 – PROVIDE OCCUPANCY SENSORS AS SHOWN ON THE PLANS. REFER TO THE SPECIFICATIONS FOR MORE INFORMATION.

LF13 – PROVIDE COMPATIBLE DIMMING SWITCHES PER MANUFACTURER'S RECOMMENDATIONS.

LF14 – FIELD VERIFY THE EXACT LOCATION OF ALL SURFACE MOUNTED FIXTURES TO AVOID CONFLICT WITH ARCHITECTURAL FEATURES, INCLUDING PAINT/WALL COVERING SCHEMES, DECORATIVE TRIMS, ETC. CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE A/E PRIOR TO ROUGH IN.

LF15 – PROVIDE (1) EXTRA LED MODULE AND LED DRIVER OF EACH TYPE INDICATED IN LIGHT FIXTURE SCHEDULE AND TURN OVER TO OWNER.

LF16 – IN ALL PLENUM RATED CEILING CAVITIES PROVIDE PLENUM RATED TROFFERS AND OTHER TYPES OF LIGHTING FIXTURES IF REQUIRED BY LOCAL CODE(S).

LF17 – IN LOCATIONS OF LIFE SAFETY EGRESS ROUTE, WHERE ONE LIGHT FIXTURE IS EMPLOYED, (2) LED MODULES AND (2) LED DRIVERS ARE REQUIRED IN THE FIXTURE TO COMPLY TO N.E.C. ARTICLE 700.16 EMERGENCY ILLUMINATION.

LF18 – FOR EXTERIOR WALL MOUNTED FIXTURES, PROVIDE SEALANT AROUND MOUNTING PLATE TO PROTECT AGAINST MOISTURE INSIDE OF FIXTURE.

LF19 – EXCEPT FOR HAZARDOUS RATED AND BATTERY COMPONENTS OF EMERGENCY FIXTURES, ALL LED DRIVERS SHALL HAVE A DISCONNECTING MEANS DESCRIBED IN NEC 410.73G. THIS DISCONNECT MUST BE ACCESSIBLE WITHIN THE FIXTURE AT OR NEAR THE DRIVER.

LF20 – AUXILIARY EMERGENCY DRIVERS FOR EXTERIOR FIXTURES SHALL BE REMOTELY MOUNTED INSIDE BUILDING. THE EMERGENCY DRIVER MAY BE REMOTELY MOUNTED UP TO (1/2) THE DISTANCE AS THE DRIVER MANUFACTURER RECOMMENDS REMOTING THAT DRIVER FROM THE SOURCE. FIXTURES SHALL BE WIRED SWITCHABLE UNLESS NOTED OTHERWISE.

LF21 – LIGHT FIXTURES SPECIFIED ESTABLISH A LEVEL OF QUALITY WHICH SHALL BE MET BY ALL FIXTURES PROVIDED. FIXTURES SHALL BE COMPARABLE IN PERFORMANCE, CONSTRUCTION, PHYSICAL APPEARANCE, FINISH AND FEATURES IN ORDER TO BE CONSIDERED EQUIVALENT. FIXTURES NOT DEEMED "EQUIVALENT" MAY NOT BE SUBMITTED AS AN "ALTERNATE" OR "SUBSTITUTE" FIXTURE TO THAT WHICH WAS SPECIFIED. DETERMINATION OF "EQUIVALENCY" SHALL BE THE RESPONSIBILITY OF A/E. THERE SHALL BE NO ADDITIONAL COST ASSOCIATED WITH REJECTION OF A FIXTURE NOT DEEMED "EQUIVALENT" BY THE A/E.

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2021-02-18 Addendum A

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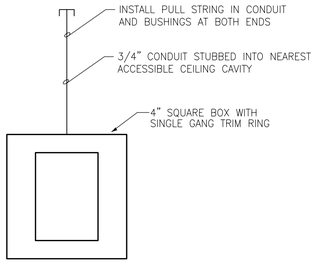
E3.0

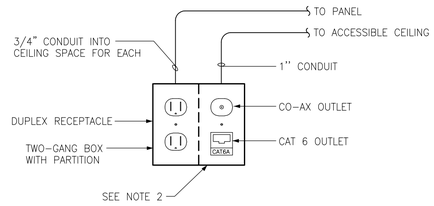


1 E5.0 TYPICAL DATA/TELEPHONE OUTLET

NTS

NOTES:

1. IF THE CONTRACTOR IS NOT PROVIDING TERMINATION JACKS, PROVIDE A BLANK COVERPLATE. COVERPLATE SHALL MATCH COLOR OF RECEPTACLE COVERPLATE.
2. COORDINATE LOCATIONS WITH SELECTED IT VENDOR.

