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October 17, 2023

NOTICE OF ADDENDUM
ADDENDUM NO. 2

CONTRACT NO. 9086
Metro Transit Hanson Rd Bus Facility Remodel

This addendum is issued to modify, explain or correct the original Drawings, Specifications, or Contract Documents marked as ***Metro Transit Hanson Rd Bus Facility Remodel, City of Madison Project 10950, Contract No. 9086, as issued on September 19, 2023, Addendum #1 as issued on September 28, 2023 and Addendum #2 as issued on October 17, 2023.*** The addenda are hereby made a part of the contract documents, represents clarifications of the previously released documents, consists of eleven (11) pages, and the referenced exhibits.

This addendum does not include a change to the bid due date.

Please acknowledge the addenda on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

An electronic version of these documents can be found on the Bid Express website at
https://www.infotechinc.com/bidexpress/

If you are unable to download the plan revisions associated with the addendum please contact the Engineering office at 608-266-4751 to receive the material by another route.

For questions regarding this bid, contact:

Jim Whitney
City of Madison Engineering
Phone: 608-266-4563
Email: jwhitney@cityofmadison.com

Sincerely,

James M. Wolfe, P.E., City Engineer

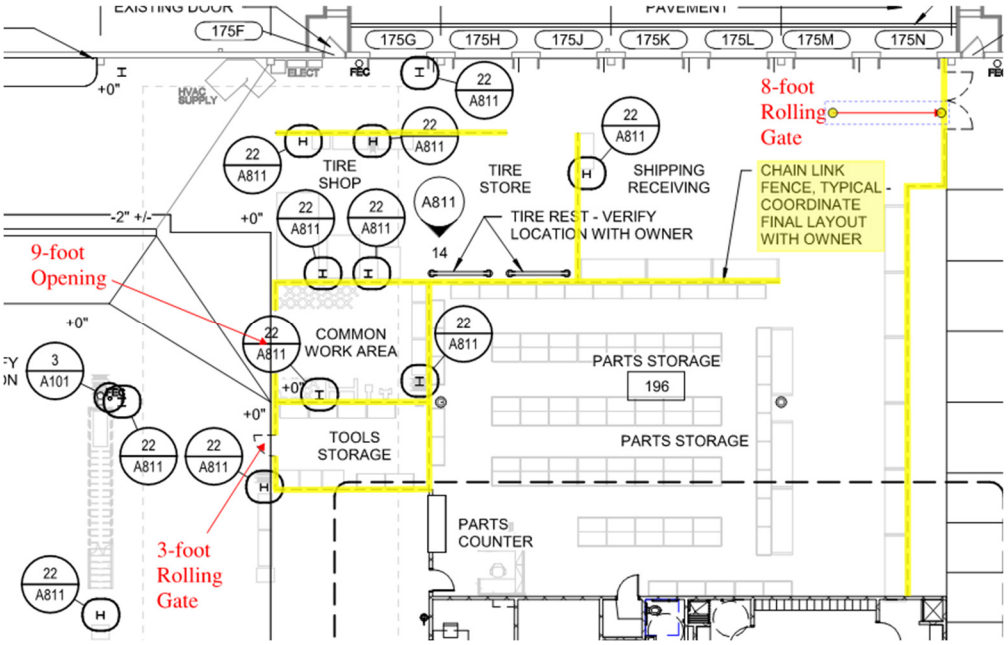
Cc: Greg Fries
Bryan Cooper

GENERAL CONTRACT CONDITIONS

1. No change.

GENERAL QUESTIONS/AMSWERS AND CLARIFICATIONS

1. Can you verify the fence highlighted attached is what is needed to be included in this bid?
    a. Response: The required fence, openings, and gates are highlighted below.



2. How tall does the fence need to be?
    a. Response: See below
3. Do posts need to be cored and set into the concrete floor, or can they be plate set with mechanical anchors?
    a. Response: Specification requires mounting into cored openings at concrete floor.
4. Please provide shop drawings/cut sheets of the New Flyer products which are being furnished and installed under separate contract.
    a. Response: Refer to attached charging equipment cutsheets for the depot chargers, mobil chargers, and pantograph charger for reference.
5. I have been unable to find where the Wash Bay Curtains from Section 10.14.43 are located on the plans.
    a. Response: Refer to sheet A201.
6. I have been unable to find the dimensions required for the curtains.
    a. Response: Refer to the specification and sheet A201. Bottom of curtain is approximately 11-feet above the finished floor.
7. Sheet D400 is not clear in elevations 1 thru 3 what area of the pre-cast wall panels get removed for install of new overhead doors. Please confirm what the hatching specifically at these elevations on the sheet denote as there does not appear to be a sheet legend.
    a. Refer to the revised elevations contained within the addendum.
8. Please confirm as it is not depicted on Sheet A400 or A401, if the existing accent color bands on the buildings are to be re-painted.
    a. Response: the elevations do not require the accent bands to be repainted. The addendum requires select areas of the storage building to be repainted due to selective demolition of items.
9. There is no work shown beyond the new VAV's, based on the demo on the preceding pages this area appears to get all new ductwork and HW piping, none of this work is shown on H101D, not sure if it's a layer issue or what but I think there's a fair amount of information missing from that sheet.
    a. This is being addressed and will be issued in another addendum.
10. Reference D101 – at the existing dock doors, "remove door, sill, seals and bumpers"…. Are the existing levelers being removed and infilled?
    a. Response: There are no levelers and therefore no pit to infill.

The photo above depicts what the building looks like after the sill, seal, and bumpers have been removed (threaded attachments remain as the removal was not complete). The steel, dock edge angle remains in the photo and as noted on the plans as it gets covered with metal flashing where the doors are infilled with metal panel or storefront.

The photo above depicts the sectional door hood and surround that are noted to be removed.

11. Is an equivalent dose of macrofibers in the concrete SOG an acceptable alternative to WWF reinforcement?
    a. Response: No
12. Who was the precaster for the original storage building?
    a. Response: The Con-Steel as-builts were provided in Addendum #1.
13. What is the crane rail elevation? How much clearance is between the crane rail and bottom of structure?
    a. Response: The crane should be as high as possible within the confines of the existing facility. Based on some preliminary measurements there is approximately 20-feet of clearance at the roof low point to accommodate the top of the crane. The buses are approximately12-feet high.
14. What are the retaining walls built from?
    a. Response: This is addressed in Addendum #2. The walls are block and sit on a concrete foundation. The guardrail has been eliminated.

15. Specification says dispensers are to be enamel coated steel. Does end user want stainless steel or painted dispensers?
    a. Response: Dispensers have been revised in the addendum.
16. Will there be a detail or specification on how the fuel piping is to enter the storage and maintenance building?
    a. Response: Refer to Vehicle Fueling System specification. Specifically 1.3(C) and (D).

17. What communication system will the customer want the fueling system to integrate with? (BAS, Modbus, stand alone?)
    a. Response: Refer to Vehicle Fueling System specification. Specifically 1.3(G) and (I).
18. Will there be a detail provided on what is desired for the future assemblies?
    a. Response: Accommodations for future assemblies should include rough-ins for all concealed and buried installations including sumps, catch basins, wash equipment, and the like. Future reels, dispensers, wash equipment, and the like will be provided by the Owner in the future but the concealed rough-ins should be in place to accommodate the installations without concrete removal.
19. Sheet C301 at the Maintenance Building fuel tank pad - should the 6" raised concrete pad be a 6" concrete curb at the perimeter of the 8" concrete slab?
    a. Response: The fuel island edging was removed from the metal fabrication specification. The vehicle fueling system specification requires a minimum of a 6-inch curb. The civil drawings indicate an 8" slab with a 6" curb. The installed condition should be an 8" slab as required by the civil documents with an exposed 6" high curb (2" of the slab is below the surface) with stainless steel edging at curb edge. The reinforcing shall be as indicated within the vehicle fueling specification and not as detailed on the civil sheets.

ACCEPTABLE EQUIVALENTS

1. No change.

SPECIFICATIONS

1. Add Section 08 91 19 Fixed Louvers (Specification section attached to Addendum).
2. Add Section 09 66 00 Terrazzo Shower Base (Specification section attached to Addendum).
3. Section 05 50 00 Metal Fabrications:
    a. Page 05 50 00-5
        i. Delete Section 2.12 Fuel Island Edging.
4. Delete Section 05 53 13 Guardrails
5. Section 08 41 13 Aluminum-Framed Storefronts:
    a. Page 08 41 13-2
        i. Delete Section 1.3(E)(4) Regional Materials.
6. Section 08 71 00 Door Hardware:
    a. Set 01, Set 04, Set 09, Set 11, Set 20, Set 31

i.	Add	1	EA	POWER SUPPLY	PS902		GRY	SCHLAGE
ii.	Add	1	EA	POSITION SWITCH		190-12	GRY	GRI

    b. Set 05, Set 29, 32, 36

i.	Add	1	EA	POWER SUPPLY	PS902		GRY	SCHLAGE
ii.	Add	1	EA	POSITION SWITCH		190-12	GRY	GRI

        iii. Add **GC TO RE-WORK FRAME AS REQUIRED FOR ELECTRIC STRIKE.
    c. Set 08

i.	Delete	3	EA	HINGE FILLERS	AS REQUIRED		652	DON-JO
ii.	Add	1	EA	PUSH	70C		630	ROCKWOOD
iii.	Add	1	EA	PULL	BF111 X 70C		630	ROCKWOOD
iv.	Add	1	EA	CLOSER	4040XP		689	LCN
v.	Add	1	EA	WALL STOP	409		630	ROCKWOOD
vi.	Add	1	EA	DOOR LOUVER				

    d. Add Set 08A

i.	Delete	3	EA	HINGE FILLERS	AS REQUIRED		652	DON-JO
ii.	Add	1	EA	PUSH	70C		630	ROCKWOOD
iii.	Add	1	EA	PULL	BF111 X 70C		630	ROCKWOOD
iv.	Add	1	EA	CLOSER	4040XP		689	LCN
v.	Add	1	EA	WALL STOP	409		630	ROCKWOOD

    e. Set 10

i.	Delete	1	EA	CLASSROOM LOCK	ND70BD X SPA		262	SCHLAGE
ii.	Add	1	EA	PASSAGE	ND10S X SPA		262	SCHLAGE

    f. Set 12
        i. Add **ALLOW 180 DEGREE SWING AT DOOR 177B
    g. Set 21

i.	Delete	1	EA	ELECT HINGE	AS SPECIFIED X TW8		630	IVES

ii. Delete 1 EA DOOR HARNESS CON-XX --- SCHLAGE
iii. Delete 1 EA HARN TO POWER CON-6W --- SCHLAGE
iv. Delete 1 EA ELECTRIC LOCK ND80BDEU X SPA 626 SCHLAGE
v. Delete **CARD READER/KEY PAD BY SECURITY SUPPLIER
vi. Delete OPERATION
vii. Add 1 EA STOREROOM LOCK ND80BD X SPA 262 SCHLAGE

h. Set 25
i. Delete 1 EA PUSH 70C 630 ROCKWOOD
ii. Delete 1 EA PULL BF111 X 70C 630 ROCKWOOD
iii. Add 1 EA PASSAGE ND10S X SPA 262 SCHLAGE

i. Add SET 37
i. Add 1 EA CORE AS REQUIRED 626 BEST
ii. Add 1 EA POSITION SWITCH 190-12 GRY GRI
iii. Add **BALANCE OF HARDWARE IS EXISTING TO REMAIN.

j. Add SET 38
i. Add 1 EA HINGES AS SPECIFIED 652 IVES
ii. Add 1 EA STOREROOM LOCK ND80BD X SPA 626 SCHLAGE
iii. Add 1 EA CORE AS REQUIRED 626 BEST
iv. Add 1 EA CLOSER 4040XP X SCUSH 689 LCN
v. Add 1 EA ELECT STRIKE 6211 630 VON DUPRIN
vi. Add 1 EA POWER SUPPLY PS902 GRY SCHLAGE
vii. Add 1 EA POSITION SWITCH 190-12 GRY GRI
viii. Add **CARD READER/KEYPAD BY SECURITY SUPPLIER.
ix. Add VALID CARD READ RELEASES ELECTRIC STRIKE TO ALLOW ENTRY. UPON LOSS OF POWER, ELECTRIC STRIKE TO REMAIN SECURED (FAIL SECURE). FREE EGRESS IS ALWAYS ALLOWED.

k. Add SET 39
i. Add 1 EA HINGES AS SPECIFIED 652 IVES
ii. Add 1 EA PRIVACY L9040 X 17A X L283-722 626 SCHLAGE
iii. Add 1 EA CLOSER 4040XP X SCUSH 689 LCN
iv. Add **PROVIDE STAINLESS STEEL HINGES AT DOOR 207.

7. Section 08 80 00 Glazing:
a. Page 08 80 00-5
i. Delete Section 2.8(I) Marker Board Standoff.

8. Section 09 30 13 Ceramic Tiling:
a. Page 09 30 13-3:
i. Revise lines 16-30
Porcelain Tile Type CT-1: Unglazed.
Manufacture: Daltile.
Product: Keystones.
Certification: Tile certified by the Porcelain Tile Certification Agency.
Face Size: 2 by 2 mosaic sheet of 12 x 24.
Thickness: 5/16 inch.
Pattern: Stacked bond
Tile Color: Desert Gray Speckle D200.
Grout Color: As selected by Architect from manufacturer's full range.
Precoat with temporary protective coating.
Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
Built-up Cove Base: MB5B.
Inside and outside corners.
ii. Revise lines 31-45
Porcelain Tile Type CT-2: Unglazed.
Manufacture: Delconca.
Product: Essential.
Certification: Tile certified by the Porcelain Tile Certification Agency.
Face Size: 12 by 24.
Thickness: 5/16 inch.

Pattern: Running bond
Tile Color: Gray HET05.
Grout Color: As selected by Architect from manufacturer's full range.
Precoat with temporary protective coating.
Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile. Provide shapes as follows, selected from manufacturer's standard shapes:
Base: 4 x 12.

iii. Add line 46:
Porcelain Tile Type CT-4:
Manufacture: Ceramiche Campogalliano.
Distributor: Ceramic Tileworks
Style: Glassalike Block.
Tile Color: Blu
Finish: Glossy
Face Size: 4 x 12.
Thickness: 3/8 inch+.
Pattern: Stacked Bond.
Grout Color: As selected by Architect from manufacturer's full range.
Precoat with temporary protective coating.
Grout width: 1/8-inch.

9. Section 09 91 24 Interior Painting:
   a. Page 09 91 24-5:
      i. Revise Line 3: Epoxy-Modified Latex System MPI EXT 3.1G:
      ii. Revise Line 17: Epoxy-Modified Latex System MPI EXT 4.2J:
      iii. Revise Line 23: Epoxy-Modified Latex System MPI EXT 3.1G:
      iv. Revise Line 24: Prime Coat: Sherwin Williams Pro Industrial Pro-Cryl Universal Primer.
10. Section 10 14 43 Wash Bay Curtain and Track
   a. Page 08 41 13-1
      i. Add line 51: Material weight: 18 oz.
11. Section 10 21 13.19 Plastic Toilet Compartments:
   a. Page 10 21 13.19-2
      i. Delete Section 2.2(A) Recycled Content
      ii. Delete Section 2.2(B) Regional Materials.
12. Section 10 51 13 Metal Lockers
   a. Page 10 51 13-3
      i. Delete Section 2.3(J)(2) Recycled Contect.
      ii. Add line 8: Size: 12-inches wide x 18 inches deep.
      iii. Add line 9: Filler Panels: Fabricated from 0.048-inch nominal-thickness steel sheet.
      iv. Add Line 10:
      Finished End Panels: Fabricated from 0.024-inch nominal-thickness steel sheet to cover unused penetrations and fasteners, except for perimeter fasteners, at exposed ends of nonrecessed metal lockers; finished to match lockers.
13. Section 11 60 05 Vehicle fueling System
   a. Page 11 60 05-3
      i. Revise 2.2(B): Dispensers and Accessories: Heavy duty, <u>stainless steel</u>, digital, UL listed unit with cabinet, register with automatic hoses, swivels, and break away valves. Units shall have vertical rail features. Provide twin 20' (minimum) length hoses at each dispenser location.
14. Section 32 31 13 Chain Link Fencing and Gates (Interior):
   a. Page 32 31 13-1
      i. Add 2.2(A)(3): Fabric Height: 7’-0”.
      ii. Add 2.2(A)(4): Selvage: Knuckled at both selvages.
   b. Page 32 31 13-2
      i. Add 2.2(A)(3): Fabric Height: 7’-0” AFF.
      ii. Add 2.2(C)(1)(a)(vii): Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.
      iii. Add 2.2(C)(1)(a)(vii): Lock: Owner provide padlock.
15. Add Section 28 46 21 Addressable Fire-Alarm System (Specification section attached to Addendum).

DRAWINGS

1. C200 Demolition Plan
   A. Revise pavement removal and sawcut area around proposed transformer location.
   B. Add curb removal called out in proposed stair location.
2. C300 Overall Site Plan
   A. Revise pavement area around proposed transformer location.
   B. Revise callout for proposed camera pole.
   C. Revise bus charger station location and layout.
3. C301 East Building Detailed Site Plan
   A. Revise callout for proposed transformer.
   B. Revise Callouts for bus charger.
   C. Revise dimensioning labels.
4. C501 Details
   A. Add detail for camera pole concrete base.

5. D201 Demolition Reflected Ceiling Plan – Storage Building
   A. Revise existing ceiling to be removed from ACT to gypsum board.
   B. Add note to remove gyp bd ceiling – retain framing.
   C. Delete note to remove card reader. Door is scheduled to receive a card reader. Coordinate with data plans.
6. D400 Demolition Elevations - Maintenance Building
   A. Detail 1 – East elevation
      1. Revise note regarding removal of egress / emergency lighting.
      2. Add metal wall panel removal for door opening.
   B. Detail 2 – West elevation
      1. Revise note regarding removal of egress / emergency lighting.
   C. Detail 3 – North elevation
      1. Revise note regarding removal of egress / emergency lighting.
   D. Detail 4 – South elevation
      1. Revise note regarding removal of egress / emergency lighting.
   E. Demolition Legend
      1. Add Legend
7. D401 Demolition Elevations - Storage Building
   A. Detail 1 – East elevation
      1. Add notes regarding removal of egress / emergency lighting.
      2. Add note regarding removal of sectional door hood and surround.
   B. Detail 2 – West elevation
      1. Revise note regarding removal of egress / emergency lighting.
      2. Add notes regarding sectional door panel replacement.
   C. Detail 3 – North elevation
      1. Revise note regarding removal of egress / emergency lighting.
      2. Add precast removal for louver opening.
      3. Add note regarding existing FDC and alarm.
      4. Add door removal graphic.
      5. Add note regarding sectional door panel replacement.
      6. Add note regarding metal door and frame removal.
   D. Detail 5 – South elevation
      1. Add notes regarding removal of egress / emergency lighting.
      2. Add notes regarding removal of building lighting.
      3. Add note regarding removal of sectional door hood and surround.
      4. Add note regarding retaining a sectional door, sill, and associated seals and accessories.
   E. Demolition Legend
      1. Add Legend
8. A201 Reflected Ceiling Plan – Storage Building
   A. Revise Womens 266 and Mens 267 from ACT ceilings to Gyp Bd ceilings.
   B. Revise Water 299 from OTS to Gyp Bd ceiling.
   C. Add detail 8/A601 reference to Water 299.
   D. Revise PVC ceiling height.
   E. Add note to Wash Bay curtain indicating curtain height.

9. A202 Enlarged Ceiling Plans
    A. Revise Womens 266 and Mens 267 from ACT ceilings to Gyp Bd ceilings.
    B. Add note to reframe existing joists to accommodate 2x2 light fixtures.
    C. Revise Water 299 from OTS to Gyp Bd ceiling.
    D. Add detail 8/A601 reference to Water 299.
10. A400 Elevations - Maintenance Building
    A. Detail 1 – East elevation
        1. Revise note regarding high speed door.
        2. Add glazing panels to high speed door.
        3. Add hose bibbs.
        4. Revise FA Device note.
        5. Delete louver and note.
    B. Detail 2 – West elevation
        1. Revise note regarding egress / emergency lighting.
        2. Add note regarding building lighting.
        3. Add hose bibbs.
    C. Detail 3 – North elevation
        1. Revise note regarding egress / emergency lighting.
        2. Add note regarding building lighting.
    D. Detail 4 – South elevation
        1. Revise note regarding high speed door.
        2. Revise louver note.
        3. Add glazing panels to high speed doors
        4. Revise note regarding egress / emergency lighting.
        5. Add note regarding Fire Protection test header location.
        6. Revise door and frame notation.
    E. Elevation Legend
        1. Add Legend
11. A401 Elevations – Storage Building
    A. Detail 1 - East elevation
        1. Add note to paint wall below canopy.
        2. Revise glazing notes.
        3. Revise note regarding building lighting.
        4. Add glazing panels to high speed door.
        5. Add high speed door control buttons / status lights
        6. Add hose bibbs.
        7. Add building light
    B. Detail 2 – West elevation
        1. Revise detail number.
        2. Revise building lighting note.
        3. Add sectional door panel replacement notes.
    C. Detail 3 – North elevation
        1. Revise detail number.
        2. Revise building lighting notes.
        3. Add sectional door panel replacement notes.
        4. Add Fire Protection test header note.
    D. Detail 4 – South elevation
        1. Revise detail number.
        2. Add note to paint wall
        3. Revise glazing notes.
        4. Revise building lighting notes.
    E. Elevation Legend
        1. Add Legend

12. A601 Door Schedule & Wall Types
    A. Door and Frame Schedule – Maintenance Building:
        1. Delete doors 140B, 140E, 175G, 175H, 175J, 175K, 175L, 175M, and 175N from door schedule and add general note underneath schedule.
        2. Revise door type for doors 100, 160, 161, and 177C.
        3. Revise door material, door finish, and frame finish for doors 100, 175A, 175D, and 177A.
        4. Revise frame type, jamb detail, head detail, and remarks for doors 160 and 161.
        5. Revise label for door 176.
        6. Remove remarks for door 178B.
    B. Door and Frame Schedule – Storage Building:
        1. Remove doors 200E, 200J, 200L, 200N, 200Q, 200T, 200U, and 200V from door schedule and add general note underneath schedule.
        2. Revise door type for doors 200W, 210C, 259A, 266, 267, 293, 294, and 299.
        3. Revise door material, door finish, and frame finish for doors 200K, 200M, 200W, 250A, and 274.
        4. Revise door height for doors 204, 211, and 300.
        5. Revise frame type, jamb detail, head detail, and remarks for doors 200W, 266, 267, 293, 294, and 299.
        6. Revise threshold detail for door 200W.
        7. Revise label for door 299.
        8. Revise hardware for doors 200W, 285B, and 299.
    C. Frame Types: Revise frame type number from 3 to E.
    D. Add detail 8
13. A701 Interior Finishes & Schedules
    A. Finish Schedule – Maintenance Building:
        1. Delete base from rooms 176, 177, 178, 195, and 196.
        2. Revise floor and base finish for room 184.
        3. Revise base finish for rooms 186, 187, 188, and 189.
    B. Finish Schedule – Storage Building:
        1. Delete flooring from room 202.
        2. Delete base from rooms 201, 202, 203, 204, 205, 206, 210, 211, and 264.
        3. Add wall finish and revise remarks for room 201.
        4. Revise floor and base finish for rooms 207 and 208.
        5. Revise base finish for room 263.
    C. Finish Key:
        1. Revise style for CG-1.
        2. Revise CPT-1:
            - Add distributor, delete style, revise product number, and revise color.
        3. Delete style for RB-1.
        4. Delete CTB-1.
14. A702 Interior Finish Plans
    A. Detail 1:
        1. Add base extents for maintenance/building & grounds walls.
    B. Detail 3:
        1. Revise view extents.
        2. Add paint and base extents for bus storage wall.
    C. Detail 4:
        1. Revise view extents.
        2. Add paint callout for plan east wall.
        3. Note extents to paint all exposed items which are not stainless steel PT-1.
15. A801 Interior elevations
    A. Detail 17:
        1. Add base section callout.
        2. Revise base finish callout.
    B. Detail 18:
        1. Add base section callout.
        2. Revise base finish callout.

16. A802 Interior Elevations
    A. Detail 4:
        1. Remove base and add CT-4 wall finish callout.
    B. Detail 5:
        1. Add base section callout.
        2. Revise base finish callout.
    C. Detail 6:
        1. Add base section callout.
        2. Revise base finish callout.
    D. Detail 7:
        1. Remove base and add CT-4 wall finish callout.
    E. Detail 8:
        1. Add base section callout.
        2. Revise base finish callout.
17. A812 Interior Details:
    A. Detail 1:
        1. Revise tile base section and profile.
    B. Detail 2:
        1. Revise tile base section and profile.
    C. Detail 14:
        1. Revise concrete removal extents in Change 186.
18. F100 First Floor Plan Maintenance Building Fire Protection, revise the following:
    A. Add heads under precast lid in Battery 178, Fluids/Compressor 177, & Fire Pump 176.
    B. Relocated and added sidewalls sprinkler heads under garage doors to provide protection under obstructions that are greater than 4'-0" in width.
    C. Added heads above Office 181, Electrical Shop 182, Mechanical 195, Toilet 184, Comfort 183, Corridor 180, Change 187, Change 186, Locker 185, Change 188, and Change 189 as area above ceiling is open to adjacent warehouse.
19. F101 First Floor Plan Storage Building Fire Protection, revise the following:
    A. Show proper location of Fire Department Connection, located outside Office 271.
    B. Added Ordinary Hazard Group 1 classification for Mechanical Room located above Driver Locker 260 and Bus Storage 200.
    C. Added concealed pendants in Lounge 257 and Kitchenette 258. Also added note identifying above and below protection is required.
    D. Added concealed pendants in ceilings in Office 206, Toilet 207, Bus Storage 200, Toilet 208, & Break 209. Also added uprights above rooms as area above ceiling is open to adjacent warehouse.
    E. Removed sidewall sprinkler heads under garage door that does not meet the 4'-0" wide obstruction requirement.
20. E001 Notes, Symbols, Abbreviations & Sheet Index, revise the following:
    A. Revise plan and notes as indicated.
21. ED100A Lighting Demo Plan – 3829 Maint. Bldg. – Section A, revise the following:
    A. Revise plan and notes as indicated.
22. ED100B Lighting Demo Plan – 3829 Maint. Bldg. – Section B, revise the following:
    A. Revise plan and notes as indicated.
23. ED200A Power Demo Plan – 3829 Maint. Bldg. – Section A, revise the following:
    A. Revise plan and notes as indicated.
24. ED200B Power Demo Plan – 3829 Maint. Bldg. – Section B, revise the following:
    A. Revise plan and notes as indicated.
25. ED300 Existing Panel Schedules – 3829 Maint. Bldg., revise the following:
    A. Revise plan and notes as indicated.
26. E100A Lighting New Work Plan – 3829 Maint. Bldg. – Section A, revise the following:
    A. Revise plan and notes as indicated.
27. E100B Lighting New Work Plan – 3829 Maint. Bldg. – Section B, revise the following:
    A. Revise plan and notes as indicated.
28. E100C Lighting New Work Plan – 3829 Maint. Bldg. – Enlarged Plans, revise the following:
    A. Revise plan and notes as indicated.
29. E200A Power New Work Plan – 3829 Maint. Bldg. – Section A, revise the following:
    A. Revise plan and notes as indicated.
30. E200B Power New Work Plan – 3829 Maint. Bldg. – Section B, revise the following:
    A. Revise plan and notes as indicated.

31. E200C Power New Work Enlarged Plans – Maint. Bldg., revise the following:
    A. Revise plan and notes as indicated.
32. E200D Power New Work Enlarged Plans – Maint. Bldg., revise the following:
    A. Revise plan and notes as indicated.
33. E200E Power New Work Enlarged Plans – Maint. Bldg., revise the following:
    A. Revise plan and notes as indicated.
34. E300A Existing Revised Panel Schedules – 3829 Maint. Bldg., revise the following:
    A. Revise plan and notes as indicated.
35. E300B New Panel Schedules – 3829 Maint. Bldg., revise the following:
    A. Revise plan and notes as indicated.
36. E400 One Line Diagram – 3829 Maint. Bldg., revise the following:
    A. Revise plan and notes as indicated.
37. E500A Fire Alarm New Work – 3829 Maint. Bldg. – Section A, revise the following:
    A. Revise plan and notes as indicated.
38. E500B Fire Alarm New Work – 3829 Maint. Bldg. – Section B, revise the following:
    A. Revise plan and notes as indicated.
39. E501A Fire Alarm New Work – 3901 Storage Bldg. – Section A, revise the following:
    A. Revise plan and notes as indicated.
40. E501B Fire Alarm New Work – 3901 Storage Bldg. – Section B, revise the following:
    A. Revise plan and notes as indicated.
41. E501C Fire Alarm New Work – 3901 Storage Bldg. – Section C, revise the following:
    A. Revise plan and notes as indicated.
42. E501D Fire Alarm New Work – 3901 Storage Bldg. – Section D, revise the following:
    A. Revise plan and notes as indicated.
43. E600 Motor and Equipment Schedules – 3829 Maint. Bldg., revise the following:
    A. Revise plan and notes as indicated.
44. Q001, NOTES, SYMBOLS, AND ABREVIATIONS revise the following:
    A. Added note identifying outside camera locations – referenced sheet Q601.
45. QD100, BUILDING 3829 DEMOLITION PLAN revise the following:
    A. Added note to IT Closet E to refer to Sheet Q103 for Demo Information.
46. Q100, OVERALL BUILDING 3829 PLAN revise the following:
    A. Moved data cable locations in the Bay to better reflect location in relation to Bollards and Columns.
47. Q101, OFFICE AREA BUILDING 3829 PLAN revise the following:
    A. Added 2 Data to room 177.
    B. Added Card Reader to room 176.
48. Q200, OVERALL BUILDING 3901 PLAN revise the following:
    A. Added 3 data to fueling stations.
49. Q201, OFFICE AREA BUILDING 3901 PLAN revise the following:
    A. Added Key Pad Notes – referenced Sheet Q601.
    B. Added 1 Data location to room 204.
50. Q601, SCHEDULES - CARD ACCESS AND CAMERA revise the following:
    A. Revised Card Access Schedule

PROPOSAL

1. No change.

End of Contract 9086 Addendum No. 2

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SECTION 08 91 19
FIXED LOUVERS

PART 1 – GENERAL

1.1 SUMMARY

A. Fixed extruded-aluminum louvers.

B. Blank-off panels for louvers

1.2 DEFINITIONS

A. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined in this Section or in referenced standards.

B. Horizontal Louver: Louver with horizontal blades (i.e., the axis of the blades are horizontal).

C. Vertical Louver: Louver with vertical blades (i.e., the axis of the blades are vertical).

D. Drainable-Blade Louver: Louver with blades having gutters that collect water and drain it to channels in jambs and mullions, which carry it to bottom of unit and away from opening.

E. Wind-Driven-Rain-Resistant Louver: Louver that provides specified wind-driven-rain performance, as determined by testing in accordance with AMCA 500-L.

F. Windborne-Debris-Impact-Resistant Louver: Louver that provides specified windborne-debris-impact resistance, as determined by testing in accordance with AMCA 540.

1.3 SUBMITTALS

A. Product Data: For each type of product.

1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.

B. Sustainable Design Submittals:

C. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.

1. Show weep paths, gaskets, flashings, sealants, and other means of preventing water intrusion.
2. Show mullion profiles and locations.

D. Samples: For each type of metal finish required.

1.4 FIELD CONDITIONS

A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.

1.5 WARRANTY

A. Special Finish Warranty, Anodized Finishes: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of anodized finishes within specified warranty period.

1. Deterioration includes, but is not limited to, the following:
   a. Color fading more than 5 Delta E units when tested in accordance with ASTM D2244.
   b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.

c. Cracking, peeling, or chipping.

2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain fixed louvers from single source from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.

2.2 PERFORMANCE REQUIREMENTS

A. Structural Performance: Louvers withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures are considered to act normal to the face of the building.

1. Wind Loads:

a. Determine loads based on pressures as indicated on Drawings.

B. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width in accordance with AMCA 500-L.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

D. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

2.3 FIXED EXTRUDED-ALUMINUM LOUVERS

A. Horizontal Drainable-Blade Louver, Extruded Aluminum:

1. Louver Depth: 4 inches unless 6 inches is required to meet performance requirements.
2. Frame and Blade Nominal Thickness: Not less than 0.060 inch for blades and 0.080 for frames.
3. Mullion Type: Exposed.
4. Louver Performance Ratings:

a. Free Area: Not less than 7.5 sq. ft. (0.70 sq. m) for 48-inch- wide by 48-inch- high louver.

b. Point of Beginning Water Penetration: Not less than 900 fpm.

5. AMCA Seal: Mark units with AMCA Certified Ratings Seal.

2.4 LOUVER SCREENS

A. General: Provide screen at each exterior louver.

1. Screen Location for Fixed Louvers: Interior face.
2. Screening Type: Bird screening

B. Secure screen frames to louver frames with stainless steel machine screws, spaced a maximum of 6 inches (150 mm) from each corner and at 16 inches o.c.

C. Louver Screen Frames: Fabricate with mitered corners to louver sizes indicated.

1. Metal: Same type and form of metal as indicated for louver to which screens are attached.
2. Finish: Mill finish unless otherwise indicated.
3. Type: Non-rewirable, U-shaped frames.

D. Louver Screening for Aluminum Louvers:

1. Bird Screening, Flattened, Expanded Aluminum: 3/4 by 0.050 inch (19 by 1.27 mm) thick.

2.5 BLANK-OFF PANELS

A. Insulated Blank-Off Panels: Laminated panels consisting of an insulating core surfaced on back and front with metal sheets and attached to back of louver.

1. Thickness: 2 inches (50 mm).
2. Metal Facing Sheets, Aluminum: Not less than 0.032-inch (0.81-mm) nominal thickness.
3. Insulating Core: extruded-polystyrene foam.
4. Edge Treatment: Trim perimeter edges of blank-off panels with louver manufacturer's standard with corners mitered and with same finish as panels.
5. Seal perimeter joints between panel faces and louver frames with gaskets or sealant.
6. Panel Finish: Same finish applied to louvers but black color.
7. Attach blank-off panels with sheet metal screws.

2.6 MATERIALS

A. Aluminum Extrusions: ASTM B221 (ASTM B221M), Alloy 6063-T5, T-52, or T6.

B. Aluminum Sheet: ASTM B209 (ASTM B209M), Alloy 3003 or 5005, with temper as required for forming, or as otherwise recommended by metal producer for required finish.

C. Fasteners: Use types and sizes to suit unit installation conditions.

1. Use screws for exposed fasteners unless otherwise indicated.
2. For fastening aluminum, use aluminum or 300 series stainless steel fasteners.

D. Postinstalled Fasteners for Concrete and Masonry: Torque-controlled expansion anchors, fabricated from stainless steel components, with allowable load or strength design capacities calculated in accordance with ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing in accordance with ASTM E488/E488M conducted by a qualified testing agency.

E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

2.7 FABRICATION

A. Factory assemble louvers to minimize field splicing and assembly. Disassemble units as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Vertical Assemblies: Where height of louver units exceeds fabrication and handling limitations, fabricate units to permit field-bolted assembly with close-fitting joints in jambs and mullions, reinforced with splice plates.

1. Continuous Vertical Assemblies: Fabricate units without interrupting blade-spacing pattern.

C. Maintain equal louver blade spacing to produce uniform appearance.

D. Fabricate frames, including integral sills, to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints.

1. Frame Type: Extruded Channel type flange unless otherwise indicated.

E. Include supports, anchorages, and accessories required for complete assembly.

F. Provide subsills made of same material as louvers for recessed louvers.

G. Join frame members to each other and to fixed louver blades with fillet welds concealed from view, threaded fasteners, or both, as standard with louver manufacturer unless otherwise indicated or size of louver assembly makes bolted connections between frame members necessary.

2.8 ALUMINUM FINISHES

A. Finish louvers after assembly.

B. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

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

3.2 PREPARATION

A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.

3.3 INSTALLATION

A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.

B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.

C. Form closely fitted joints with exposed connections accurately located and secured.

D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.

E. Protect unpainted galvanized- and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.

F. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 079200 "Joint Sealants" for sealants applied during louver installation.

3.4 ADJUSTING AND CLEANING

A. Clean exposed louver surfaces that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate during construction period.

B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.

C. Restore louvers damaged during installation and construction, so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Architect, remove damaged units and replace with new units.

END OF SECTION

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SECTION 09 66 00
TERRAZZO SHOWER BASES

PART 1 – GENERAL

1.1 SUMMARY

A. Section Includes:
1. Shower Basins
2. Grout.

1.2 SUBMITTALS

A. Product Data: For each type of product.
1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for showers **basins**.
2. Include rated capacities, operating characteristics, and furnished specialties and accessories.

A. Maintenance Data: For shower valves to include in maintenance manuals.

PART 2 - PRODUCTS

2.1 SHOWER BASINS

A. Precast-Terrazzo Shower Basins:
1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model **SBADA and SBS** or comparable product by one of the following:
a. Florestone Products Co., Inc.
b. Stern-Williams Co., Inc.
2. Source Limitations: Obtain shower basins from single source from single manufacturer.
3. Description: Precast-terrazzo base for built-up-type shower fixture.
4. Standard:
a. CSA B45.8/IAPMO Z403.
b. IAPMO PS 99.
c. 2010 ADA Standards for Accessible Design.
5. Threshold Type: **Standard commercial and Handicapped/accessible**.
6. Shape: **Square** and **Square, ADA for roll-in**.
7. Nominal Size:
a. Square: **36 by 36 in.**
b. Square, ADA for Roll-In: 37 1/2 by 39 in.
8. Color: Selected from manufacturer's standard color selection.
9. Outlet: Coordinate with plumbing contractor.
10. Tiling Flange: Integral, stainless steel.
a. Square fixture: **Three sides**.

2.2 GROUT

A. Standard: ASTM C1107/C1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
B. Characteristics: Nonshrink; recommended for interior and exterior applications.
C. Design Mix: 5000 psi (34.5 MPa), 28-day compressive strength.
D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine rough-in of water-supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before shower installation.

B. Examine walls and floors for suitable conditions where showers will be installed.

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

3.2 INSTALLATION

A. Assemble shower components in accordance with manufacturers' written instructions.

B. Install showers level and plumb.

C. Set **shower basins** in leveling bed of cement grout.

D. Seal joints between showers and floors and walls using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 PIPING CONNECTIONS

A. Connect fixtures with piping. Use size fittings required to match fixtures.

B. Comply with traps and soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

3.4 ADJUSTING

A. Operate and adjust showers and controls. Replace damaged and malfunctioning showers, fittings, and controls.

B. Adjust water pressure at shower valves to produce proper flow.

3.5 CLEANING AND PROTECTION

A. After completing installation of showers **basins**, inspect and repair damaged finishes.

B. Clean shower **basins**, shower valves, and other fittings with manufacturers' recommended cleaning methods and materials.

C. Provide protective covering for installed fixtures and fittings.

D. Do not allow use of showers **basins** for temporary facilities unless approved in writing by Owner.

END OF SECTION

SECTION 28 46 21
ADDRESSABLE FIRE-ALARM SYSTEMS

PART 1 - GENERAL

SUMMARY

Section Includes:

Addressable fire-alarm system.
Fire-alarm control unit (FACP).
Manual fire-alarm boxes.
System smoke detectors.
Duct smoke detectors.
Carbon monoxide detectors.
Heat detectors.
Fire-alarm notification appliances.
Fire-alarm remote annunciators.
Fire-alarm addressable interface devices.

Related Requirements:

Section 26 05 19 “Low- Voltage Electrical Power Conductors and Cables” or section 26 05 23 ”Control Voltage Electrical Power Cables” for cables and conductors for fire-alarm systems.

DEFINITIONS

DACT: Digital alarm communicator transmitter.
FACP: Fire-alarm control unit.
Voltage Class: For specified circuits and equipment, voltage classes are defined as follows:

Control Voltage: Listed and labeled for use in remote-control, signaling, and power-limited circuits supplied by a Class 2 or Class 3 power supply having rated output not greater than 150 V and 5 A, allowing use of alternate wiring methods complying with NFPA 70, Article 725.

Low Voltage: Listed and labeled for use in circuits supplied by a Class 1 or other power supply having rated output not greater than 1000 V, requiring use of wiring methods complying with NFPA 70, Article 300, Part I.

SEQUENCING AND SCHEDULING

Existing Fire-Alarm Equipment: Maintain existing equipment fully operational until new equipment has been tested and accepted. When new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service, and label existing fire-alarm equipment "NOT IN SERVICE" until removed from building.

Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and wiring.

SUBMITTALS

Product Data: For each type of product, including furnished operations and accessories.

Include construction details, material descriptions, dimensions, profiles, and finishes.

Include rated capacities, operating characteristics, and electrical characteristics.

Shop Drawings: For fire-alarm system.

Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field
assembly, components, and locations. Indicate conductor sizes, indicate termination locations and requirements,

and distinguish between factory and field wiring.

Detail assembly and support requirements.

Include voltage drop calculations for notification-appliance circuits.

Include battery-size calculations.

Include input/output matrix.

Include written statement from manufacturer that equipment and components have been tested as a system and comply with requirements in this Section and in NFPA 72.

Include performance parameters and installation details for each detector.

Verify that each duct detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.

Provide control wiring diagrams for fire-alarm interface to HVAC; coordinate location of duct smoke detectors and access to them.

Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators.

Show field wiring and equipment required for HVAC unit shutdown on alarm.

Locate detectors in accordance with manufacturer's written instructions.

Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits and point-to-point wiring diagrams

Delegated Design Submittal: For notification appliances and smoke and heat detectors, in addition to submittals listed above, indicate compliance with performance requirements and design criteria, including analysis data signed and sealed by qualified professional engineer responsible for their preparation.

Drawings showing location of each notification appliance and smoke and heat detector, ratings of each, and installation details as needed to comply with listing conditions of device.

Design Calculations: Calculate requirements for selecting spacing and sensitivity of detection, complying with NFPA 72. Calculate spacing and intensities for strobe signals and sound-pressure levels for audible appliances.

Indicate audible appliances required to produce square wave signal per NFPA 72.

CLOSEOUT SUBMITTALS

Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals.

In addition to items specified in Division 1, include the following and deliver copies to authorities having jurisdiction:

Comply with "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.

Provide "Fire-Alarm and Emergency Communications System Record of Completion Documents" in accordance with "Completion Documents" Article in "Documentation" section of "Fundamentals" chapter in NFPA 72.

Complete wiring diagrams showing connections between devices and equipment. Each conductor must be numbered at every junction point with indication of origination and termination points.

Riser diagram.

Device addresses.

Air-sampling system sample port locations and modeling program report showing layout meets performance criteria.

Record copy of site-specific software.

Provide "Inspection and Testing Form" in accordance with "Inspection, Testing and Maintenance" chapter in NFPA 72, and include the following:

Equipment tested.
Frequency of testing of installed components.
Frequency of inspection of installed components.
Requirements and recommendations related to results of maintenance.
Manufacturer's user training manuals.

Manufacturer's required maintenance related to system warranty requirements.

Abbreviated operating instructions for mounting at FACP and each annunciator unit.

MAINTENANCE MATERIAL SUBMITTALS

Extra Stock Material: Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Lamps for Remote Indicating Lamp Units: Quantity equal to 10 percent of amount installed, but no fewer than one unit.

Lamps for Strobe Units: Quantity equal to 10 percent of amount installed, but no fewer than one unit.

Smoke Detectors, Fire Detectors: Quantity equal to 10 percent of amount of each type installed, but no fewer than one unit of each type.

Detector Bases: Quantity equal to two percent of amount of each type installed, but no fewer than one unit of each type.

Keys and Tools: One extra set for access to locked or tamperproof components.

Audible and Visual Notification Appliances: One of each type installed.

Fuses: Two of each type installed in system. Provide in box or cabinet with compartments marked with fuse types and sizes.

WARRANTY

Special Warranty: Manufacturer agrees to repair or replace fire-alarm system equipment and components that fail because of defects in materials or workmanship within specified warranty period.

Warranty Period: Five years from date of Substantial Completion.

PART 2-PRODUCTS

ADDRESSABLE FIRE-ALARM SYSTEM

Description:

Noncoded, UL-certified addressable system, with multiplexed signal transmission and horn-and-strobe notification for evacuation.

Performance Criteria:

Regulatory Requirements:

Fire-Alarm Components, Devices, and Accessories: Listed and labeled by a NRTL in accordance with NFPA 70 for use with selected fire-alarm system and marked for intended location and application.

General Characteristics:

Automatic sensitivity control of certain smoke detectors.

Fire-alarm signal initiation must be by one or more of the following devices and systems:

- Manual stations.
- Heat detectors.
- Smoke detectors.
- Duct smoke detectors.
- Carbon monoxide detectors.
- Automatic sprinkler system water flow.
- Fire-extinguishing system operation.
- Fire standpipe system.
- Fire pump running.

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Fire-alarm signal must initiate the following actions:

- Continuously operate alarm notification appliances.
- Identify alarm and specific initiating device at FACP and remote annunciators.
- Unlock electric door locks in designated egress paths.
- Release fire and smoke doors held open by magnetic door holders.
- Activate voice/alarm communication system.
- Record events in system memory.
- Indicate device in alarm on graphic annunciator.

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Supervisory signal initiation must be by one or more of the following devices and actions:

- Valve supervisory switch.
- Independent fire-detection and -suppression systems.
- Fire pump is running.
- Fire pump has lost power.
- Power to fire pump has phase reversal.
- Zones or individual devices have been disabled.
- FACP has lost communication with network.

System trouble signal initiation must be by one or more of the following devices and actions:

Open circuits, shorts, and grounds in designated circuits.

Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.

Loss of communication with addressable sensor, input module, relay, control module, remote annunciator, printer interface, or Ethernet module.

Loss of primary power at FACP.

Ground or single break in internal circuits of FACP.

Abnormal ac voltage at FACP.

Break in standby battery circuitry.

Failure of battery charging.

Abnormal position of switch at FACP or annunciator.

Voice signal amplifier failure.

System Supervisory Signal Actions:

Identify specific device initiating event at FACP and remote annunciators.
Transmit system status to building management system.
Display system status on graphic annunciator.

Network Communications:

Provide network communications for fire-alarm system in accordance with fire-alarm manufacturer's written instructions.
Provide network communications pathway per manufacturer's written instructions and requirements in NFPA 72 and NFPA 70.

Document Storage Box:

Description: Enclosure to accommodate standard 8-1/2-by-11 inch manuals and loose document records. Legend sheet will be permanently attached to door for system required documentation, key contacts, and system information. Provide two key ring holders with location to mount standard business cards for key contact personnel.

Material and Finish: 18-gauge cold-rolled steel; four mounting holes.

Color: Red powder-coat epoxy finish.

Labeling: Permanently screened with 1 inch high lettering "SYSTEM RECORD DOCUMENTS" with white indelible ink.

Security: Locked with 3/4 inch barrel lock. Provide solid 12 inch stainless steel piano hinge.

FIRE-ALARM CONTROL UNIT (FACP)

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Bosch Security Systems, Inc.
Edwards; Carrier Global Corporation.
Gamewell-FCI; Honeywell International, Inc.
Notifier; Honeywell International, Inc.
Potter Electric Signal Company, LLC.
Siemens Industry, Inc., Building Technologies Division.
Simplex; brand of Johnson Controls International plc, Building Solutions North America.
Or approved equal

Description: Field-programmable, microprocessor-based, modular, power-limited design with electronic modules.

Performance Criteria:

Regulatory Requirements: Comply with NFPA 72 and UL 864.

General Characteristics:

System software and programs must be held in nonvolatile flash, electrically erasable, programmable, read-only memory, retaining information through failure of primary and secondary power supplies.

Include real-time clock for time annotation of events on event recorder and printer.

Provide communication between FACP and remote circuit interface panels, annunciators, and displays.

FACP must be listed for connection to central-station signaling system service.

Provide nonvolatile memory for system database, logic, and operating system and event history. System must require no manual input to initialize in the event of complete power down condition. FACP must provide minimum 500-event history log.

Addressable Initiation Device Circuits: FACP must indicate which communication zones have been silenced and must provide selective silencing of alarm notification appliance by building communication zone.

Addressable Control Circuits for Operation of Notification Appliances and Mechanical Equipment: FACP must be listed for releasing service.

Fire-Alarm Annunciator: Arranged for interface between human operator at FACP and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and programming and control menu.

Annunciator and Display: LCD, 80 characters, minimum.

Keypad: Arranged to permit entry and execution of programming, display, and control commands.

Initiating-Device, Notification-Appliance, and Signaling-Line Circuits:

Pathway Class Designations: NFPA 72, Class B

Pathway Survivability: Level 1

Install no more than 50 addressable devices on each signaling-line circuit.

Install fault circuit isolators to comply with circuit performance requirements of NFPA 72 or with manufacturer's written instructions, whichever is more conservative.

Serial Interfaces:

One dedicated RS 485 port for central-station operation using point ID DACT.

One RS 485 port for remote annunciators, Ethernet module, or multi-interface module (printer port).

FACP Notification-Appliance Circuit:

Audible appliances must sound in three-pulse temporal pattern, as defined in NFPA 72.

Where notification appliances provide signals to sleeping areas, alarm signal must be 520 Hz square wave with intensity 15 dB above average ambient sound level or 5 dB above maximum sound level, or at least 75 dB(A-weighted), whichever is greater, measured at pillow.

Visual alarm appliances must flash in synchronization where multiple appliances are in same field of view, as defined in NFPA 72.

Transmission to Remote Alarm Receiving Station: Automatically transmit alarm, supervisory, and trouble signals to remote alarm station.

Voice/Alarm Signaling Service: Central emergency communication system with redundant microphones, preamplifiers, amplifiers, and tone generators provided as special module that is part of FACP.

Indicate number of alarm channels for automatic, simultaneous transmission of different announcements to different zones or for manual transmission of announcements by use of central-control microphone.

Amplifiers must comply with UL 1711.

Allow application of, and evacuation signal to, indicated number of zones and simultaneously allow voice paging to other zones selectively or in combination.

Programmable tone and message sequence selection.

Generate tones to be sequenced with audio messages of type recommended by NFPA 72 and that are compatible with tone patterns of notification-appliance circuits of FACP.

Status Annunciator: Indicate status of various voice/alarm speaker zones and status of firefighters' two-way telephone communication zones.

Preamplifiers, amplifiers, and tone generators must automatically transfer to backup units, on primary equipment failure.

Printout of Events: On receipt of signal, print alarm, supervisory, and trouble events. Identify zone, device, and function. Include type of signal (alarm, supervisory, or trouble) and date and time of occurrence. Differentiate alarm signals from other printed indications. Also, print system reset event, including same information for device, location, date, and time. Commands initiate printing of list of existing alarm, supervisory, and trouble conditions in system and historical log of events.

Primary Power: 24 V(dc) obtained from 120 V(ac) service and power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and DACT must be powered by 24 V(dc) source.

Alarm current draw of entire fire-alarm system must not exceed 80 percent of power-supply module rating.

Secondary Power: 24 V(dc) supply system with batteries, automatic battery charger, and automatic transfer switch.

Batteries: Sealed lead calcium .

Accessories:

Instructions: Computer printout or typewritten instruction card mounted behind plastic or glass cover in stainless steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe functional operation of system under normal, alarm, and trouble conditions.

Preaction System Functionality:

Initiate Presignal Alarm: This function must cause audible and visual alarm and indication to be provided at FACP. Activation of initiation device connected as part of preaction system must be annunciated at FACP only, without activation of general evacuation alarm.

MANUAL FIRE-ALARM BOXES

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Bosch Security Systems, Inc.
Edwards; Carrier Global Corporation.
Gamewell-FCI; Honeywell International, Inc.
Notifier; Honeywell International, Inc.
Potter Electric Signal Company, LLC.
Siemens Industry, Inc., Building Technologies Division.
Simplex; brand of Johnson Controls International plc, Building Solutions North America.
Or approved equal

General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes must be finished in red with molded, raised-letter operating instructions in contrasting color; must show visible indication of operation; and must be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.

Single-action mechanism, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to FACP.

Station Reset: Key- or wrench-operated switch.

Able to perform at up to 90 percent relative humidity at 90 deg F .

Able to be used in indoor areas.

SYSTEM SMOKE DETECTORS

Photoelectric Smoke Detectors:

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Bosch Security Systems, Inc.
Edwards; Carrier Global Corporation.
Gamewell-FCI; Honeywell International, Inc.
Notifier; Honeywell International, Inc.
Potter Electric Signal Company, LLC.
Siemens Industry, Inc., Building Technologies Division.
Simplex; brand of Johnson Controls International plc, Building Solutions North America.
Or approved equal

Performance Criteria:

Regulatory Requirements:

NFPA 72.
UL 268.

General Characteristics:

Detectors must be two-wire type.

Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.

Base Mounting: Detector and associated electronic components must be mounted in twist-lock module that connects to fixed base. Provide terminals in fixed base for connection to building wiring.

Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.

Integral Visual-Indicating Light: LED type, indicating detector has operated and power-on status.

Detector address must be accessible from FACP and must be able to identify detector's location within system and its sensitivity setting.

Operator at FACP, having designated access level, must be able to manually access the following for each detector:

Primary status.
Device type.
Present average value.
Present sensitivity selected.
Sensor range (normal, dirty, etc.).

Detector must have functional humidity range within 10 to 90 percent relative humidity.

Sensitivity levels based on time of day.

DUCT SMOKE DETECTORS

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Bosch Security Systems, Inc.
Edwards; Carrier Global Corporation.
Gamewell-FCI; Honeywell International, Inc.
Notifier; Honeywell International, Inc.
Potter Electric Signal Company, LLC.
Siemens Industry, Inc., Building Technologies Division.
Simplex; brand of Johnson Controls International plc, Building Solutions North America.
Or approved equal

Description: Photoelectric-type, duct-mounted smoke detector.

Performance Criteria:

Regulatory Requirements:

NFPA 72.
UL 268A.

General Characteristics:

Detectors must be four -wire type.

Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.

Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.

Integral Visual-Indicating Light: LED type, indicating detector has operated and power-on status.

Detector address must be accessible from FACP and must be able to identify detector's location within system and its sensitivity setting.

Operator at FACP, having designated access level, must be able to manually access the following for each detector:

Primary status.
Device type.
Present average value.
Present sensitivity selected.
Sensor range (normal, dirty, etc.).

Weatherproof Duct Housing Enclosure: NEMA 250, Type 4X; NRTL listed for use with supplied detector for smoke detection in HVAC system ducts.

Each sensor must have multiple levels of detection sensitivity.

Sampling Tubes: Design and dimensions as recommended by manufacturer for specific duct size, air velocity, and installation conditions where applied.

Relay Fan Shutdown: Fully programmable relay rated to interrupt fan motor-control circuit.

CARBON MONOXIDE DETECTORS

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Notifier; Honeywell International, Inc.
Or approved equal

Description: Carbon monoxide detector listed for connection to fire-alarm system.

Performance Criteria:

Regulatory Requirements:

NFPA 72

NFPA 720.
UL 2075.

General Characteristics:

Mounting: Adapter plate for outlet box mounting.
Testable by introducing test carbon monoxide into sensing cell.
Detector must provide alarm contacts and trouble contacts.
Detector must send trouble alarm when nearing end-of-life, power supply problems, or internal faults.
Locate, mount, and wire in accordance with manufacturer's written instructions.
Provide means for addressable connection to fire-alarm system.
Test button simulates alarm condition.

HEAT DETECTORS

Combination-Type Heat Detectors:

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Bosch Security Systems, Inc.
Edwards; Carrier Global Corporation.
Gamewell-FCI; Honeywell International, Inc.
Potter Electric Signal Company, LLC.
Siemens Industry, Inc., Building Technologies Division.
Simplex; brand of Johnson Controls International plc, Building Solutions North America.
Or approved equal

Performance Criteria:

Regulatory Requirements:

NFPA 72.
UL 521.

General Characteristics:

Temperature sensors must test for and communicate sensitivity range of device.

Actuated by fixed temperature of 135 deg F or rate of rise that exceeds 15 deg F per minute unless otherwise indicated.

Mounting: Twist-lock base interchangeable with smoke-detector bases.

Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.

Detector must have functional humidity range of 10 to 90 percent relative humidity.

Fixed-Temperature-Type Heat Detectors:

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Bosch Security Systems, Inc.
Edwards; Carrier Global Corporation.
Gamewell-FCI; Honeywell International, Inc.
Notifier; Honeywell International, Inc.
Potter Electric Signal Company, LLC.
Siemens Industry, Inc., Building Technologies Division.
Simplex; brand of Johnson Controls International plc, Building Solutions North America.
Or approved equal

Performance Criteria:

Regulatory Requirements:

NFPA 72.
UL 521.

General Characteristics:

Actuated by temperature that exceeds fixed temperature of 190 deg F .

Mounting: Twist-lock base interchangeable with smoke-detector bases.

Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to FACP.

Detector must have functional humidity range of 10 to 90 percent.

FIRE-ALARM NOTIFICATION APPLIANCES

Fire-Alarm Audible Notification Appliances:

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Edwards; Carrier Global Corporation.
Notifier; Honeywell International, Inc.
Potter Electric Signal Company, LLC.
Siemens Industry, Inc., Building Technologies Division.
Simplex; brand of Johnson Controls International plc, Building Solutions North America.
Or approved equal

Description: Horns, bells, or other notification devices that cannot output voice messages.

Performance Criteria:

Regulatory Requirements:

NFPA 72.

General Characteristics:

Connected to notification-appliance signal circuits, zoned as indicated, equipped for mounting as indicated, and with screw terminals for system connections.

Chimes, Low-Level Output: Vibrating type, 75 dB(A-weighted) minimum rated output.

Chimes, High-Level Output: Vibrating type, 81 dB(A-weighted) minimum rated output.

Sounders, High Volume 24 V(dc): Less than 6 mA of alarm current.
Sounders, Low Volume 24 V(dc): Less than 4 mA of alarm current.

Audible notification appliances must have functional humidity range of 10 to 95 percent relative humidity.

ISO Temporal 3 Evacuation Tone: 90 plus or minus 4 dB(A-weighted) at 24 V.

ISO Temporal 3 Alert Tone: 95 plus or minus 5 dB(A-weighted) at 24 V.

AS2220 Evacuation Tone: 93 plus or minus 4 dB(A-weighted) at 24 V.

AS2220 Alert Tone: 93 plus or minus 5 dB(A-weighted) at 24 V.

Horns: Electric-vibrating-polarized type, 24 V(dc); with provision for housing operating mechanism behind grille. Comply with UL 464. Horns must produce sound-pressure level of 90 dB(A-weighted), measured 10 ft. from horn, using coded signal prescribed in UL 464 test protocol.

Combination Devices: Factory-integrated audible and visible devices in single-mounting assembly, equipped for mounting as indicated, and with screw terminals for system connections.

Fire-Alarm Visible Notification Appliances:

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Edwards; Carrier Global Corporation.
Notifier; Honeywell International, Inc.
Potter Electric Signal Company, LLC.
Siemens Industry, Inc., Building Technologies Division.
Simplex; brand of Johnson Controls International plc, Building Solutions North America.
Or approved equal

Performance Criteria:

Regulatory Requirements:

NFPA 72.
UL 1971.

General Characteristics:

Rated Light Output:

15/30/75/110 cd, selectable in field.

Clear or nominal white polycarbonate lens mounted on aluminum faceplate.

Mounting: Wall mounted unless otherwise indicated.

For units with guards to prevent physical damage, light output ratings must be determined with guards in place.

Flashing must be in temporal pattern, synchronized with other units.

Strobe Leads: Factory connected to screw terminals.

Mounting Faceplate: Factory finished, red .

FIRE-ALARM REMOTE ANNUNCIATORS

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Same as FACP.

Performance Criteria:

Regulatory Requirements:

NFPA 72.

General Characteristics:

Annunciator functions must match those of FACP for alarm, supervisory, and trouble indications. Manual switching functions must match those of FACP, including acknowledging, silencing, resetting, and testing.

Mounting: Surface cabinet, NEMA 250, Type 1.

Display Type and Functional Performance: Alphanumeric display and LED indicating lights must match those of FACP. Provide controls to acknowledge, silence, reset, and test functions for alarm, supervisory, and trouble signals.

FIRE-ALARM ADDRESSABLE INTERFACE DEVICES

Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

Bosch Security Systems, Inc.
Notifier; Honeywell International, Inc.
Or approved equal.

Performance Criteria:

Regulatory Requirements:

NFPA 72.

General Characteristics:

Include address-setting means on module.

Store internal identifying code for control panel use to identify module type.

Listed for controlling HVAC fan motor controllers.

Monitor Module: Microelectronic module providing system address for alarm-initiating devices for wired applications with normally open contacts.

Integral Relay: Capable of providing direct signal to elevator controller to initiate elevator recall .
Allow control panel to switch relay contacts on command.
Have minimum of two normally open and two normally closed contacts available for field wiring.

Control Module:
Operate notification devices.
Operate solenoids for use in sprinkler service.

PART 3- EXECUTION

EXAMINATION

Examine areas and conditions for compliance with requirements for ventilation, temperature, humidity, and other conditions affecting performance of the Work.

Verify that manufacturer's written instructions for environmental conditions have been permanently established in spaces where equipment and wiring are installed, before installation begins.

Examine roughing-in for electrical connections to verify actual locations of connections before installation.

Proceed with installation only after unsatisfactory conditions have been corrected.

PREPARATION

Preinstallation Testing: Perform verification of functionality of installed components of existing system prior to starting work. Document equipment or components not functioning as designed.

Protection of In-Place Conditions: Protect devices during construction unless devices are placed in service to protect facility during construction.

INSTALLATION OF EQUIPMENT

Comply with NECA 305, NFPA 72, NFPA 101, and requirements of authorities having jurisdiction for installation and testing of fire-alarm equipment. Install electrical wiring to comply with requirements in NFPA 70 including, but not limited to, Article 760, "Fire Alarm Systems."

Devices placed in service before other trades have completed cleanup must be replaced.

Devices installed, but not yet placed, in service must be protected from construction dust, debris, dirt, moisture, and damage in accordance with manufacturer's written storage instructions.

Install wall-mounted equipment, with tops of cabinets not more than 78 inch above finished floor.

Manual Fire-Alarm Boxes:

Install manual fire-alarm box in normal path of egress within 60 inch of exit doorway.

Mount manual fire-alarm box on background of contrasting color.

Operable part of manual fire-alarm box must be between 42 and 48 inch above floor level. Devices must be mounted at same height unless otherwise indicated.

Smoke- and Heat-Detector Spacing:

Comply with "Smoke-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for smoke-detector spacing.

Comply with "Heat-Sensing Fire Detectors" section in "Initiating Devices" chapter in NFPA 72, for heat-detector spacing.

Smooth ceiling spacing must not exceed 30 ft. .

Spacing of detectors for irregular areas, for irregular ceiling construction, and for high ceiling areas must be determined in accordance with Annex A or Annex B in NFPA 72.

HVAC: Locate detectors not closer than 36 inch from air-supply diffuser or return-air opening.

Lighting Fixtures: Locate detectors not closer than 12 inch from lighting fixture and not directly above pendant mounted or indirect lighting.

Install cover on each smoke detector that is not placed in service during construction. Cover must remain in place except during system testing. Remove cover prior to system turnover.

Duct Smoke Detectors: Comply with NFPA 72 and NFPA 90A. Install sampling tubes so they extend full width of duct. Tubes more than 36 inch long must be supported at both ends.

Do not install smoke detector in duct smoke-detector housing during construction. Install detector only during system testing and prior to system turnover.

Elevator Shafts: Coordinate temperature rating and location with sprinkler rating and location. Do not install smoke detectors in sprinklered elevator shafts.

Remote Status and Alarm Indicators: Install in visible location near each smoke detector, sprinkler water-flow switch, and valve-tamper switch that is not readily visible from normal viewing position.

Audible Alarm-Indicating Devices: Install not less than 6 inch below ceiling. Install bells and horns on flush-mounted back boxes with device-operating mechanism concealed behind grille. Install devices at same height unless otherwise indicated.

Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inch below ceiling. Install devices at same height unless otherwise indicated.

Device Location-Indicating Lights: Locate in public space near device they monitor.

ELECTRICAL CONNECTIONS

Connect wiring in accordance with Section 26 05 19 "Low-Voltage Electrical Power Conductors and Cables."

Ground equipment in accordance with Section 26 05 26 "Grounding and Bonding for Electrical Systems."
Install electrical devices furnished by manufacturer, but not factory mounted, in accordance with NFPA 70 and NECA 1.

Install nameplate for each electrical connection, indicating electrical equipment designation and circuit number feeding connection.

Nameplate must be laminated acrylic or melamine plastic signs with black background and engraved white letters at least 1/2 inch high.

CONTROL CONNECTIONS

Install control and electrical power wiring to field-mounted control devices.

Connect control wiring in accordance with Section 26 05 23 "Control-Voltage Electrical Power Cables."

Install nameplate for each control connection, indicating field control panel designation and I/O control designation feeding connection.

PATHWAYS

Pathways above recessed ceilings and in inaccessible locations may be routed exposed.

Exposed pathways located less than 96 inch above floor must be installed in EMT.

Exposed EMT must be painted red enamel.

CONNECTIONS

Make addressable connections with supervised interface device to the following devices and systems. Install interface device less than 36 inch from device controlled. Make addressable confirmation connection when such feedback is available at device or system being controlled.

Alarm-initiating connection to smoke-control system (smoke management) at firefighters' smoke-control system panel.

Alarm-initiating connection to stairwell and elevator-shaft pressurization systems.

Smoke dampers in air ducts of designated HVAC duct systems.

Supervisory connections at low-air-pressure switch of each dry-pipe sprinkler system.

Supervisory connections at elevator shunt-trip breaker.

Data communication circuits for connection to building management system.

Supervisory connections at fire-extinguisher locations.

IDENTIFICATION

Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 27 05 53 "Identification for Communications Systems."

Install framed instructions in location visible from FACP.

GROUNDING

Ground FACP and associated circuits in accordance with Section 26 05 26 "Grounding and Bonding for Electrical Systems."

Ground shielded cables at control panel location only. Insulate shield at device location.

FIELD QUALITY CONTROL

Field tests must be witnessed by authorities having jurisdiction .

Administrant for Tests and Inspections:

Administer and perform tests and inspections.

Tests and Inspections:

Visual Inspection: Conduct visual inspection prior to testing.

Inspection must be based on completed record Drawings and system documentation that is required by "Completion Documents, Preparation" table in "Documentation" section of "Fundamentals" chapter in NFPA 72.

Comply with "Visual Inspection Frequencies" table in "Inspection" section of "Inspection, Testing and Maintenance" chapter in NFPA 72; retain "Initial/Reacceptance" column and list only installed components.

System Testing: Comply with "Test Methods" table in "Testing" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.

Factory-authorized service representative must prepare "Fire Alarm System Record of Completion" in "Documentation" section of "Fundamentals" chapter in NFPA 72 and "Inspection and Testing Form" in "Records" section of "Inspection, Testing and Maintenance" chapter in NFPA 72.

Reacceptance Testing: Perform reacceptance testing to verify proper operation of added or replaced devices and appliances.

Fire-alarm system will be considered defective if it does not pass tests and inspections.

Prepare test and inspection reports.

Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.

Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

DEMONSTRATION

Train Owner's maintenance personnel to adjust, operate, and maintain fire-alarm system. Provide video recording of training to Owner.

MAINTENANCE

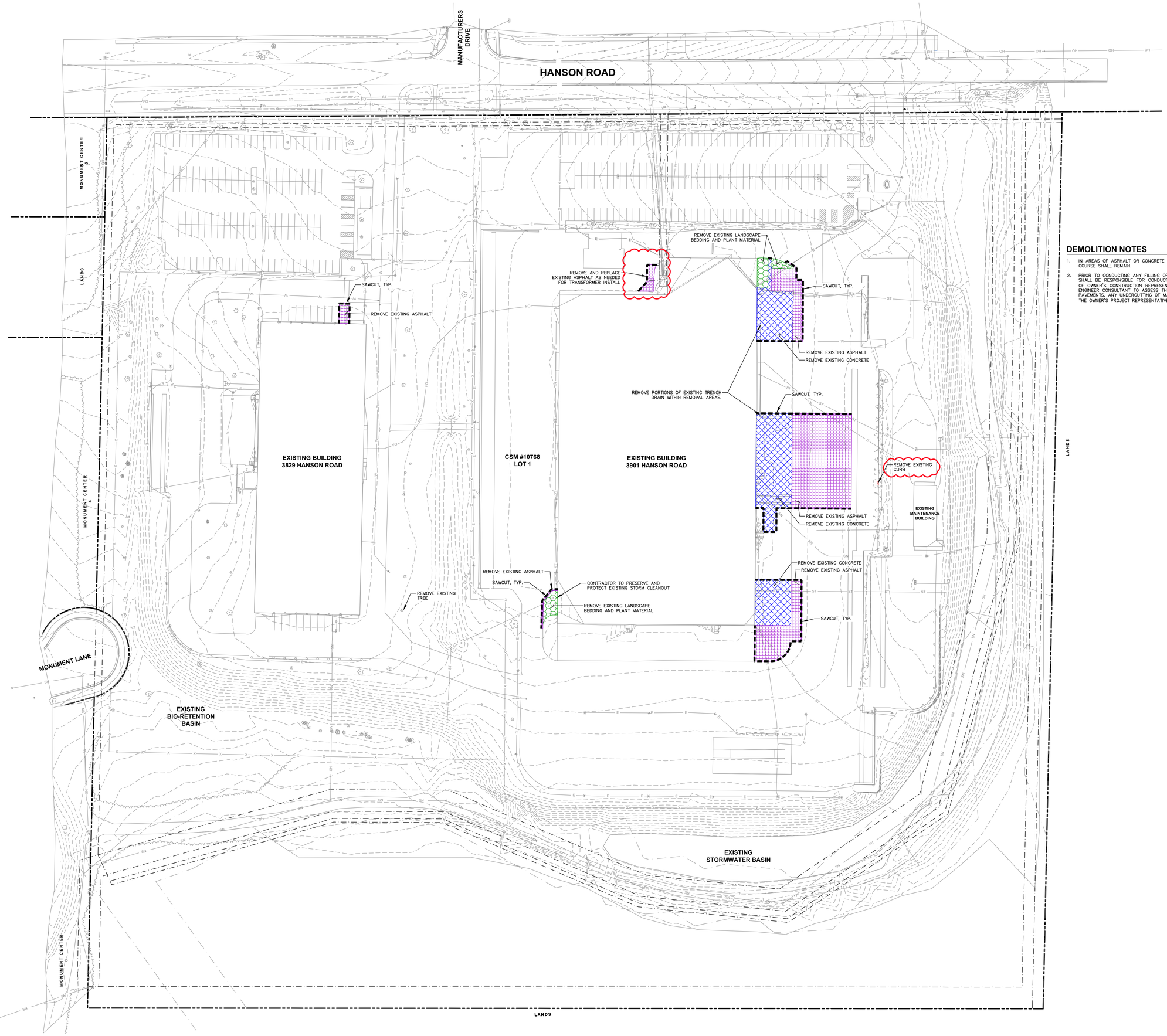
Maintenance Service: Beginning at Substantial Completion, maintenance service must include 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper operation. Parts and supplies must be manufacturer's authorized replacement parts and supplies.

Include visual inspections in accordance with "Visual Inspection Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.

Perform tests in "Test Methods" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.

Perform tests per "Testing Frequencies" table in "Testing" paragraph of "Inspection, Testing and Maintenance" chapter in NFPA 72.

END OF SECTION 28 46 21



DEMOLITION NOTES

1. IN AREAS OF ASPHALT OR CONCRETE PAVEMENT REMOVAL; ALL EXISTING BASE COURSE SHALL REMAIN.
2. PRIOR TO CONDUCTING ANY FILLING OPERATION IN PAVED AREAS, CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING A PROOF-ROLL IN THE PRESENCES OF OWNER'S CONSTRUCTION REPRESENTATIVE AND/OR OWNER'S GEOTECHNICAL ENGINEER CONSULTANT TO ASSESS THE STABILITY AND STRENGTH OF EXISTING PAVEMENTS. ANY UNDERCUTTING OF MATERIAL SHALL BE AT THE DIRECTION OF THE OWNER'S PROJECT REPRESENTATIVE.

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

JSD

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

BID SET	9/15/2023

REVISION FOR:

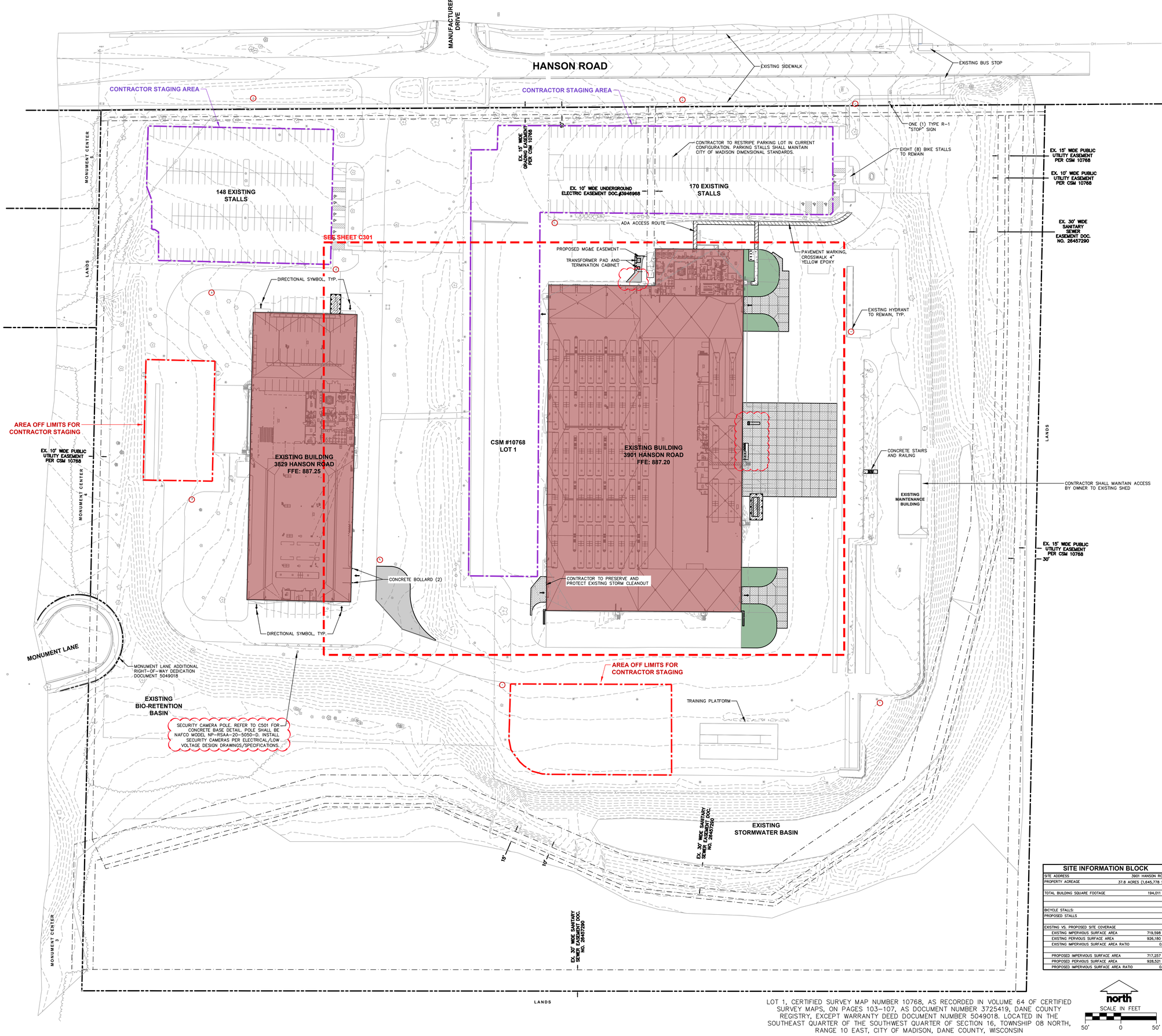
NO.	DESCRIPTION	DATE
	BID ADDENDUM #2	10/13/2023

DRAWN BY	CHG / MA
CHECKED BY	MRH / KJY

DEMOLITION PLAN

north
SCALE IN FEET
50' 0 50'

C200



SITE INFORMATION BLOCK	
SITE ADDRESS	3901 HANSON ROAD
PROPERTY ACREAGE	37.8 ACRES (1,645,778 SF)
TOTAL BUILDING SQUARE FOOTAGE	194,011 SF
BICYCLE STALLS:	
PROPOSED STALLS	8
EXISTING VS. PROPOSED SITE COVERAGE	
EXISTING IMPERVIOUS SURFACE AREA	719,598 SF
EXISTING PERVIOUS SURFACE AREA	926,180 SF
EXISTING IMPERVIOUS SURFACE AREA RATIO	0.44
PROPOSED IMPERVIOUS SURFACE AREA	717,257 SF
PROPOSED PERVIOUS SURFACE AREA	928,521 SF
PROPOSED IMPERVIOUS SURFACE AREA RATIO	0.44

LOT 1, CERTIFIED SURVEY MAP NUMBER 10768, AS RECORDED IN VOLUME 64 OF CERTIFIED SURVEY MAPS, ON PAGES 103–107, AS DOCUMENT NUMBER 3725419, DANE COUNTY REGISTRY, EXCEPT WARRANTY DEED DOCUMENT NUMBER 5049018. LOCATED IN THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 08 NORTH, RANGE 10 EAST, CITY OF MADISON, DANE COUNTY, WISCONSIN

north
SCALE IN FEET
50' 0 50'

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

JSD

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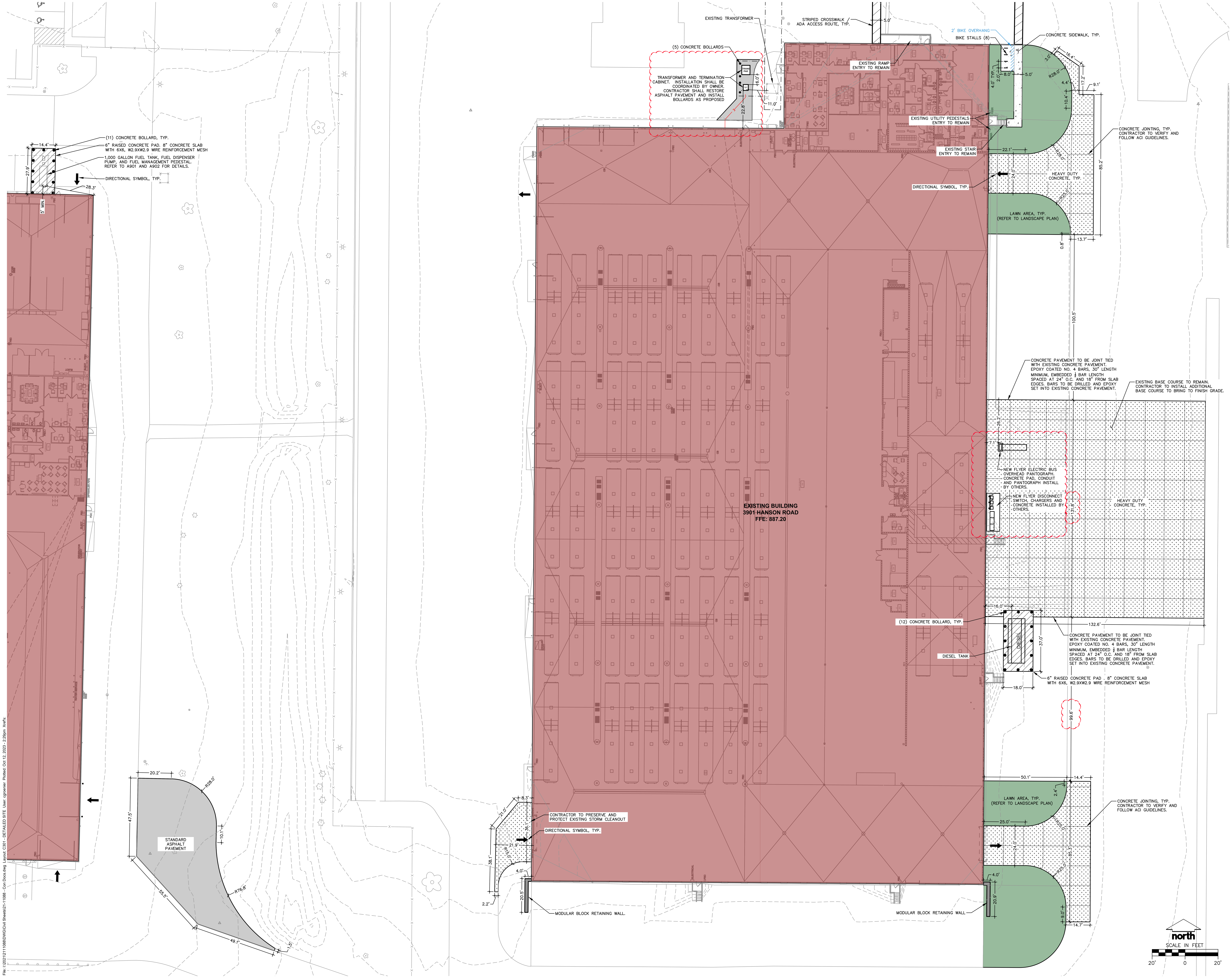
DRAWN BY	CHG / MA
CHECKED BY	MRH / KJY

OVERALL SITE PLAN

C300


EXISTING TRANSFORMER
STRIPED CROSSWALK ADA ACCESS ROUTE, TYP.
2' BIKE OVERHANG
BIKE STALLS (8)
CONCRETE SIDEWALK, TYP.
(5) CONCRETE BOLLARDS
TRANSFORMER AND TERMINATION CABINET. INSTALLATION SHALL BE COORDINATED BY OWNER. CONTRACTOR SHALL RESTORE ASPHALT PAVEMENT AND INSTALL BOLLARDS AS PROPOSED
EXISTING RAMP ENTRY TO REMAIN
EXISTING UTILITY PEDESTALS ENTRY TO REMAIN
EXISTING STAIR ENTRY TO REMAIN
CONCRETE JOINTING, TYP. CONTRACTOR TO VERIFY AND FOLLOW ACI GUIDELINES.
HEAVY DUTY CONCRETE, TYP.
DIRECTIONAL SYMBOL, TYP.
LAWN AREA, TYP. (REFER TO LANDSCAPE PLAN)
(11) CONCRETE BOLLARD, TYP.
6" RAISED CONCRETE PAD. 8" CONCRETE SLAB WITH 6X6, W2.9XW2.9 WIRE REINFORCEMENT MESH
1,000 GALLON FUEL TANK, FUEL DISPENSER PUMP, AND FUEL MANAGEMENT PEDESTAL. REFER TO A901 AND A902 FOR DETAILS.
DIRECTIONAL SYMBOL, TYP.
CONCRETE PAVEMENT TO BE JOINT TIED WITH EXISTING CONCRETE PAVEMENT. EPOXY COATED NO. 4 BARS, 30" LENGTH MINIMUM, EMBEDDED ½ BAR LENGTH SPACED AT 24" O.C. AND 18" FROM SLAB EDGES. BARS TO BE DRILLED AND EPOXY SET INTO EXISTING CONCRETE PAVEMENT.
EXISTING BASE COURSE TO REMAIN. CONTRACTOR TO INSTALL ADDITIONAL BASE COURSE TO BRING TO FINISH GRADE.
NEW FLYER ELECTRIC BUS OVERHEAD PANTOGRAPH. CONCRETE PAD, CONDUIT AND PANTOGRAPH INSTALL BY OTHERS.
NEW FLYER DISCONNECT SWITCH, CHARGERS AND CONCRETE INSTALLED BY OTHERS.
EXISTING BUILDING
3901 HANSON ROAD
FFE: 887.20
HEAVY DUTY CONCRETE, TYP.
(12) CONCRETE BOLLARD, TYP.
DIESEL TANK
DIESEL
CONCRETE PAVEMENT TO BE JOINT TIED WITH EXISTING CONCRETE PAVEMENT. EPOXY COATED NO. 4 BARS, 30" LENGTH MINIMUM, EMBEDDED ½ BAR LENGTH SPACED AT 24" O.C. AND 18" FROM SLAB EDGES. BARS TO BE DRILLED AND EPOXY SET INTO EXISTING CONCRETE PAVEMENT.
6" RAISED CONCRETE PAD . 8" CONCRETE SLAB WITH 6X6, W2.9XW2.9 WIRE REINFORCEMENT MESH
STANDARD ASPHALT PAVEMENT
CONTRACTOR TO PRESERVE AND PROTECT EXISTING STORM CLEANOUT
DIRECTIONAL SYMBOL, TYP.
LAWN AREA, TYP. (REFER TO LANDSCAPE PLAN)
CONCRETE JOINTING, TYP. CONTRACTOR TO VERIFY AND FOLLOW ACI GUIDELINES.
MODULAR BLOCK RETAINING WALL.
MODULAR BLOCK RETAINING WALL
north
SCALE IN FEET
20' 0 20'

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

JSD

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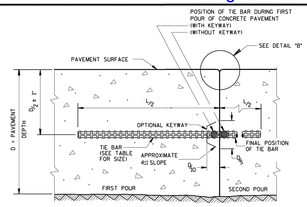
DRAWN BY CHG / MA

CHECKED BY MRH / KJY

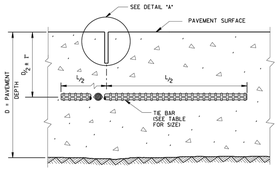
EAST BUILDING DETAILED SITE PLAN

C301

SDD 13C1 Concrete Pavement Longitudinal Joints and Ties



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

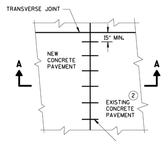
CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

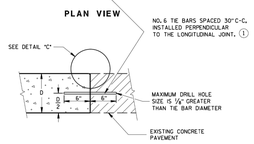
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

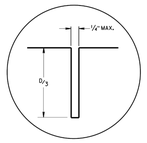
*NOTE: REFER TO SHEET C301 FOR LOCATION OF JOINTS WHICH REQUIRE JOINT TIES



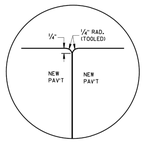
PLAN VIEW



SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



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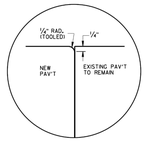


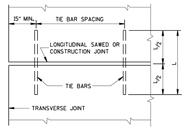
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 ½"	NO. 4	30"	36"
≥ 10 ½"	NO. 5	36"	36"
	NO. 4 *	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

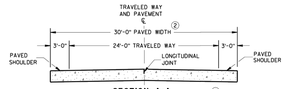
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE
FHWA
/S/ Peter Kemp, P.E.
PAVEMENT SUPERVISOR

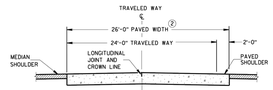
6

S.D.D. 13 C 1-19

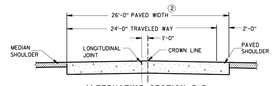
SDD 13C11-a Rural Doweled Concrete Pavement



SECTION A-A (1)
TWO-LANE TWO-WAY HIGHWAY

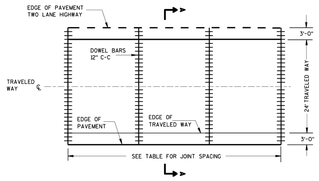


SECTION B-B

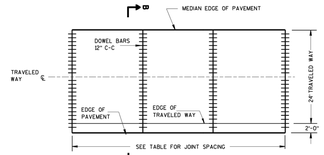


ALTERNATIVE SECTION B-B (1)
DIVIDED HIGHWAY

*NOTE: REFER TO SHEET C301 FOR JOINT LAYOUT AND SPACING. SPACING AND LOCATION OF DOWEL BAR ASSEMBLIES SHALL BE IN ACCORDANCE WITH WISDOT SPECIFICATIONS AS IDENTIFIED ON THIS DETAIL



CONTRACTION JOINT LAYOUT
FOR TWO-LANE TWO-WAY HIGHWAY



CONTRACTION JOINT LAYOUT
FOR DIVIDED HIGHWAY

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE, SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

*NOTE: REFER TO SHEET C301 FOR LOCATIONS OF CONSTRUCTION JOINTS

(1) REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.

(2) MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

PAVEMENT DEPTH: DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6½ ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1¼"	15'
9", 9 ½"	1¼"	15'
10" & ABOVE	1½"	15'

*NOTE: REFER TO SHEET C301 FOR JOINT LAYOUT AND SPACING

RURAL DOWELED
CONCRETE PAVEMENT

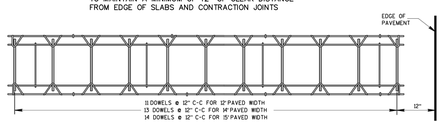
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 11-12a

SDD 13C11-b Rural Doweled Concrete Pavement

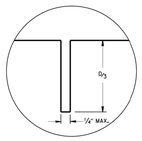
*NOTE: JOINT SPACING VARIES. SEE SHEET C301. DOWEL ASSEMBLY WIDTH AND NUMBER OF BARS TO BE SELECTED TO MAINTAIN A MINIMUM OF 12" OF CLEAR DISTANCE FROM EDGE OF SLABS AND CONTRACTION JOINTS



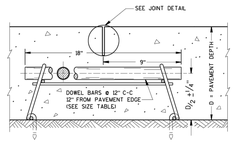
PLAN VIEW

SIDE VIEW
(NORMAL TO CENTERLINE)

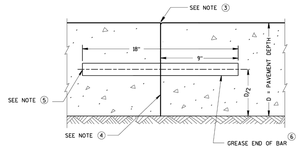
CONTRACTION JOINT DOWEL ASSEMBLY (1)



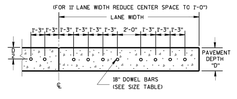
JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT (7)

GENERAL NOTES

(1) OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY, USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.

(2) SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

(3) FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

(4) PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

(5) INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

(6) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

(7) ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER. 9 INCHES IN LENGTH.