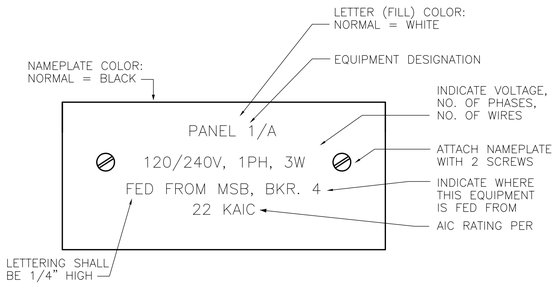


2 E5.0 RECEPTACLE/MONITOR OUTLET DETAIL

NTS

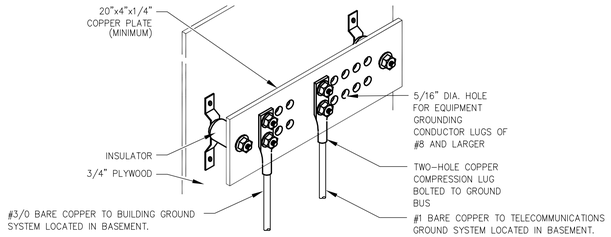
NOTES:

1. COORDINATE MOUNTING HEIGHT WITH INSTALLATION OF MONITOR. CENTER BEHIND MONITOR.
2. TV WALL BOX SHALL BE ARLINGTON INDUSTRIES. TVB713 POWER OUTLET SHALL BE SURGE PROTECTIVE AND HOSPITAL GRADE. HUBBELL HBL8262 OR EQUAL.
3. MOUNT AT 6'-0" AFF. OR OTHERWISE NOTED. VERIFY IN FIELD PRIOR TO INSTALLATION.



3 E5.0 PANELBOARD NAMEPLATE DETAIL

NTS

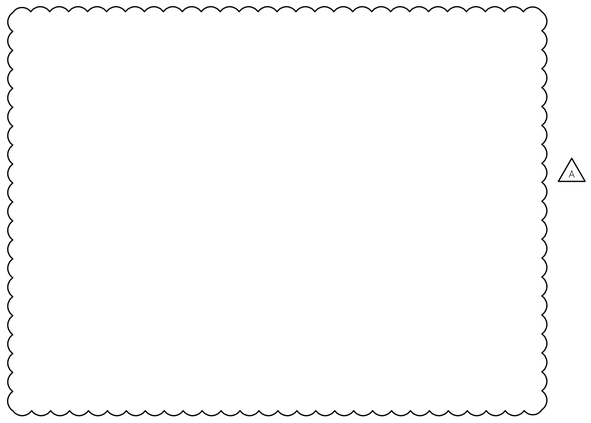


4 E5.0 INTERSYSTEMS GROUND BAR DETAIL

NTS

NOTES:

1. LENGTH OF GROUND BAR SHALL BE ADEQUATE TO GROUND ALL EQUIPMENT AND HAVE ROOM FOR 20% GROWTH.
2. PROVIDE A BARE #6 FROM DATA ROOM BAR TO DATA RACK. DATA RACK AND CONNECTION TO DATA RACK IS BY THE OWNER'S IT CONTRACTOR.

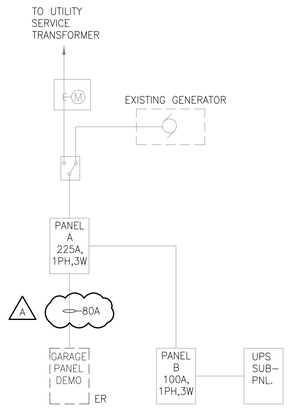


6 E5.0 TYPICAL OVERHEAD DOOR DETAIL

NTS

NOTES:

1. COORDINATE THE INSTALLATION OF THE DOOR SYSTEM WITH SELECTED DOOR VENDOR.
2. E.C. SHALL INSTALL ALL EQUIPMENT AND CONTROL WIRING AND MAKE ALL FINAL CONNECTIONS, TO MAKE A COMPLETE AND OPERATIONAL SYSTEM.
3. SYSTEM BASIS OF DESIGN IS LIFT MASTER ELITE SERIES TROLLEY OPERATOR. COORDINATE REQUIRMENTS WITH FINAL EQUIPMENT SELECTION.

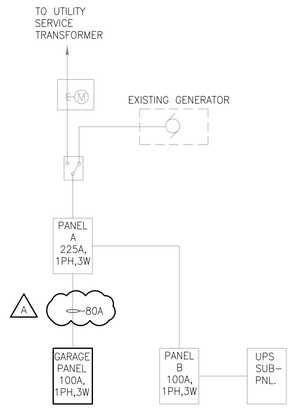


7 E5.0 ELECTRICAL 120/240V ONE-LINE DIAGRAM - DEMO

NO SCALE

NOTES:

1. ALL EQUIPMENT, CONDUIT AND WIRING IS EXISTING UNLESS NOTED OTHERWISE.
2. REMOVE EXISTING GARAGE POWER PANEL AND REPLACE WITH NEW.



8 E5.0 ELECTRICAL 120/240V ONE-LINE DIAGRAM - NEW

NO SCALE

NOTES:

1. PROVIDE NEW POWER PANEL.

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