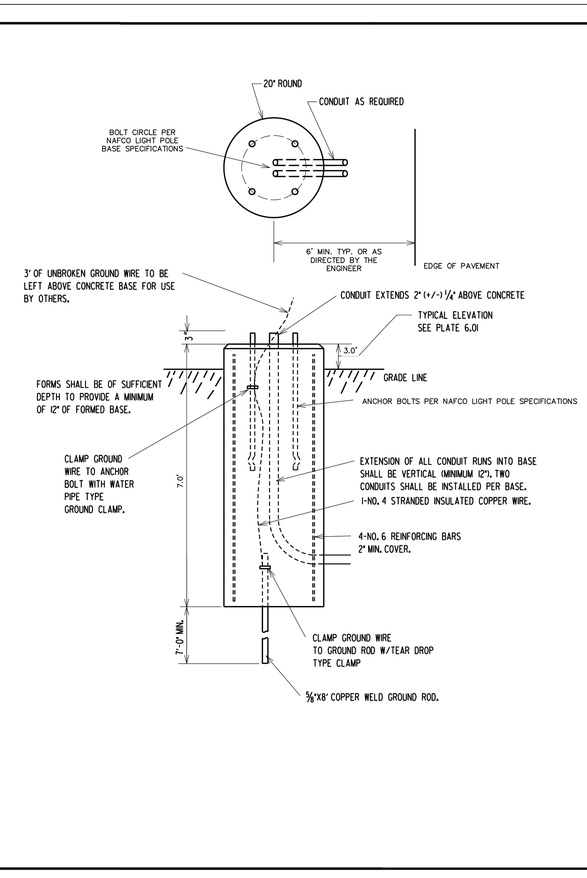
RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018
DATE
FHWA
/S/ Peter Kemp, P.E.
PAVEMENT SUPERVISOR

6

S.D.D. 13 C 11-12b



6.12

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

JSD

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON

METRO TRANSIT

1245 E WASHINGTON AVE #201

MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

BID SET	9/15/2023

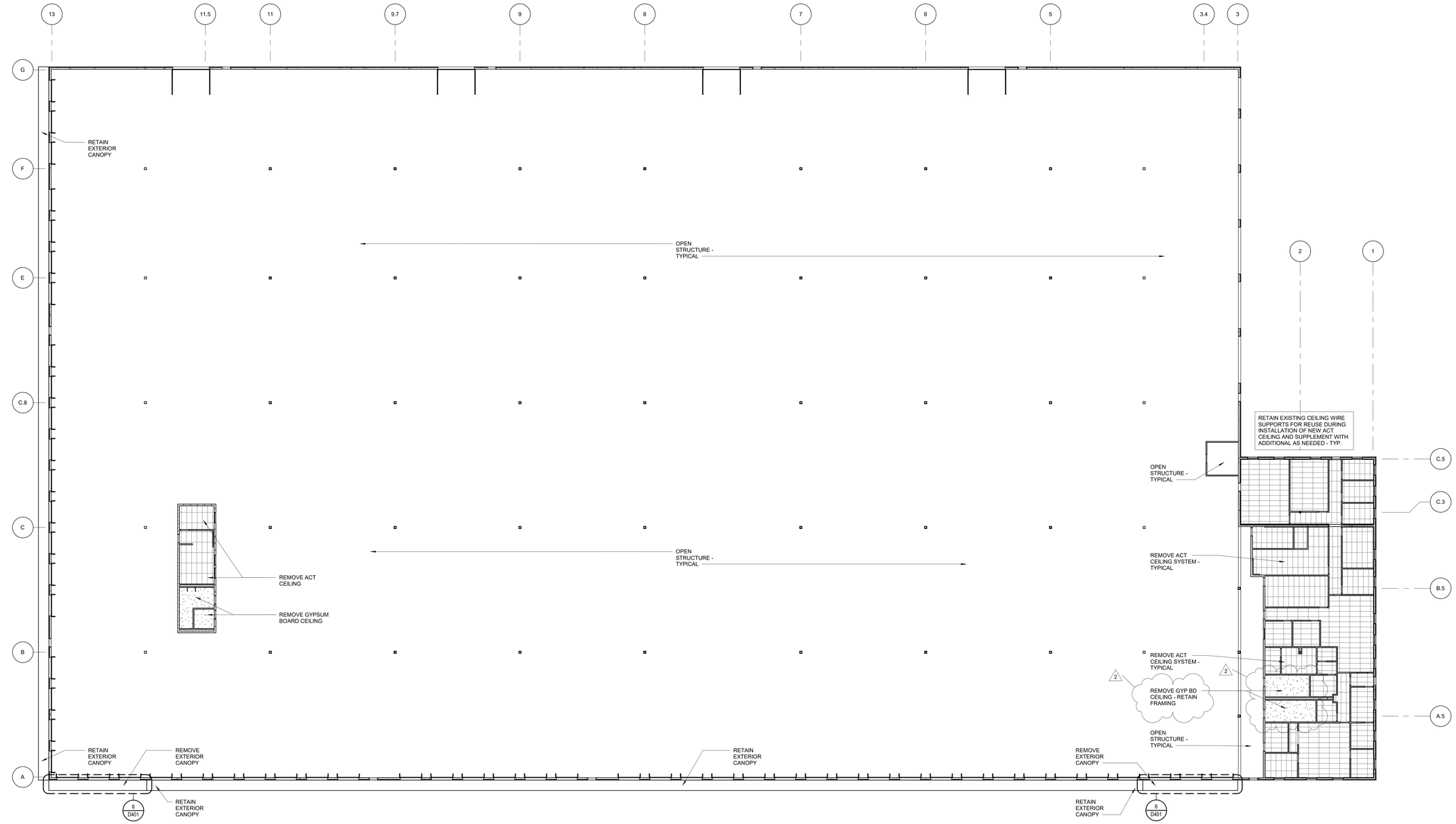
REVISION FOR:

NO.	DESCRIPTION	DATE
	BID ADDENDUM #2	10/13/2023

DRAWN BY	CHG / MA
CHECKED BY	MRH / KJY

DETAILS

C501



1 CEILING DEMOLITION PLAN - STORAGE BUILDING
SCALE: 1/16" = 1'-0"

NORTH

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

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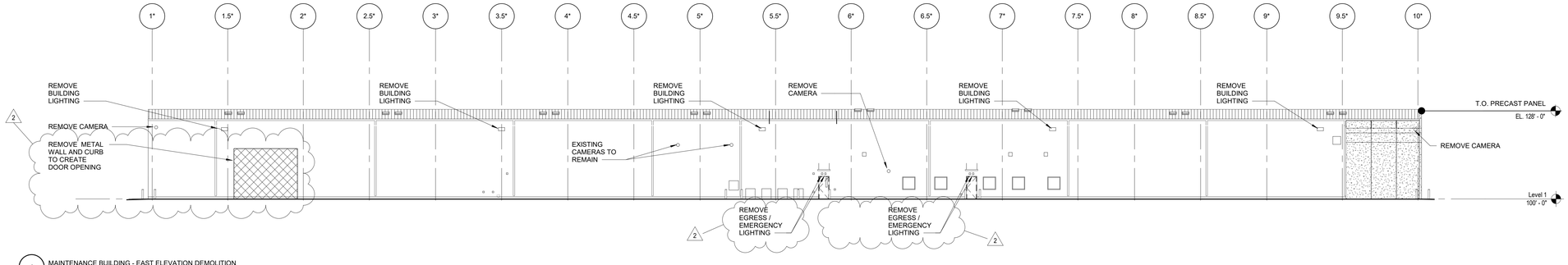
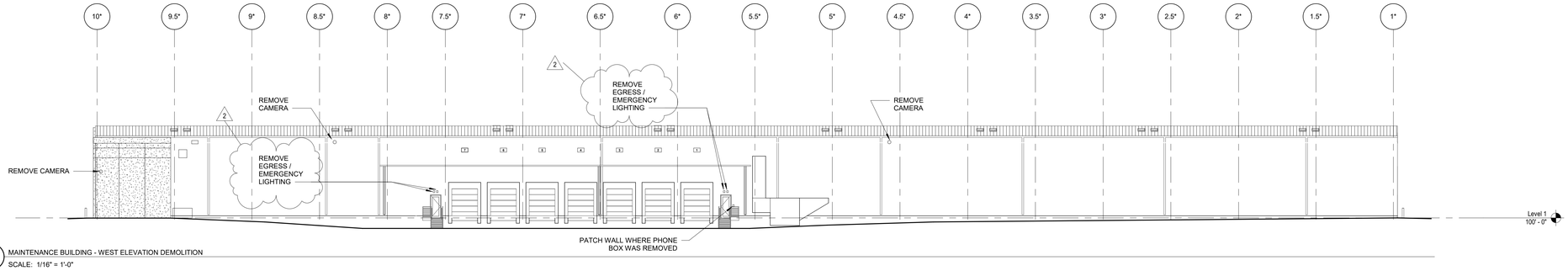
DRAWN BY	JFB
CHECKED BY	JH

DEMOLITION REFLECTED CEILING PLAN - STORAGE BUILDING

D201



1 MAINTENANCE BUILDING - EAST ELEVATION DEMOLITION
SCALE: 1/16" = 1'-0"



2 MAINTENANCE BUILDING - WEST ELEVATION DEMOLITION
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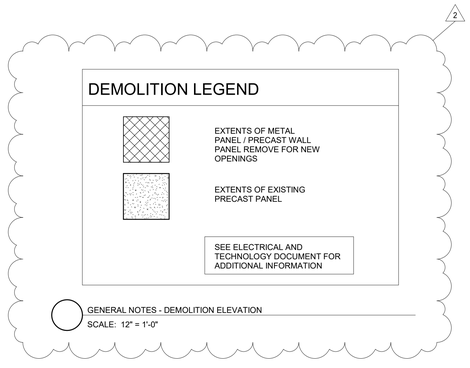
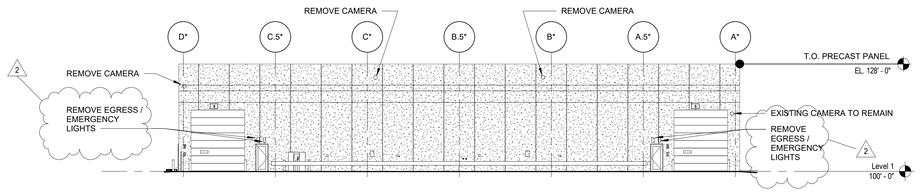
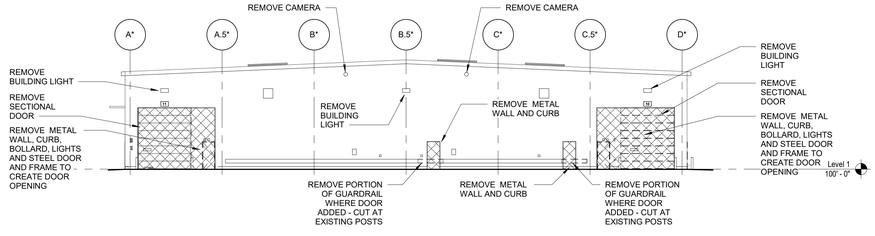


GENERAL NOTES - DEMOLITION ELEVATION
SCALE: 12" = 1'-0"



3 MAINTENANCE BUILDING - NORTH ELEVATION DEMOLITION
SCALE: 1/16" = 1'-0"



4 MAINTENANCE BUILDING - SOUTH ELEVATION DEMOLITION
SCALE: 1/16" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

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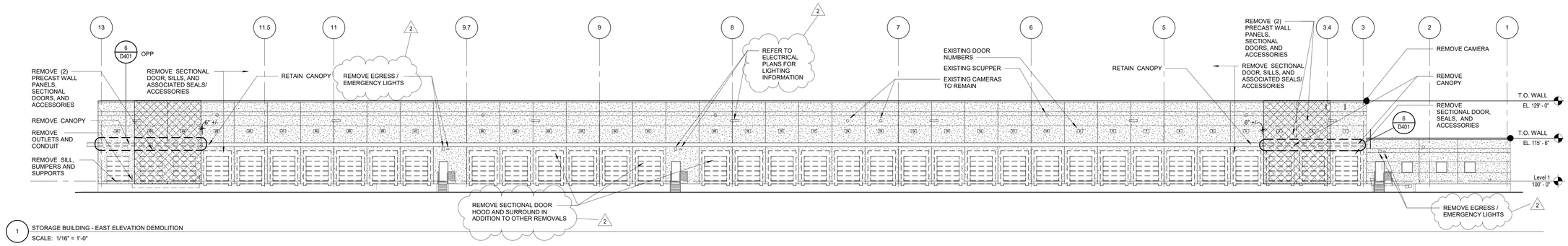
DRAWN BY JFB

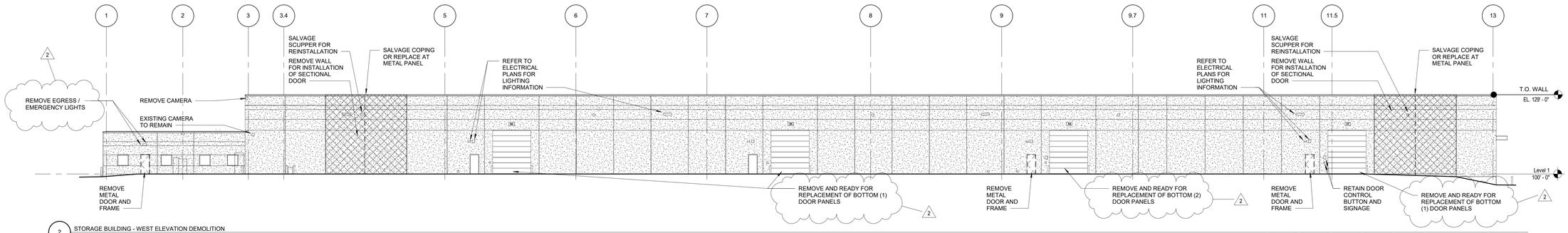
CHECKED BY JH

DEMOLITION ELEVATIONS - MAINTENANCE BUILDING

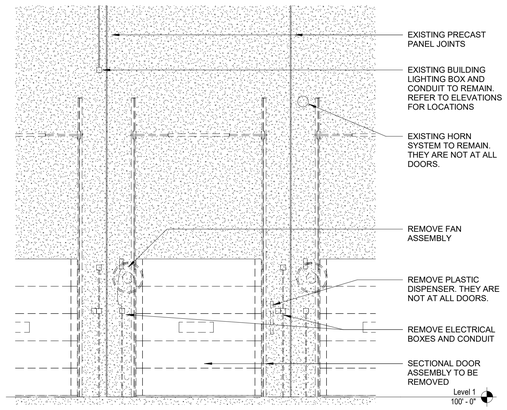
D400



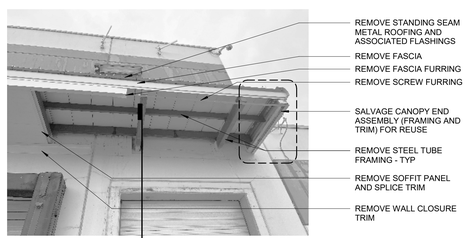
1 STORAGE BUILDING - EAST ELEVATION DEMOLITION
SCALE: 1/16" = 1'-0"



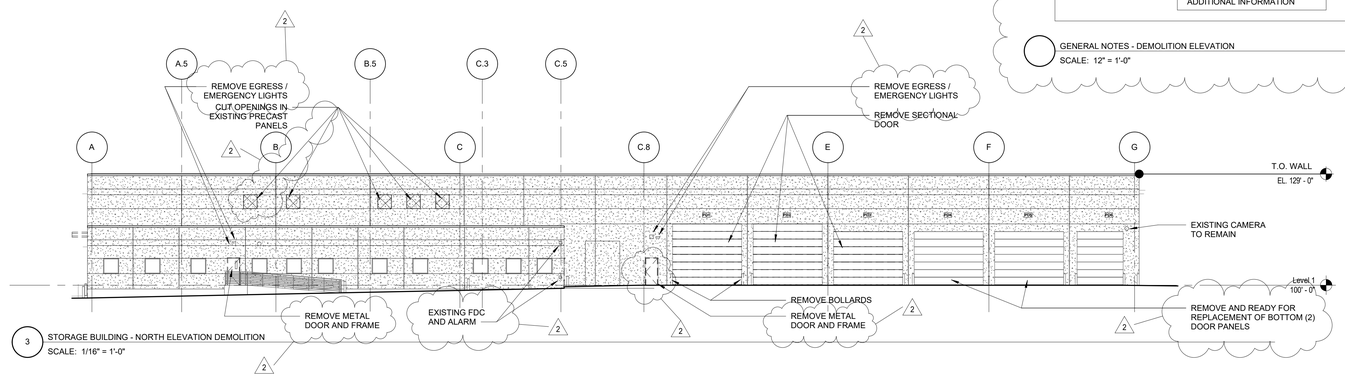
2 STORAGE BUILDING - WEST ELEVATION DEMOLITION
SCALE: 1/16" = 1'-0"



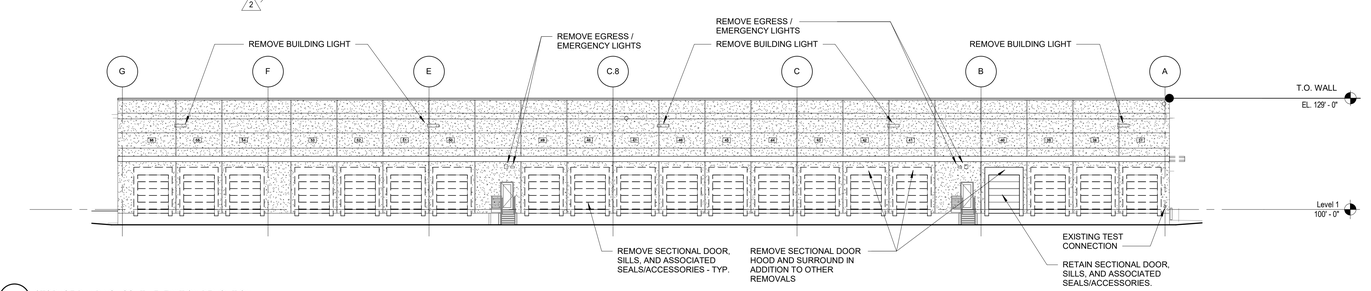
4 OVERHEAD DOOR INTERIOR DEMOLITION ELEVATION
SCALE: 1/4" = 1'-0"



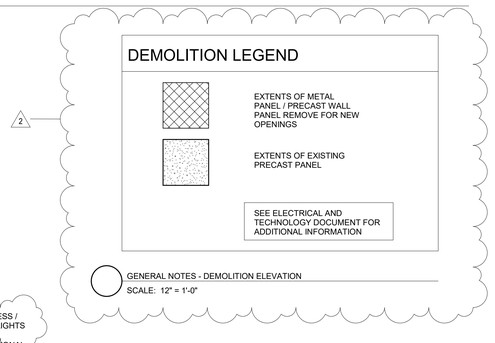
6 CANOPY DEMOLITION DETAIL
SCALE: 1 1/2" = 1'-0"



3 STORAGE BUILDING - NORTH ELEVATION DEMOLITION
SCALE: 1/16" = 1'-0"



5 STORAGE BUILDING - SOUTH ELEVATION DEMOLITION
SCALE: 1/16" = 1'-0"



GENERAL NOTES - DEMOLITION ELEVATION
SCALE: 12" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

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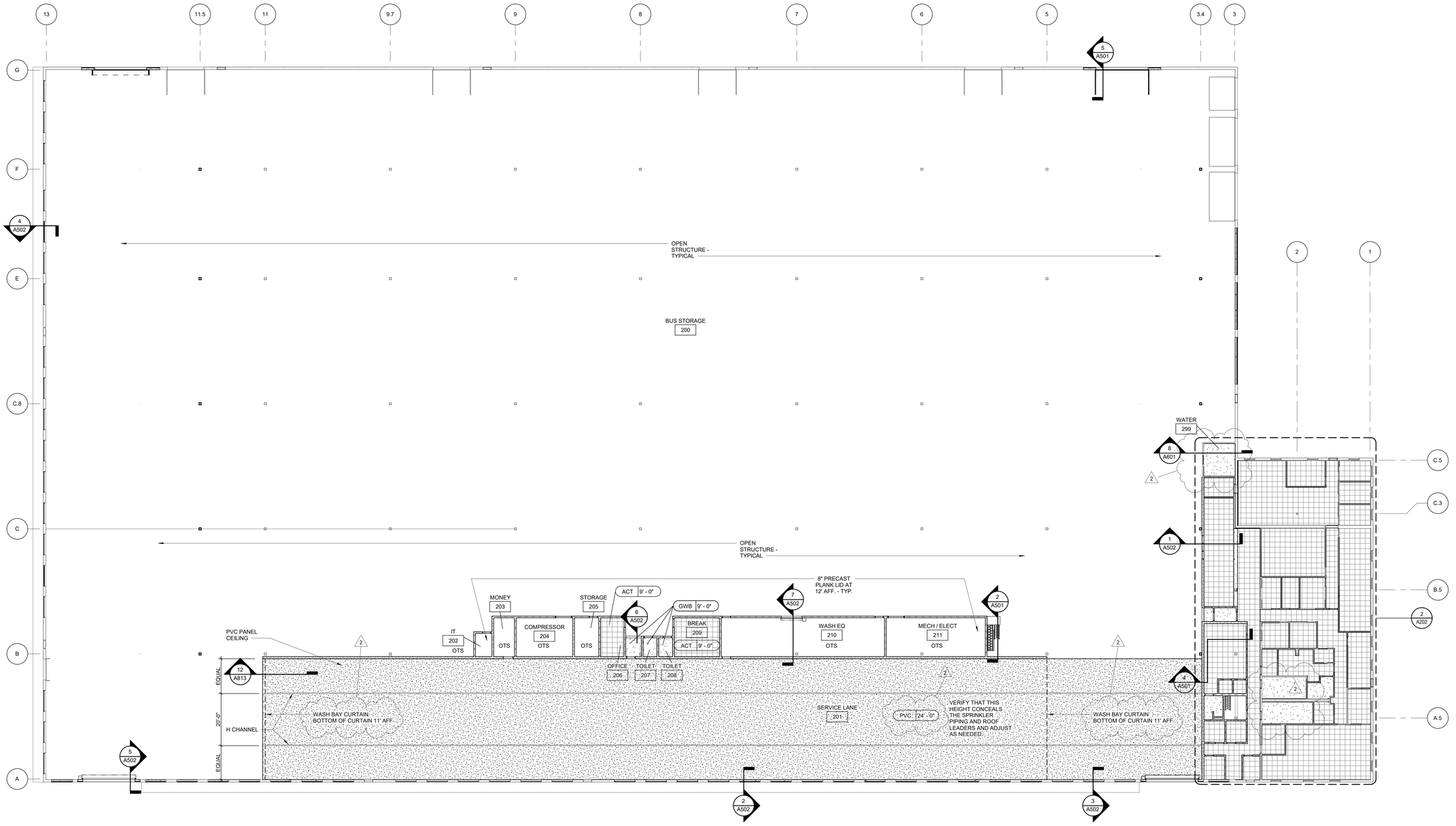
CHECKED BY	JH

DEMOLITION ELEVATIONS - STORAGE BUILDING

D401



1 REFLECTED CEILING PLAN - STORAGE BUILDING
SCALE: 1/16" = 1'-0"

REFLECTED CEILING PLAN LEGEND

- GWB CEILING
- PVC CEILING
- ACOUSTIC CEILING TILE

GENERAL NOTES - REFLECTED CEILING PLANS:

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND TECHNOLOGY DRAWINGS FOR ADDITIONAL INFORMATION.
2. PATCH AND REPAIR EXISTING WALLS WHERE CEILINGS, BULKHEADS, AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
3. SIZE CEILING TILES EQUALLY ON OPPOSITE ENDS OF THE ROOM UNLESS NOTED OTHERWISE.

Engberg Anderson ARCHITECTS
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CHECKED BY	JH

REFLECTED CEILING PLAN - STORAGE BUILDING

A201

REFLECTED CEILING PLAN LEGEND

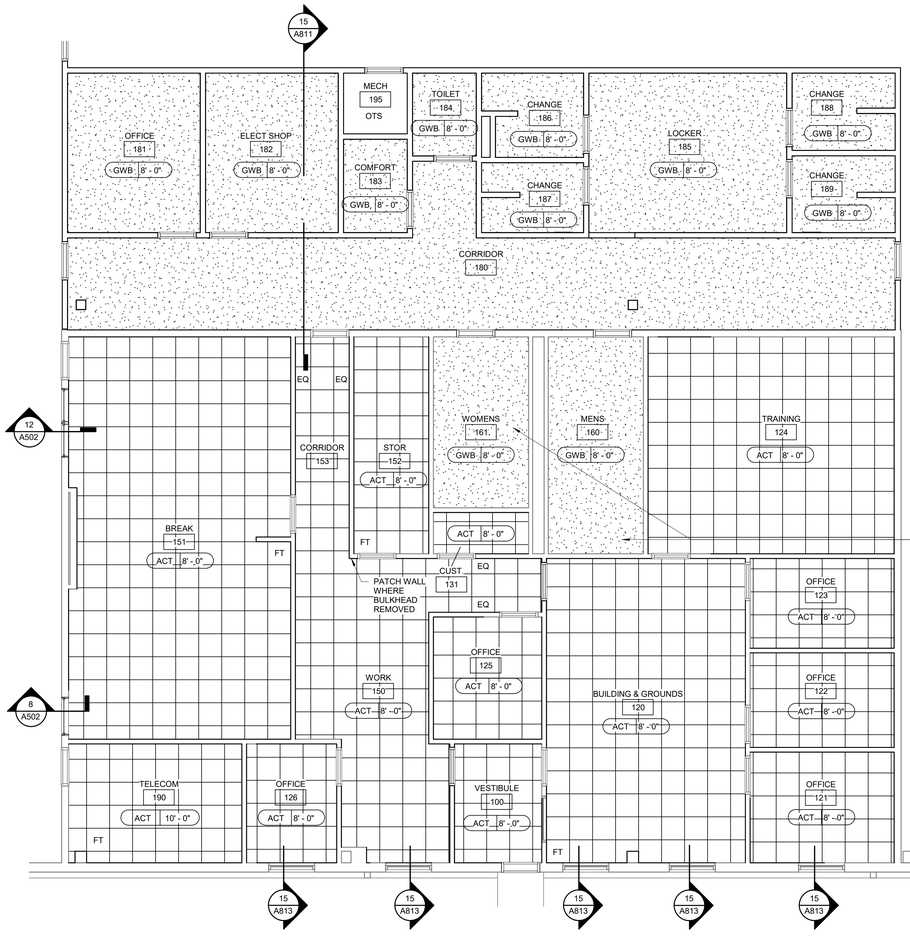
GWB CEILING

PVC CEILING

ACOUSTIC CEILING TILE

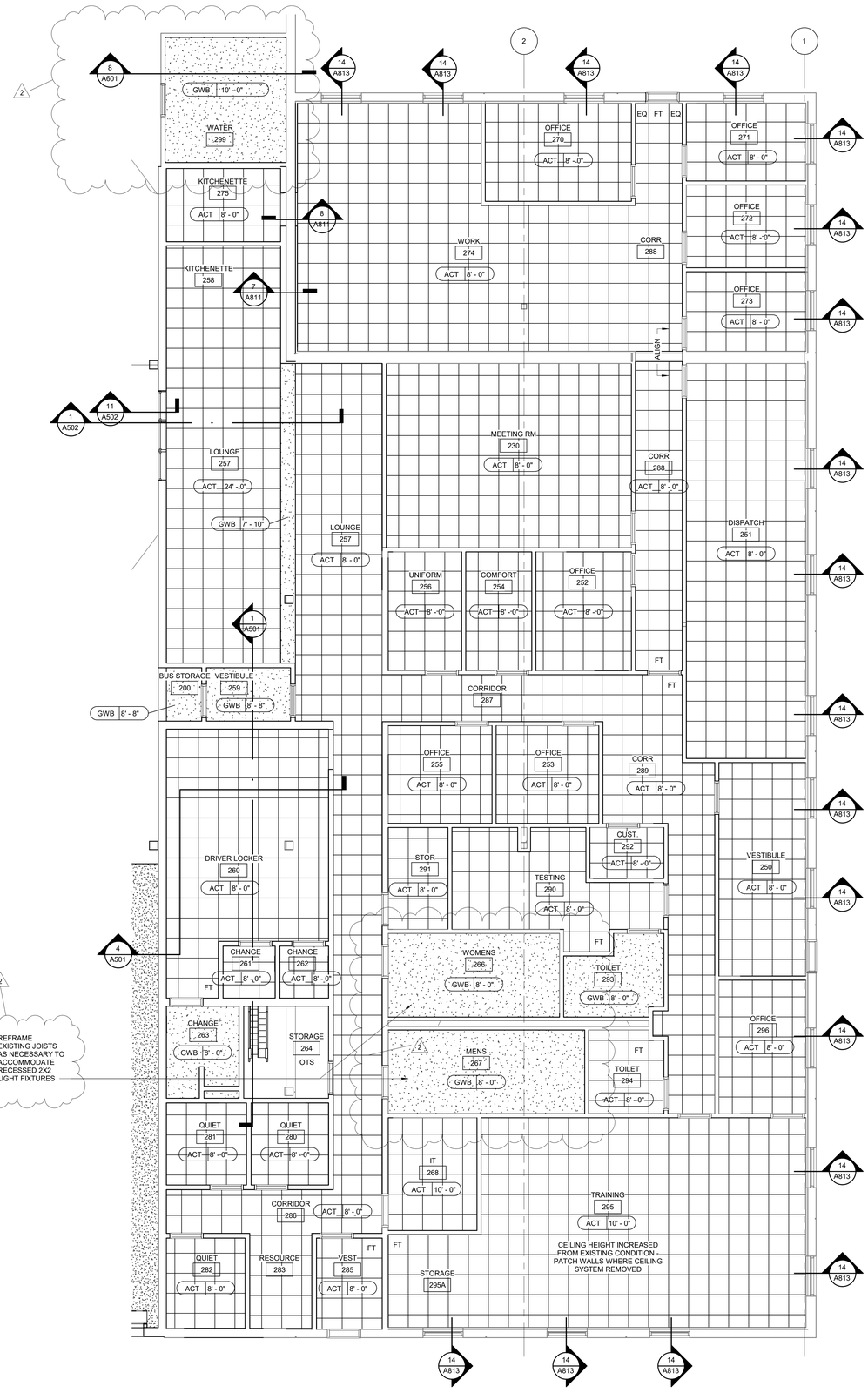
GENERAL NOTES - REFLECTED CEILING PLANS:

1. REFER TO MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, AND TECHNOLOGY DRAWINGS FOR ADDITIONAL INFORMATION.
2. PATCH AND REPAIR EXISTING WALLS WHERE CEILINGS, BULKHEADS, AND OTHER ITEMS WERE REMOVED DURING DEMOLITION TO MATCH ORIGINAL.
3. SIZE CEILING TILES EQUALLY ON OPPOSITE ENDS OF THE ROOM UNLESS NOTED OTHERWISE.



1 ENLARGED REFLECTED CEILING PLAN - MAINTENANCE BUILDING
SCALE: 3/16" = 1'-0"

REFRAME EXISTING JOISTS AS NECESSARY TO ACCOMMODATE RECESSED 2X2 LIGHT FIXTURES



2 ENLARGED REFLECTED CEILING PLAN - STORAGE BUILDING
SCALE: 3/16" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

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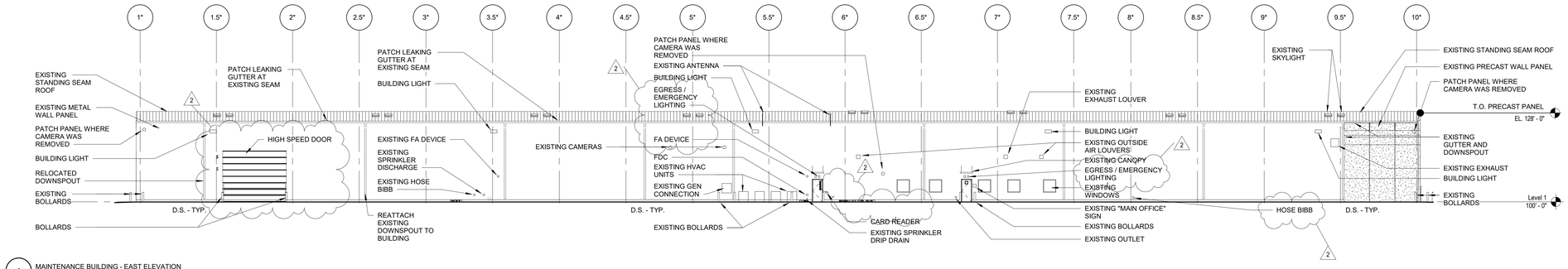
DRAWN BY JFB

CHECKED BY JH

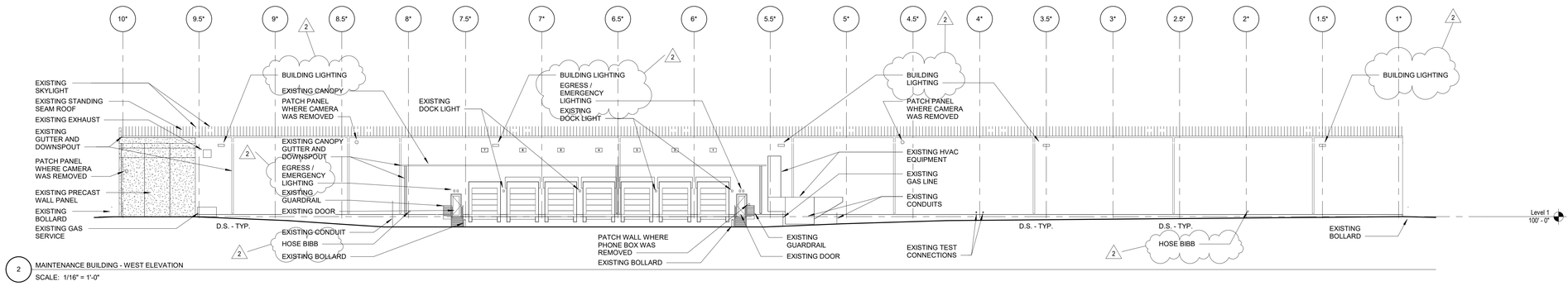
ENLARGED CEILING PLANS

A202



1 MAINTENANCE BUILDING - EAST ELEVATION

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



2 MAINTENANCE BUILDING - WEST ELEVATION

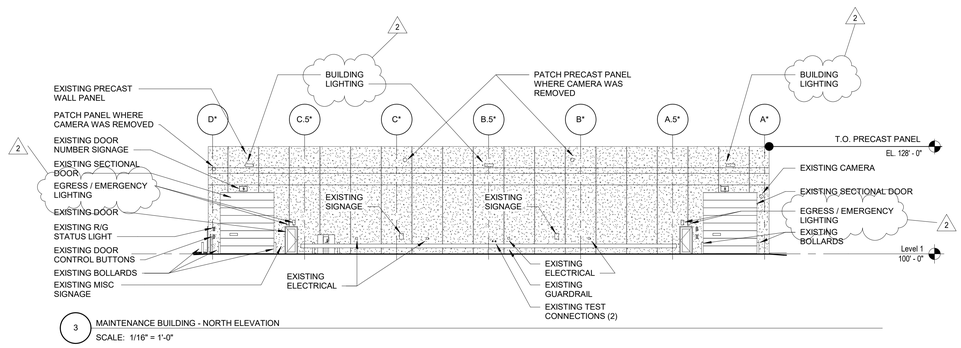
SCALE: 1/16" = 1'-0"

ELEVATIONS LEGEND

EXTENTS OF EXISTING PRECAST PANEL

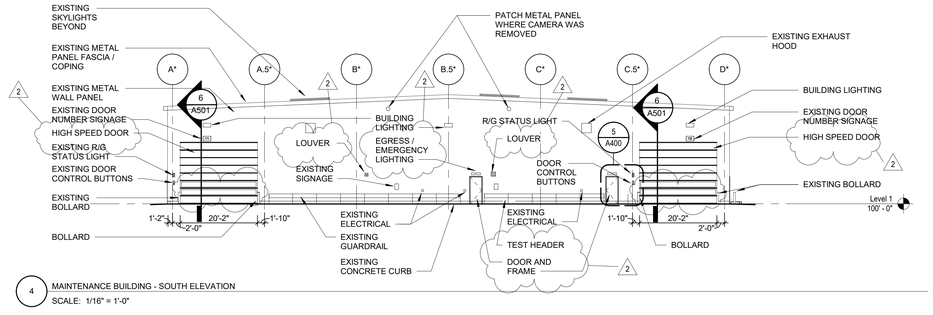
SEE ELECTRICAL AND TECHNOLOGY FOR ADDITIONAL INFORMATION - PATCH EXTERIOR PENETRATIONS WHERE ELECTRICAL AND TECHNOLOGY ITEMS REMOVED.
- METAL PANEL WITH PREFINISHED METAL PANEL TO MATCH.
- NON-SHRINK GROUT AT PRECAST - PAINT TO MATCH EXISTING WALL.

PATCH PRECAST FACADE WHERE SECTIONAL DOORS, SILLS, HOODS, SURROUNDS, AND ASSOCIATED SEALS/ACCESSORIES WERE REMOVED. PREPARE FOR REPAINTING.



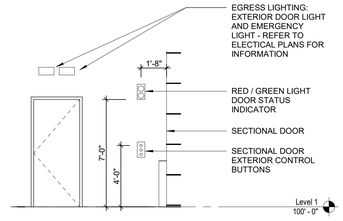
3 MAINTENANCE BUILDING - NORTH ELEVATION

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



4 MAINTENANCE BUILDING - SOUTH ELEVATION

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



5 DOOR LIGHT ELEVATION DETAIL

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

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

BID SET	9/15/2023

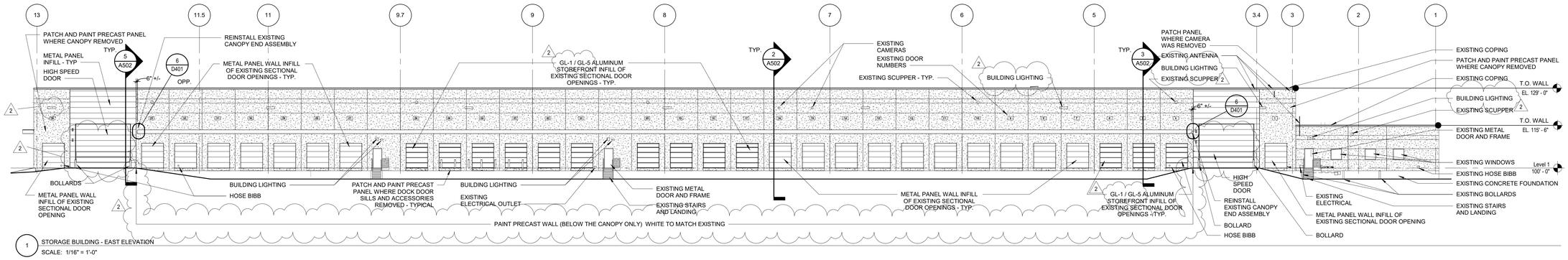
REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM NO. 2	10/13/2023

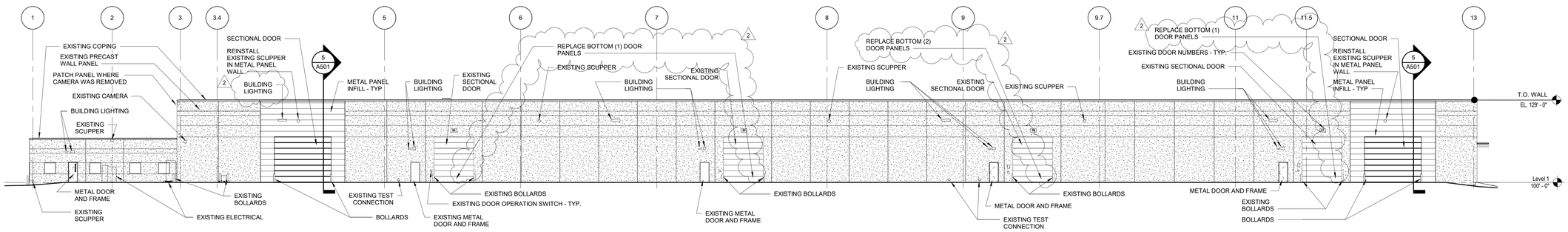
DRAWN BY	JFB
CHECKED BY	JH

ELEVATIONS - MAINTENANCE BUILDING

A400



1 STORAGE BUILDING - EAST ELEVATION
SCALE: 1/16" = 1'-0"



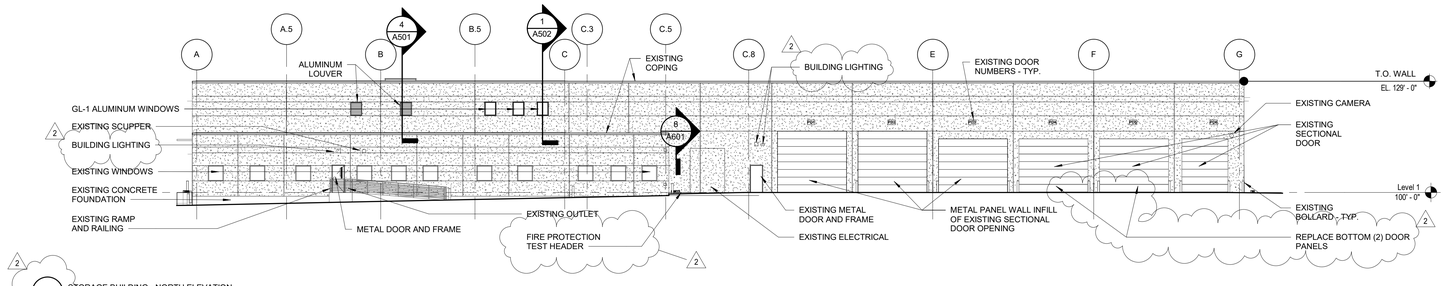
2 STORAGE BUILDING - WEST ELEVATION
SCALE: 1/16" = 1'-0"

ELEVATIONS LEGEND

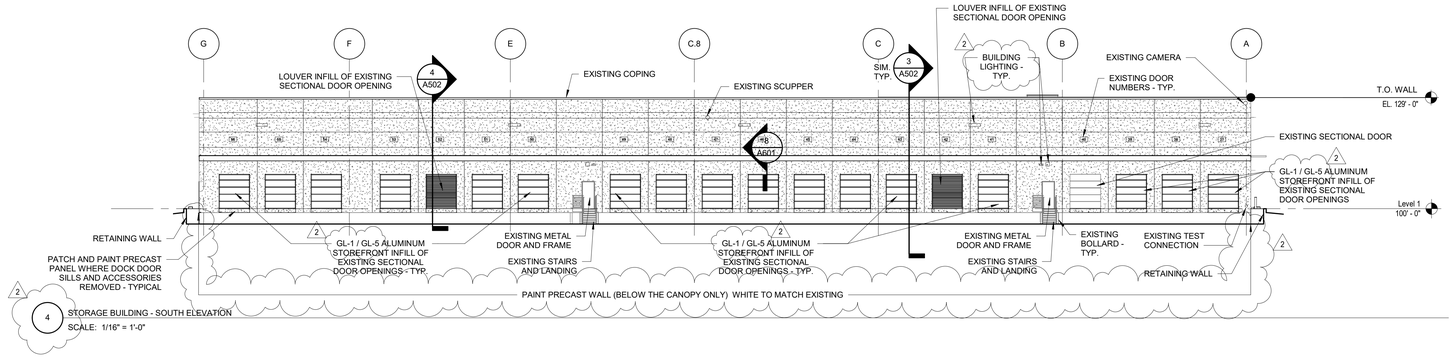
EXTENTS OF EXISTING PRECAST PANEL

SEE ELECTRICAL AND TECHNOLOGY FOR ADDITIONAL INFORMATION - PATCH EXTERIOR PENETRATIONS WHERE ELECTRICAL AND TECHNOLOGY ITEMS REMOVED.
- METAL PANEL WITH PREFINISHED METAL PANEL TO MATCH.
- NON-SHRINK GROUT AT PRECAST - PAINT TO MATCH EXISTING WALL.

PATCH PRECAST FACADE WHERE SECTIONAL DOORS, SILLS, HOODS, SURROUNDS, AND ASSOCIATED SEALS/ACCESSORIES WERE REMOVED. PREPARE FOR REPAINTING.



3 STORAGE BUILDING - NORTH ELEVATION
SCALE: 1/16" = 1'-0"



4 STORAGE BUILDING - SOUTH ELEVATION
SCALE: 1/16" = 1'-0"

Engberg Anderson ARCHITECTS
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SATELLITE BUS FACILITY REMODEL

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REVISION FOR:

NO.	DESCRIPTION	DATE
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DRAWN BY	JFB
CHECKED BY	JH

ELEVATIONS - STORAGE BUILDING

A401

DOOR AND FRAME SCHEDULE - MAINTENANCE BUILDING

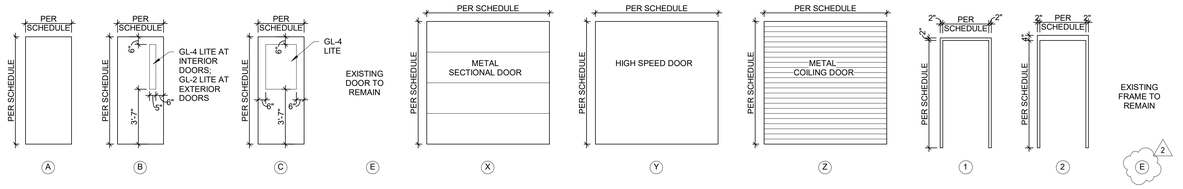
NUMBER	DOOR TYPE	DOOR MAT'L	DOOR FINISH	DOOR	DOOR WIDTH	DOOR HEIGHT	FRAME TYPE	FRAME MAT'L	FRAME FINISH	DETAIL THRESH	DETAIL JAMB	DETAIL HEAD	LABEL	HARDWARE	REMARKS	NUMBER
100	C	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	4/A505	5/A505		1	REPLACE DOOR AND FRAME IN EXISTING OPENING	100
120	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		37		120
121	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		2		121
122	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		2		122
123	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		2		123
124B	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		3		124B
125	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		2		125
126	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		2		126
130	C	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		4		130
131	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		2		131
140A	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-		5		140A
140C	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-		5		140C
140D	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-		5		140D
150	C	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		10 2		150
151A	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		7		151A
151B	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		7		151B
152	E	HM	PAINTED		3' - 0"	7' - 0"	E 2	HM	PAINTED	-	-	- 2		32	2	152
153	E 2	HM	PAINTED		3' - 0"	7' - 0"	E 2	HM	PAINTED	-	-	-		7		153
160	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		8	REPLACE DOOR AND FRAME IN EXISTING OPENING	160
161	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		8	REPLACE DOOR AND FRAME IN EXISTING OPENING	161
175A	B	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	4/A505	5/A505		9	REPLACE DOOR AND FRAME IN EXISTING OPENING	175A
175B-1	Z				20' - 0"	16' - 0"			2	6/A505 SIM.	2/A505	3/A505		-	INSTALL DOOR AND FRAME IN EXISTING WALL	175B-1
175B-2	X		2		20' - 0"	16' - 0"				6/A505 SIM.	2/A505	3/A505		-	INSTALL DOOR AND FRAME IN EXISTING WALL	175B-2
175C-1	Z				20' - 2"	16' - 0"				6/A505 SIM.	2/A505	3/A505		-	INSTALL DOOR AND FRAME IN EXISTING WALL	175C-1
175C-2	X	2			20' - 2"	16' - 0"		2		6/A505 SIM.	2/A505	3/A505		-	INSTALL DOOR AND FRAME IN EXISTING WALL	175C-2
175D	A	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	4/A505	5/A505		9	INSTALL DOOR AND FRAME IN EXISTING WALL	175D
175E-1	Z				20' - 2"	16' - 0"				6/A505 SIM.	2/A505	3/A505		-	INSTALL DOOR AND FRAME IN EXISTING WALL	175E-1
175E-2	X				20' - 2"	16' - 0"				6/A505 SIM.	2/A505	3/A505		-	INSTALL DOOR AND FRAME IN EXISTING WALL	175E-2
175F	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-	2	5		175F
176	A	HM	PAINTED	2	3' - 0"	7' - 0"	2	HM	PAINTED	2 -	1/A601	1/A601	60 MIN	38		176
177A	A	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	4/A505	5/A505		9	INSTALL DOOR AND FRAME IN EXISTING WALL	177A
177B	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		12		177B
177C	Z 2				8' - 0"	8' - 0"				-	6/A811	7/A502 SIM.		-	2	177C
178A	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601	90 MIN	13		178A
178B	Z				8' - 0"	8' - 0"				-	6/A811	7/A502 SIM.	90 MIN	-		178B
180A	B	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		14		180A
180B	B	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		9		180B
181	C	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		15		181
182	C	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		15		182
183	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		16		183
184	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		17		184
186	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		18		186
187	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		18		187
188	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		18		188
189	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		18		189
190	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		36		190
195	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		19		195
196	B	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		10		196

DOORS 140B, 140E, 175G, 175H, 175J, 175K, 175L, 175M, AND 175N ARE EXISTING SECTIONAL DOORS (DOOR TYPE E) 2

DOOR AND FRAME SCHEDULE - STORAGE BUILDING

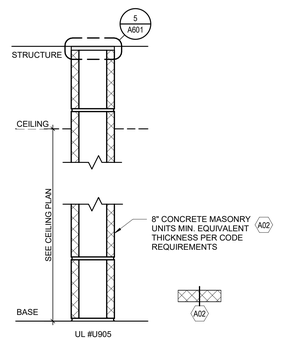
x	DOOR TYPE	DOOR MAT'L	DOOR FINISH	DOOR	DOOR WIDTH	DOOR HEIGHT	FRAME TYPE	FRAME MAT'L	FRAME FINISH	DETAIL THRESH	DETAIL JAMB	DETAIL HEAD	LABEL	HARDWARE	REMARKS	NUMBER
200A-1	Y				20' - 0"	16' - 0"				6/A505 SIM.	11/A506	12/A506		-		200A-1
200A-2	Z				20' - 0"	16' - 0"				6/A505 SIM.	11/A506	12/A506		-		200A-2
200B	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-		29		200B
200C	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-		29		200C
200D-1	Y				20' - 0"	16' - 0"				6/A505 SIM.	11/A506	12/A506		-		200D-1
200D-2	Z				20' - 0"	16' - 0"				6/A505 SIM.	11/A506	12/A506		-		200D-2
200F	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-		29		200F
200G	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST 2	-	-	-		29		200G
200H	X			2	20' - 0"	16' - 0"				6/A505	7/A505	8/A505		-		200H
200K	A	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	3/A601	3/A601		9	REPLACE DOOR AND FRAME IN EXISTING OPENING	200K
200M	A	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	3/A601	3/A601		9	REPLACE DOOR AND FRAME IN EXISTING OPENING	200M
200P	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-		29		200P
200R	E	HM	EXIST		3' - 0"	7' - 0"	E	HM	EXIST	-	-	-		29		200R
200S	X			2	20' - 0"	16' - 0"				6/A505	7/A505	8/A505	2	-		200S
200W	A	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	3/A601	3/A601		9	REPLACE DOOR AND FRAME IN EXISTING OPENING	200W
201	B	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		6		201
202	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		20	2	202
203	A	HM	PAINTED		3' - 6"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		11		203
204	A	HM	PAINTED	(2)	3' - 0"	8' - 4"	2	HM	PAINTED	-	1/A601	7/A601		21		204
205	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		11		205
206	C	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		22		206
207	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		39		207
208	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		17		208
209	C	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		23		209
210A	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		6		210A
210B	A 2	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		6		210B
210C	Z				8' - 0"	8' - 0"				-	6/A811	7/A502		-		210C
210D	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		6		210D
211	A	HM	PAINTED	(2)	3' - 0"	8' - 4"	2	HM	PAINTED	-	1/A601	7/A601		24		211
230	E 2	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	2 -	-	-		3		230
250A	B	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	3/A601	3/A601		9	REPLACE DOOR AND FRAME IN EXISTING OPENING	250A
250B	C	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		25		250B
251	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		3		251
252	C	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		22	INSTALL DOOR AND FRAME IN EXISTING WALL	252
253	C	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		28		253
254	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		18	INSTALL DOOR AND FRAME IN EXISTING WALL	254
255	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		28		255
256	A 2	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		11	INSTALL DOOR AND FRAME IN EXISTING WALL	256
259A	C	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		27		259A
259B	C	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		6		259B
261	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		16		261
262	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		18		262
263	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		18		263
264	A 2	HM	PAINTED		3' - 0"	7' - 0"	2 2	HM	PAINTED	-	1/A601	1/A601	2	11		264
266	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		8	REPLACE DOOR AND FRAME IN EXISTING OPENING	266
267	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		8	REPLACE DOOR AND FRAME IN EXISTING OPENING	267
268	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		36		268
270	C	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		22	INSTALL DOOR AND FRAME IN EXISTING WALL	270
271	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		35		271
272	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		35		272
273	E 2	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	2 -	-	-		35		273
274	B	FBG	N/A		3' - 0"	7' - 0"	1	ALUM	CLR ANOD	4/A601	3/A601	3/A601		9	REPLACE DOOR AND FRAME IN EXISTING OPENING	274
280	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		30		280
281	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		30		281
282	A	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		30		282
285A	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		31 2		285A
285B	C	HM	PAINTED		3' - 0"	7' - 0"	2	HM	PAINTED	-	1/A601	1/A601		10		285B
288	C	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		11		288
290	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		11		290
291	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		26	INSTALL DOOR AND FRAME IN EXISTING WALL	291
292	A 2	HM	PAINTED		3' - 0"	7' - 0"	1 2	HM	PAINTED	-	2/A601	2/A601	2	26	INSTALL DOOR AND FRAME IN EXISTING WALL	292
293	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		8	REPLACE DOOR AND FRAME IN EXISTING OPENING	293
294	A	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601		8	REPLACE DOOR AND FRAME IN EXISTING OPENING	294
295	E	HM	PAINTED		3' - 0"	7' - 0"	E	HM	PAINTED	-	-	-		32		295
296	E 2	HM	PAINTED		3' - 0"	7' - 0"	E 2	HM	PAINTED	-	2	-		2 35		296
299	A 2	HM	PAINTED		3' - 0"	7' - 0"	1	HM	PAINTED	-	2/A601	2/A601	60 MIN	38	REPLACE DOOR AND FRAME IN EXISTING OPENING	299
300	A	HM	PAINTED	(2)	3' - 0"	8' - 4"	2	HM	PAINTED	-	1/A601	1/A601 2	2	34		300

DOORS 200E, 200J, 200L, 200N, 200Q, 200T, 200U, AND 200V ARE EXISTING SECTIONAL DOORS (DOOR TYPE E) 2 2

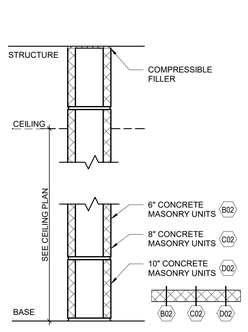


DOOR TYPES

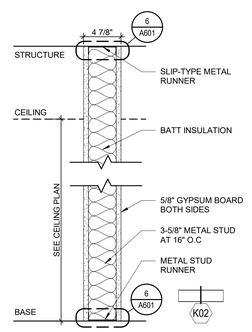
FRAME TYPES



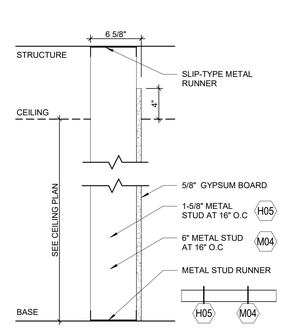
MASONRY WALLS - 2 HR. RATED



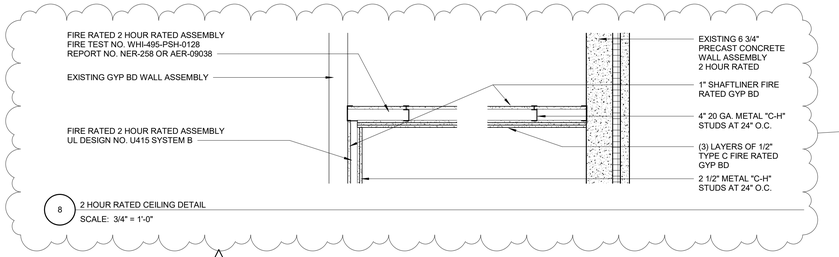
MASONRY WALLS - NON RATED



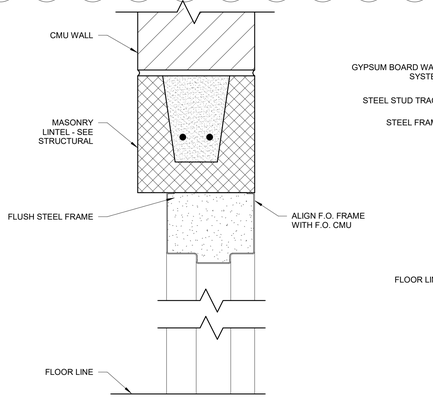
METAL STUD WALLS - NON RATED

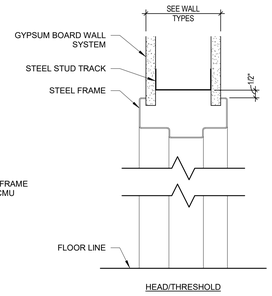


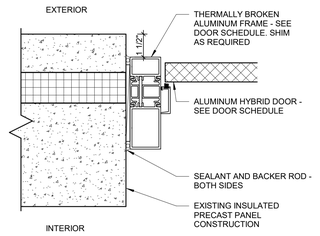
METAL STUD FURRING - NON RATED



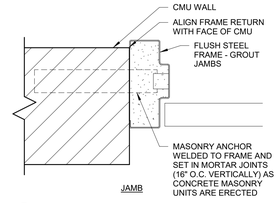
8 2 HOUR RATED CEILING DETAIL
SCALE: 3/4" = 1'-0"



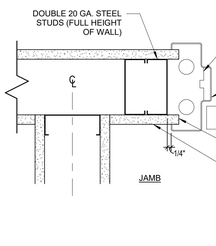




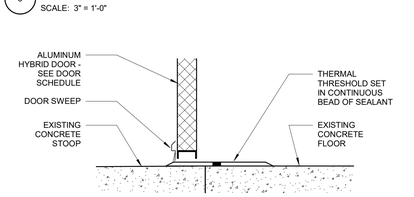
3 EXTERIOR DOOR JAMB / HEAD 3901
SCALE: 3" = 1'-0"



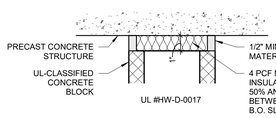
1 HM FRAME @ CMU
SCALE: 3" = 1'-0"



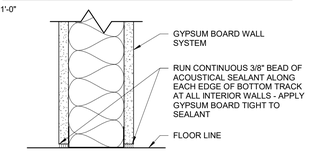
2 HM FRAME @ METAL STUDS
SCALE: 3" = 1'-0"



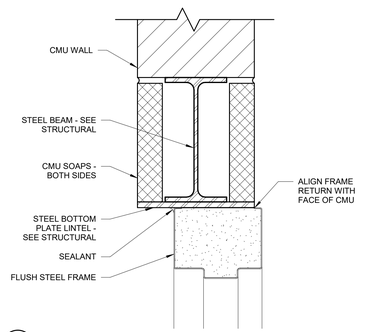
4 INSULATED DOOR SILL
SCALE: 3" = 1'-0"



5 RATED CMU @ STRUCTURE
SCALE: 3" = 1'-0"



6 SOUND CONTROL AT STUD WALLS
SCALE: 3" = 1'-0"



7 HM HEAD @ STEEL LINTEL
SCALE: 3" = 1'-0"

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

BID SET 9/15/2023

REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM NO. 2	10/13/2023

DRAWN BY JFB

CHECKED BY JH

DOOR SCHEDULE & WALL TYPES

A601

FINISH SCHEDULE - MAINTENANCE BUILDING

RM #	ROOM NAME	FLOORS FINISH	BASE FINISH	WALL FINISH NORTH FINISH	WALL FINISH EAST FINISH	WALL FINISH SOUTH FINISH	WALL FINISH WEST FINISH	CEILING FINISH	REMARKS	RM #
100	VESTIBULE	WM-1	RB-1	PT-3	PT-3	PT-3	PT-6	ACT-1		100
120	BUILDING & GROUNDS	RF-1	RB-1	PT-4	PT-3	PT-3	PT-3	ACT-1		120
121	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		121
122	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		122
123	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		123
124	TRAINING	RF-1	RB-1	PT-3	PT-3	PT-3	PT-5	ACT-1		124
125	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		125
126	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		126
130	CORRIDOR	RF-1	RB-1	PT-3	PT-6	PT-3	PT-3	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	130
131	CUST.	-	-	-	-	-	-	ACT-1		131
140	BUILDING & GROUNDS	SC-1	RB-1	-	-	PT-1	-	-	RB-1 AND PT-1 AT OFFICE WING	140
150	WORK	RF-1	RB-1	PT-3 / PT-6	PT-3	PT-3 / PT-7	PT-3	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	150
151	BREAK	RF-1	RB-1	PT-3 / PT-5	PT-3	PT-3 / PT-4	PT-5	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	151
152	STOR	-	-	-	-	-	-	ACT-1		152
153	CORRIDOR	RF-1	RB-1	PT-3	PT-3	PT-7	PT-3	ACT-1		153
160	MENS	CT-2	CT-2	PT-1	PT-1	CT-4	PT-1	PT-1	REINSTALL EXISTING SIGNAGE	160
161	WOMENS	CT-2	CT-2	CT-4	PT-1	PT-1	PT-1	PT-1	REINSTALL EXISTING SIGNAGE	161
175	MAINTENANCE	SC-1	RB-1	PT-1	PT-1	PT-1	PT-1	-	RB-1 AND PT-1 AT OFFICE AND FIRE PUMP WING	175
176	FIRE PUMP	SC-1	-	PT-1	PT-1	PT-1	PT-1	-	ID-03 SIGNAGE	176
177	FLUIDS / COMPRESSOR	SC-1	-	PT-1	PT-1	PT-1	PT-1	-		177
178	BATTERY	SC-1	-	PT-1	PT-1	PT-1	PT-1	-	ID-01, ID-04, AND ID-05 SIGNAGE	178
180	CORRIDOR	SC-2	RB-1	PT-3	PT-6	PT-3	PT-3	PT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	180
181	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	PT-1		181
182	ELECT SHOP	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	PT-1		182
183	COMFORT	RF-1	RB-1	PT-3	PT-3	PT-3	PT-6	PT-1		183
184	TOILET	CT-2	CT-2	PT-3	PT-3	PT-3	PT-3	PT-1	ID-02 SIGNAGE	184
185	LOCKER	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	PT-1		185
186	CHANGE	CT-1	CT-1	PT-3	SSM-1 / PT-3	SSM-1 / PT-3	SSM-1 / PT-3	PT-1	FULL-HEIGHT SSM-1 WALLS IN SHOWER	186
187	CHANGE	CT-1	CT-1	PT-3	SSM-1 / PT-3	SSM-1 / PT-3	SSM-1 / PT-3	PT-1	FULL-HEIGHT SSM-1 WALLS IN SHOWER	187
188	CHANGE	CT-1	CT-1	SSM-1 / PT-3	SSM-1 / PT-3	PT-3	SSM-1 / PT-3	PT-1	FULL-HEIGHT SSM-1 WALLS IN SHOWER	188
189	CHANGE	CT-1	CT-1	SSM-1 / PT-3	SSM-1 / PT-3	PT-3	SSM-1 / PT-3	PT-1	FULL-HEIGHT SSM-1 WALLS IN SHOWER	189
190	TELECOM	-	-	PT-1	PT-1	PT-1	PT-1	ACT-1		190
195	MECH	SC-2	-	PT-1	PT-1	PT-1	PT-1	-		195
196	PARTS STORAGE	SC-1	-	-	PT-1	-	-	-	RB-1 AND PT-1 AT OFFICE WING	196

Grand total: 34

FINISH SCHEDULE - STORAGE BUILDING

RM #	ROOM NAME	FLOORS FINISH	BASE FINISH	WALL FINISH NORTH FINISH	WALL FINISH EAST FINISH	WALL FINISH SOUTH FINISH	WALL FINISH WEST FINISH	CEILING FINISH	REMARKS	RM #
200	BUS STORAGE	SC-1	RB-1	PT-1	PT-1	-	-	PVC-1	RB-1 AND PT-1 AT OFFICE WING	200
201	SERVICE LANE	SC-1	-	-	PT-1	-	PT-1	PVC-1	RB-1 AND PT-1 AT OFFICE WING. PAINT ALL EXPOSED ITEMS WHICH ARE NOT STAINLESS STEEL PT-1	201
202	IT	-	-	PT-1	PT-1	PT-1	PT-1	PT-1		202
203	MONEY	SC-1	-	PT-1	PT-1	PT-1	PT-1	PT-1		203
204	COMPRESSOR	SC-1	-	PT-1	PT-1	PT-1	PT-1	-		204
205	STORAGE	SC-1	-	PT-1	PT-1	PT-1	PT-1	-		205
206	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		206
207	TOILET	CT-2	CT-2	PT-3	PT-3	PT-3	PT-3	PT-1	ID-02 SIGNAGE	207
208	TOILET	CT-2	CT-2	PT-3	PT-3	PT-3	PT-3	PT-1	ID-02 SIGNAGE	208
209	BREAK	RF-1	RB-1	PT-3	PT-3	PT-3	PT-5	ACT-1		209
210	WASH EQ	SC-1	-	PT-1	PT-1	PT-1	PT-1	-		210
211	MECH / ELECT	SC-1	-	PT-1	PT-1	PT-1	PT-1	-	ID-06 SIGNAGE	211
230	MEETING RM	RF-1	RB-1	PT-3	PT-5	PT-3	PT-3	ACT-1		230
250	VESTIBULE	WM-1	RB-1	PT-3	PT-3	PT-3	PT-6	ACT-1		250
251	DISPATCH	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		251
252	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		252
253	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		253
254	COMFORT	RF-1	RB-1	PT-3	PT-3	PT-3	PT-6	ACT-1		254
255	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		255
256	UNIFORM	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		256
257	LOUNGE	RF-1	RB-1	PT-4	PT-3	PT-3	PT-3	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	257
258	KITCHENETTE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		258
259	VESTIBULE	WM-1	RB-1	PT-3	PT-3	PT-3	PT-3	PT-1		259
260	DRIVER LOCKER	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		260
261	CHANGE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		261
262	CHANGE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		262
263	CHANGE	CT-1	CT-1	SSM-1 / PT-3	SSM-1 / PT-3	SSM-1 / PT-3	PT-3	PT-1	FULL-HEIGHT SSM-1 WALLS IN SHOWER	263
264	STORAGE	SC-1	-	PT-3	PT-3	PT-3	PT-3	-	FINISHES SIM. IN MECHANICAL MEZZANINE	264
266	WOMENS	-	-	-	-	-	-	ACT-1	REINSTALL EXISTING SIGNAGE	266
267	MENS	-	-	-	-	-	-	ACT-1	REINSTALL EXISTING SIGNAGE	267
268	IT	-	-	PT-3	PT-3	PT-3	PT-3	ACT-1		268
270	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		270
271	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		271
272	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		272
273	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		273
274	WORK	RF-1	RB-1	N/A	PT-3	PT-3	PT-7	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	274
275	KITCHENETTE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-5	ACT-1		275
280	QUIET	CPT-1	RB-1	PT-3	PT-3	PT-3	PT-4	ACT-1		280
281	QUIET	CPT-1	RB-1	PT-3	PT-3	PT-3	PT-7	ACT-1		281
282	QUIET	CPT-1	RB-1	PT-3	PT-3	PT-5	PT-3	ACT-1		282
283	RESOURCE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		283
285	VEST	WM-1	RB-1	PT-6	PT-3	PT-3	PT-3	ACT-1	ID-06 SIGNAGE	285
286	CORRIDOR	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	286
287	CORRIDOR	RF-1	RB-1	PT-3	PT-3	PT-3	PT-4	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	287
288	CORR	RF-1	RB-1	PT-6	PT-3	PT-3 / PT-7	PT-3	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	288
289	CORR	RF-1	RB-1	PT-3 / PT-6	PT-3	PT-3	PT-3 / PT-6	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	289
290	TESTING	RF-1	RB-1	PT-3	PT-3 / PT-6	PT-7	PT-3	ACT-1		290
291	STOR	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		291
292	CUST.	-	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1	EXISTING FRP WAINSCOT AT MOP BASIN WALLS	292
293	TOILET	-	CT-3	PT-1	-	PT-1	PT-1	PT-1	USE ATTIC STOCK AND SALVAGED BASE/WALL TILE TO PATCH FINISHES WHERE REQUIRED - SEE ENLARGED PLANS AND BASE PHOTO	293
294	TOILET	-	CT-1	-	-	-	-	ACT-1	SEE BASE PHOTO FOR ADDITIONAL INFORMATION	294
295	TRAINING	RF-1	RB-1	PT-5	PT-3	PT-4	PT-3	ACT-1	SEE ENLARGED PLANS FOR CORNER GUARD LOCATIONS	295
295A	STORAGE	RF-1	RB-1	N/A	PT-3	PT-3	PT-4	ACT-1		295A
296	OFFICE	RF-1	RB-1	PT-3	PT-3	PT-3	PT-3	ACT-1		296
299	WATER	-	-	-	-	-	-	-	ID-03 SIGNAGE	299

FINISH KEY

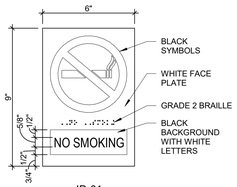
TAG	PRODUCT	MANUFACTURER	DISTRIBUTOR	STYLE	PRODUCT NO.	COLOR	FINISH	SIZE	NOTES
ACT-1	ACOUSTICAL CEILING TILE	ARMSTRONG		CALLA	2824	WHITE		24" X 24"	9/16" SQUARE TEGULAR
CG-1	CORNER GUARD	INPRO		ENVIROGT G2 SERIES		GALA 0380			
CPT-1	CARPET	J&J FLOORING	DIGITAL		1859	ZONE 3573		24" X 24"	
CT-1	TILE	DALTILE		KEYSTONES	D208	SUEDE GRAY SPECKLE	MATTE	2" X 2"	GT-1 GROUT
CT-2	TILE	DELCONCA	CERAMIC TILEWORKS	ESSENTIAL		GRAY HET05	MATTE	12" X 24"	GT-2 GROUT
CT-3	TILE								ATTIC STOCK
CT-4	TILE	CERAMICHE CAMPOGALLIANO	CERAMIC TILEWORKS	GLASSALIKE BLOCK		BLU	GLOSSY	4" X 12"	GT-3 GROUT
GT-1	GROUT								MATCH BOSTIK SHADOW H195
GT-2	GROUT								MATCH BOSTIK STORM H198
GT-3	GROUT								MATCH BOSTIK WHITE H152
PLAM-1	PLASTIC LAMINATE	WILSONART		BEIGEWOOD	7850-60		MATTE		
PT-1	PAINT	SHERWIN WILLIAMS				SNOWBOUND SW 7004			
PT-2	PAINT	SHERWIN WILLIAMS				IRON ORE SW 7069			DOORS AND FRAMES TO BE PAINTED PT-2
PT-3	PAINT	SHERWIN WILLIAMS				ON THE ROCKS SW 7671			
PT-4	PAINT	SHERWIN WILLIAMS				BREEZY SW 7616			
PT-5	PAINT	SHERWIN WILLIAMS				LABRADORITE SW 7619			
PT-6	PAINT	SHERWIN WILLIAMS				DISTANCE SW 6243			
PT-7	PAINT	SHERWIN WILLIAMS				CAVERN CLAY SW 7701			
PVC-1									SEE SPECIFICATIONS
RB-1	RUBBER BASE	JOHNSONITE				BURNT UMBER 63		4"	
RF-1	RUBBER FLOOR	NORA		GRAND	ARTICLE 1880	FENUGREEK 5307		3.5 MM TILE	
SC-1									SEE SPECIFICATIONS
SC-2									SEE SPECIFICATIONS
SSM-1	SOLID SURFACE MATERIAL	CORIAN		DOVE					SHOWER WALL
SSM-2	SOLID SURFACE MATERIAL	CORIAN		CARBON CONCRETE					COUNTERTOP
WM-1	WALKOFF MAT	J&J FLOORING		INCOGNITO	7069	INTELLIGENCE 1841		24" X 24"	

GENERAL NOTES - FINISHES

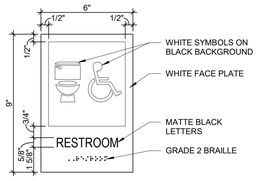
1. REFER TO INTERIOR ELEVATIONS FOR ADDITIONAL INFORMATION.
2. "-" ON THE FINISH SCHEDULE INDICATES THAT THE EXISTING FINISH IS TO REMAIN.
3. PAINT HOLLOW METAL DOORS AND FRAMES PT-2. SEE DOOR SCHEDULE FOR LOCATIONS.
4. SEE FLOORING TRANSITION DETAILS FOR ADDITIONAL INFORMATION. REMOVE AND REPLACE TRANSITION STRIP IN AREAS WHERE TILE FLOORING IS TO REMAIN.
5. "TRUE" CARDINAL DIRECTIONS ARE INDICATED IN THE FINISH SCHEDULE U.N.O.

SIGNAGE NOTES:

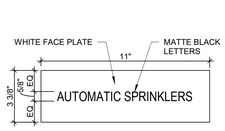
1. SEE FINISH SCHEDULE FOR LOCATIONS OF SIGNS ID-01 THROUGH ID-06.
2. ID-07 SIGNAGE TO BE INSTALLED AT DOORS 100 AND 250A.
3. ID-08 SIGNAGE TO BE INSTALLED AT DOORS 100, 140A, 140C, 140D, 175A, 175D, 175F, 177A, 206B, 200C, 200F, 200G, 200K, 200M, 200P, 200R, 200W, 250A, 274, AND 285A.
4. ID-09, ID-10, AND ID-11 SIGNAGE TO BE INSTALLED AT ALL PEDESTRIAN ENTRIES THROUGH EXTERIOR GATES AROUND THE SITE.
5. TYPEFACE ON ALL SIGNS SHALL BE HELVETICA BOLD.
6. COLOR CHANGES TO BE RAISED 1/32" FROM BACKGROUND.



ID-01



ID-02



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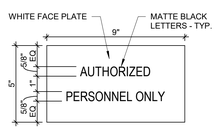
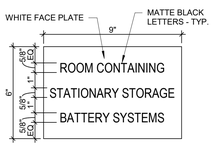
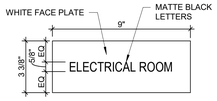


ID-04

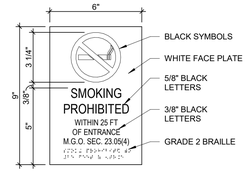


ID-05

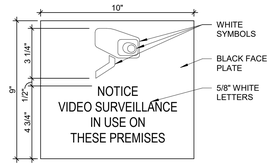


ID-06

ID-07



ID-08



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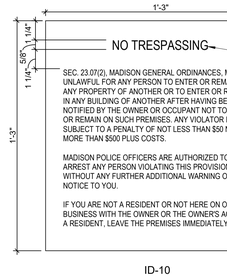
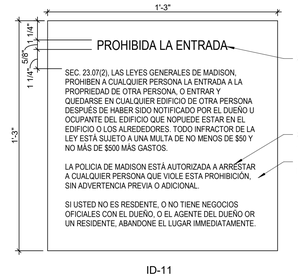
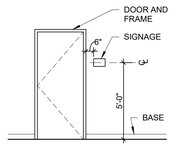


ID-10

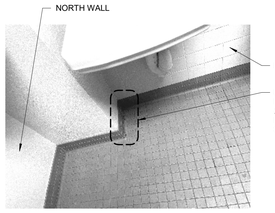


ID-11

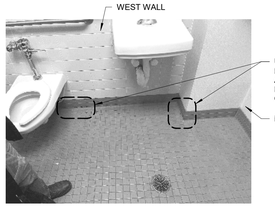
1 SIGNAGE SCHEDULE
NOT TO SCALE



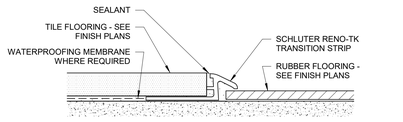
2 SIGN MOUNTING
NOT TO SCALE



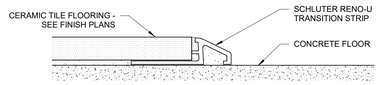
3 TOILET 293 BASE REPLACEMENT
NOT TO SCALE



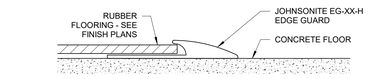
4 TOILET 294 BASE REPLACEMENT
NOT TO SCALE



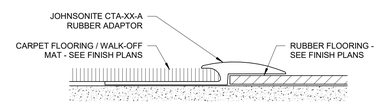
5 TILE TO RUBBER FLOORING TRANSITION
SCALE: 12" = 1'-0"



6 TILE TO CONCRETE TRANSITION
SCALE: 12" = 1'-0"



7 RUBBER FLOORING TO CONCRETE TRANSITION
SCALE: 12" = 1'-0"



8 CARPET TO RESILIENT FLOORING
SCALE: 12" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON

METRO TRANSIT

1245 E WASHINGTON AVE #201

MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

BID SET 9/15/2023

REVISION FOR:

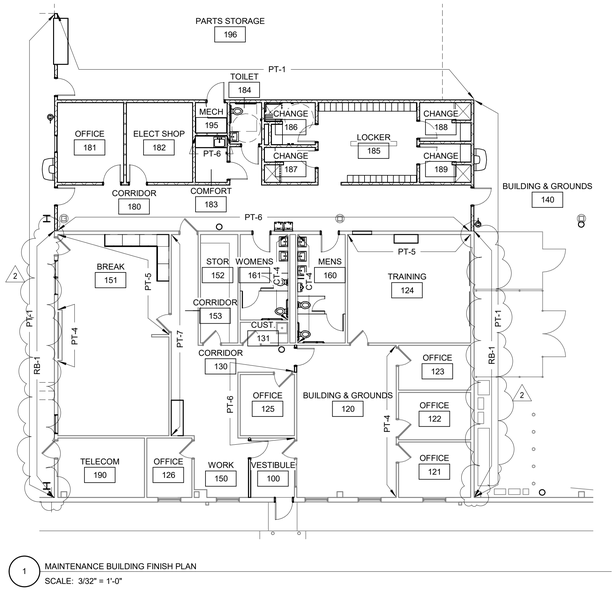
NO.	DESCRIPTION	DATE
2	ADDENDUM NO. 2	10/13/2023

DRAWN BY JFB

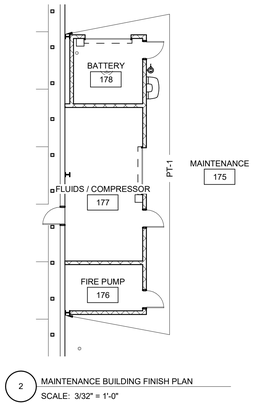
CHECKED BY JH

INTERIOR FINISHES & SCHEDULES

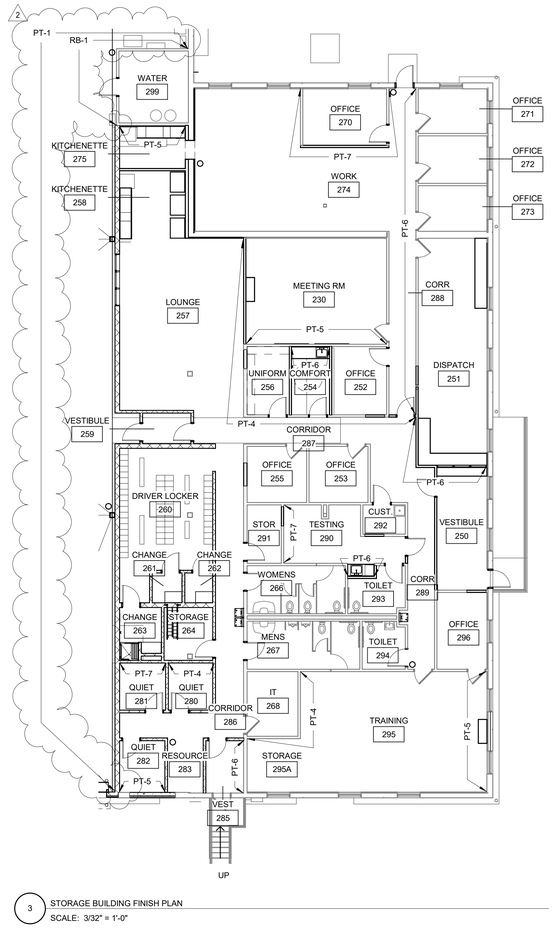
A701



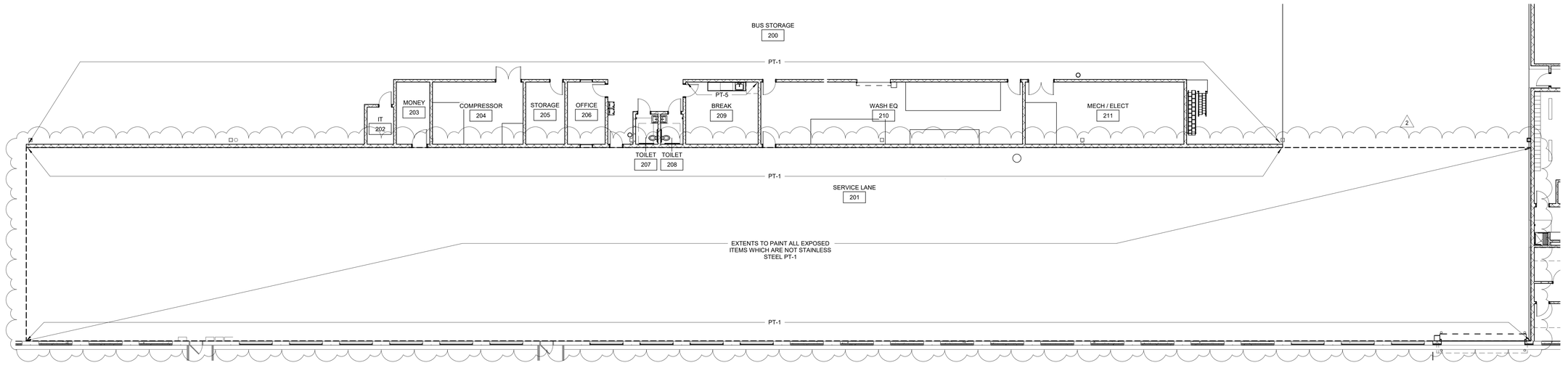
1 MAINTENANCE BUILDING FINISH PLAN
SCALE: 3/32" = 1'-0"



2 MAINTENANCE BUILDING FINISH PLAN
SCALE: 3/32" = 1'-0"



3 STORAGE BUILDING FINISH PLAN
SCALE: 3/32" = 1'-0"



4 STORAGE BUILDING FINISH PLAN
SCALE: 3/32" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

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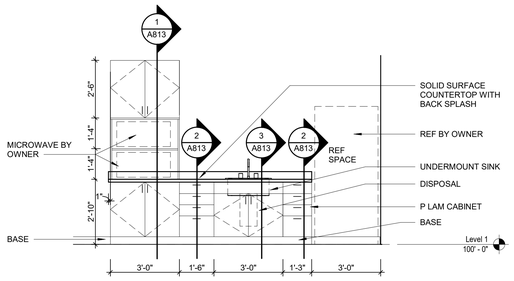
DRAWN BY	JFB
CHECKED BY	JH

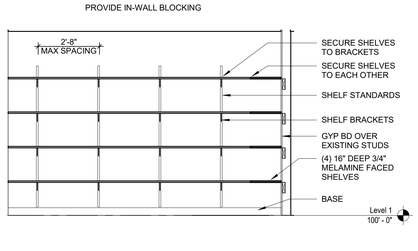
INTERIOR FINISH PLANS

NORTH

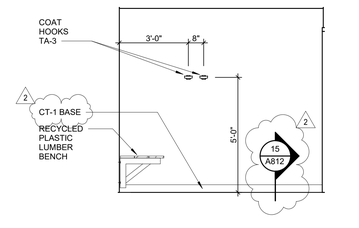
A702



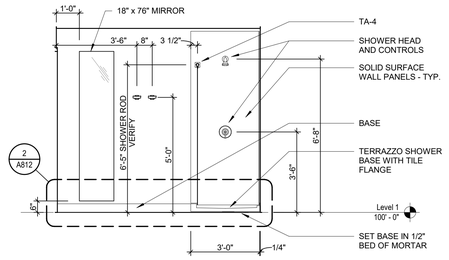
5 LOUNGE KITCHENETTE
SCALE: 3/8" = 1'-0"



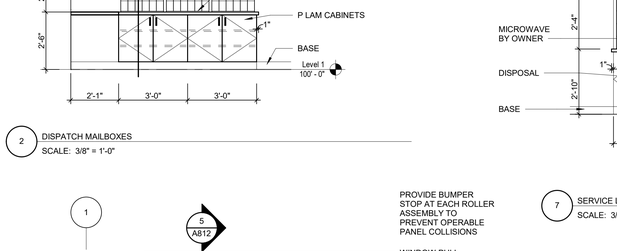
10 UNIFORM STORAGE 2
SCALE: 3/8" = 1'-0"



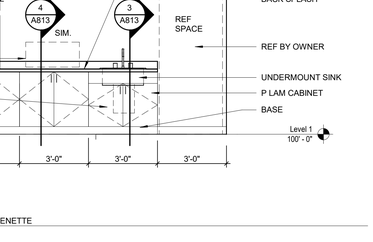
18 SHOWER ELEVATION C
SCALE: 3/8" = 1'-0"



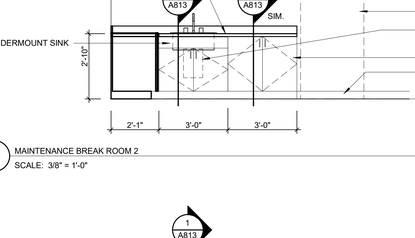
20 SHOWER ELEVATION B
SCALE: 3/8" = 1'-0"



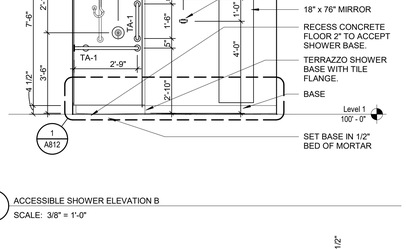
4 DISPATCH ELEVATION
SCALE: 3/8" = 1'-0"



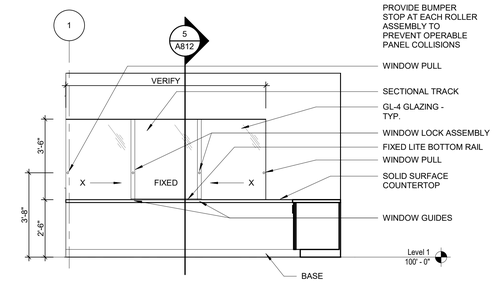
9 UNIFORM STORAGE 1
SCALE: 3/8" = 1'-0"



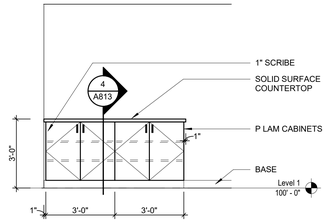
14 MAINTENANCE COMFORT ROOM
SCALE: 3/8" = 1'-0"



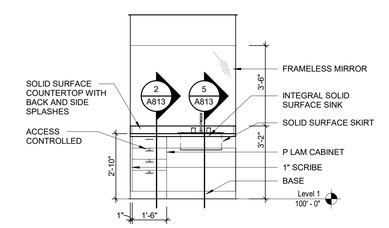
19 SHOWER ELEVATION A
SCALE: 3/8" = 1'-0"



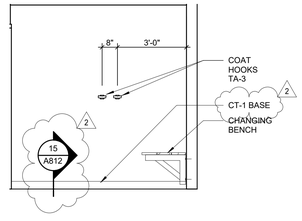
3 WORK KITCHENETTE
SCALE: 3/8" = 1'-0"



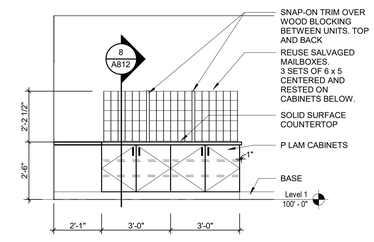
8 MAINTENANCE WORK ELEVATION
SCALE: 3/8" = 1'-0"



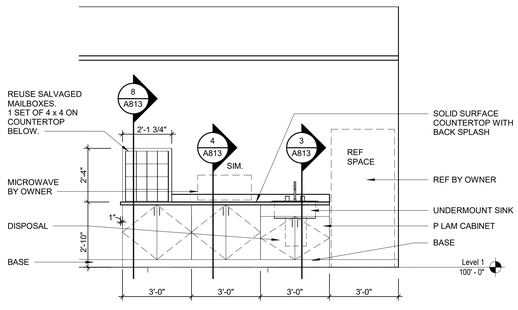
13 TESTING ROOM CASEWORK
SCALE: 3/8" = 1'-0"



17 ACCESSIBLE SHOWER ELEVATION C
SCALE: 3/8" = 1'-0"



2 DISPATCH MAILBOXES
SCALE: 3/8" = 1'-0"

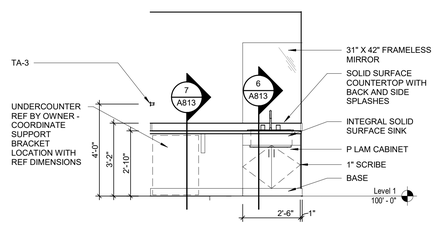


7 SERVICE LANE KITCHENETTE
SCALE: 3/8" = 1'-0"

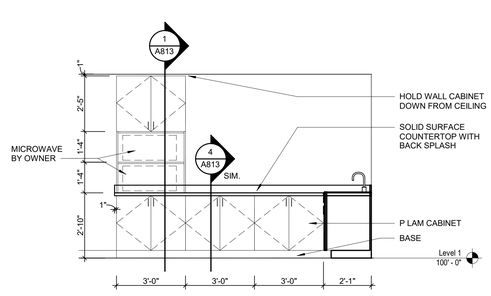
12 MAINTENANCE BREAK ROOM 2
SCALE: 3/8" = 1'-0"

16 ACCESSIBLE SHOWER ELEVATION B
SCALE: 3/8" = 1'-0"

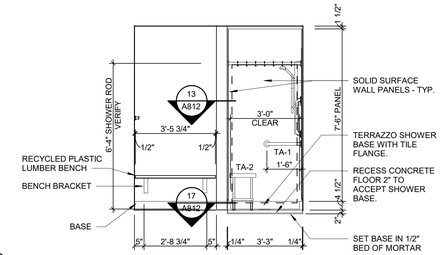
1 CHECK-IN WINDOW ELEVATION
SCALE: 3/8" = 1'-0"



6 OPERATIONS COMFORT ROOM
SCALE: 3/8" = 1'-0"



11 MAINTENANCE BREAK ROOM 1
SCALE: 3/8" = 1'-0"



15 ACCESSIBLE SHOWER ELEVATION A
SCALE: 3/8" = 1'-0"

Engberg Anderson ARCHITECTS
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SATELLITE BUS FACILITY REMODEL

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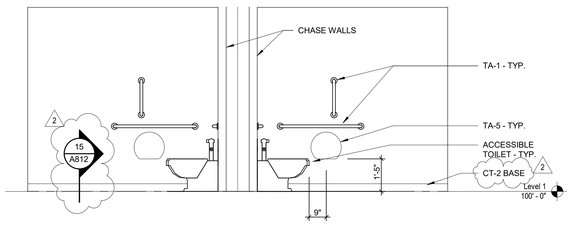
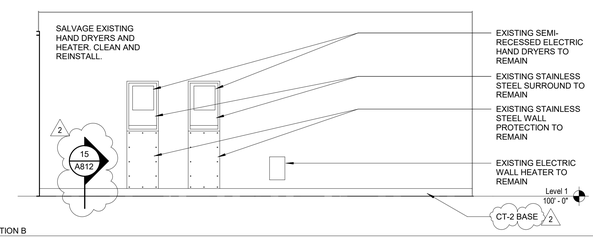
DRAWN BY JFB
CHECKED BY JH

INTERIOR ELEVATIONS

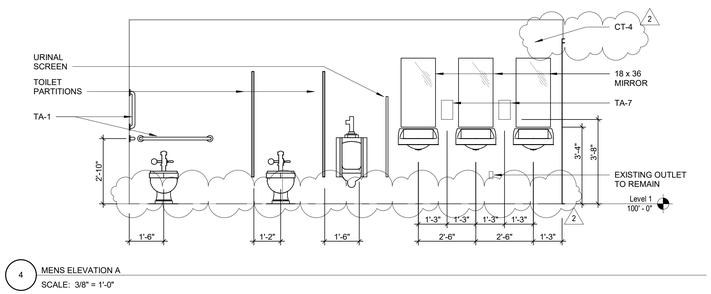
A801



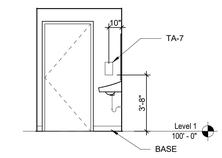
6 MENS / WOMENS C
SCALE: 3/8" = 1'-0"



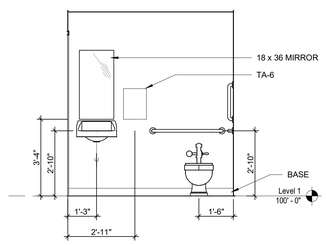
5 MENS ELEVATION B
SCALE: 3/8" = 1'-0"



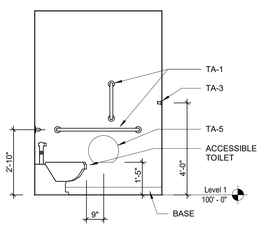
4 MENS ELEVATION A
SCALE: 3/8" = 1'-0"



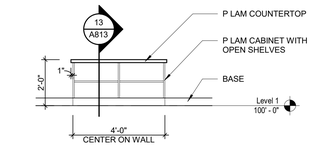
3 TOILET ELEVATION C
SCALE: 1/4" = 1'-0"



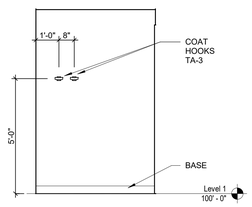
2 TOILET ELEVATION B
SCALE: 3/8" = 1'-0"



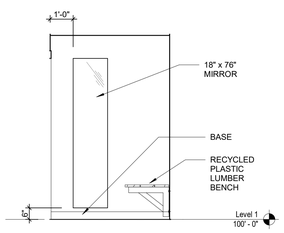
1 TOILET ELEVATION A
SCALE: 3/8" = 1'-0"



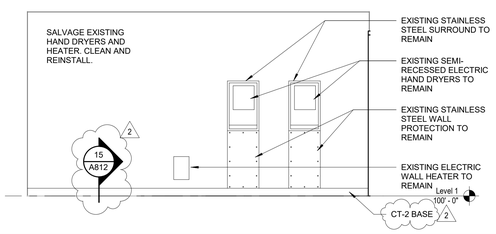
11 CONF ROOM CASEWORK
SCALE: 3/8" = 1'-0"



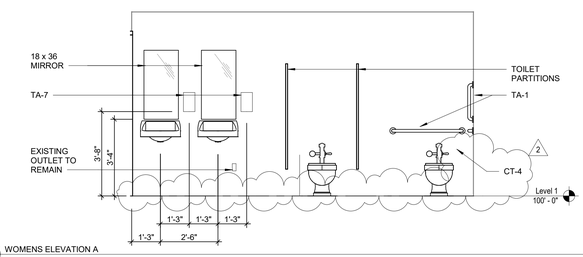
10 CHANGING ELEVATION B
SCALE: 3/8" = 1'-0"



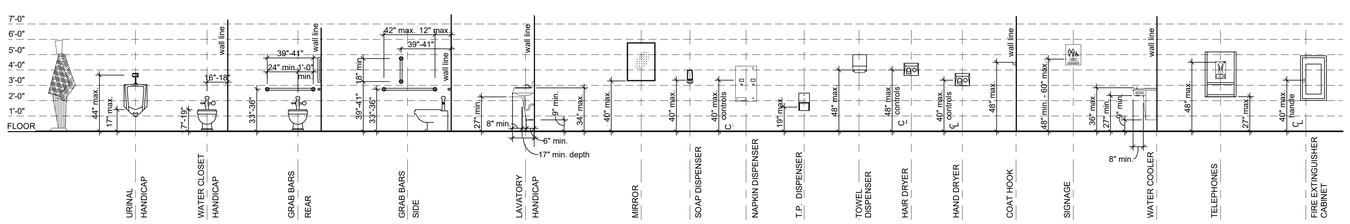
9 CHANGING ELEVATION A
SCALE: 3/8" = 1'-0"



8 WOMENS ELEVATION B
SCALE: 3/8" = 1'-0"



7 WOMENS ELEVATION A
SCALE: 3/8" = 1'-0"



TYPICAL MOUNTING HEIGHTS LEGEND (ANSI)

Engberg Anderson ARCHITECTS
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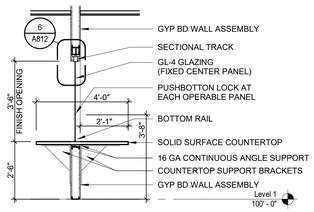
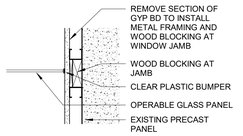
CHECKED BY JH

INTERIOR ELEVATIONS

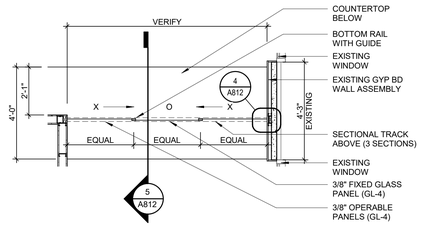
A802



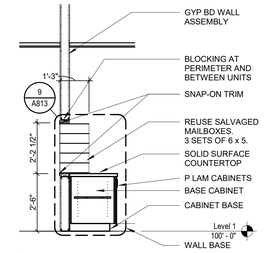
5 CHECK-IN WINDOW SECTION
SCALE: 3/8" = 1'-0"



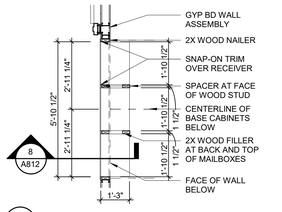
4 CHECK-IN WINDOW JAMB
SCALE: 1 1/2" = 1'-0"



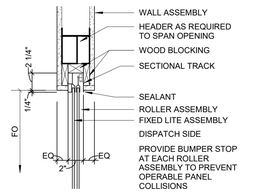
3 CHECK-IN WINDOW PLAN
SCALE: 3/8" = 1'-0"



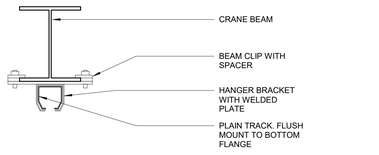
8 MAILBOX SECTION
SCALE: 3/8" = 1'-0"



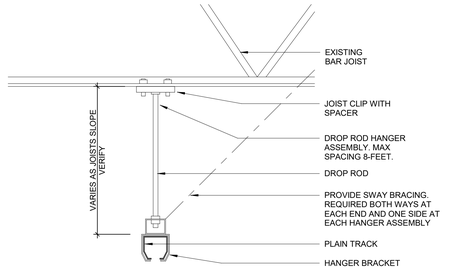
7 MAILBOX PLAN
SCALE: 3/8" = 1'-0"



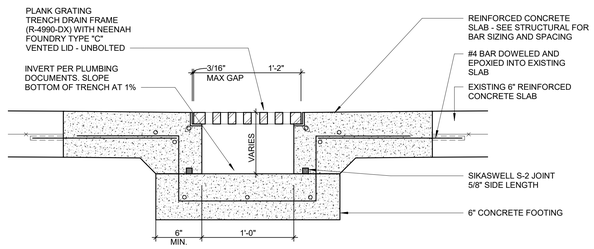
6 CHECK-IN WINDOW HEAD
SCALE: 1 1/2" = 1'-0"



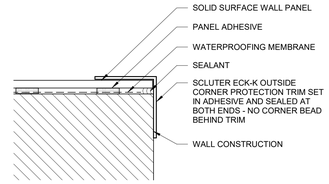
19 FALL PROTECTION DETAIL 2
SCALE: 1 1/2" = 1'-0"



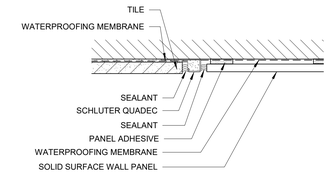
10 FALL PROTECTION DETAIL 1
SCALE: 1 1/2" = 1'-0"



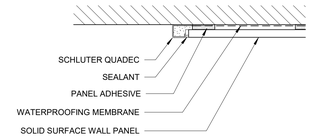
9 TRENCH DRAIN DETAIL
SCALE: 1 1/2" = 1'-0"



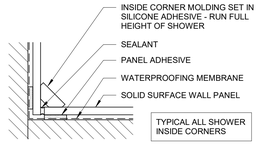
13 SOLID SURFACE CORNER
SCALE: 6" = 1'-0"



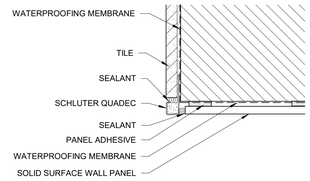
12 TILE/ SS DETAIL
SCALE: 6" = 1'-0"



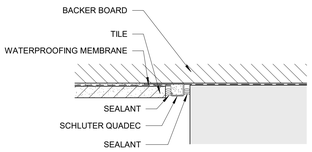
11 SS TRANSITION DETAIL
SCALE: 6" = 1'-0"

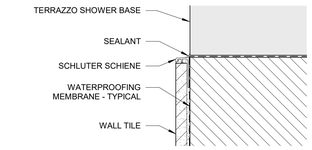


18 SHOWER CORNER DETAIL
SCALE: 6" = 1'-0"

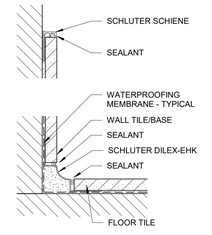


17 TILE/ SS CORNER DETAIL
SCALE: 6" = 1'-0"

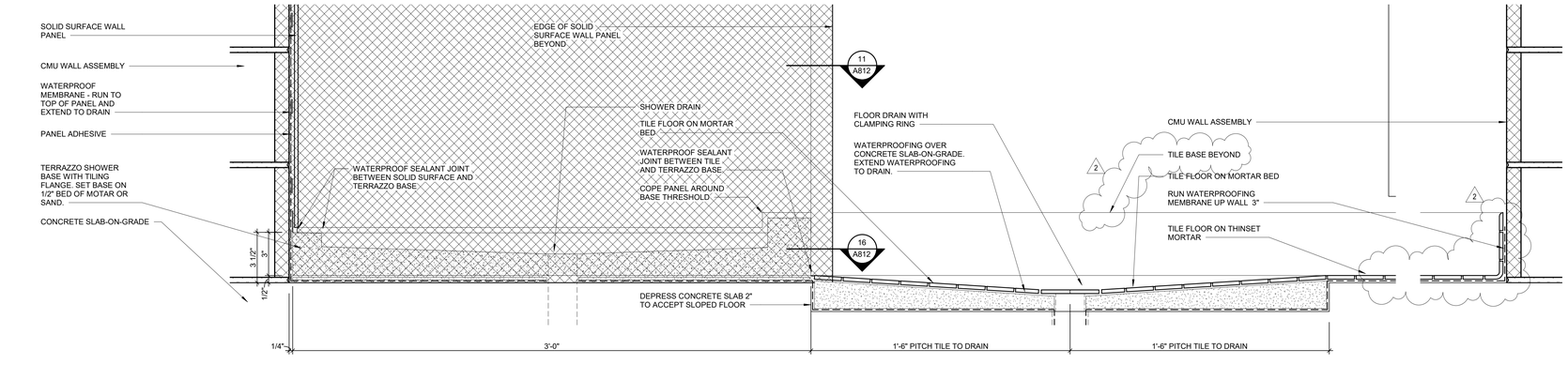




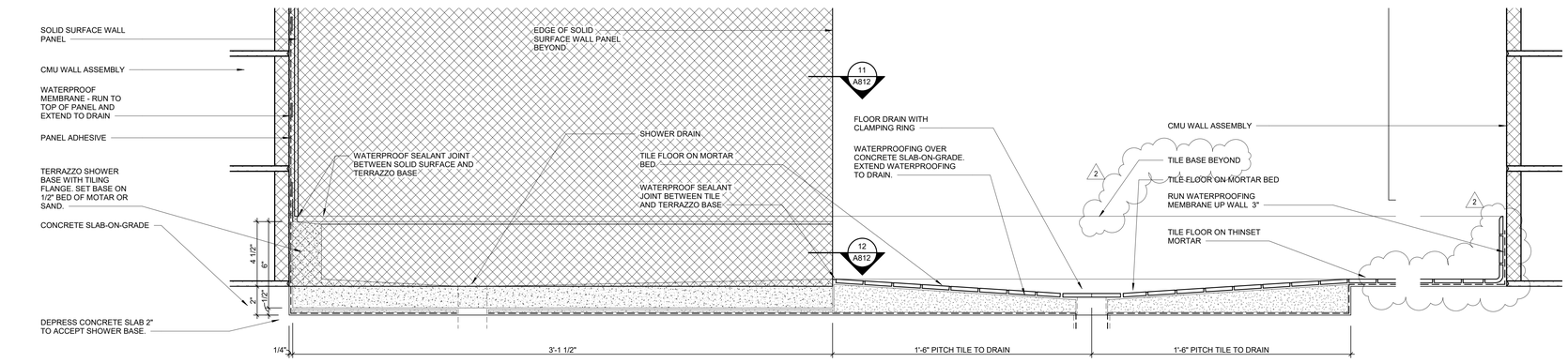
16 TILE/ TERRAZZO DETAIL
SCALE: 6" = 1'-0"



15 TILE BASE DETAIL
SCALE: 6" = 1'-0"



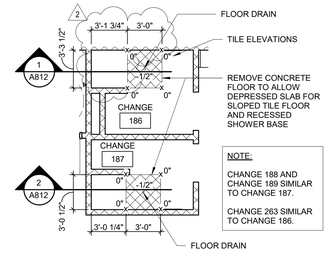
2 SHOWER BASE WATERPROOFING DETAIL
SCALE: 3" = 1'-0"



1 DEPRESSED SLAB WATERPROOFING DETAIL
SCALE: 3" = 1'-0"

FLOOR FINISH NOTE:

1. CHANGES IN LEVEL OF 1/4" MAX. SHALL BE PERMITTED TO BE VERTICAL.
2. CHANGES IN LEVEL GREATER THAN 1/4" AND NOT MORE THAN 1/2" SHALL BE BEVELED AND NOT STEEPER THAN 1:2.
3. SLOPE TO FLOOR DRAINS SHALL NOT BE STEEPER THAN 1:48.



14 SLAB REMOVAL DETAIL
SCALE: 3/16" = 1'-0"

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

BID SET	9/15/2023

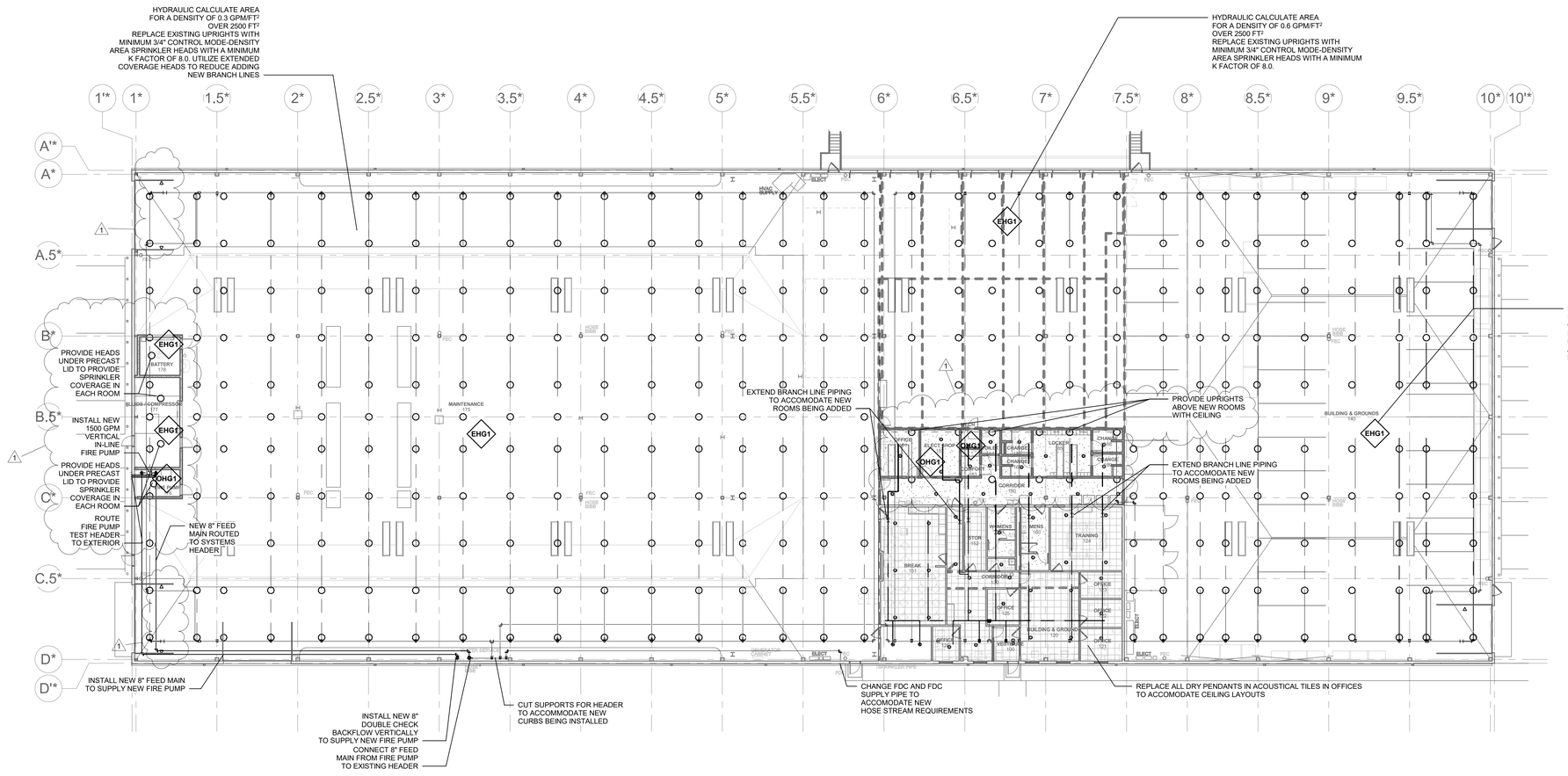
REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM NO. 2	10/13/2023

DRAWN BY	JFB
CHECKED BY	JH

INTERIOR DETAILS

A812



1 FIRST FLOOR FIRE PROTECTION PLAN - 3829

0' 4' 8' 16' 24'

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

THUNDERBIRD ENGINEERING INC

MILWAUKEE PH: (414) 352-2211

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TBE # 22-018

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ISSUED FOR:

BID SET	09/15/2023

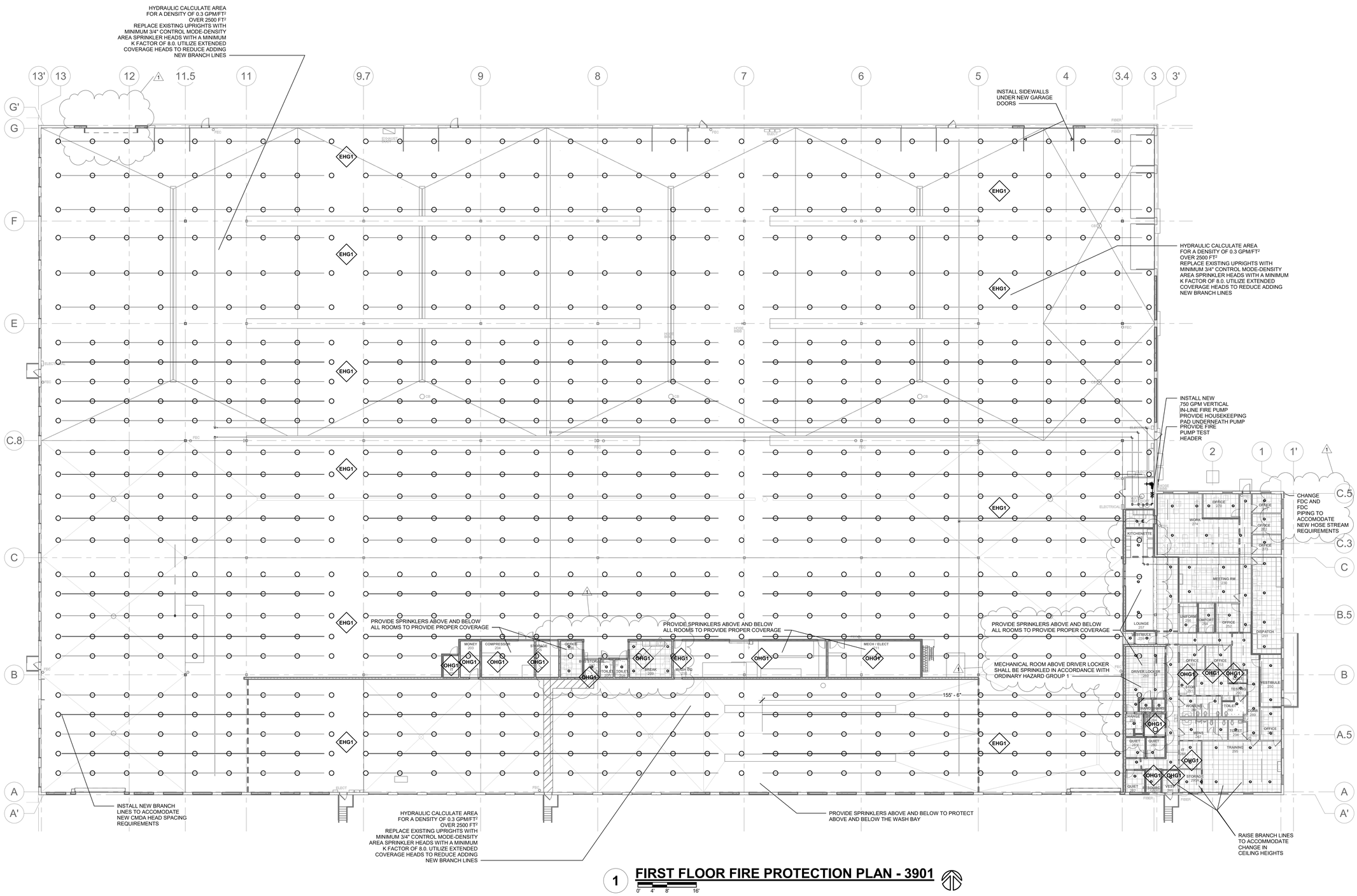
REVISION FOR:

NO.	DESCRIPTION	DATE
1	ADDENDUM 02	10/13/23

DRAWN BY	Author
CHECKED BY	Checker

FIRST FLOOR PLAN
MAINTENANCE BUILDING
FIRE PROTECTION

F100



1 FIRST FLOOR FIRE PROTECTION PLAN - 3901

0' 4' 8' 16'

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

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BID SET	09/15/2023

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NO.	DESCRIPTION	DATE
1	ADDENDUM 02	10/13/23

DRAWN BY Author

CHECKED BY Checker

FIRST FLOOR PLAN
STORAGE BUILDING FIRE PROTECTION

F101

GENERAL NOTES

1. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ADDITIONAL GENERAL NOTES WHICH WILL APPLY HERE.
2. NOTES ON DRAWINGS SHALL APPLY TO ALL SIMILAR CONDITIONS WHETHER THEY ARE REPEATED OR NOT.
3. THE CONTRACTOR MUST VISIT THE SITE TO FAMILIARIZE HIMSELF WITH THE EXISTING SITE AND BUILDING CONDITIONS WHICH WILL BE AFFECTED DURING CONSTRUCTION PRIOR TO SUBMITTING HIS BID PROPOSAL. CONTRACTOR IS CAUTIONED THAT THE PROJECT IS A REMODELING JOB AND IT IS ASSUMED THAT HE HAS INCLUDED FUNDS IN HIS BID TO COVER UNFORESEEN ITEMS WHICH MUST BE MOVED, RELOCATED OR ADJUSTED TO FIT HIS WORK. NO EXTRA COMPENSATION WILL BE ALLOWED FOR ANY EXTRA WORK CAUSED BY FAILURE TO VISIT, EXAMINE OR VERIFY.
4. ALL EXISTING EQUIPMENT IS TO REMAIN OPERATIONAL DURING CONSTRUCTION PERIOD. ALL TEMPORARY WIRING OR REROUTING OF CIRCUITRY TO ACHIEVE THIS IS BY THE ELECTRICAL CONTRACTOR. SHUTDOWN OF EXISTING SERVICES SHALL ONLY BE PERMITTED UPON WRITTEN APPROVAL FROM THE OWNER AND THEN ONLY FOR THAT DATE AND DURATION AGREED UPON. INCLUDE ALL PREMIUM TIME CHARGES IN THE BASE BID.
5. EXISTING CONDUIT IN SAME PLACE MAY BE REUSED WHERE POSSIBLE, PULL NEW WIRE AS REQUIRED. ALL UNUSED CONDUIT, WIRE, JUNCTION BOXES, ETC. WILL BE REMOVED. RELOCATED EXISTING CONDUIT SHALL NOT BE ALLOWED.
6. BOXES LOCATED ON OPPOSITE SIDES OF NON-FIRE RATED WALLS SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE RATED WALL SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. "THRU THE WALL" BOXES SHALL NOT BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.
7. ELECTRICAL CONTRACTOR SHALL VERIFY TOTAL CONNECTED LOAD/HP WITH ALL OTHER TRADES PRIOR TO WIRING OF ALL OTHER TRADES' EQUIPMENT. MAKE ANY CHANGES TO OVERCURRENT DEVICES AND FEEDER SIZE PER ELECTRICAL CODE AS REQUIRED.
8. ELECTRICAL CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT.
9. PROVIDE SLEEVES/CONDUITS FOR LOW VOLTAGE CABLES WHEN THEY TRAVERSE ABOVE NON ACCESSIBLE CEILING SPACE. ALSO, PROVIDE SLEEVES THROUGH MASONARY WALLS FOR LOW VOLTAGE CABLES. VERIFY SLEEVE/CONDUIT SIZE REQUIREMENTS AND LOCATION WITH THE CONTRACTOR INSTALLING LOW VOLTAGE SYSTEM.
10. ALL FIRE ALARM SYSTEM WIRING SHALL BE INSTALLED IN CONDUITS INCLUDING WIRING ABOVE ACCESSIBLE CEILING. ALL OTHER LOW VOLTAGE WIRING SHALL BE INSTALLED IN CONDUIT EXCEPT SUCH WIRING ABOVE ACCESSIBLE CEILING SHALL BE EXPOSED. PROVIDE "J" HOOKS AS REQUIRED. USE CABLE TRAY WHERE APPLICABLE.
11. UNLESS NOTED OTHERWISE, THE CONDUITS AND BACK BOXES SHALL BE CONCEALED WITHIN ALL DRY WALLS, NEW MASONRY WALLS AND IN CEILING. SURFACE METAL RACEWAY SHALL BE USED FOR DEVICES ON EXISTING MASONRY WALLS AND ON EXISTING DRY WALL OR PLASTERED WALL. AS MUCH AS PRACTICAL. WHEREVER FEASIBLE, INSTALL CONDUITS BEHIND A WALL IN AN UNFINISHED ROOM AND PENETRATE INTO AN ELECTRICAL DEVICE TO BE INSTALLED IN FINISHED AREA. IF THIS IS NOT FEASIBLE, PROVIDE SURFACE METAL RACEWAY. IN THE ROOM WHERE ELECTRICAL DEVICE NEEDS TO BE INSTALLED. THE SURFACE METAL RACEWAY SHALL BE ROUTED IN THE CORNER AND/OR ADJACENT TO WINDOW, DOOR FRAMEWORK ETC. SO IT IS AS INCONSPICUOUS AS POSSIBLE. FOR SAKE OF SIMPLICITY ONLY THE TERM "CONDUIT" IS USED IN MOST CASES IN THIS DOCUMENT. HOWEVER, BASED UPON ABOVE, THE SURFACE METAL RACEWAY AND CONDUIT SHALL BE USED, AS APPLICABLE. WHERE SURFACE METAL RACEWAY IS USED ONE TWO CHANNEL RACEWAY WITH DIVIDER CAN BE USED (FOR POWER & LOW VOLTAGE) WHERE APPLICABLE.
12. WHERE POWER AND LOW VOLTAGE OUTLETS (SUCH AS DATA OUTLETS) ARE SHOWN TOGETHER ON DRAWINGS, PROVIDE THEM ADJACENT TO EACH OTHER.
13. PROVIDE CONCRETE PAD FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT. (SUCH AS SWITCHBOARDS, PANELS, TRANSFORMER, ETC.)
14. FOR THE AREA TO BE DEMOLISHED, THE DEMOLITION OF LIGHT FIXTURES, OUTLETS OR ANY OTHER ELECTRICAL EQUIPMENT/DEVICES SHALL BE PERFORMED AS REQUIRED. SEE ARCHITECTURAL DRAWINGS AND THE RESPECTIVE FLOOR PLANS IN ELECTRICAL DRAWINGS FOR DEMOLITION. ELECTRICAL CONTRACTOR SHALL REMOVE ALL ASSOCIATED RACEWAYS AND WIRING AS REQUIRED. ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND DISCONNECT APPLICABLE WIRING TO FACILITATE SAFE DEMOLITION.
15. THE EXISTING EQUIPMENT IS SHOWN BASED UPON THE INFORMATION OBTAINED THROUGH BRIEF SURVEY OF THE FACILITY. CONTRACTOR IS TO SURVEY THE EXISTING FACILITY IN ORDER TO DETERMINE THE FULL EXTENT OF WORK AND BE COMPLETELY FAMILIAR WITH ALL THE EXISTING CONDITIONS INCLUDING PLUMBING, HVAC, ELECTRICAL, ETC. THE ARCHITECT/ENGINEER AND OWNER ASSUME NO RESPONSIBILITY IN RESPECT TO THE ACCURACY OF SUCH INFORMATION SHOWN ON THE DRAWINGS. CONTRACTOR SHALL MAKE ADEQUATE ALLOWANCE IN HIS BID FOR SOME DEVIATIONS TO SUCH INFORMATION.
16. WHERE EXISTING CONDITIONS PREVENT PROPER INSTALLATION OF PROPOSED WORK, REROUTE, EXTEND OR ALTER EXISTING WORK SO AS TO ACCOMMODATE PROPOSED WORK REQUIREMENTS.
17. CIRCUIT NUMBERS SHOWN FOR EXISTING PANELS ARE FOR REFERENCE ONLY. USE NEXT AVAILABLE CIRCUITS AND PROVIDE APPROPRIATE SIZE BREAKERS.
18. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ELECTRICAL EQUIPMENT & DEVICES. THE ELECTRICAL DRAWINGS ARE FOR CONCEPT ONLY.
19. IN GENERAL, DASHED LINES INDICATE EXISTING ITEMS TO BE REMOVED, LIGHT SOLID LINES INDICATE ITEMS TO REMAIN AND DARK SOLID LINES INDICATE NEW ITEMS.
20. WHERE EXISTING WIRING DEVICE (SUCH AS RECEPTACLE, SWITCH, ETC.) IS INDICATED TO REMAIN, REUSE EXISTING JUNCTION BOX, RACEWAY, BUT PROVIDE NEW DEVICE AND ASSOCIATED COVERPLATE. RECONNECT THIS DEVICE TO NEW CIRCUIT AS INDICATED.
21. THE SYSTEMS PROVIDED BY THIS CONTRACTOR SHALL BE COMPLETELY OPERATIONAL REGARDLESS OF OMISSION OF MINOR ITEMS, SUCH AS CIRCUIT NUMBER FOR RELAY, A CIRCUIT NUMBER NEXT TO A LIGHTING FIXTURE, ETC.
22. ALL OUTDOOR DEVICES SUCH AS RECEPTACLES, DISCONNECTS, SPEAKERS, LIGHTING FIXTURES, JUNCTION BOXES, ETC. SHALL BE OUTDOOR TYPE.
23. THE EXIT SIGNS ARE PROVIDED FOR BIDDING PURPOSE. FINAL LOCATION SHALL BE AS DETERMINED BY LOCAL FIRE MARSHALL. IF REQUIRED BY FIRE MARSHALL, PROVIDE ADDITIONAL EXIT SIGNS WITHOUT ADDITIONAL COST TO OWNER.
24. PROVIDE LOCKING CLIPS ON CIRCUIT BREAKERS SERVING EMERGENCY LIGHTING, FIRE ALARM SYSTEM, PA/INTERCOMM, TELEPHONE SYSTEM AND SECURITY SYSTEM LOAD.
25. WHERE A NEW WALL IS TO BE BUILT PERPENDICULAR TO EXISTING WALL AND IF THERE IS AN EXISTING RECEPTACLE ON THE EXISTING WALL, RELOCATE THIS RECEPTACLE AS REQUIRED.
26. IN CERTAIN CASES LARGER SIZE CABLES ARE SPECIFIED IN ORDER TO COMPENSATE FOR VOLTAGE DROP. PROVIDE OVERSIZE AND/OR MULTIPLE LUGS AT THE LINE AND LOAD SIDE OF EQUIPMENT TO INCORPORATE LARGER AND ADDITIONAL CABLES. IF REQUIRED, PROVIDE SPLICE BOXES AT EITHER END OF CABLE TO INTERCEPT CHANGE IN THE CABLES.
27. PROVIDE LABEL ON MAIN ELECTRICAL SERVICE PANEL/SWITCHBOARD INDICATING THAT IT IS LISTED AND LABELED AS A SUITABLE CONNECTION TO AN ONSITE RENEWABLE ENERGY SOURCE TO COMPLY WITH ARTICLE 608.12 OF IGCC (INTERNATIONAL GREEN CONSTRUCTION CODE).
28. PROVIDE TYPED PANEL DIRECTORY INDICATING LOAD SERVED.
29. UNO, ALL OVERCURRENT PROTECTION DEVICES 800 AMP AND LARGER SHALL BE 100% RATED.
30. AS REQUIRED EXTEND EXISTING RECEPTACLES WHERE EXISTING WALLS ARE FURRED OUT. REFER TO ARCHITECTURAL DRAWINGS FOR EXTENT OF THIS WORK.
31. DUE TO THE SMALL SCALE AND INTERFERENCE OF EXISTING EQUIPMENT, EACH AND EVERY ITEM IS NOT SHOWN. SHOWN INFORMATION IS INTENDED AS A GUIDE. CONTRACTOR SHALL VERIFY INFORMATION AND CONDITIONS IN THE FIELD.
32. RECONFIGURE LIGHTING FIXTURES AND OUTLETS IN MECHANICAL ROOMS TO BE COMPATIBLE WITH EQUIPMENT LAYOUT AS REQUIRED.
33. COORDINATE THE FINAL LOCATION OF RECEPTACLES IN TELECOMMUNICATION CLOSETS WITH TELECOMMUNICATION EQUIPMENT VENDOR.
34. ALL RECEPTACLES LOCATED WITHIN 6' OF SOURCE OF WATER (SUCH AS SINK) AND ALL OUTDOOR RECEPTACLES SHALL BE GFI TYPE, WHETHER SPECIFICALLY INDICATED OR NOT.
35. WHERE THE OUTLETS ARE SHOWN ON FURNITURE/DESK THEY SHALL BE PROVIDED EITHER UNDER THE DESK OR AS A PART OF MILLWORK AS INDICATED ON ARCHITECTURAL DRAWINGS. PROVIDE CONDUITS AND WIRING UNDER OR WITHIN THE FURNITURE/DESK. THE QUANTITY AND LOCATION OF INDICATED OUTLETS IS APPROXIMATE. COORDINATE EXACT REQUIREMENTS WITH ARCHITECT AND MILLWORK VENDOR. IF FURNITURE/DESK IS NEXT TO WALL, THE ROUGH-IN SHALL BE PROVIDED FROM WALLS. IF FURNITURE/DESK IS FREE STANDING, THE ROUGH-IN SHALL BE PROVIDED FROM FLOOR. THE POWER POLE IS NOT ALLOWED UNLESS SPECIFICALLY INDICATED.
36. IN ORDER TO FACILITATE THE REPLACEMENT OF EXISTING OR INSTALLATION OF NEW DUCTWORK AND/OR PIPING, REMOVE EXISTING LIGHTING FIXTURE AND/OR SMOKE /HEAT DETECTORS AS REQUIRED. THIS WORK IS NOT SHOWN ON DRAWINGS. ONCE THE INSTALLATION OF DUCTWORK, PIPING ETC IS COMPLETED, REINSTALL ELECTRICAL EQUIPMENT/DEVICES. PROVIDE ADEQUATE ALLOWANCE IN THE BID FOR THIS WORK.
37. PROVIDE EXPANSION FITTINGS FOR ALL ELECTRICAL RACEWAYS AT EVERY EXPANSION JOINT. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR LOCATION OF EXPANSION JOINTS.
38. COORDINATE THE INSTALLATION OF ELECTRICAL EQUIPMENT SUCH AS PANELS, SWITCHBOARD, MOTOR CONTROL CENTER, TRANSFORMER ETC. WITH OTHER TRADES SUCH THAT NO DUCTWORK, PIPING ETC. IS LOCATED ABOVE THEM.
39. ELECTRICAL CONTRACTOR SHALL VERIFY SIZE OF ALL EXISTING OPENINGS, DOORS, ETC., FOR REMOVING EQUIPMENT AND MATERIAL OUT OF BUILDING. ELECTRICAL CONTRACTOR SHALL PROVIDE ANY NEW OR ENLARGED OPENINGS IN EXISTING BUILDING CONSTRUCTION REQUIRED TO FACILITATE EXITING OF HIS EQUIPMENT/MATERIAL AND RESTORE SUCH OPENINGS TO THEIR ORIGINAL STATE AFTER COMPLETION.
40. VERIFY QUANTITY AND SIZE OF LUGS PROVIDED IN OTHER TRADE'S EQUIPMENT (FOR EXAMPLE, CHILLER, ELEVATOR, FIRE PUMP ETC.) BEFORE STARTING ANY WORK ASSOCIATED WITH SUCH EQUIPMENT. IF THEIR LUGS CANNOT ACCOMMODATE THE CABLES INDICATED IN ELECTRICAL DOCUMENT, PROVIDE LUG FITTINGS TO ACCOMMODATE CHANGE IN THE CABLES. PROVIDE SUCH FITTINGS IN A JUNCTION BOX AS CLOSE AS POSSIBLE TO THEIR EQUIPMENT. IF ALLOWED BY THE EQUIPMENT MANUFACTURER, SUCH FITTINGS MAY BE INSTALLED IN THEIR EQUIPMENT RATHER THAN IN A SEPARATE JUNCTION BOX.
41. MAIN SERVICE ENTRANCE EQUIPMENT SHALL HAVE LABEL FOR SERVICE ENTRANCE TYPE, AND SHALL BE GROUNDED PER ELECTRICAL CODE.
42. AS A MINIMUM, USE #10 FOR ALL EMERGENCY LIGHTING.
43. PROVIDE SEPARATE DEDICATED GROUNDING CONDUCTOR IN EACH FEEDER AND BRANCH CIRCUIT WIRING CIRCUIT.
44. PROVIDE FIRE SEALANTS FOR ALL PENETRATIONS THRU FIRE RATED FLOORS AND WALLS.
45. THE ELECTRICAL DRAWINGS SHOW DIRECT PRINCIPLE WORK WHICH MUST BE ACCOMPLISHED UNDER THIS CONTRACT. INDIRECT AND INCIDENTAL WORK WILL ALSO BE NECESSARY DUE TO CHANGES AFFECTING EXISTING ARCHITECTURAL, MECHANICAL, PLUMBING OR OTHER SYSTEMS. SUCH INCIDENTAL WORK IS ALSO PART OF THIS CONTRACT. INSPECT THOSE AREA, AND ASCERTAIN WORK NEEDED AND DO THAT WORK IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS, AT NO ADDITIONAL COST.
46. PROVIDE WIRELESS COMMUNICATOR AT FIRE ALARM CONTROL PANEL FOR DIALING OUT WHETHER SPECIFICALLY INDICATED OR NOT. THE COMMUNICATOR SHALL BE DSC MODEL LE 4010CF WITH ANTENNA MODEL LTE-50ANT OR APPROVED EQUAL. PROVIDE 120 VOLT POWER TO IT FROM NEAREST GENERATOR CIRCUIT IF THERE IS A GENERATOR. IF THERE IS NO GENERATOR PROVIDE POWER FROM NORMAL CIRCUIT. PROVIDE CAT 5 CABLE BETWEEN COMMUNICATOR AND FACP AND CABLE BETWEEN ANTENNA AND COMMUNICATOR. PROVIDE AN ADDITIONAL CAT 6 CABLE TO FACP FROM IT RACK AS A BACK UP TO COMMUNICATOR. IN LIEU OF COMMUNICATOR PROVIDE TWO PHONE LINES IF ACCEPTED BY OWNER AND LOCAL FIRE MARSHALL. COORDINATE APPLICABILITY OF COMMUNICATOR OR PHONE LINES WITH OWNER.
47. PROVIDE SMOKE DETECTOR WITHIN 5 FEET OF FIRE ALARM CONTROL PANEL, WHETHER SPECIFICALLY INDICATED OR NOT.
48. PROVIDE REMOTE TEST AND INDICATING STATION IN A READILY ACCESSIBLE AND VISIBLE SPACE FOR EACH DUCT SMOKE DETECTOR. VERIFY ITS EXACT LOCATION WITH OWNER AND LOCAL FIRE MARSHALL.
49. WHERE "VIF" IS INDICATED NEXT TO A DEVICE, CONTRACTOR SHALL VERIFY ITS REQUIREMENT IN FIELD. THIS INCLUDES VERIFICATION OF DEVICE TYPE, LOCATION, WIRING CONDUIT AND CIRCUIT BREAKER ETC. PROVIDE APPROPRIATE DEVICE, WIRING, CONDUIT, CIRCUIT BREAKER ETC. AS REQUIRED.
50. PROVIDE RED PLASTIC SIGN AT MAIN WATER SERVICE METER INDICATING "MAIN GROUND LOCATION."
51. AIC (AVAILABLE INTERRUPTING CAPACITY) RATING OF PANELS, SWITCHBOARDS, BUSWAY, MCC ETC. ARE SHOWN BASED UPON PRELIMINARY CALCULATIONS. THE FINAL RATING OF THE EQUIPMENT SHALL BE BASED UPON THE ARC-FLASH AND SHORT CIRCUIT COORDINATION STUDY. PROVIDE POWER DISTRIBUTION EQUIPMENT TO MEET THE RATING INDICATED IN THIS STUDY. THE STUDY SHALL BE BASED UPON THE ULTIMATE CAPABILITY OF THE MAIN SERVICE EQUIPMENT AND NOT THE INITIAL TRANSFORMER PROVIDED BY THE UTILITY COMPANY.
52. PROVIDE ARC-FLASH LABELS ON NEW EQUIPMENT IN ACCORDANCE WITH NEC.
53. WHERE EQUIPMENT DEVICES ARE INDICATED TO BE REMOVED, REMOVE ACCESSIBLE, UNUSABLE CONDUITS & WIRING. IF CONDUITS ARE NOT ACCESSIBLE THEY MAY BE ABANDONED. MAINTAIN CONTINUITY TO THE LOAD WHICH IS TO REMAIN.
54. CONNECT FIRE ALARM SYSTEM DEVICES TO EXISTING SYSTEM. UPGRADE/MODIFY EXISTING HEAD-END EQUIPMENT AS REQUIRED.
55. WHERE EXISTING HVAC EQUIPMENT IS SHOWN TO BE REMOVED, REMOVE ITS ASSOCIATED STARTER, DISCONNECT SWITCH, CONDUIT WIRING ETC. FIELD VERIFY LOCATION OF STARTER, DISCONNECT, ETC.
56. ONLY OCCUPANCY/VACANCY SENSORS & REQUIRED SWITCHES ARE INDICATED. PROVIDE POWER PACKS (CONTROL RELAYS) AS REQUIRED. LOCATE SENSORS TO PROVIDE OPTIMUM COVERAGE OF THE DEVICE.
57. PROVIDE GROUND BUS BAR IN EACH PANEL WHETHER SPECIFICALLY INDICATED OR NOT.
58. ARMORED (BX) CABLES OR MC CABLES ARE NOT ALLOWED.
59. ELECTRICAL DEVICES SUCH AS SMOKE/HEAT DETECTORS, OCCUPANCY SENSORS, DAY LIGHT SENSOR ETC. SHALL BE LOCATED IN AS CENTER AND AS UNIFORMLY IN ROOM AS POSSIBLE. THEY ARE NOT ALWAYS SHOWN IN CENTER OF A ROOM OR UNIFORMLY IN A ROOM TO AVOID CONFLICT WITH ROOM NUMBER TAGS.
60. PROVIDE DUCT SMOKE DETECTORS FOR ANY AIR HANDLING UNIT HAVING 2000 CFM OR MORE. PROVIDE TWO DUCT SMOKE DETECTORS FOR ANY AIR HANDLING UNIT HAVING 15000 CFM OR MORE. THE DUCT SMOKE DETECTOR SHALL BE FURNISHED, INSTALLED AND TESTED UNDER 'DIVISION 26. ITS ASSOCIATED REMOTE TEST AND INDICATING STATION SHALL ALSO BE FURNISHED, INSTALLED, WIRED AND TESTED UNDER DIVISION 26. 'COMPLETE WARRANTY OF THESE PRODUCTS SHALL ALSO BE PROVIDED UNDER DIVISION 26. THE WIRING OF THESE PRODUCTS TO FIRE ALARM CONTROL PANEL SHALL BE PROVIDED UNDER DIVISION 26. WIRING FOR FAN SHUTDOWN SHALL BE PROVIDED UNDER DIVISION 23. REQUIRED RELAY FOR FAN SHUTDOWN SHALL BE PROVIDED UNDER DIVISION 26.
61. SERIES RATING OF PANELS IS ACCEPTABLE FOR THEIR SHORT CIRCUIT RATING.
62. LUGS FOR CIRCUIT BREAKERS AND SWITCHES SHALL BE RATED FOR TERMINATION OF 60 DEGREE C AND 75 DEGREE C RATED CONDUCTORS. THIS SHALL ALLOW USE OF CONDUCTORS BASED UPON AMPACITIES OF ONLY 75 DEGREE C.
63. OUTDOOR RECEPTACLES SHALL BE INSTALLED IN AN "IN USE" TYPE COVER. SUCH RECEPTACLES SHALL BE TYPE "WR" WEATHER-RESISTANT RECEPTACLES.
64. PROVIDE ARC ENERGY REDUCING FEATURES IN CIRCUIT BREAKERS RATED 1200 AMP OR LARGER TO MEET NEC 240.87.
65. IDENTIFY LOCATION OF CIRCUIT DISCONNECTS FOR FIRE ALARM PANEL PER NFPA 72, 10.5.
66. PER NFPA 72, 10.5.5.2; CIRCUIT BREAKERS FEEDING FIRE ALARM PANELS AND ASSOCIATED EQUIPMENT SHALL HAVE RED MARKING AND SHALL BE IDENTIFIED AS "FIRE ALARM CIRCUIT" AND SHALL HAVE LOCK-ON DEVICE.
67. ALL LOW VOLTAGE WIRING SHALL BE IN CONDUITS EXCEPT WIRING ABOVE ACCESSIBLE CEILING. WIRING ABOVE ACCESSIBLE CEILING SHALL BE EXPOSED UNLESS REQUIRED BY CODE TO BE IN CONDUITS. COORDINATE WITH LOW VOLTAGE SYSTEM VENDORS ROUTING OF THEIR CABLING AND PROVIDE CONDUITS/RACEWAYS AS REQUIRED. ALL FIRE ALARM SYSTEM WIRING SHALL BE IN CONDUITS.
68. FOR DATA WIRING, PROVIDE CONDUITS PER FOLLOWING, (BASED UPON CAT6 CABLES HAVING 0.3" DIAMETER CABLES)

CONDUIT	NUMBER OF CABLES
3/4"	2
1"	4
1 1/4"	6
1 1/2"	10
2"	17

69. PROVIDE CAT5E OR EQUIVALENT CABLING SYSTEM FOR OCCUPANCY SENSORS, VACANCY SWITCHES/SENSORS, POWER PACKS, DIMMER SWITCHES, DAY LIGHT SENSORS ETC. AS REQUIRED.
70. UNLESS NOTED OTHERWISE, WHEN DETERMINING THE DIAMETER FOR DATA WIRING OF FEEDER CONDUITS FROM THE CABLE ORIGINATION POINT CONDUIT SIZING SHALL ALLOW FOR 50% ADDITIONAL CAPACITY FOR OWNERS FUTURE DATA NEEDS.
71. FOR EACH FLUSH MOUNTED PANEL, PROVIDE THREE 1" SPARE EMPTY CONDUITS AND TERMINATE ABOVE ACCESSIBLE CEILING SPACE FOR FUTURE USE.
72. LIGHTING FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SYSTEM BY AT LEAST TWO WIRES ON OPPOSITE CORNERS OF THE FIXTURES.
73. ALL WORK SHALL COMPLY WITH ALL LOCAL CODES.
74. UNLESS NOTES OTHERWISE, COLOR OF WIRING DEVICES (OUTLETS, SWITCHES AND COVER PLATES) SHALL BE WHITE. VERIFY FINAL COLOR WITH THE ARCHITECT BY PROVIDING SUBMITTAL.

ELECTRICAL SYMBOLS

MULTI-OUTLET ASSEMBLY
CABLE TRAY
MH MANHOLE
HH HANDHOLE
PB PULL BOX
J JUNCTION BOX- EXPOSED OR IN CEILING
J JUNCTION BOX - WALL MOUNTED
J JUNCTION BOX WITH FLEXIBLE CONDUIT AND FINAL CONNECTION TO EQUIPMENT.
HD HAND DRYER
LIGHTING FIXTURE. SIZE AND TYPE AS INDICATED ON SCHEDULE.
STRIP LIGHTING FIXTURE. SIZE AND TYPE AS INDICATED ON SCHEDULE.
DOWNLIGHT LIGHTING FIXTURE. SIZE AND TYPE AS INDICATED ON SCHEDULE.
WALL MOUNTED LIGHTING FIXTURE. SIZE AND TYPE AS INDICATED ON SCHEDULE.
WALL MOUNTED LIGHTING FIXTURE. SIZE AND TYPE AS INDICATED ON SCHEDULE.
WALL WASH LIGHTING FIXTURE- SIZE AND TYPE AS INDICATED ON SCHEDULE.
EMERGENCY LIGHTING FIXTURE
LIGHTING STANDARD - SINGLE FIXTURE, POLE MOUNTED. NUMBER IDENTIFIES FIXTURE
LIGHTING STANDARD - MULTI FIXTURE, POLE MOUNTED. NUMBER IDENTIFIES FIXTURE

LIGHTING FIXTURES:
"A" UPPER CASE LETTER INDICATES LIGHTING FIXTURE TYPE. REFER TO LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION AND MOUNTING.
"1" NUMBER INDICATES BRANCH CIRCUIT NUMBER(S)
"a" LOWER CASE LETTER INDICATES SWITCH CONTROL(S)

TRACK LIGHTING
BATTERY PACK, EMERGENCY LIGHTING UNIT
REMOTE HEAD CONNECTED TO BATTERY PACK.
COMBINATION EXIT SIGN AND EMERGEMCY LIGHTING UNIT
"X1" INDICATES FIXTURE. SHADED QUADRANTS INDICATES DIRECTION OF LIGHTED FACES. ARROWS INDICATE DIRECTION OF ARROWS.
3W $ XXa LIGHT SWITCH, SINGLE POLE UNLESS NOTED OTHERWISE:

"a"	SWITCHLEG	"WP"	WEATHERPROOF
"D"	DIMMER SWITCH	"2P"	TWO POLE
"EP"	EXPLOSION PROOF	"3P"	THREE POLE
"F"	FAN CONTROLL	"3W"	THREE-WAY
"K"	KEY OPERATED	"4W"	FOUR-WAY
"P"	PILOT LIGHT	"MC"	MOMENTARY CONTACT
"XX"	CIRCUIT NUMBER	"VC"	VACANCY SENSOR
"T"	THERMAL OVERLOAD PROTECTION	"OC"	OCCUPANCY SENSOR
"VS"	VACANCY SWITCH		

DS DAYLIGHT SENSOR
OC OCCUPANCY SENSOR
VC VACANCY SENSOR
TC TIME CLOCK
PC PHOTOCELL

B BLUE INDICATOR LIGHT
R/G RED/GREEN INDICATOR LIGHT
TIMER SWITCH

WALL | CEILING MOUNTED | FLUSH FLOOR MOUNTED | ABOVE COUNTER

SINGLE RECEPTACLE
QUADPLEX RECEPTACLE
DUPLEX RECEPTACLE
DUPLEX RECEPTACLE - SPLIT WIRED
DUPLEX RECEPTACLE - CRITICAL BRANCH
DUPLEX RECEPTACLE - DEDICATED CIRCUIT
TELE- DATA SYSTEMS OUTLET
VOICE ONLY

JUNCTION BOX WITH FLEXIBLE CONDUIT TO FINAL EQUIPMENT OR FURNITURE SYSTEM POWER CONNECTION

WP XX ADJACENT LETTERS IN THE SYMBOLS ABOVE INDICATE THE FOLLOWING:

"EP"	RECEPTACLE IS EXPLOSION PROOF
"GF"	RECEPTACLE HAS GROUND FAULT CIRCUIT INTERRUPTER
"IG"	RECEPTACLE HAS ISOLATED GROUND
"TP"	TAMPER PROOF (SAFETY TYPE)
"TVSS"	RECEPTACLE HAS TRANSIENT VOLTAGE SURGE SUPPRESSION
"WP"	RECEPTACLE HAS WATERPROOF COVER
"XX"	RECEPTACLE CIRCUIT NUMBER
"USB"	RECEPTACLE WITH 2 USB PLUGS.

XX SPECIAL PURPOSE OUTLET - SEE SCHEDULE 'XX' INDICATES OUTLET TAG
4FT. MULTI RECEPTACLE STRIP
PUSH-BUTTON STATION
GARAGE DOOR OPENER PUSH-BUTTON STATION
EMERGENCY SHUT OFF SWITCH
PP PUSH PLATE STATION
CB ENCLOSED CIRCUIT BREAKER
TGB TECHNOLOGY GROUND BAR- 1/4" X 4" X 12" COPPER
RIM REMOTE INDICATOR MODULE
MOTOR OR EQUIPMENT
AS/AF FUSED DISCONNECT SWITCH, "AS" INDICATES AMPERE RATING OF SWITCH AND "AF" INDICATES AMPERE RATING OF FUSE
NON-FUSED DISCONNECT SWITCH, CIRCUIT BREAKER IN ENCLOSURE,
C CONTACTOR-SEE SCHEDULE
SWITCHGEAR, SWITCHBOARD OR MOTOR CONTROL CENTER, DASHED LINES INDICATE FUTURE SECTIONS, ARROW INDICATES FRONT
SURFACE MOUNTED DISTRIBUTION PANELBOARD
SURFACE MOUNTED NORMAL BRANCH CIRCUIT PANELBOARD
RECESSED MOUNTED NORMAL BRANCH CIRCUIT PANELBOARD
T TRANSFORMER
HD HAND DRYER
KP KEY PAD

2

TECHNOLOGY SYMBOLS

▽	INFORMATION DATA OUTLET
CE	COMCAST EQUIPMENT CABINET
CS	COMCAST SPLITTER JUNCTION POINT
TV	TELEVISION OUTLET-WITH LOW VOLTAGE JACK AND RECEPTACLE
FACP	FIRE ALARM CONTROL PANEL
TGB	TECHNOLOGY GROUND BAR. 12" L X 2" H X 0.25" T COPPER BAR WITH HOLES FOR LUGS
S	SPEAKER - LOCAL SOUND SYSTEM
E	EQUIPMENT CABINET
P	PROJECTOR MOUNT
R	RESCUE ASSISTANCE CALL STATION
RAP	RESCUE ASSISTANCE CONTROL PANEL
I	INTERCOM STATION
©	DOME CAMERA

2

ELECTRICAL ABBREVIATIONS

AC	ABOVE COUNTER
AFF	ABOVE FINISHED FLOOR
AIC	AVAILABLE INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
BFS	BOILER FEED SYSTEM
C	CONDUIT
CCTV	CLOSED CIRCUIT TV
DW	DISHWASHER
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EL	ELEVATOR
EM	EMERGENCY
EDH	ELECTRIC DUCT HEATER
ESUH	ELECTRIC SUSPENDED UNIT HEATER
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRICAL WATER HEATER
E	EXISTING
FBO	FURNISHED BY OTHERS
FLA	FULL LOAD AMPS
FVNR	FULL VOLTAGE NON REVERSING
GF	GROUND FAULT INTERRUPTER
GRD	GROUND
HP	HORSE POWER
JB	JUNCTION BOX
KW	KILOWATTS
KVA	KILO VOLT AMPS
LTG	LIGHTING
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MFG	MANUFACTURER
MIN	MINIMUM
MTD	MOUNTED
MV	MERCURY VAPOR
MW	MICROWAVE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NL	NIGHT LIGHT
NO	NORMALLY OPEN
P	PRESENT TO REMAIN
PX	PRESENT TO BE REMOVED
PH	PHASE (ø)
PNL	PANEL
PRE	POWER ROOF EXHAUST
RF	REFRIGERATOR
RTU	ROOD TOP UNIT
STV	STOVE
SW	SWITCH
TTC	TELEPHONE TERMINAL CABINET
UNO	UNLESS NOTED OTHERWISE
UV	UNIT VENTILATOR
UH	UNIT HEATER
V	VOLTS
VAV	VARIABLE AIR VOLUME
VCP	VACUUM CONDENSATE PUMP
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
W	WIRE
WE	WITH EQUIPMENT
WP	WEATHER PROOF
XP	EXISTING TO BE REPLACED
XR	EXISTING TO BE RELOCATED
XN	EXISTING RELOCATED IN NEW LOCATION

2

FIRE ALARM DEVICE SCHEDULE

2

SYMBOL	DESCRIPTION	NOTES
H	CEILING MOUNTED HORN STROBE	CEILING MOUNT AUDIO/VISUAL ANNUNCIATION DEVICE WITH ADJUSTABLE CANDELA SETTINGS. ADJUST CANDELA TO SETTING INDICATED ON PLAN.
S 75	CEILING SPEAKER STROBE	CEILING MOUNT AUDIO/VISUAL ANNUNCIATION DEVICE WITH ADJUSTABLE CANDELA SETTINGS. ADJUST CANDELA TO SETTING INDICATED ON PLAN.
FAAP	FIRE ALARM ANNUNCIATOR PANEL	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL	FIRE ALARM CONTROL PANEL
FS	FLOW SWITCH	FLOW SWITCH
⧄	PULLSTATION	ADDRESSABLE PULLSTATION - MOUNT TO 46" AFF.
S	SMOKE DETECTOR	ADDRESSABLE SMOKE DETECTOR - CEILING MOUNTED UNLESS OTHERWISE NOTED.
	STROBE	WALL MOUNTED STROBE
TS	TAMPER SWITCH	TAMPER SWITCH
H	WALL MOUNTED HORN STROBE	WALL MOUNT AUDIO/VISUAL ANNUNCIATION DEVICE WITH ADJUSTABLE CANDELA SETTINGS. ADJUST CANDELA TO SETTING INDICATED ON PLAN.
CO	CARBON MONOXIDE DETECTOR	TAMPER SWITCH

ELECTRICAL PROJECT GENERAL NOTES

1. THESE PLANS ARE SCHEMATIC AND DO NOT SHOW THE EXACT LOCATIONS OF EQUIPMENT OR FIXTURES, CONDUIT ROUTING, ETC. THE CONTRACTOR MUST REFER TO ARCHITECTURAL AND MECHANICAL PLANS, DETAILS, AND SPECS TO OBTAIN COMPLETE INFORMATION.
2. PROVIDE LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS REQUIRED FOR COMPLETE AND FUNCTIONING SYSTEMS, FULLY TESTED AND READY FOR USE.
3. ALL WORK SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CITY, COUNTY, STATE, AND WITH REGULATIONS AND REQUIREMENTS OF ALL LOCAL AND NATIONAL CODES AS THEY MAY APPLY TO THE PROJECT AND TO THE PUBLIC SAFETY,
4. THE CONTRACTOR IS RESPONSIBLE FOR SEEING THAT NEC CLEARANCES AROUND AND ABOVE ELECTRICAL EQUIPMENT ARE MAINTAINED. REFER TO NEC 110-26 FOR SPECIFIC INFORMATION.
5. VERIFY ANY AND ALL CONFIGURATIONS, DIMENSIONS AND ELEVATIONS BY FIELD MEASUREMENTS AND COORDINATE WITH ARCHITECTURAL DRAWINGS AND STRUCTURAL CONDITIONS.
6. ALL CONDUCTORS OPERATING AT 50 VOLTS OR GREATER SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. ALL RACEWAY WITHIN THE STRUCTURE ABOVE THE FLOOR SLAB SHALL BE METAL. RACEWAY BELOW THE FLOOR SLAB AND UNDERGROUND RACEWAY OUTSIDE THE STRUCTURE SHALL BE PVC AT A MINIMUM. CONDUIT LEAVING THE SLAB SHALL TRANSITION TO RIGID METAL CONDUIT (RMC) PRIOR TO EXITING THE SLAB.
7. THE CONTRACTOR MAY INSTALL UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. LOADINGS ARE BASED ON THWN INSULATION, 40°C AMBIENT WITH DERATINGS FOR TEMPERATURE AND UP TO THREE (3) CURRENT CARRYING CONDUCTORS IN A CONDUIT. CONTACT THE ENGINEER FOR WIRING IN OTHER CONDITIONS.
8. CONDUCTORS IN WITHIN UNINSULATED CEILING SPACES AND OUTDOORS MUST BE DERATED BASED UPON THE AMBIENT TEMPERATURE. THE CONTRACTOR IS RESPONSIBLE FOR REVISING CONDUCTOR SIZE IF ACTUAL CONDUIT ROUTING DIFFERS FROM THE CONSTRUCTION DOCUMENTS.
9. EXACT TYPE OF MECHANICAL DEVICES AND EQUIPMENT LOCATIONS SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR(S).
10. ALL MATERIALS, EQUIPMENT, AND APPARATUS INSTALLED ON THE PROJECT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS AND THE MANUFACTURER. IN THE CASE OF EXCEPTIONS, THE MANUFACTURER'S AUTHORIZED REPRESENTATIVE SHALL CERTIFY IN WRITING TO THE OWNER'S REPRESENTATIVE, THAT THE INSTALLATION HAS BEEN MADE IN ACCORDANCE WITH SUCH PRINTED INSTRUCTIONS AND REQUIREMENTS.
11. MODEL NUMBERS INDICATED ON THE DRAWINGS ARE ONLY FOR REFERENCE AND CONVENIENCE. CONFIRM THE ACCURACY OF ALL MODEL NUMBERS SO AS TO MEET THE SPECIFIC PROJECT REQUIREMENTS AND MINIMUM INDICATED PERFORMANCE DATA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT EQUIPMENT FITS WITHIN THE SPACE ALLOTTED.
12. COORDINATE AND VERIFY LOCATIONS, ROUGH-IN REQUIREMENTS AND INSTALLATION REQUIREMENTS OF EQUIPMENT FURNISHED BY THE OWNER.

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E200E	POWER NEW WORK ENLARGED PLANS - MAINT. BLDG.
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2

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

HEIN Engineering Group

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:
BID SET 9/15/2023

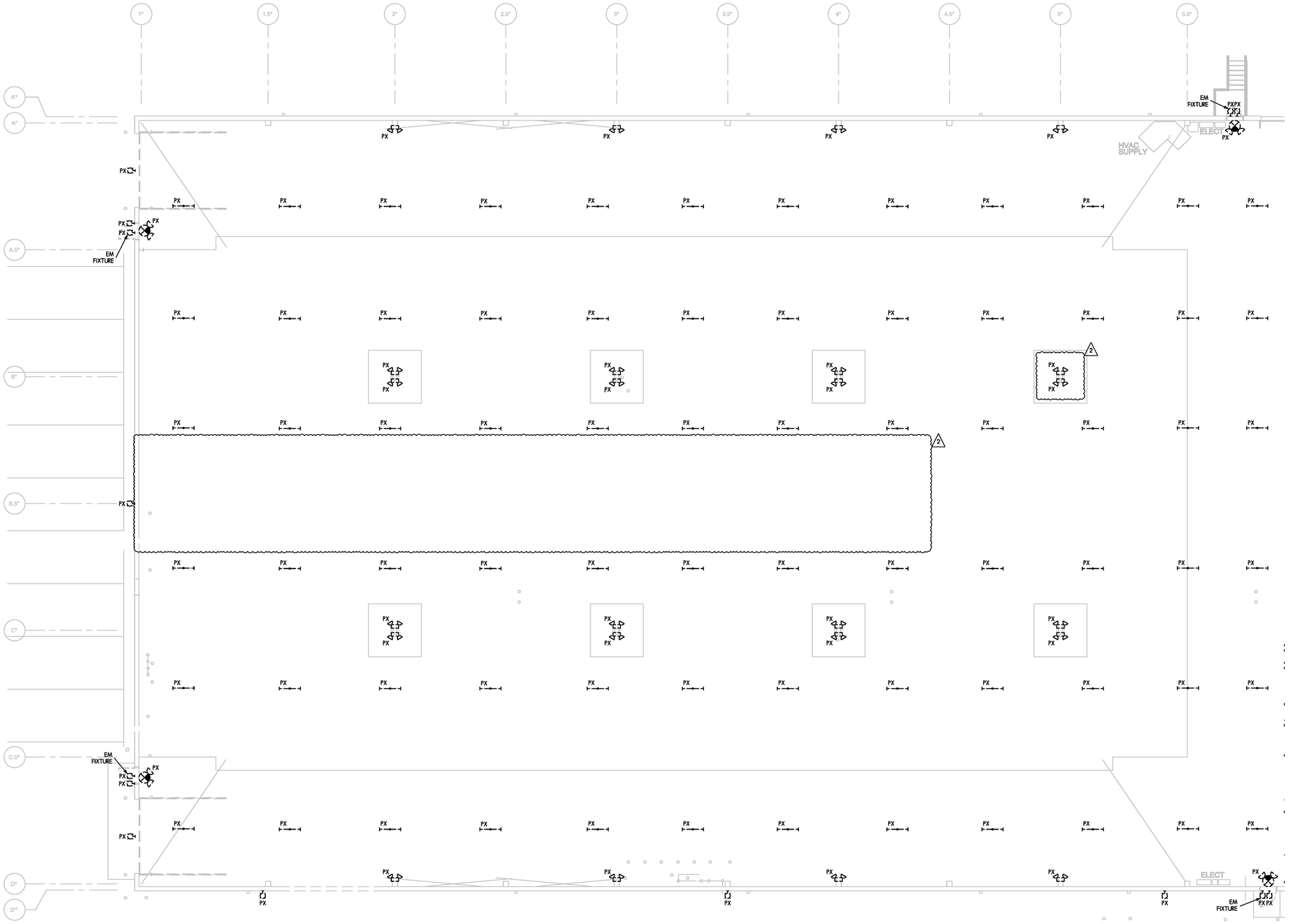
REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	10/13/2023

DRAWN BY EP
CHECKED BY MK

NOTES, SYMBOLS, ABREVIATIONS & SHEET INDEX

E001



LIGHTING DEMOLITION GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. REFER TO TEMPORARY ELECTRICAL WORK SECTION IN DIVISION 1 GENERAL REQUIREMENTS OF PROJECT MANUAL FOR ALL TEMPORARY ELECTRICAL REQUIREMENTS.
3. ALL DARK DASHED LINES APPROXIMATELY INDICATE EXISTING DEVICES TO BE DISCONNECTED AND REMOVED, UNLESS INDICATED OTHERWISE. REMOVE ANY/ALL UNUSED BOXES, WIRING AND CONDUIT BACK TO SOURCE. ALL PROPERLY SIZED AND PROPERLY SUPPORTED CONDUIT ONLY MAY BE REUSED.
4. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION AND PROVIDE FIRE WATCH, ETC., AS REQUIRED BY LOCAL AHJ. ANY/ALL CEILING MOUNTED DEVICES SHALL BE TEMPORARY SUPPORTED AND PROTECTED, INCLUDING BAGGING SMOKE DETECTORS (AS NECESSARY AND AS PERMITTED), DURING CONSTRUCTION AND SHALL BE REINSTALLED AT APPROXIMATE ORIGINAL LOCATION(S). SYSTEM SHALL BE ACTIVE AND MONITORED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
5. ALL ELECTRICAL CONDUCTORS AND CONDUITS SERVING REMOVED EQUIPMENT AND DEVICES SHALL BE COMPLETELY REMOVED. CONDUIT AND CONDUCTORS SHALL NOT BE ABANDONED IN PLACE. EXISTING CONDUITS AND PATHWAYS MAY BE REUSED. FOR NEW WORK, EXISTING CONDUCTORS MAY NOT BE REUSED, UNLESS SPECIFICALLY NOTED.
6. DISCONNECT AND REMOVE ANY AND ALL ELECTRICAL EQUIPMENT AND DEVICES, ETC. WITHIN DEMOLISHED AREAS AS REQUIRED, UNLESS NOTED OTHERWISE.
7. ANY/ALL EXISTING ELECTRICAL BOXES, RACEWAYS, WIRING, ETC. THAT IS NOT ACTIVE AND ENERGIZED BEFORE, DURING, OR AFTER THE PROJECT COMPLETION SHALL BE DISCONNECTED AND REMOVED COMPLETE. NO ABANDONED BOXES OR RACEWAYS SHALL REMAIN IN THE BUILDING AT PROJECT COMPLETION.

1 LIGHTING DEMO PLAN – 3829 MAINT. BLDG – SECTION A
SCALE: 1/8" = 1'-0"

N

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

HEIN Engineering Group

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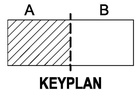
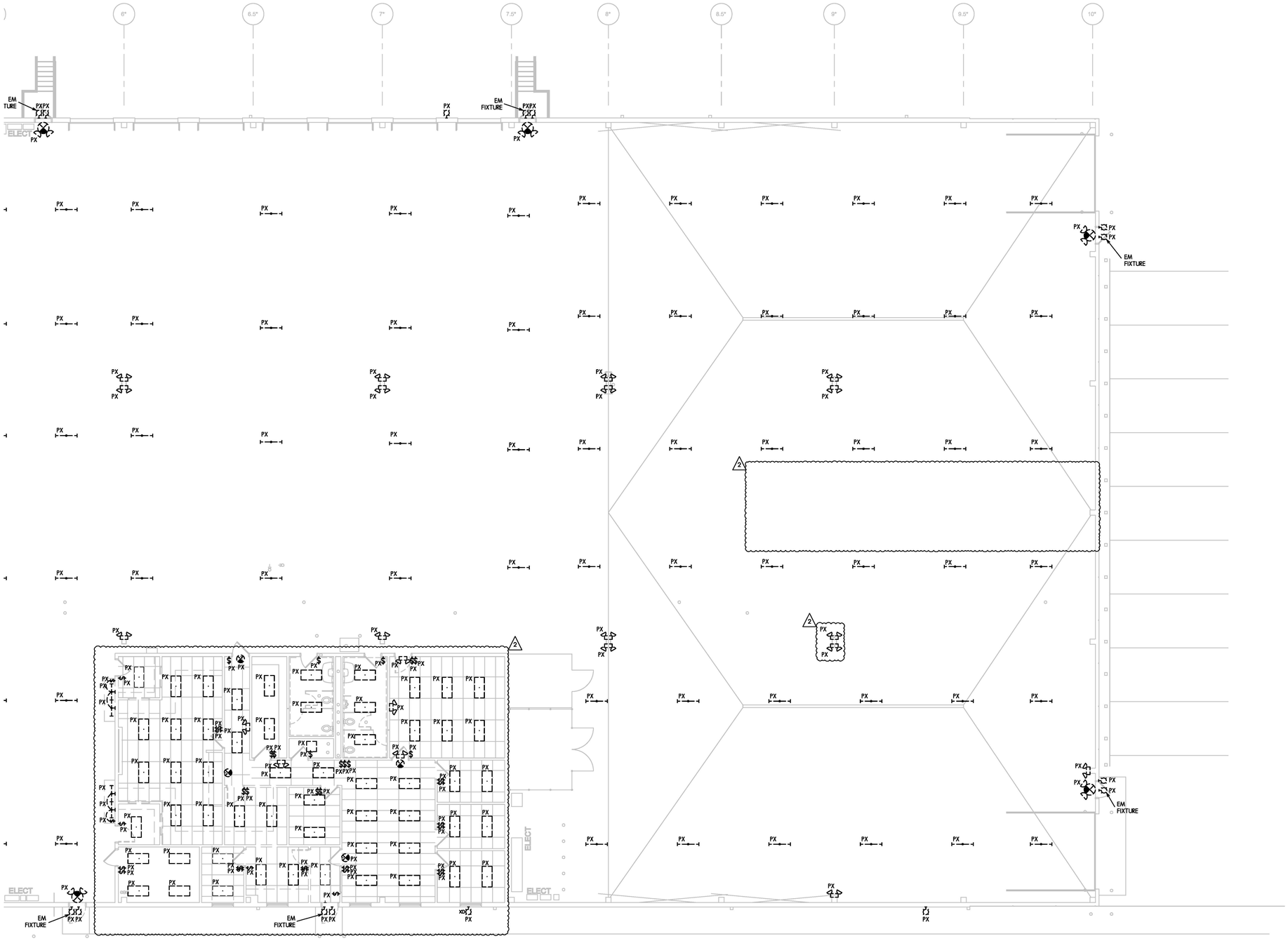
DRAWN BY	EP
CHECKED BY	MK

LIGHTING DEMO PLAN - 3829 MAINT. BLDG. - SECTION A



KEYPLAN

ED100A



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4. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION AND PROVIDE FIRE WATCH, ETC., AS REQUIRED BY LOCAL AHJ. ANY/ALL CEILING MOUNTED DEVICES SHALL BE TEMPORARY SUPPORTED AND PROTECTED, INCLUDING BAGGING SMOKE DETECTORS (AS NECESSARY AND AS PERMITTED), DURING CONSTRUCTION AND SHALL BE REINSTALLED AT APPROXIMATE ORIGINAL LOCATION(S). SYSTEM SHALL BE ACTIVE AND MONITORED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
5. ALL ELECTRICAL CONDUCTORS AND CONDUITS SERVING REMOVED EQUIPMENT AND DEVICES SHALL BE COMPLETELY REMOVED. CONDUIT AND CONDUCTORS SHALL NOT BE ABANDONED IN PLACE. EXISTING CONDUITS AND PATHWAYS MAY BE REUSED. FOR NEW WORK, EXISTING CONDUCTORS MAY NOT BE REUSED, UNLESS SPECIFICALLY NOTED.
6. DISCONNECT AND REMOVE ANY AND ALL ELECTRICAL EQUIPMENT AND DEVICES, ETC. WITHIN DEMOLISHED AREAS AS REQUIRED, UNLESS NOTED OTHERWISE.
7. ANY/ALL EXISTING ELECTRICAL BOXES, RACEWAYS, WIRING, ETC. THAT IS NOT ACTIVE AND ENERGIZED BEFORE, DURING, OR AFTER THE PROJECT COMPLETION SHALL BE DISCONNECTED AND REMOVED COMPLETE. NO ABANDONED BOXES OR RACEWAYS SHALL REMAIN IN THE BUILDING AT PROJECT COMPLETION.

1 LIGHTING DEMO PLAN – 3829 MAINT. BLDG. – SECTION B

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

N

Engberg Anderson ARCHITECTS

MILWAUKEE | MADISON | CHICAGO

HEG HEIN Engineering Group

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON

METRO TRANSIT

1245 E WASHINGTON AVE #201

MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

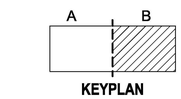
BID SET	9/15/2023

REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	10/13/2023

DRAWN BY	EP
CHECKED BY	MK

LIGHTING DEMO PLAN - 3829 MAINT. BLDG. - SECTION B



KEYPLAN

ED100B

POWER DEMOLITION GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. REFER TO TEMPORARY ELECTRICAL WORK SECTION IN DIVISION 1 GENERAL REQUIREMENTS OF PROJECT MANUAL FOR ALL TEMPORARY ELECTRICAL REQUIREMENTS.
3. ALL DARK DASHED LINES APPROXIMATELY INDICATE EXISTING DEVICES TO BE DISCONNECTED AND REMOVED, UNLESS INDICATED OTHERWISE. REMOVE ANY/ALL UNUSED BOXES, WIRING AND CONDUIT BACK TO SOURCE. ALL PROPERLY SIZED AND PROPERLY SUPPORTED CONDUIT ONLY MAY BE REUSED.
4. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION UNTIL NEW SYSTEM IS INSTALLED, INSPECTED, APPROVED, AND ONLINE/OPERATIONAL. REMOVE ANY/ALL EXISTING FIRE ALARM DEVICES ONCE THE NEW SYSTEM IS ONLINE/OPERATIONAL. PROVIDE FIRE WATCH, ETC. AS REQUIRED BY LOCAL AHJ DURING CONSTRUCTION.
5. ALL ELECTRICAL CONDUCTORS AND CONDUITS SERVING REMOVED EQUIPMENT AND DEVICES SHALL BE COMPLETELY REMOVED. CONDUIT AND CONDUCTORS SHALL NOT BE ABANDONED IN PLACE. EXISTING CONDUITS AND PATHWAYS MAY BE REUSED. FOR NEW WORK, EXISTING CONDUCTORS MAY NOT BE REUSED, UNLESS SPECIFICALLY NOTED.
6. DISCONNECT AND REMOVE ANY AND ALL ELECTRICAL EQUIPMENT AND DEVICES, ETC. WITHIN DEMOLISHED AREAS AS REQUIRED, UNLESS NOTED OTHERWISE.
7. ANY/ALL EXISTING ELECTRICAL BOXES, RACEWAYS, WIRING, ETC. THAT IS NOT ACTIVE AND ENERGIZED BEFORE, DURING, OR AFTER THE PROJECT COMPLETION SHALL BE DISCONNECTED AND REMOVED COMPLETE. NO ABANDONED BOXES OR RACEWAYS SHALL REMAIN IN THE BUILDING AT PROJECT COMPLETION.

KEYED NOTES:

1. DISCONNECT EXISTING CEILING FAN FOR RELOCATION OF EXISTING CONTROLS, REFER TO KEYED NOTE 2. REFEED/RECONNECT ONCE NEW CONTROLS ARE RELOCATED.
2. DISCONNECT AND RELOCATE EXISTING CEILING FAN CONTROLS. REFEED/RECONNECT TO EXISTING CIRCUITS.
3. DISCONNECT EXISTING DESTRATIFICATION FAN CONTROL PANEL FOR RELOCATION. REFEED/RECONNECT ONCE RELOCATED.
4. DISCONNECT EXISTING VFD/CONTROLLER FOR EXISTING HVAC EQUIPMENT. COORDINATE ALL REQUIREMENTS WITH HVAC CONTRACTOR AND FIELD VERIFY ALL REQUIREMENTS.
5. FIRE SUPPRESSION SYSTEM - (9) CONTROL POINTS.

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CHECKED BY	MK

POWER DEMO PLAN - 3829 MAINT. BLDG. - SECTION A

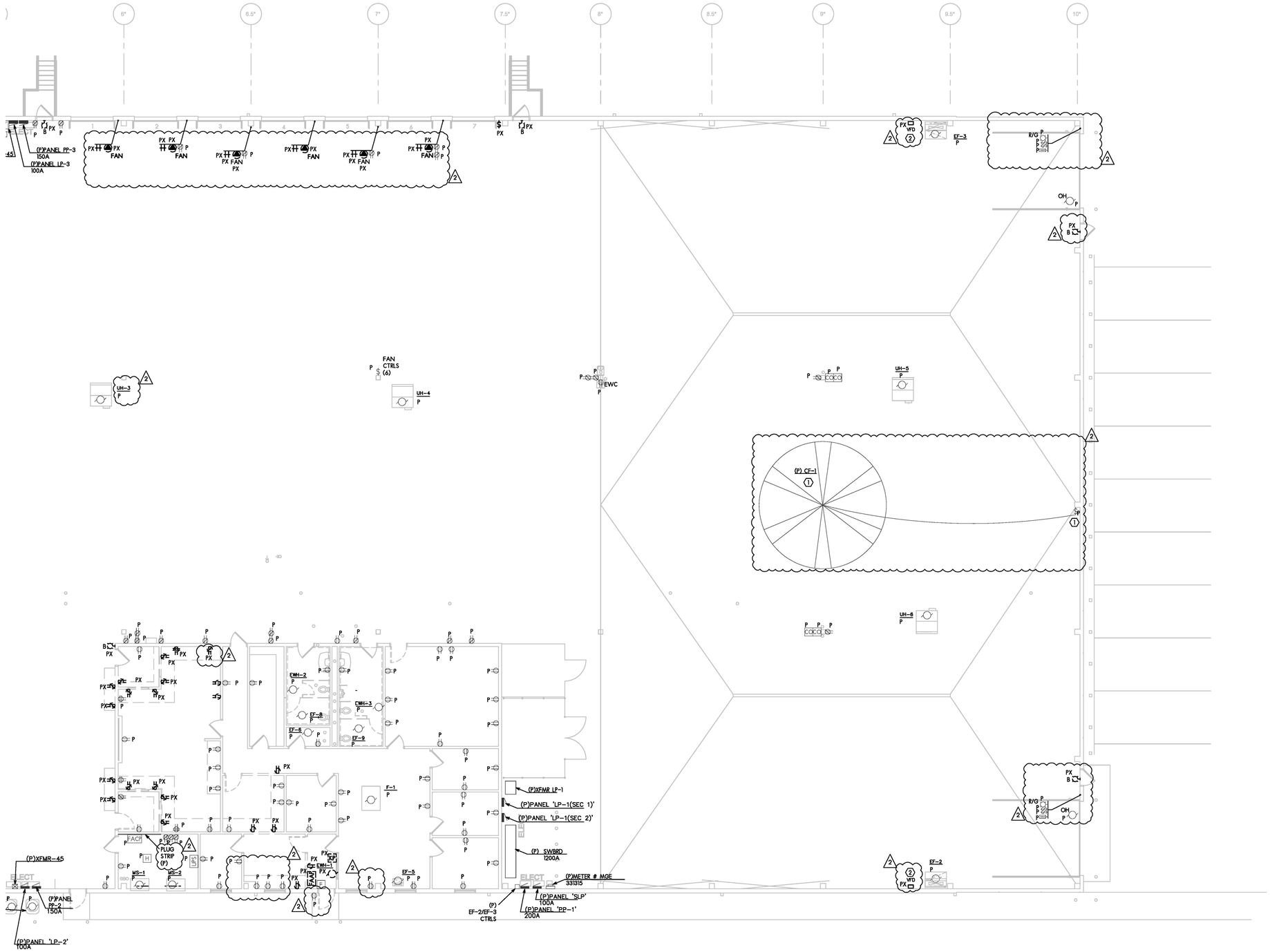
KEYPLAN

1 POWER DEMO PLAN - 3829 MAINT. BLDG. - SECTION A

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

N

ED200A



POWER DEMO PLAN – 3829 MAINT. BLDG. – SECTION B

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

N

POWER DEMOLITION GENERAL NOTES:

2

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. REFER TO TEMPORARY ELECTRICAL WORK SECTION IN DIVISION 1 GENERAL REQUIREMENTS OF PROJECT MANUAL FOR ALL TEMPORARY ELECTRICAL REQUIREMENTS.
3. ALL DARK DASHED LINES APPROXIMATELY INDICATE EXISTING DEVICES TO BE DISCONNECTED AND REMOVED, UNLESS INDICATED OTHERWISE. REMOVE ANY/ALL UNUSED BOXES, WIRING AND CONDUIT BACK TO SOURCE. ALL PROPERLY SIZED AND PROPERLY SUPPORTED CONDUIT ONLY MAY BE REUSED.

2

4. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION UNTIL NEW SYSTEM IS INSTALLED, INSPECTED, APPROVED, AND ONLINE/OPERATIONAL. REMOVE ANY/ALL EXISTING FIRE ALARM DEVICES ONCE THE NEW SYSTEM IS ONLINE/OPERATIONAL. PROVIDE FIRE WATCH, ETC. AS REQUIRED BY LOCAL AHJ DURING CONSTRUCTION.
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2

KEYED NOTES:

1. EXISTING CEILING FAN AND ASSOCIATED CONTROLS TO REMAIN.
2. DISCONNECT EXISTING VFD/CONTROLLER FOR EXISTING HVAC EQUIPMENT. COORDINATE ALL REQUIREMENTS WITH HVAC CONTRACTOR AND FIELD VERIFY ALL REQUIREMENTS.

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POWER DEMO PLAN - 3829 MAINT. BLDG. - SECTION B

A B

KEYPLAN

ED200B

PANEL SCHEDULE GENERAL NOTES:

1. THE PANEL SCHEDULES ON THIS SHEET REFLECT APPROXIMATE EXISTING CONDITIONS AND ARE INCLUDED FOR REFERENCE ONLY TO ASSIST IN COMMUNICATING AVAILABLE CIRCUITRY WITHIN THE BUILDING. ANY/ALL CIRCUITRY SHALL BE FIELD VERIFIED DURING CONSTRUCTION TO DETERMINE ANY/ALL POTENTIAL USE/REUSE.

PANEL MSB-1200A

VOLTS 277/480 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	FUSIBLE SWITCH SIZE (A)	P	FUSE (A)	CONNECTED KVA	CONNECTED AMP	DEMAND KVA	DEMAND AMP	REMARKS
PANEL SLP	100	3						
PANEL PP3	150	3						
PANEL PP1	200	3						
TRANSFORMER T-1	90	3						
PANEL PP2	150	3						
MCP01 MATERIAL HANDLING (OFF)	100	3						
NOT LABELED (OFF)	400	3						

BUS RATING 1200 A — SHORT CIRCUIT CURRENT RATING - A
MAIN BREAKER 1200 A — A.I.C. - A

TOTAL (CONNECTED) ____ VA ____ A — TOTAL (DEMAND) ____ VA ____ A
TOTAL (125%) ____ A

PANEL SLP (FED FROM MDP)

VOLTS 277/480 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
NORTH PARKING LOT POLES			30	2	1				2	20	1			E. BUILDING LIGHT OUTSIDE
NORTH PARKING LOT POLES			-	-	3				4	20	1			W. DOCK OUTSIDE LIGHTS
W.-S.W. LIGHT POLES			30	2	5				6	20	1			SPARE (ON)
W.-S.W. LIGHT POLES			-	-	7				8	20	1			SPARE (ON)
SPARE (ON)			20	1	9				10	20	1			SPARE (ON)
SPACE					11				12					SPACE
SPACE					13				14					SPACE
SPACE					15				16					SPACE
SPACE					17				18					SPACE
SPACE					19				20					SPACE
SPACE					21				22					SPACE
SPACE					23				24					SPACE
SPACE					25				26					SPACE
SPACE					27				28					SPACE
SPACE					29				30					SPACE

PANEL PP-1 (FED FROM MDP)

VOLTS 277/480 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
B.A.F. GARAGE DOOR N.E.			20	3	1				2	20	1			WHSE LIGHTS
-			-	-	3				4	20	1			WHSE LIGHTS
-			-	-	5				6	20	1			WHSE LIGHTS
GARAGE DOOR N.W.			20	3	7				8	20	1			CAGE RADIANT HEAT
-			-	-	9				10	20	1			EM LIGHTS
-			-	-	11				12	20	1			SPARE (ON)
ENTRY WALL HEAT			20	1	13				14	20	3			EX.FAN N.E.
OFFICE LIGHTS			20	1	15				16	-	-			-
OFFICE LIGHTS			20	1	17				18	-	-			-
HAND DRYER WOMENS			20	1	19				20	20	3			EX. FAN N.W.
HAND DRYER MENS			20	1	21				22	-	-			-
WOMENS BATH HEAT (OFF)			20	1	23				24	-	-			-
MENS BATH HEAT (OFF)			20	1	25				26	20	1			SPARE (OFF)
SPACE					27				28					SPACE
SPACE					29				30					SPACE
SPACE					31				32					SPACE
SPACE					33				34					SPACE
SPACE					35				36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

BUS RATING 225 A
MAIN BREAKER - A

PANEL LP-1 (FED FROM XFMR T-1) (SEC 1)

VOLTS 120/208 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
N. COLUMN OUTLETS			20	1	1				2	20	1			CAGE OUTLETS
N. FURNACE (OFF)			20	1	3				4	20	1			CAGE OUTLETS
N. FURNACE (OFF)			20	1	5				6	20	1			CAGE OUTLETS
N.W. TRUCK OUTLET			20	1	7				8	20	1			N.C. FURNACE
N.W. WALK DOOR OUTLET			20	1	9				10	20	1			WATER COOLER/COLUMN OUTLET
N.W. TRUCK OUTLET			20	1	11				12	20	1			BATH FANS/LIGHTS
N.W. TRUCK OUTLET			20	1	13				14	20	1			VEND OUTLET 1
N.W. TRUCK OUTLET			20	1	15				16	20	1			VEND OUTLET 2
TURNSTYLE GATE			20	1	17				18	20	1			VEND OUTLET 3
N.E. TRUCK OUTLET			20	1	19				20	20	1			VEND OUTLET 4
N.E. WALK DOOR OUTLET			20	1	21				22	20	1			MEETING RM OUTLET
N.E. TRUCK OUTLET			20	1	23				24	20	1			TRUCK OUTLET W. TRUCK PKG LOT
N.E. TRUCK OUTLET			20	1	25				26	20	1			TRUCK OUTLET W. TRUCK PKG LOT
N.E. TRUCK OUTLET			20	1	27				28	20	1			SPARE (OFF)
STAR OUTLET W.			20	1	29				30	20	1			SPARE (OFF)
STAR OUTLET E.			20	1	31				32	20	1			SPARE (OFF)
TC/SVC MGR/CHECKING			20	1	33				34	20	1			SPARE (OFF)
FURNACE OFFICE S.			20	1	35				36	20	1			SPARE (OFF)
MOTORIZED GATE (OFF)			20	1	37				38	20	1			SPARE (OFF)
MOTORIZED GATE (OFF)			20	1	39				40	20	1			SPARE (OFF)
SPACE					41				42	20	1			SPARE (OFF)

BUS RATING 200 A
MAIN BREAKER 200 A

PANEL LP-1 (FED FROM XFMR T-1) (SEC 2)

VOLTS 120/208 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
LIGHTING CONTROL OPEN OFFICE			20	1	43				44	20	1			SVC CHECK IN N.W. DED. OUTLET
FURNACE			20	1	45				46	20	1			SVC CHECK IN S.W. DED. OUTLET
P&D MANAGER			20	1	47				48	20	1			SVC CHECK IN S COND. OUTLET DI
COPIER OUTLET			20	1	49				50	20	1			TRANSMITTER & COLUMN OUTLET
SERVICE MANAGER			20	1	51				52	20	1			SVC MGR. E. OUTLET TEMP. S. IT R
ABOVE CEILING EX-FAN			20	1	53				54	20	1			IT & SECURITY S. OUTLET
FIRE ALARM PANEL			20	1	55				56	20	1			S.E. SVC MGR. CHECK IN OUTLET
SVC MANAGER CHECKING OUTLET			20	1	57				58	20	1			N.E. SVC MGR. CHECK IN OUTLET
POS. PRESSSURE FAN			20	1	59				60	20	1			ICE MACHINE
IT JB			20	1	61				62	20	1			MPO SINK FAN/LT OUTLET
IT DED. OUTLET			20	1	63				64	20	1			BATH OUTLET
SIGN N.E. BUILDING			20	1	65				66	25	1			WATER HEATER
SECURITY RM OUTLET			20	1	67				68	60	2			IT ROOM UPS
DOCK MANAGER RM OUTLET			20	1	69				70	-	-			-
APPLY/INTERVIEW RM OUTLET			20	1	71				72					SPACE
AC NORTH			20	3	73				74					SPACE
-			-	-	75				76					SPACE
-			-	-	77				78					SPACE
AC SOUTH			20	3	79				80					SPACE
-			-	-	81				82					SPACE
-			-	-	83				84					SPACE

BUS RATING 400 A
FEED THRU LUGS 400 A

PANEL PP-2 (FED FROM MDP)

VOLTS 277/480 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
TRANSFORMER T-2			60	3	1				2	20	3			B.A.F. GARAGE DOOR OPENER
-			-	-	3				4	-	-			-
-			-	-	5				6	-	-			-
WHSE LIGHTS			20	1	7				8	20	1			CAGE HEAT (OFF)
WHSE LIGHTS			20	1	9				10	20	1			EM LIGHTS
EXHAUST FAN			20	3	11				12	20	1			SPARE (OFF)
-			-	-	13				14	20	1			SPARE (OFF)
-			-	-	15				16	20	1			SPARE (OFF)
SPACE					17				18	20	1			SPARE (OFF)
SPACE					19				20					SPACE
SPACE					21				22					SPACE
SPACE					23				24					SPACE
SPACE					25				26					SPACE
SPACE					27				28					SPACE
SPACE					29				30					SPACE
SPACE					31				32					SPACE
SPACE					33				34					SPACE
SPACE					35				36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

BUS RATING 225 A
MAIN BREAKER - A

PANEL LP-2 (FED FROM XFMR T-2)

VOLTS 120/208 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
TRUCK OUTLET SOUTH			20	1	1				2	20	2			FIRE PUMP
TRUCK OUTLET SOUTH			20	1	3				4	-	-			-
S.E. WALK DOOR OUTLET			20	1	5				6	20	1			METAL DECECTOR OUTLET
COLUMN T.C. OUTLET			20	1	7				8	20	1			CAGE J.B.
FURNACE			20	1	9				10	20	1			CAGE PHONE BOARD OUTLET
FURNACE			20	1	11				12	20	1			CAGE PHONE BOARD OUTLET
TRUCK OUTLET SOUTH			20	1	13				14	20	1			CAGE INSIDE OUTLET
TRUCK OUTLET SOUTH			20	1	15				16	20	1			CAGE INSIDE OUTLET
CENTER AREA TRK OUTLET			20	1	17				18	20	1			CAGE INSIDE OUTLET
CENTER AREA TRK OUTLET			20	1	19				20	20	1			SPRINKLER BELL
SPARE (ON)			20	1	21				22	20	1			GFI BY SPRINKLER
SPARE (ON)			20	1	23				24	20	2			SPLIT SYSTEM NORTH
SPACE					25				26	-	-			-
SPACE					27				28	20	2			SPLIT SYSTEM SOUTH
SPACE					29				30	-	-			-
SPACE					31				32	20	1			PHOTO EYE/OUTLET BY COND.
SPACE					33				34					SPACE
SPACE					35				36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

BUS RATING 100 A
MAIN BREAKER 100 A

PANEL LP-3 (FED FROM XFMR T-3)

VOLTS 120/208 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
TUGGER OUTLET			20	1	1				2	20	1			WATER COOLER S./COLUMN OUTLE
TUGGER OUTLET			20	1	3				4	20	1			FURNACE S.C.
TUGGER OUTLET			20	1	5				6	20	1			SOUTH WALL DOOR/EXIT
DOCK WALL OUTLET N.W.			20	1	7				8	20	1			FURNACE S.
DOCK WALL OUTLET S.W.			20	1	9				10	20	1			UNIT HEATER C.
SPARE (ON)			20	1	11				12	20	1			TRUCK OUTLET S.
SPARE (ON)			20	1	13				14	20	1			TRUCK OUTLET S.
SPACE					15				16	20	1			TRUCK OUTLET S.
SPACE					17				18	20	1			TRUCK OUTLET S.
SPACE					19				20	20	1			TRUCK OUTLET N.
SPACE					21				22	20	1			TRUCK OUTLET N.
SPACE					23				24	20	1			UNLOAD DESK OUTLET
SPACE					25				26					SPACE
SPACE					27				28					SPACE
SPACE					29				30					SPACE
SPACE					31				32					SPACE
SPACE					33				34					SPACE
SPACE					35				36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

BUS RATING 100 A
MAIN BREAKER 100 A

PANEL PP-3 (FED FROM MDP)

VOLTS 277/480 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
TRANSFORMER T-3			60	3	1				2	20	3			OVERHEAD DOOR S.W.
-			-	-	3				4	-	-			-
-			-	-	5				6	-	-			-
WHSE LIGHTS			20	1	7				8	20	3			EXHAUST FAN SOUTH WEST
WHSE LIGHTS			20	1	9				10	-	-			-
DOCK FANS/LIGHTS N.W.			20	1	11				12	-	-			-
DOCK FANS/LIGHTS S.W.			20	1	13				14	20	1			FAN
EM LIGHTS			20	1	15				16	20	1			SOUTH VAN LIGHTS
SPARE (ON)			20	1	17				18	20	1			NORTH VAN LIGHTS
MAU			60	3	19				20					SPACE
-			-	-	21				22					SPACE
-			-	-	23				24					SPACE
SPACE					25				26					SPACE
SPACE					27				28					SPACE
SPACE					29				30					SPACE
SPACE					31				32					SPACE
SPACE					33				34					SPACE
SPACE					35				36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

BUS RATING 225 A
MAIN BREAKER - A

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

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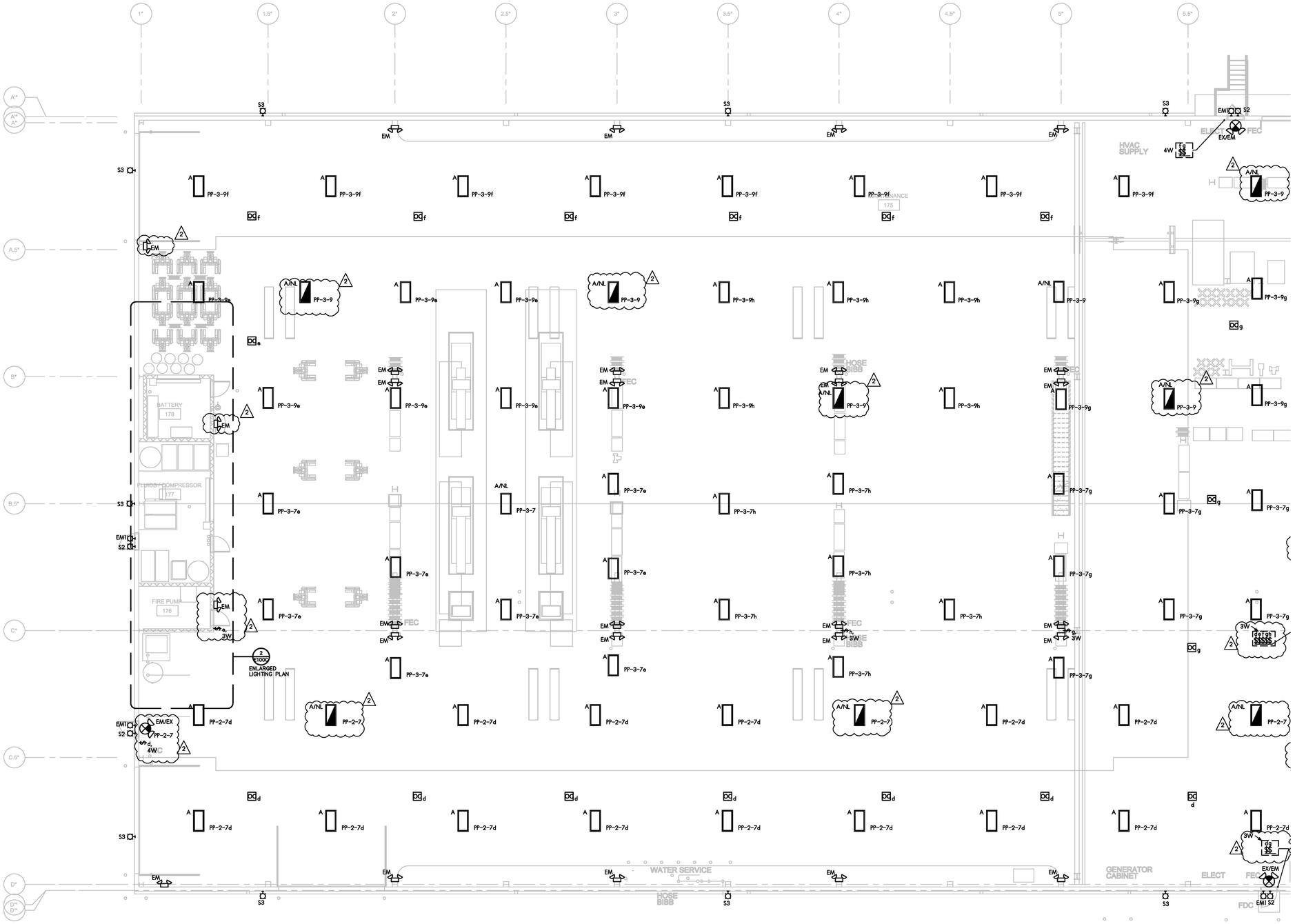
EXISTING PANEL SCHEDULES - 3829 MAINTENANCE BUILDING

2

ED300



1 LIGHTING NEW WORK PLAN - 3829 MAINT. BLDG. - SECTION A
SCALE: 1/8" = 1'-0"

N

LIGHTING GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. REFER TO ARCHITECTURAL PLANS, SECTIONS, ELEVATIONS, AND REFLECTED CEILING PLANS FOR EXACT LOCATION AND COORDINATION OF ALL LIGHT FIXTURE AND CONTROLLER INSTALLATIONS.
3. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
4. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
5. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTMENT FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
6. EXIT SIGNAGE IS INDICATED ON THE PLANS BASED ON ANTICIPATED EGRESS PATHS THROUGHOUT THE BUILDING. ELECTRICAL CONTRACTOR SHALL CONFIRM ALL EGRESS PATHS WITH ARCHITECT/OWNER/GENERAL CONTRACTOR DURING CONSTRUCTION AND SHALL ADD/MODIFY EXIT SIGNAGE/EGRESS LIGHTING AS REQUIRED TO COMPLY WITH PATHWAYS.
7. ALL LIGHT FIXTURES SHALL BE PROVIDED WITH QUICK-CONNECT DISCONNECTING MEANS AND A 6'0" (MAXIMUM) FIXTURE WHIP FOR FUTURE MAINTENANCE PURPOSES.
8. LIGHT FIXTURES AND OTHER APPARATUS SUPPORTED BY THE ACOUSTICAL CEILING GRID MUST MEET THE REQUIREMENTS OF NEC SECTION 410.16, MEANS OF SUPPORT.
9. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN ALL FINISHED AREAS. IN UNFINISHED AREAS (MECH. ROOMS, ETC.) ALL CONDUIT AND WIRING MUST BE HIDDEN FROM VIEW AS MUCH AS POSSIBLE AND MOUNTED TIGHT TO BAR JOISTS, ETC. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH PAINTED CEILING COLOR.
10. ALL EXTERIOR LIGHTING SHALL BE FED FROM EXISTING CIRCUITS. EXTERIOR LIGHTING SHALL BE CONTROLLED VIA LUTRON ATHENA NETWORK TIMCLOCK FUNCTIONS. PROVIDE WIRELESS NODE/POWERPACK ON THE INTERIOR OF THE BUILDING IN LINE AT EACH EXTERIOR LIGHT LOCATION. THE EXTERIOR EMERGENCY EGRESS FIXTURES ARE NOT TO BE INCLUDED IN THE ATHENA NETWORK.
11. ALL EMERGENCY LIGHTING SHALL BE FED FROM THE NEAREST NORMAL LIGHTING CIRCUIT IN THE AREA.
12. IN GENERAL, THE EXISTING LIGHTING THROUGHOUT THIS BUILDING WILL BE DISCONNECTED, REMOVED, AND REPLACED. ANY/ALL NEW LIGHT FIXTURES AND SENSORS THROUGHOUT THE VEHICLE AREA(S) SHALL BE MOUNTED TO THE BOTTOM OF THE STRUCTURE/BAR JOISTS AT APPROXIMATELY 20'-0" A.F.F.
13. LIGHTING THROUGHOUT THIS BUILDING SHALL BE CONTROLLED VIA A LUTRON ATHENA NETWORK WIRELESS CONTROL SYSTEM. PROVIDE ATHENA HEAD END SYSTEM, WITH TIMECLOCK FUNCTIONS, LUTRON ENERGI SAVR WIRELESS NODES IN FIXTURES AND LOCAL MANUAL CONTROLS AS SHOWN. PROVIDE LIGHTING MANAGEMENT HUBS, PROCESSORS, SYSTEM SOFTWARE, ETC. AS REQUIRED FOR A COMPLETE OPERATIONAL SYSTEM. REFER TO SPECIFICATION SECTION 26 09 43 FOR ADDITIONAL INFORMATION. ANY/ALL OTHER MANUFACTURERS MUST MEET OR EXCEED THE LUTRON ATHENA SYSTEM AND MUST BE SUBMITTED/APPROVED BY OWNER AND ENGINEER PRIOR TO BID.
14. NOTE THAT THE BUILDING CONSISTS OF AREAS UTILIZED FOR COMMERCIAL GARAGES, REPAIR AND STORAGE. AS A RESULT, ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ANY/ALL AREAS CLASSIFIED AS COMMERCIAL GARAGE, REPAIR & STORAGE PER NEC 511. IN THESE AREAS, ANY/ALL ELECTRICAL WORK WITHIN SHALL COMPLY WITH NEC 511.

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

HEIN Engineering Group

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

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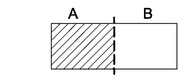
BID SET	9/15/2023

REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	10/13/2023

DRAWN BY	EP
CHECKED BY	MK

LIGHTING NEW WORK PLAN - 3829 MAINT. BLDG. SECTION A



KEYPLAN

E100A

1 LIGHTING NEW WORK PLAN - 3829 MAINT. BLDG. - SECTION B

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

N

LIGHTING GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
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7. ALL LIGHT FIXTURES SHALL BE PROVIDED WITH QUICK-CONNECT DISCONNECTING MEANS AND A 6'0" (MAXIMUM) FIXTURE WHIP FOR FUTURE MAINTENANCE PURPOSES.
8. LIGHT FIXTURES AND OTHER APPARATUS SUPPORTED BY THE ACOUSTICAL CEILING GRID MUST MEET THE REQUIREMENTS OF NEC SECTION 410.16, MEANS OF SUPPORT.
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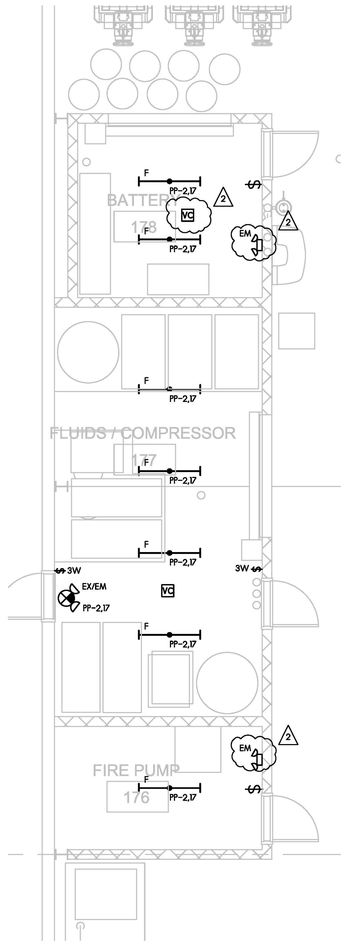
LIGHTING NEW WORK PLAN - 3829 MAINT. BLDG. SECTION B

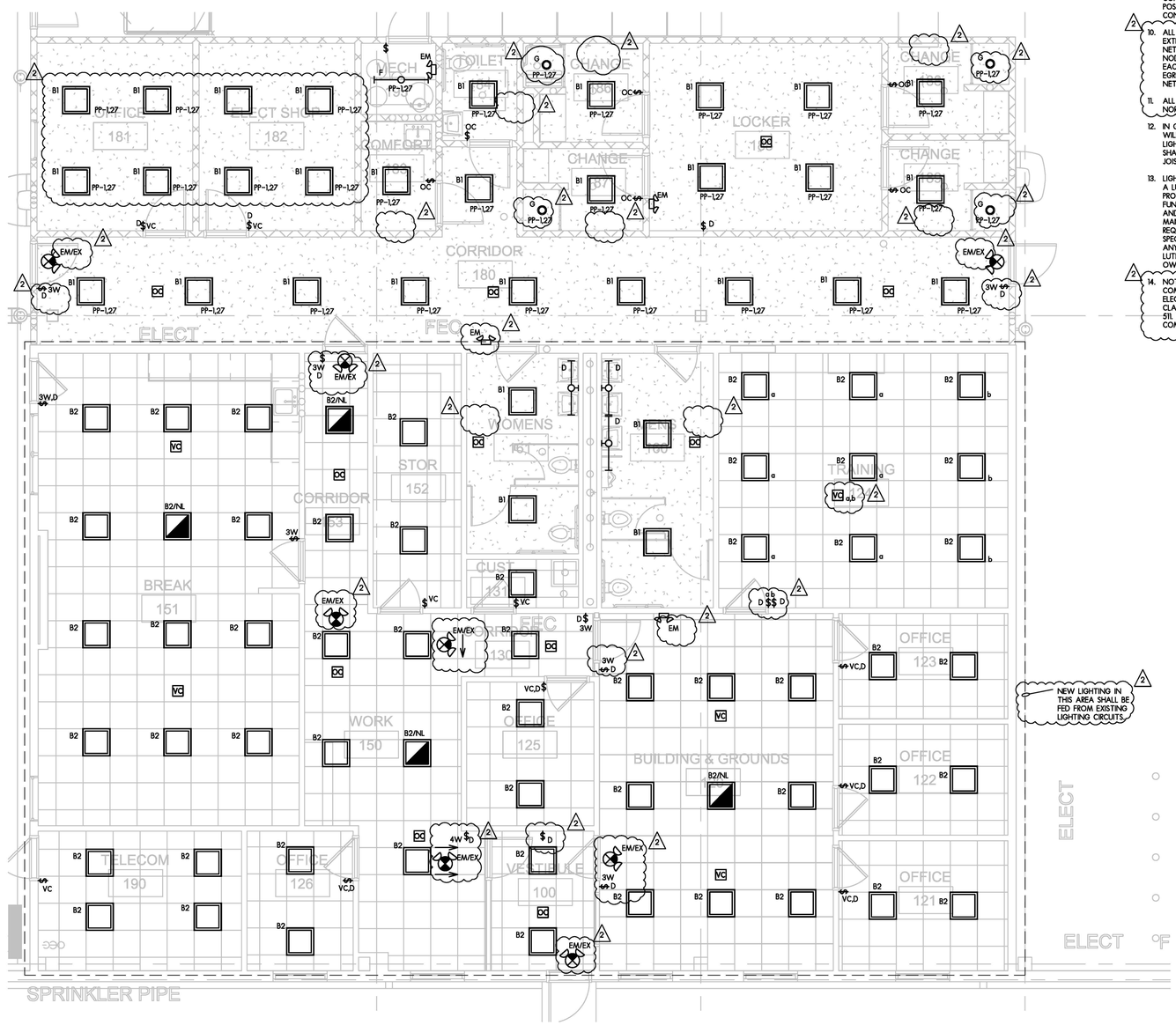
A B

KEYPLAN

E100B



2 MAINTENANCE BUILDING
BATTERY RM, BULK FLUIDS/ COMPRESSOR, FIRE PUMP RM.
SCALE: 1/4" = 1'-0"



1 MAINTENANCE BUILDING
OFFICE AREA
SCALE: 1/4" = 1'-0"

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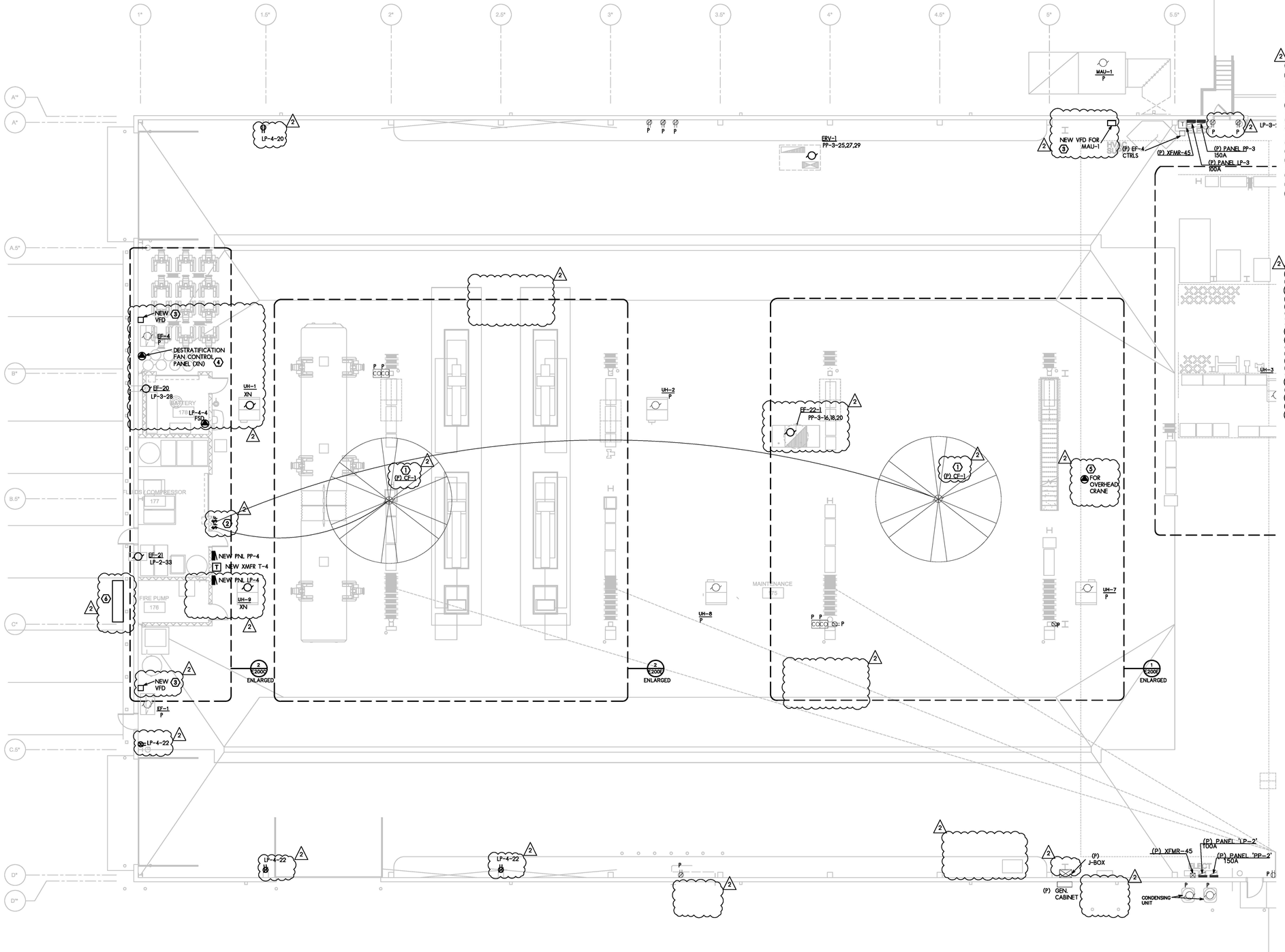
LIGHTING NEW WORK -
3829 MAINT. BLDG.
ENLARGED PLANS

A B
KEYPLAN

E100C



POWER GENERAL NOTES:

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6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
7. REFER TO OWNER/OWNERS VENDORS EQUIPMENT SCHEDULES AND PLANS FOR ALL EXACT EQUIPMENT LOCATIONS AND ELECTRICAL REQUIREMENTS. ALL EXACT/FINAL EQUIPMENT ELECTRICAL REQUIREMENTS SHALL BE COORDINATED PRIOR TO ROUGH-IN. ANY/ALL ASSOCIATED ELECTRICAL EQUIPMENT REQUIRED FOR THESE CONNECTIONS SHALL BE CONFIRMED IN ADVANCE OF PURCHASING.
8. E.C. SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING THE ROUGH-INS, CONSISTING OF EMPTY JUNCTION BOXES AND CONDUITS, AS REQUIRED FOR ALL LOW VOLTAGE SYSTEMS DEVICES/EQUIPMENT SHOWN ON THE TECHNOLOGY PLANS (SHEETS Q001 – Q701). COORDINATE ALL REQUIREMENTS WITH TECHNOLOGY CONTRACTORS.
9. NOTE THAT THE BUILDING CONSISTS OF AREAS UTILIZED FOR COMMERCIAL GARAGES, REPAIR AND STORAGE. AS A RESULT, ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ANY/ALL AREAS CLASSIFIED AS COMMERCIAL GARAGE, REPAIR & STORAGE PER NEC 511. IN THESE AREAS, ANY/ALL ELECTRICAL WORK WITHIN SHALL COMPLY WITH NEC 511.

KEYED NOTES:

1. DISCONNECT EXISTING CEILING FAN FOR RELOCATION OF EXISTING CONTROLS, REFER TO KEYED NOTE 2. REFEED/RECONNECT ONCE NEW CONTROLS ARE RELOCATED.
2. DISCONNECT AND RELOCATE EXISTING CEILING FAN CONTROLS. REFEED/RECONNECT TO EXISTING CIRCUITS.
3. INSTALL/CONNECT NEW VFD FOR EXISTING HVAC EQUIPMENT. COORDINATE ALL REQUIREMENTS WITH HVAC CONTRACTOR AND FIELD VERIFY ALL REQUIREMENTS.
4. DISCONNECT AND RELOCATE EXISTING DESTRATIFICATION FAN CONTROL PANEL. REFEED/RECONNECT TO EXISTING CIRCUITS.
5. COORDINATE EXACT REQUIREMENT, LOCATION FOR POWER FEED WITH OWNER. FEED FROM PANEL PP-2.
6. PROVIDE NEW MG&E ELECTRICAL SERVICE AS REQUIRED FOR NEW FIRE PUMP. COORDINATE ALL REQUIREMENTS WITH MG&E AND INCLUDE ALL COSTS IN BID.

POWER NEW WORK PLAN – 3829 MAINT. BLDG. SECTION A

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

N

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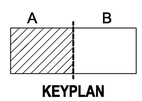
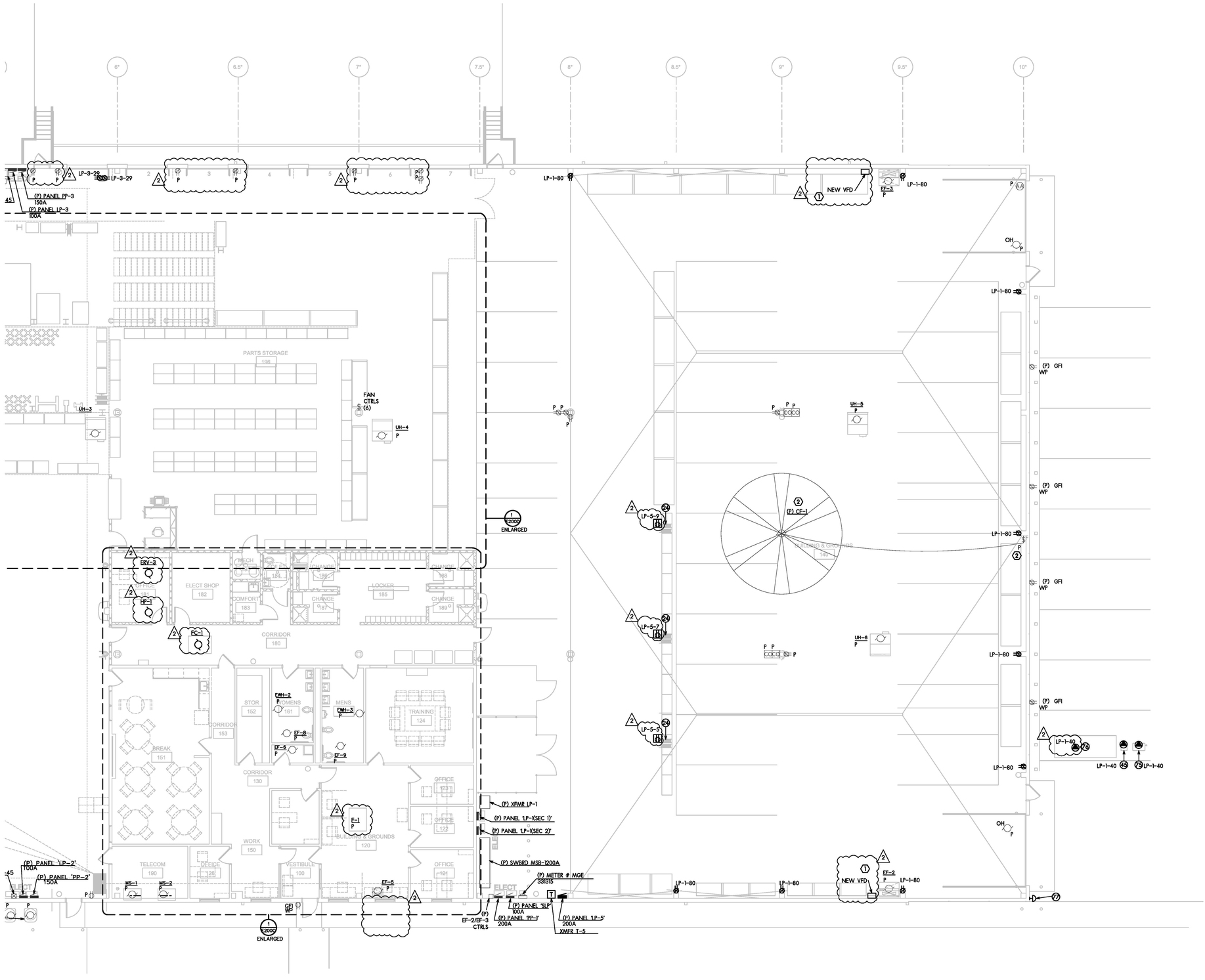
POWER NEW WORK PLAN - 3829 MAINT. BLDG. - SECTION A



KEYPLAN

E200A



POWER NEW WORK – 3829 MAINT. BLDG. – SECTION B

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

N

POWER GENERAL NOTES:

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6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
7. REFER TO OWNER/OWNERS VENDORS EQUIPMENT SCHEDULES AND PLANS FOR ALL EXACT EQUIPMENT LOCATIONS AND ELECTRICAL REQUIREMENTS. ALL EXACT/FINAL EQUIPMENT ELECTRICAL REQUIREMENTS SHALL BE COORDINATED PRIOR TO ROUGH-IN. ANY/ALL ASSOCIATED ELECTRICAL EQUIPMENT REQUIRED FOR THESE CONNECTIONS SHALL BE CONFIRMED IN ADVANCE OF PURCHASING.
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KEYED NOTES:

1. INSTALL/CONNECT NEW VFD FOR EXISTING HVAC EQUIPMENT. COORDINATE ALL REQUIREMENTS WITH HVAC CONTRACTOR AND FIELD VERIFY ALL REQUIREMENTS.
2. EXISTING CEILING FAN AND ASSOCIATED CONTROLS TO REMAIN.

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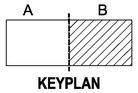
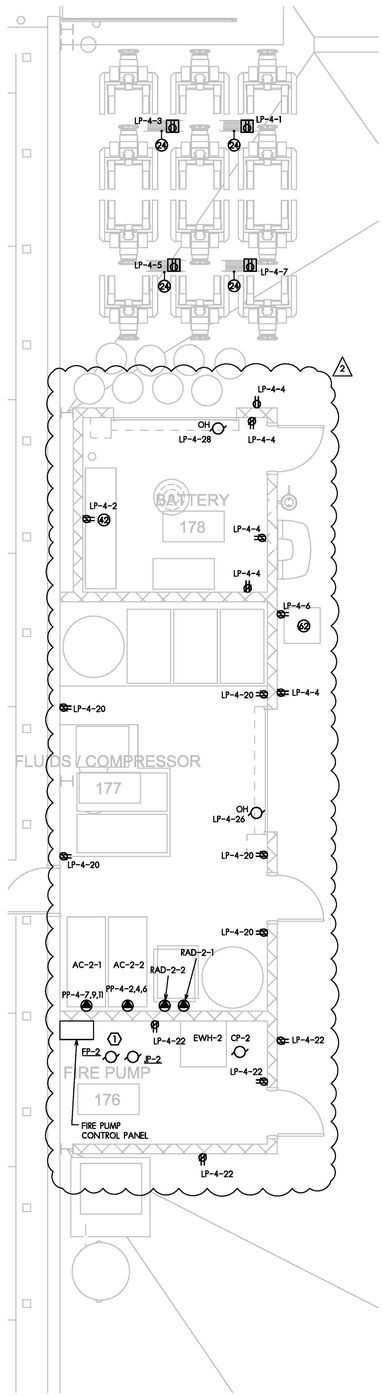
POWER NEW WORK PLAN - 3829 MAINT. BLDG. - SECTION B



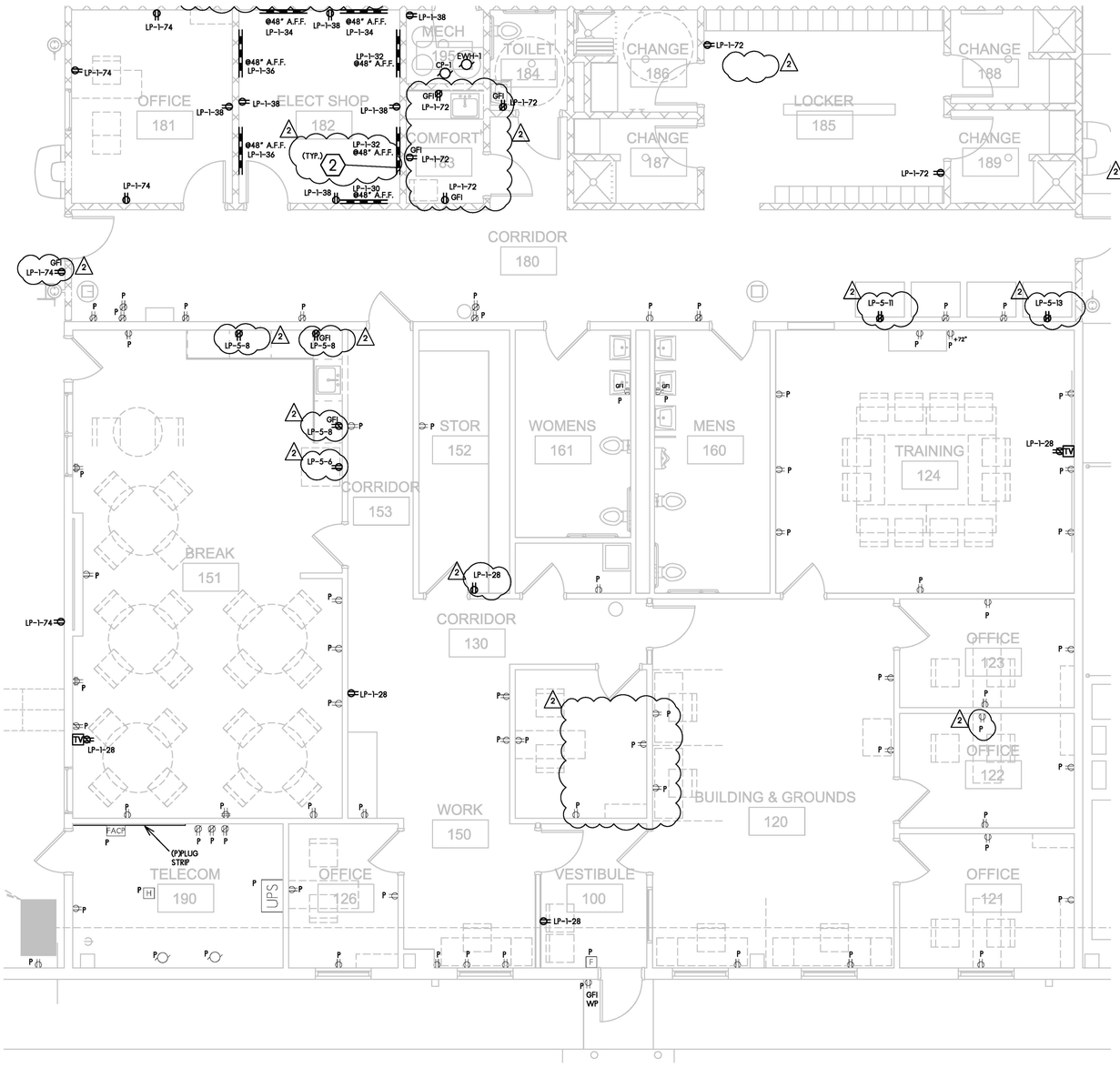
KEYPLAN

E200B



MAINTENANCE BUILDING
BATTERY RM, BULK FLUIDS/ COMPRESSOR, FIRE PUMP RM.

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



MAINTENANCE BUILDING
OFFICE AREA

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6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
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8. E.C. SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING THE ROUGH-INS, CONSISTING OF EMPTY JUNCTION BOXES AND CONDUITS, AS REQUIRED FOR ALL LOW VOLTAGE SYSTEMS DEVICES/EQUIPMENT SHOWN ON THE TECHNOLOGY PLANS (SHEETS Q001 – Q701). COORDINATE ALL REQUIREMENTS WITH TECHNOLOGY CONTRACTORS.
9. NOTE THAT THE BUILDING CONSISTS OF AREAS UTILIZED FOR COMMERCIAL GARAGES, REPAIR AND STORAGE. AS A RESULT, ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ANY/ALL AREAS CLASSIFIED AS COMMERCIAL GARAGE, REPAIR & STORAGE PER NEC 511. IN THESE AREAS, ANY/ALL ELECTRICAL WORK WITHIN SHALL COMPLY WITH NEC 511.

KEYED NOTES:

1. FP-2 – FIRE PUMP – 115HP(MAX), 480V, 3P, FED FROM NEW 1000A MG&E SERVICE. PUMP IS SIZED AS A BASIS OF DESIGN ONLY. COORDINATE EXACT FINAL PUMP SIZE AND ANY/ALL ELECTRICAL REQUIREMENTS WITH FIRE PROTECTION CONTRACTOR. PROVIDE FIRE PUMP ALARM AND SIGNALS AS REQUIRED BY NFPA 20;
   - PUMP OR MOTOR RUNNING
   - LOSS OF PHASE
   - PHASE REVERSAL
   - CONTROLLER OR SYSTEM TROUBLE (GROUND-FAULT, PRESSURE-SENSING, VARIABLE SPEED TROUBLE, FAIL-TO-START)
2. TYPICAL, PROVIDE A WIREMOLD #2000 SERIES PLUGMOLD. CIRCUIT AS INDICATED

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

HEIN Engineering Group

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

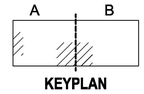
BID SET	9/15/2023

REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	10/13/2023

DRAWN BY	EP
CHECKED BY	MK

POWER NEW WORK
ENLARGED PLANS - 3829
MAINT. BLDG. .



KEYPLAN

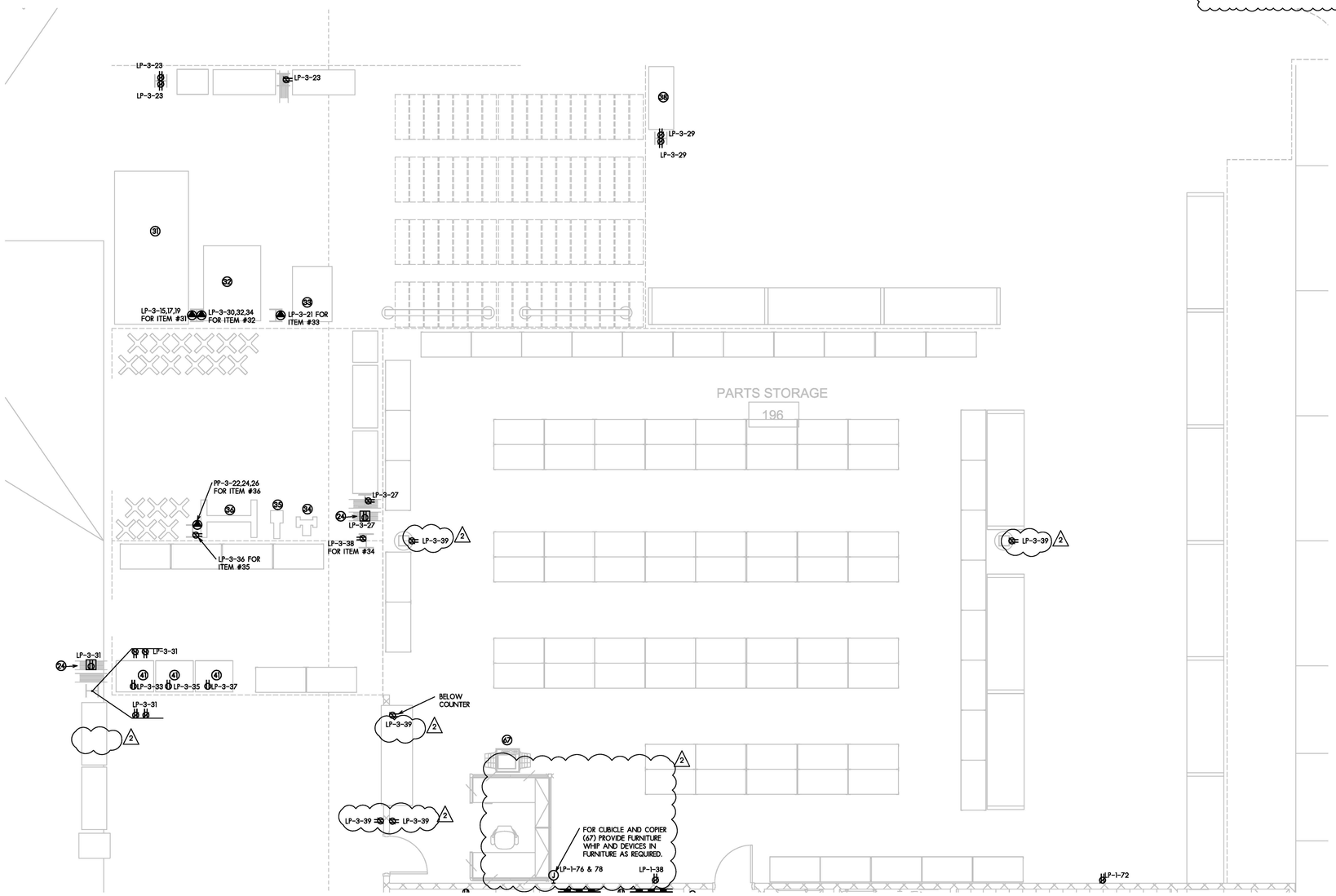
E200C

POWER GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
3. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
4. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTABLE FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
5. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN ALL FINISHED AREAS. IN UNFINISHED AREAS (MECH. ROOMS, ETC.) ALL CONDUIT AND WIRING MUST BE HIDDEN FROM VIEW AS MUCH AS POSSIBLE AND MOUNTED TIGHT TO BAR JOISTS, ETC. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH PAINTED CEILING COLOR.
6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.

2

7. REFER TO OWNER/OWNERS VENDORS EQUIPMENT SCHEDULES AND PLANS FOR ALL EXACT EQUIPMENT LOCATIONS AND ELECTRICAL REQUIREMENTS. ALL EXACT/FINAL EQUIPMENT ELECTRICAL REQUIREMENTS SHALL BE COORDINATED PRIOR TO ROUGH-IN. ANY/ALL ASSOCIATED ELECTRICAL EQUIPMENT REQUIRED FOR THESE CONNECTIONS SHALL BE CONFIRMED IN ADVANCE OF PURCHASING.
8. E.C. SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING THE ROUGH-INS, CONSISTING OF EMPTY JUNCTION BOXES AND CONDUITS, AS REQUIRED FOR ALL LOW VOLTAGE SYSTEMS DEVICES/EQUIPMENT SHOWN ON THE TECHNOLOGY PLANS (SHEETS Q001 – Q701). COORDINATE ALL REQUIREMENTS WITH TECHNOLOGY CONTRACTORS.
9. NOTE THAT THE BUILDING CONSISTS OF AREAS UTILIZED FOR COMMERCIAL GARAGES, REPAIR AND STORAGE. AS A RESULT, ELECTRICAL CONTRACTOR SHALL FIELD VERIFY ANY/ALL AREAS CLASSIFIED AS COMMERCIAL GARAGE, REPAIR & STORAGE PER NEC 511. IN THESE AREAS, ANY/ALL ELECTRICAL WORK WITHIN SHALL COMPLY WITH NEC 511.



1 SHOP AND PARTS
SCALE: 1/4" = 1'-0"

N

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ENLARGED PLANS - 3829
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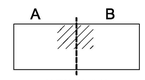

KEYPLAN

E200D

POWER GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
3. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
4. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTABLE FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
5. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN ALL FINISHED AREAS. IN UNFINISHED AREAS (MECH. ROOMS, ETC.) ALL CONDUIT AND WIRING MUST BE HIDDEN FROM VIEW AS MUCH AS POSSIBLE AND MOUNTED TIGHT TO BAR JOISTS, ETC. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH PAINTED CEILING COLOR.
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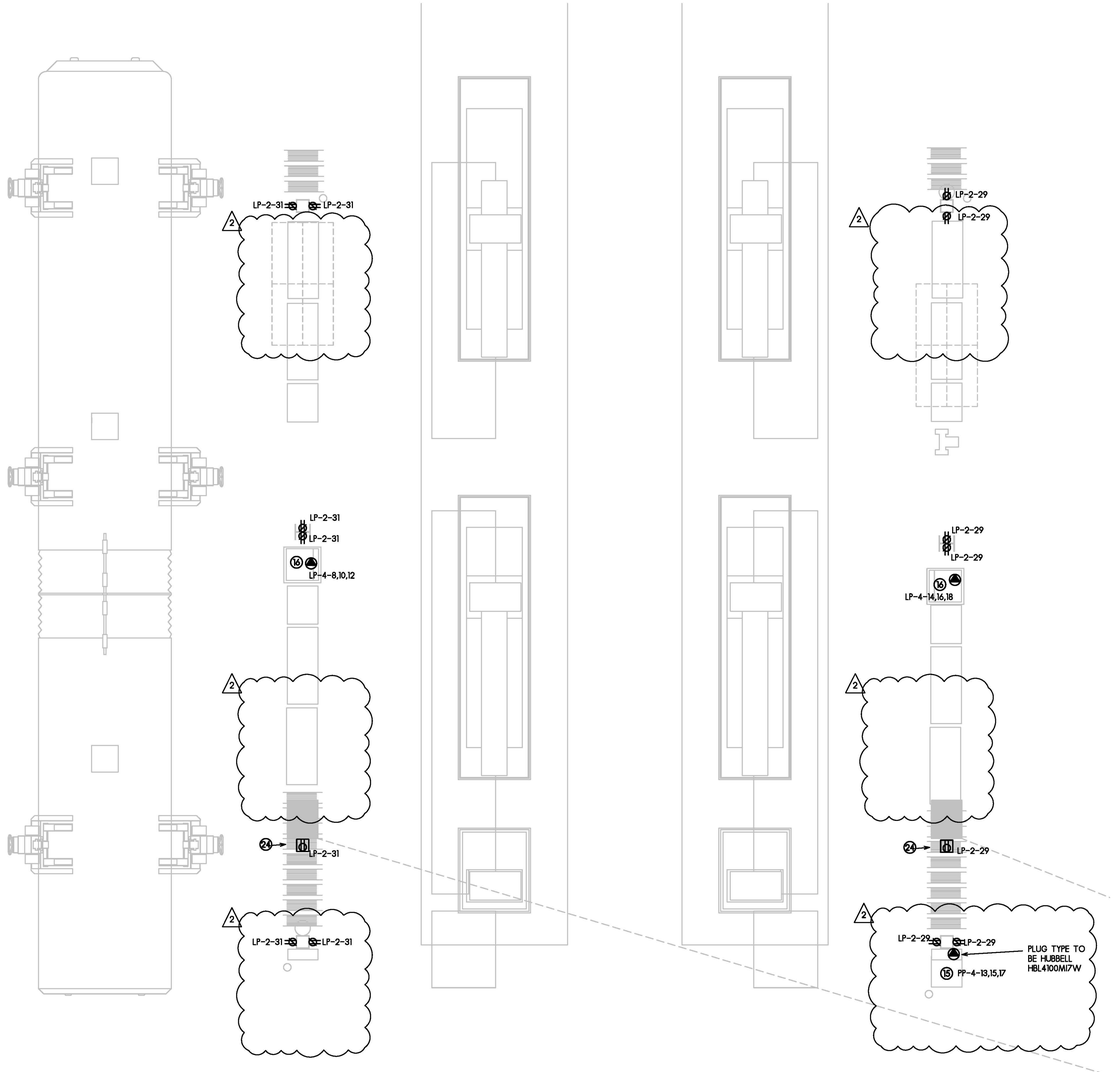
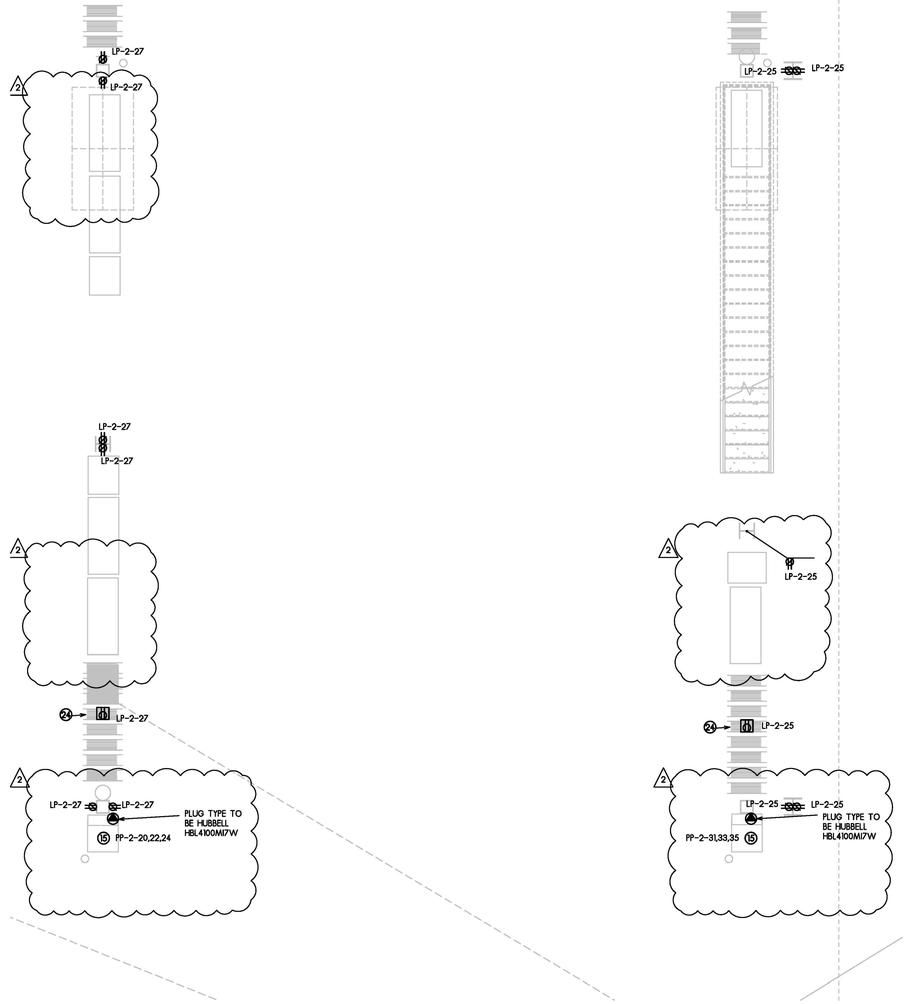


2 WORK BAYS
SCALE: 1/4" = 1'-0"



1 WORK BAY WITH ROOF ACCESS
SCALE: 1/4" = 1'-0"

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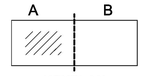

KEYPLAN

E200E

PANEL SCHEDULE GENERAL NOTES:

1. THE PANEL SCHEDULES ON THIS SHEET REFLECT APPROXIMATE NEW WORK CONDITIONS AND ARE INCLUDED TO ASSIST IN COMMUNICATING AVAILABLE AND NEW WORK CIRCUITRY WITHIN THE BUILDING. ANY/ALL CIRCUITRY SHALL BE FIELD VERIFIED DURING CONSTRUCTION TO DETERMINE AVAILABILITY FOR POTENTIAL USE/REUSE. PANEL SCHEDULES FOR ANY/ALL NEW PANELS PROVIDED AS PART OF THIS PROJECT ARE ALSO REFLECTED ON THIS SHEET.

PANEL MSB-1200A — REVISED SCHEDULE

VOLTS 277/480 V — PHASE 3 Ø — # WIRE 4 W

DESCRIPTION	FUSIBLE SWITCH SIZE (A)	P	FUSE (A)	CONNECTED KVA	CONNECTED AMP	DEMAND KVA	DEMAND AMP	REMARKS
EXISTING LOAD	100	3						
EXISTING LOAD	150	3						
EXISTING LOAD	200	3						
EXISTING LOAD	90	3						
EXISTING LOAD	150	3						
EXISTING LOAD	100	3						
EXISTING LOAD (FOR NEWFLYER)	400	3						
TRANSFORMER T-5	125	3						
PP-4	400	3						

BUS RATING 1200 A — SHORT CIRCUIT CURRENT RATING: FIELD VERIFY
MAIN BREAKER 1200 A — A.I.C.: FIELD VERIFY

PANEL PP-1 (FED FROM MDP) — REVISED SCHEDULE

VOLTS 277/480 V — PHASE 3 Ø — # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
EXISITNG LOAD			20	3	1	4,872			2	20	1			BUILDING & GROUNDS LIGHTS
-			-	-	3		2,088		4	20	1			PARTS STORAGE LIGHTS
-			-	-	5				6	20	1			SPARE
EXISTING LOAD			20	3	7				8	20	1			SPARE
-			-	-	9				10	20	1			EXISTING LOAD
-			-	-	11				12	20	1			EXISTING LOAD
EXISTING LOAD			20	1	13				14	20	3			EXISTING LOAD
EXISTING LOAD			20	1	15				16	-	-			-
EXISTING LOAD			20	1	17				18	-	-			-
EXISTING LOAD			20	1	19				20	20	3			EXISTING LOAD
EXISTING LOAD			20	1	21				22	-	-			-
EXISTING LOAD			20	1	23				24	-	-			-
EXISTING LOAD			20	1	25				26	20	1			SPARE (OFF)
NEW OFFICE SPACE LIGHTING					27		923		28					SPACE
SPACE					29				30					SPACE
SPACE					31				32					SPACE
SPACE					33				34					SPACE
SPACE					35				36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

BUS RATING 225 A
FEED THRU LUGS A

PANEL LP-1 (FED FROM XFMR T-1) (SEC 1) — REVISED SCHEDULE

VOLTS 120/208 V — PHASE 3 Ø — # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
EXISTING LOAD			20	1	1				2	20	1			EXISTING LOAD
EXISTING LOAD			20	1	3				4	20	1			EXISTING LOAD
EXISTING LOAD			20	1	5				6	20	1			EXISTING LOAD
EXISTING LOAD			20	1	7				8	20	1			EXISTING LOAD
EXISTING LOAD			20	1	9				10	20	1			EXISTING LOAD
EXISTING LOAD			20	1	11				12	20	1			EXISTING LOAD
EXISTING LOAD			20	1	13				14	20	1			EXISTING LOAD
EXISTING LOAD			20	1	15				16	20	1			EXISTING LOAD
EXISTING LOAD			20	1	17				18	20	1			EXISTING LOAD
EXISTING LOAD			20	1	19				20	20	1			EXISTING LOAD
EXISTING LOAD			20	1	21				22	20	1			EXISTING LOAD
EXISTING LOAD			20	1	23				24	20	1			EXISTING LOAD
EXISTING LOAD			20	1	25				26	20	1			EXISTING LOAD
EXISTING LOAD			20	1	27		720		28	20	1			NEW TV RECP.
EXISTING LOAD			20	1	29			720	30	20	1		1,080	ELEC SHOP PLUG MOLD
EXISTING LOAD			20	1	31	1,440			32	20	1		1,080	ELEC SHOP PLUG MOLD
EXISTING LOAD			20	1	33		1,400		34	20	1		1,080	ELEC SHOP PLUG MOLD
EXISTING LOAD			20	1	35			1,440	36	20	1		1,080	ELEC SHOP PLUG MOLD
EXISTING LOAD			20	1	37	1,260			38	20	1		1,080	ELEC SHOP RECP.
EXISTING LOAD			20	1	39		1,034		40	20	1		1,034	FUEL PUMP AND FUEL MANAGENM
SPACE					41				42	20	1			SPARE (OFF)

BUS RATING 200 A
MAIN BREAKER 200 A

PANEL LP-1 (FED FROM XFMR T-1) (SEC 2) — REVISED SCHEDULE

VOLTS 120/208 V — PHASE 3 Ø — # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
EXISTING LOAD			20	1	43				44	20	1			EXISTING LOAD
EXISTING LOAD			20	1	45				46	20	1			EXISTING LOAD
EXISTING LOAD			20	1	47				48	20	1			EXISTING LOAD
EXISTING LOAD			20	1	49				50	20	1			EXISTING LOAD
EXISTING LOAD			20	1	51				52	20	1			EXISTING LOAD
EXISTING LOAD			20	1	53				54	20	1			EXISTING LOAD
EXISTING LOAD			20	1	55				56	20	1			EXISTING LOAD
EXISTING LOAD			20	1	57				58	20	1			EXISTING LOAD
EXISTING LOAD			20	1	59				60	20	1			EXISTING LOAD
EXISTING LOAD			20	1	61				62	20	1			EXISTING LOAD
EXISTING LOAD			20	1	63				64	20	1			EXISTING LOAD
EXISTING LOAD			20	1	65				66	25	1			EXISTING LOAD
EXISTING LOAD			20	1	67				68	60	2			EXISTING LOAD
EXISTING LOAD			20	1	69				70		-			-
EXISTING LOAD			20	1	71			1,440	72	20	1		1,080	COMFORT, TOILET 184, LOCKER RE
EXISTING LOAD			20	3	73	540			74	20	1		540	OFFICE 181 RECP.
-			-	-	75		180		76	20	1		180	EQUIP. # 67 COPIER
-			-	-	77			180	78	20	1		180	EXISTING SPACE
EXISTING LOAD			20	3	79	1,620			80	20	1		1,620	BLDG AND GROUNDS RECP
-			-	-	81		55		82	15	1		55	CP-1
-			-	-	83				84					SPACE

BUS RATING 400 A
FEED THRU LUGS 400 A

PANEL PP-2 (FED FROM MDP) — REVISED SCHEDULE

VOLTS 277/480 V — PHASE 3 Ø — # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
EXISTING LOAD			60	3	1				2	20	3			EXISTING LOAD
-			-	-	3				4	-	-			-
-			-	-	5				6	-	-			-
MAINT. LIGHTS	3,132		20	1	7	3,132			8	20	1			SPARE
SPARE			20	1	9				10	20	1			EXISTING LOAD
EXISTING LOAD			20	3	11				12	20	1			EXISITNG LOAD (OFF)
-			-	-	13				14	20	1			EXISTING SPARE (OFF)
-			-	-	15				16	20	1			EXISTING SPARE (OFF)
BATTERY, FLUIDS/COMP, FIRE	244		20	1	17			244	18	20	1			EXISTING SPARE (OFF)
EXISTING SPACE					19	18,000			20	90	3		18,000	EV BATTERY TENDER
EXISTING SPACE					21		18,000		22	-	-		18,000	-
EXISTING SPACE					23			18,000	24	-	-		18,000	-
OVERHEAD CRANE				3	25				26					EXISTING SPACE
-			-	-	27				28					EXISTING SPACE
-			-	-	29				30					EXISTING SPACE
EXISTING SPACE					31				32					EXISTING SPACE
EXISTING SPACE			-	-	33				34					EXISTING SPACE
EXISTING SPACE			-	-	35				36					EXISTING SPACE
EXISTING SPACE					37				38					EXISTING SPACE
EXISTING SPACE					39				40					EXISTING SPACE
EXISTING SPACE					41				42					EXISTING SPACE

BUS RATING 225 A
FEED THRU LUGS - A

PANEL LP-2 (FED FROM XFMR T-2) — REVISED SCHEDULE

VOLTS 120/208 V — PHASE 3 Ø — # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
EXISTING LOAD			20	1	1				2	20	2			EXISTING LOAD
EXISTING LOAD			20	1	3				4	-	-			-
EXISTING LOAD			20	1	5				6	20	1			EXISTING LOAD
EXISTING LOAD			20	1	7				8	20	1			EXISTING LOAD
EXISTING LOAD			20	1	9				10	20	1			EXISTING LOAD
EXISTING LOAD			20	1	11				12	20	1			EXISTING LOAD
EXISTING LOAD			20	1	13				14	20	1			EXISTING LOAD
EXISTING LOAD			20	1	15				16	20	1			EXISTING LOAD
EXISTING LOAD			20	1	17				18	20	1			EXISTING LOAD
EXISTING LOAD			20	1	19				20	20	1			EXISTING LOAD
SPARE (ON)			20	1	21				22	20	1			EXISTING LOAD
SPARE (ON)			20	1	23				24	20	2			EXISTING LOAD
MAINT. BAY RECP.	1,080		20	1	25	1,080			26	-	-			EXISTING LOAD
MAINT. BAY RECP.	1,440		20	1	27		1,440		28	20	2			EXISTING LOAD
MAINT. BAY RECP.	1,440		20	1	29			1,440	30	20	1			EXISTING LOAD
MAINT. BAY RECP.	1,440		20	1	31	1,440			32	20	1			EXISTING LOAD
EF-21	180		20	1	33		180		34					EXISTING SPACE
ERV-3	2,000		25	2	35			2,000	36					EXISTING SPACE
-	2,000		-	-	37	2,000			38					EXISTING SPACE
EXISTING SPACE					39				40					EXISTING SPACE
EXISTING SPACE					41				42					EXISTING SPACE

BUS RATING 100 A
FEED THRU LUGS 100 A

PANEL LP-3 (FED FROM XFMR T-3) — REVISED SCHEDULE

VOLTS 120/208 V — PHASE 3 Ø — # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
EXISTING LOAD			20	1	1				2	20	1			EXISTING LOAD
EXISTING LOAD			20	1	3				4	20	1			EXISTING LOAD
EXISTING LOAD			20	1	5				6	20	1			EXISTING LOAD
EXISTING LOAD			20	1	7				8	20	1			EXISTING LOAD
EXISTING LOAD			20	1	9				10	20	1			EXISTING LOAD
SPARE (ON)			20	1	11				12	20	1			EXISTING LOAD
SPARE (ON)			20	1	13				14	20	1			EXISTING LOAD
TIRE CAROUSEL	1,040		20	3	15		1,040		16	20	1			EXISTING LOAD
-	1,040		-	-	17			1,040	18	20	1			EXISTING LOAD
-	1,040		-	-	19	1,040			20	20	1			EXISTING LOAD
TIRE INFLATION CAGE	1,500		20	1	21		1,500		22	20	1			EXISTING LOAD
SPARE			20	1	23				24	20	1			EXISTING LOAD
CONVIENENCE RECP.	1,080		20	1	25	1,080			26	20	1			EXISTING LOAD
RECP.	900		20	1	27		1,080		28	20	1		180	EF-20
RECEIVING RECP.	720		20	1	29			1,880	30	20	3		1,160	TIRE CHANGER
RECP.	1,080		20	1	31	2,240			32	-	-		1,160	-
EQUIP. #41 VENDING MACH	1,500		20	1	33		2,660		34	-	-		1,160	-
EQUIP. #41 VENDING MACH	1,500		20	1	35			3,000	36	20	1		1,500	DRILL PRESS
EQUIP. #41 VENDING MACH	1,500		20	1	37	3,000			38	20	1		1,500	BENCH GRINDER
PARTS STOR. RECP	720		20	1	39		720		40					EXISTING SPACE
EXISTING SPACE					41				42					EXISTING SPACE

BUS RATING 100 A
FEED THRU LUGS 100 A

PANEL PP-3 (FED FROM MDP) — REVISED SCHEDULE

VOLTS 277/480 V — PHASE 3 Ø — # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
EXISTING LOAD			60	3	1				2	20	3			EXISTING LOAD
-			-	-	3				4	-	-			-
-			-	-	5				6	-	-			-
MAINT. LIGHTS			20	1	7	3,132			8	20	3			EXISTING LOAD
MAINT. LIGHTS			20	1	9		5,220		10	-	-			-
SPARE			20	1	11				12	-	-			-
SPARE			20	1	13				14	20	1			EXSITNG LOAD
EXISTING LOAD			20	1	15		1,859		16	20	3			EF-22-1
EXISTING LOAD			20	1	17			1,859	18	-	-			-
EXISTING LOAD			60	3	19	1,859			20	-	-			-
-			-	-	21		748		22	20	3		748	SHOP PRESS
-			-	-	23			748	24	-	-		748	-
ERV-1			20	3	25	2,789			26	-	-		748	-
-			-	-	27		2,789		28					SPACE
-			-	-	29			2,789	30					SPACE
EV BATTERY TENDER	18,000		90	3	31	18,000			32					SPACE
-	18,000		-	-	33		18,000		34					SPACE
-	18,000		-	-	35			18,000	36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

PHASE
BUS RATING 225 A
FEED THRU LUGS - A

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

HEIN Engineering Group

SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINGTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:
BID SET 9/15/2023

REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	10/13/2023

DRAWN BY EP
CHECKED BY MK

EXISTING REVISED PANEL SCHEDULES - 3829 MAINT. BLDG.

2

E300A

PANEL SCHEDULE GENERAL NOTES:

1. THE PANEL SCHEDULES ON THIS SHEET REFLECT APPROXIMATE NEW WORK CONDITIONS AND ARE INCLUDED TO ASSIST IN COMMUNICATING AVAILABLE AND NEW WORK CIRCUITRY WITHIN THE BUILDING. ANY/ALL CIRCUITRY SHALL BE FIELD VERIFIED DURING CONSTRUCTION TO DETERMINE AVAILABILITY FOR POTENTIAL USE/REUSE. PANEL SCHEDULES FOR ANY/ALL NEW PANELS PROVIDED AS PART OF THIS PROJECT ARE ALSO REFLECTED ON THIS SHEET.

2

PANEL PP-4

VOLTS 277/480 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
TRANSFORMER T-4	25,000		125	3	1	50,761			2	125	3		25,761	AC-2-2 COMPRESSOR
-	25,000		-	-	3		50,761		4	-	-		25,761	
-	25,000		-	-	5			50,761	6	-	-		25,761	
AC-2-1 COMPRESSOR	25,761		125	3	7	27,295			8	20	3		1,534	RAD-2-1, RAD-2-2 AIR DRYERS
-	25,761		-	-	9		27,295		10	-	-		1,534	-
-	25,761		-	-	11			27,295	12	-	-		1,534	-
JP-2	4,307		20	3	13	4,307			14	20	1			SPARE
-	4,307		-	-	15		4,307		16	20	1			SPARE
-	4,307		-	-	17			4,307	18	20	1			SPARE
SPACE			-	-	19				20					SPACE
SPACE			-	-	21				22					SPACE
SPACE			-	-	23				24					SPACE
SPACE			-	-	25				26					SPACE
SPACE			-	-	27				28					SPACE
SPACE			-	-	29				30					SPACE
SPACE					31				32					SPACE
SPACE					33				34					SPACE
SPACE					35				36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

PHASE

BUS RATING 400 A
FEED THRU LUGS A

PANEL LP-4

VOLTS 120/208 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
PORTABLE LIFT CHRG STAT.	1,080		20	1	1	2,160			2	20	1		1,080	BATTERY CHAGING BENCH #42
PORTABLE LIFT CHRG STAT.	1,080		20	1	3		2,160		4	20	1		1,080	CONV. RECP.
PORTABLE LIFT CHRG STAT.	1,080		20	1	5			2,160	6	20	1		1,080	OIL FILTER CRUSHER
PORTABLE LIFT CHRG STAT.	1,080		20	1	7	6,483			8	60	3		5,403	BUS LIFT
EWH-2	2,000		20	3	9		7,403		10	-	-		5,403	
-	2,000		-	-	11			7,403	12	-	-		5,403	
-	2,000		-	-	13	7,403			14	60	3		5,403	BUS LIFT
CP-2	39		15	1	15		5,442		16	-	-		5,403	
SPARE			20	1	17			5,403	18	-	-		5,403	
SPARE			20	1	19				20	20	1			SPARE
SPARE			20	1	21				22	20	1			SPARE
SPARE			20	1	23				24	20	1			SPARE
SPARE			20	1	25				26	20	1			SPARE
SPARE			20	1	27				28	20	1			SPARE
SPARE			20	1	29				30	20	1			SPARE
SPARE			20	1	31				32	20	1			SPARE
SPARE			20	1	33				34	20	1			SPARE
SPARE			20	1	35				36	20	1			SPARE
SPARE			20	1	37				38	20	1			SPARE
SPARE			20	1	39				40	20	1			SPARE
SPARE			20	1	41				42	20	1			SPARE

BUS RATING 225 A
FEED THRU LUGS A

PANEL LP-5

VOLTS 120/208 V | PHASE 3 Ø | # WIRE 4 W

DESCRIPTION	LOAD (VA)	TY	BREAKER AMP	P	CKT NO	PHASE A	PHASE B	PHASE C	CKT NO	BREAKER AMP	P	TY	LOAD (VA)	DESCRIPTION
FC-1	10,807		85	2	1	16,049			2	35	2		5,242	HP-1
-	10,807		-	-	3		16,049		4	-	-		5,242	-
BLDG. GROUNDS RECP	1,080		20	1	5			2,160	6	20	1		1,080	BREAK 151 FRIDGE RECP.
BLDG. GROUNDS RECP	1,080		20	1	7	2,160			8	20	1		1,080	BREAK 151 RECP.
BLDG. GROUNDS RECP	1,080		20	1	9		4,080		10	35	3		3,000	EWH-1
CORRIDOR 180 RECP.	1,080		20	1	11			4,080	12	-	-		3,000	-
CORRIDOR 180 RECP.	1,080		20	1	13	4,080			14	-	-		3,000	-
SPARE			20	1	15				16	20	1			SPARE
SPARE			20	1	17				18	20	1			SPARE
SPARE			20	1	19				20	20	1			SPARE
SPARE			20	1	21				22	20	1			SPARE
SPARE			20	1	23				24	20	1			SPARE
SPARE			20	1	25				26	20	1			SPARE
SPARE			20	1	27				28	20	1			SPARE
SPACE			-	-	29				30					SPACE
SPACE					31				32					SPACE
SPACE					33				34					SPACE
SPACE					35				36					SPACE
SPACE					37				38					SPACE
SPACE					39				40					SPACE
SPACE					41				42					SPACE

BUS RATING 225 A
FEED THRU LUGS A

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

HEIN Engineering Group

SATELLITE BUS
FACILITY REMODEL

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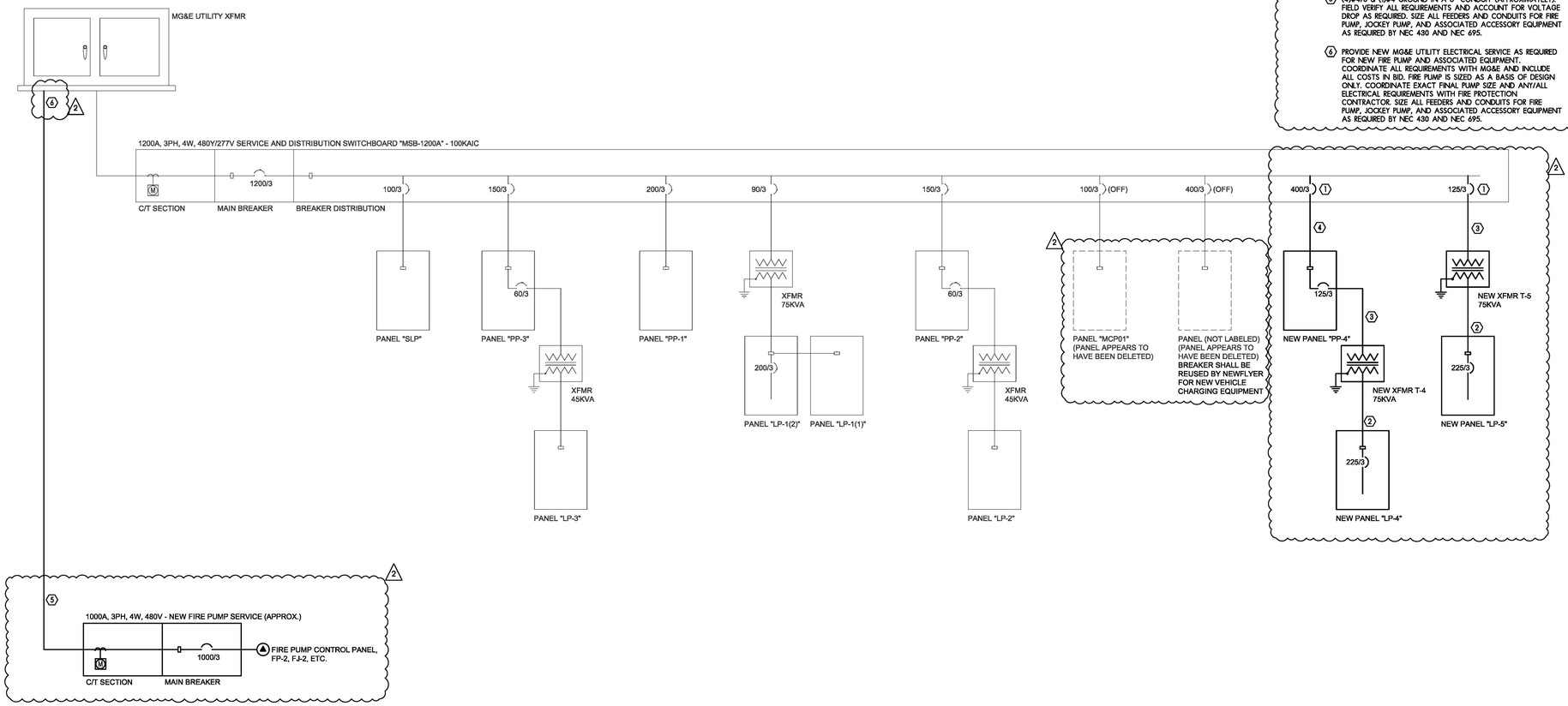
NEW PANEL SCHEDULES - 3829 MAINT. BLDG.

E300B



1 E400 3829 MAINTENANCE BUILDING - ONE LINE DIAGRAM

SCALE: NONE

Engberg Anderson ARCHITECTS

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HEG HEIN Engineering Group

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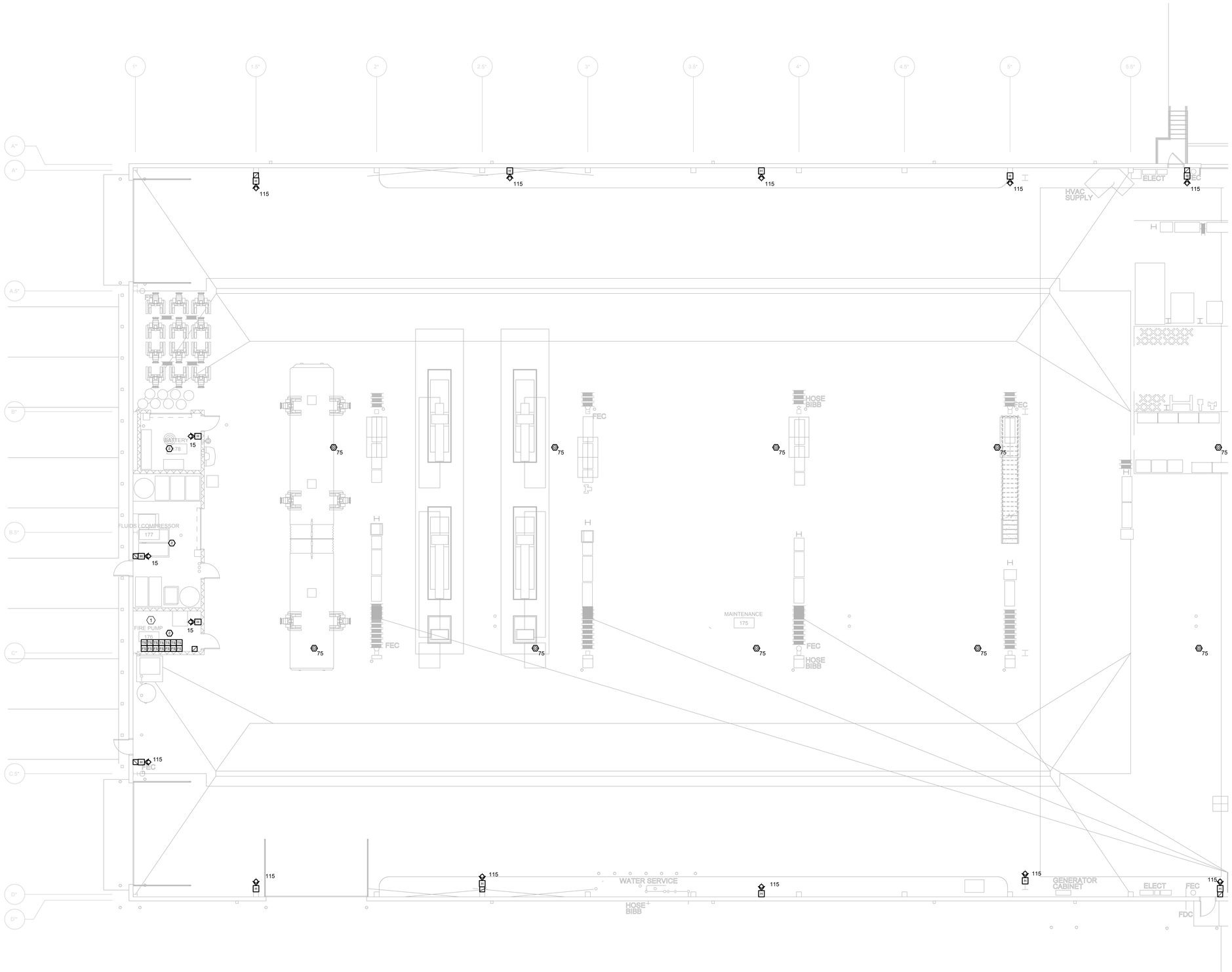
ONE LINE DIAGRAM - 3829 MAINT. BLDG.

E400



FIRE ALARM NEW WORK PLAN - 3829 MAINT. BLDG. SECTION A

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

N

FIRE ALARM GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
3. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
4. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTABLE FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
5. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN ALL FINISHED AREAS. IN UNFINISHED AREAS (MECH. ROOMS, ETC.) ALL CONDUIT AND WIRING MUST BE HIDDEN FROM VIEW AS MUCH AS POSSIBLE AND MOUNTED TIGHT TO BAR JOISTS, ETC. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH PAINTED CEILING COLOR.
6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
7. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION UNTIL NEW SYSTEM IS INSTALLED, INSPECTED, APPROVED, AND ONLINE/OPERATIONAL. REMOVE ANY/ALL EXISTING FIRE ALARM DEVICES ONCE THE NEW SYSTEM IS ONLINE/OPERATIONAL. PROVIDE FIRE WATCH, ETC. AS REQUIRED BY LOCAL AHJ DURING CONSTRUCTION.
8. ALL FIRE ALARM CONDUIT AND BOXES SHALL BE COLOR RED.

FIRE ALARM KEYED NOTES:

1. PROVIDE FIRE PUMP ALARM AND SIGNALS AS REQUIRED BY NFPA 20:
   - PUMP OR MOTOR RUNNING
   - LOSS OF PHASE
   - PHASE REVERSAL
   - CONTROLLER OR SYSTEM TROUBLE (GROUND-FAULT, PRESSURE-SENSING, VARIABLE SPEED TROUBLE, FAIL-TO-START.)

Engberg Anderson ARCHITECTS
MILWAUKEE | MADISON | CHICAGO

HEG HEIN Engineering Group

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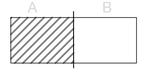
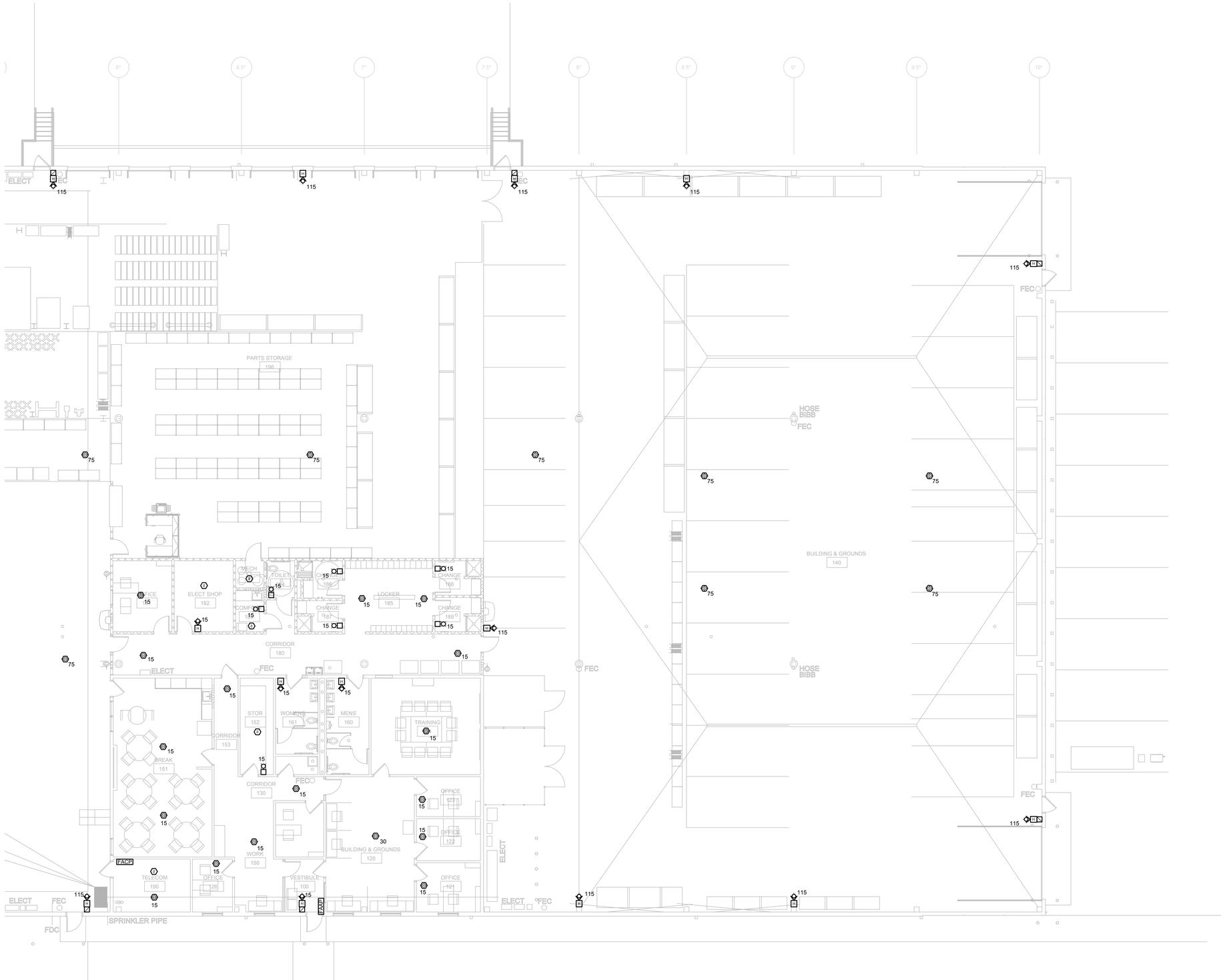
FIRE ALARM NEW WORK PLAN - 3829 MAINT. BLDG. - SECTION A



KEYPLAN

2 THIS SHEET ADDED

E500A



1 FIRE ALARM NEW WORK - 3829 MAINT. BLDG. - SECTION B
SCALE: 1/8" = 1'-0"

FIRE ALARM GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
3. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
4. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTABLE FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
5. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN ALL FINISHED AREAS. IN UNFINISHED AREAS (MECH. ROOMS, ETC.) ALL CONDUIT AND WIRING MUST BE HIDDEN FROM VIEW AS MUCH AS POSSIBLE AND MOUNTED TIGHT TO BAR JOISTS, ETC. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH PAINTED CEILING COLOR.
6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
7. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION UNTIL NEW SYSTEM IS INSTALLED, INSPECTED, APPROVED, AND ONLINE/OPERATIONAL. REMOVE ANY/ALL EXISTING FIRE ALARM DEVICES ONCE THE NEW SYSTEM IS ONLINE/OPERATIONAL. PROVIDE FIRE WATCH, ETC. AS REQUIRED BY LOCAL AHJ DURING CONSTRUCTION.
8. ALL FIRE ALARM CONDUIT AND BOXES SHALL BE COLOR RED.

FIRE ALARM KEYED NOTES:

(1) PROVIDE FIRE PUMP ALARM AND SIGNALS AS REQUIRED BY NFPA 20:
- PUMP OR MOTOR RUNNING
- LOSS OF PHASE
- PHASE REVERSAL
- CONTROLLER OR SYSTEM TROUBLE (GROUND-FAULT, PRESSURE-SENSING, VARIABLE SPEED TROUBLE, FAIL-TO-START.)

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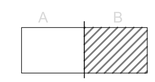
FIRE ALARM NEW WORK PLAN - 3829 MAINT. BLDG. - SECTION B



KEYPLAN

2 THIS SHEET ADDED

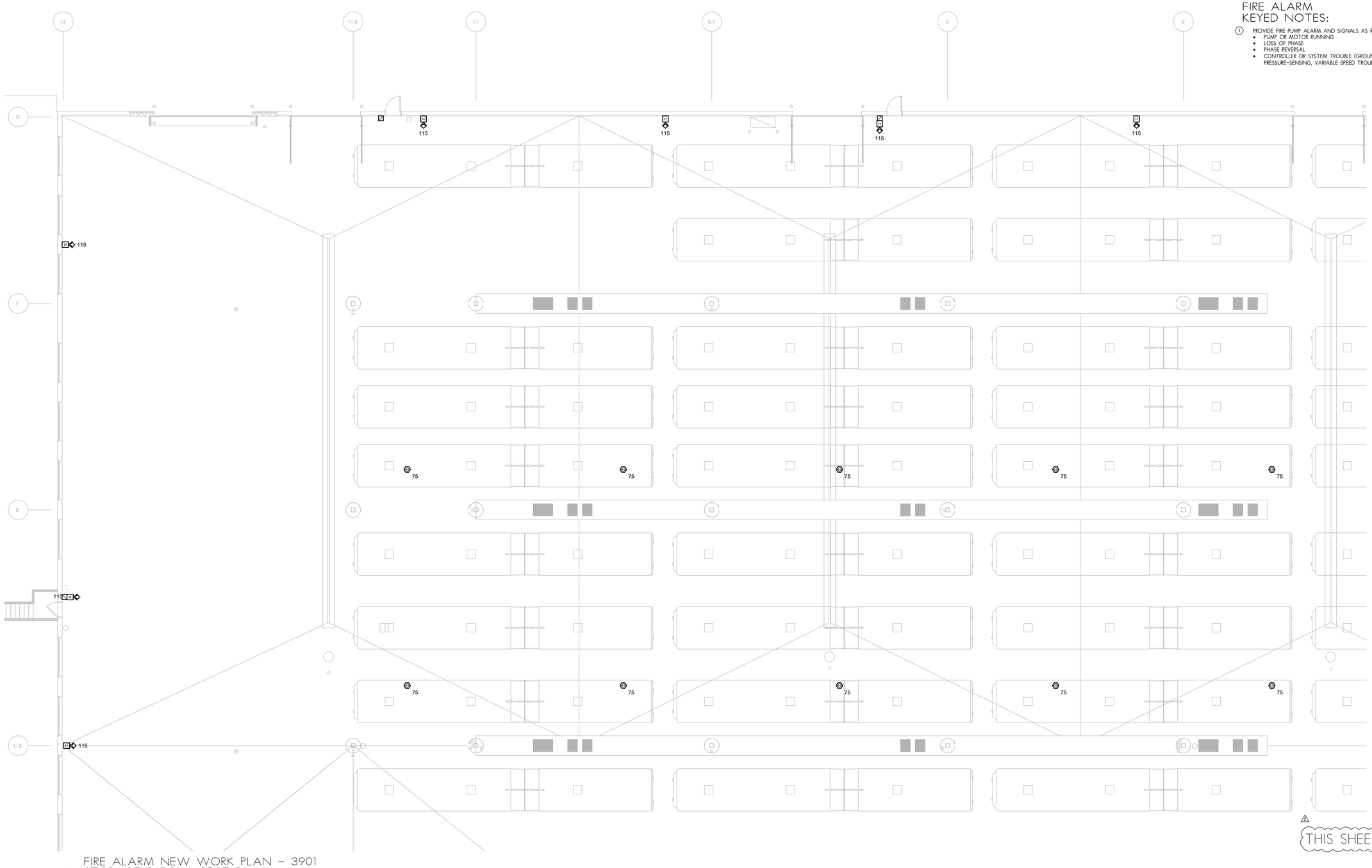
E500B

FIRE ALARM GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
3. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
4. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTABLE FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
5. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN ALL FINISHED AREAS. IN UNFINISHED AREAS (MECH. ROOMS, ETC.) ALL CONDUIT AND WIRING MUST BE HIDDEN FROM VIEW AS MUCH AS POSSIBLE AND MOUNTED TIGHT TO BAR JOISTS, ETC. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH PAINTED CEILING COLOR.
6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
7. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION UNTIL NEW SYSTEM IS INSTALLED, INSPECTED, APPROVED, AND ONLINE/OPERATIONAL. REMOVE ANY/ALL EXISTING FIRE ALARM DEVICES ONCE THE NEW SYSTEM IS ONLINE/OPERATIONAL. PROVIDE FIRE WATCH, ETC. AS REQUIRED BY LOCAL AHJ DURING CONSTRUCTION.
8. ALL FIRE ALARM CONDUIT AND BOXES SHALL BE COLOR RED.

FIRE ALARM KEYED NOTES:

(1) PROVIDE FIRE PUMP ALARM AND SIGNALS AS REQUIRED BY NFPA 20:
- PUMP OR MOTOR RUNNING
- LOSS OF PHASE
- PHASE REVERSAL
- CONTROLLER OR SYSTEM TROUBLE (GROUND-FAULT, PRESSURE-SENSING, VARIABLE SPEED TROUBLE, FAIL-TO-START.)



THIS SHEET ADDED

1 FIRE ALARM NEW WORK PLAN - 3901 STORAGE BLDG. - SECTION A
SCALE: 1/8" = 1'-0"

N

Engberg Anderson ARCHITECTS

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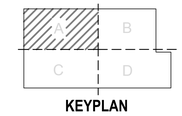
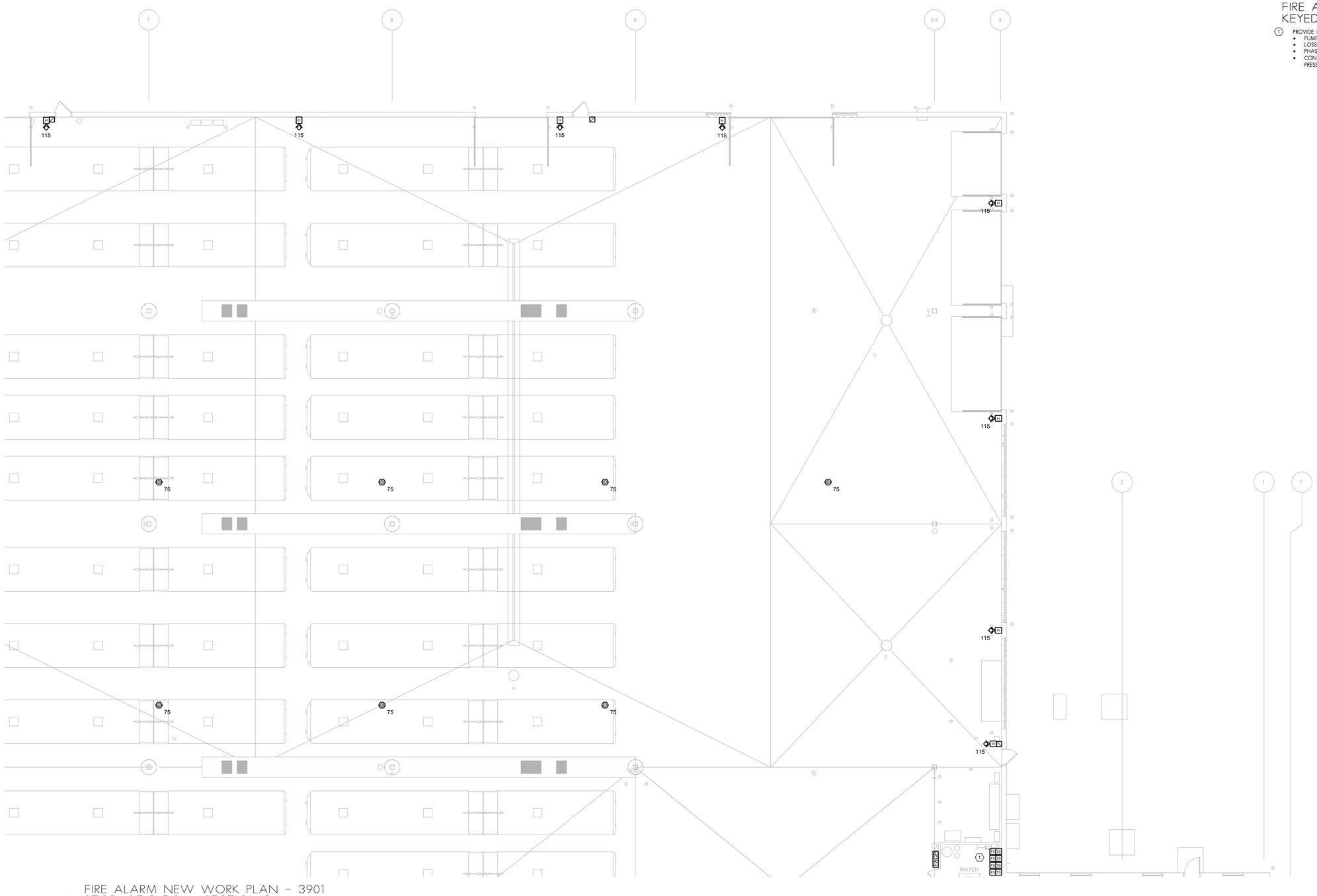
CHECKED BY	Checker

FIRE ALARM NEW WORK PLAN - 3901 STORAGE BLDG. - SECTION A



KEYPLAN

E501A



1 FIRE ALARM NEW WORK PLAN – 3901 STORAGE BLDG. – SECTION B
SCALE: 1/8" = 1'-0"

N

FIRE ALARM GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
3. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
4. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTABLE FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
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6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
7. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION UNTIL NEW SYSTEM IS INSTALLED, INSPECTED, APPROVED, AND ONLINE/OPERATIONAL. REMOVE ANY/ALL EXISTING FIRE ALARM DEVICES ONCE THE NEW SYSTEM IS ONLINE/OPERATIONAL. PROVIDE FIRE WATCH, ETC. AS REQUIRED BY LOCAL AHJ DURING CONSTRUCTION.
8. ALL FIRE ALARM CONDUIT AND BOXES SHALL BE COLOR RED.

FIRE ALARM KEYED NOTES:

(1) PROVIDE FIRE PUMP ALARM AND SIGNALS AS REQUIRED BY NFPA 20:
- PUMP OR MOTOR RUNNING
- LOSS OF PHASE
- PHASE REVERSAL
- CONTROLLER OR SYSTEM TROUBLE (GROUND-FAULT, PRESSURE-SENSING, VARIABLE SPEED TROUBLE, FAIL-TO-START.)

Engberg Anderson ARCHITECTS
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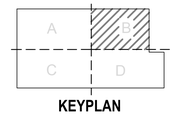
FIRE ALARM NEW WORK PLAN - 3901 STORAGE BLDG. - SECTION B



KEYPLAN

2 THIS SHEET ADDED

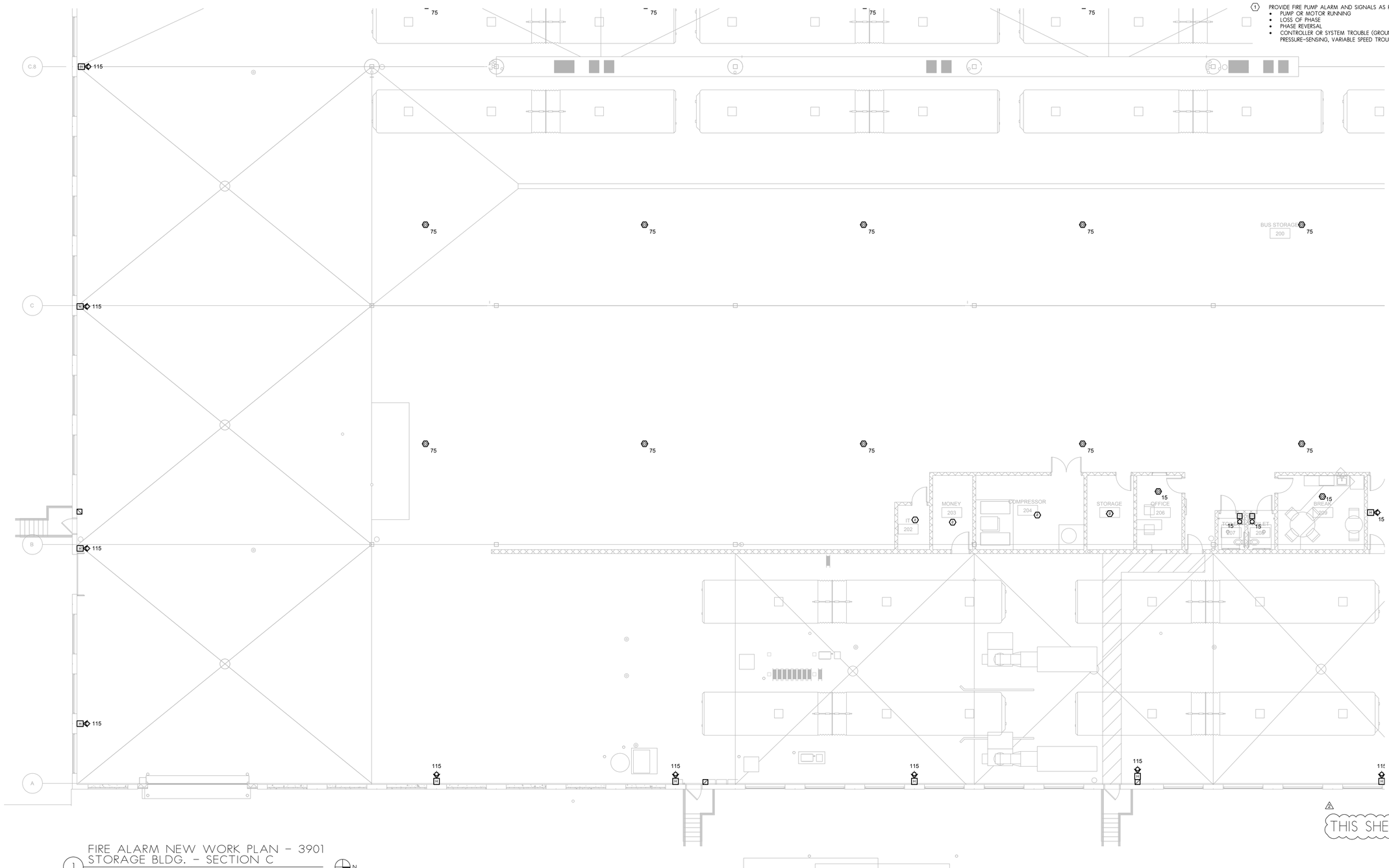
E501B

FIRE ALARM GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
3. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
4. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTABLE FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
5. ALL CONDUIT AND WIRING SHALL BE CONCEALED WITHIN ALL FINISHED AREAS. IN UNFINISHED AREAS (MECH. ROOMS, ETC.) ALL CONDUIT AND WIRING MUST BE HIDDEN FROM VIEW AS MUCH AS POSSIBLE AND MOUNTED TIGHT TO BAR JOISTS, ETC. EXPOSED CONDUIT SHALL BE PAINTED TO MATCH PAINTED CEILING COLOR.
6. ALL LOW VOLTAGE CABLES OR CONDUCTORS OPERATING AT LESS THAN 50 VOLTS SHALL BE IN ELECTRICAL METAL TUBING (EMT) AT A MINIMUM. NO FREE AIR CABLING IS ALLOWED.
7. MAINTAIN FIRE ALARM SYSTEM THROUGHOUT CONSTRUCTION UNTIL NEW SYSTEM IS INSTALLED, INSPECTED, APPROVED, AND ONLINE/OPERATIONAL. REMOVE ANY/ALL EXISTING FIRE ALARM DEVICES ONCE THE NEW SYSTEM IS ONLINE/OPERATIONAL. PROVIDE FIRE WATCH, ETC. AS REQUIRED BY LOCAL AHJ DURING CONSTRUCTION.
8. ALL FIRE ALARM CONDUIT AND BOXES SHALL BE COLOR RED.

FIRE ALARM KEYED NOTES:

1. PROVIDE FIRE PUMP ALARM AND SIGNALS AS REQUIRED BY NFPA 20:
   - PUMP OR MOTOR RUNNING
   - LOSS OF PHASE
   - PHASE REVERSAL
   - CONTROLLER OR SYSTEM TROUBLE (GROUND-FAULT, PRESSURE-SENSING, VARIABLE SPEED TROUBLE, FAIL-TO-START.)



THIS SHEET ADDED

FIRE ALARM NEW WORK PLAN - 3901 STORAGE BLDG. - SECTION C

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

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SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
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CITY OF MADISON

METRO TRANSIT

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MADISON, WI 53703

PROJECT NUMBER 213419.00

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REVISION FOR:

NO.	DESCRIPTION	DATE
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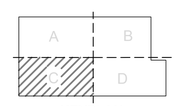
CHECKED BY	Checker

FIRE ALARM NEW WORK PLAN - 3901 STORAGE BLDG. - SECTION C



KEYPLAN

E501C

FIRE ALARM GENERAL NOTES:

1. REFER TO SHEET E001 FOR ALL SYMBOLS, ABBREVIATIONS, AND DETAILS.
2. VERIFY ALL MOUNTING HEIGHTS OF DEVICES ABOVE MILLWORK WITH ARCHITECTURAL PLANS.
3. WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.
4. POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTABLE FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR ALL LIGHTING CIRCUITS.
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8. ALL FIRE ALARM CONDUIT AND BOXES SHALL BE COLOR RED.

FIRE ALARM KEYED NOTES:

(1) PROVIDE FIRE PUMP ALARM AND SIGNALS AS REQUIRED BY NFPA 20:
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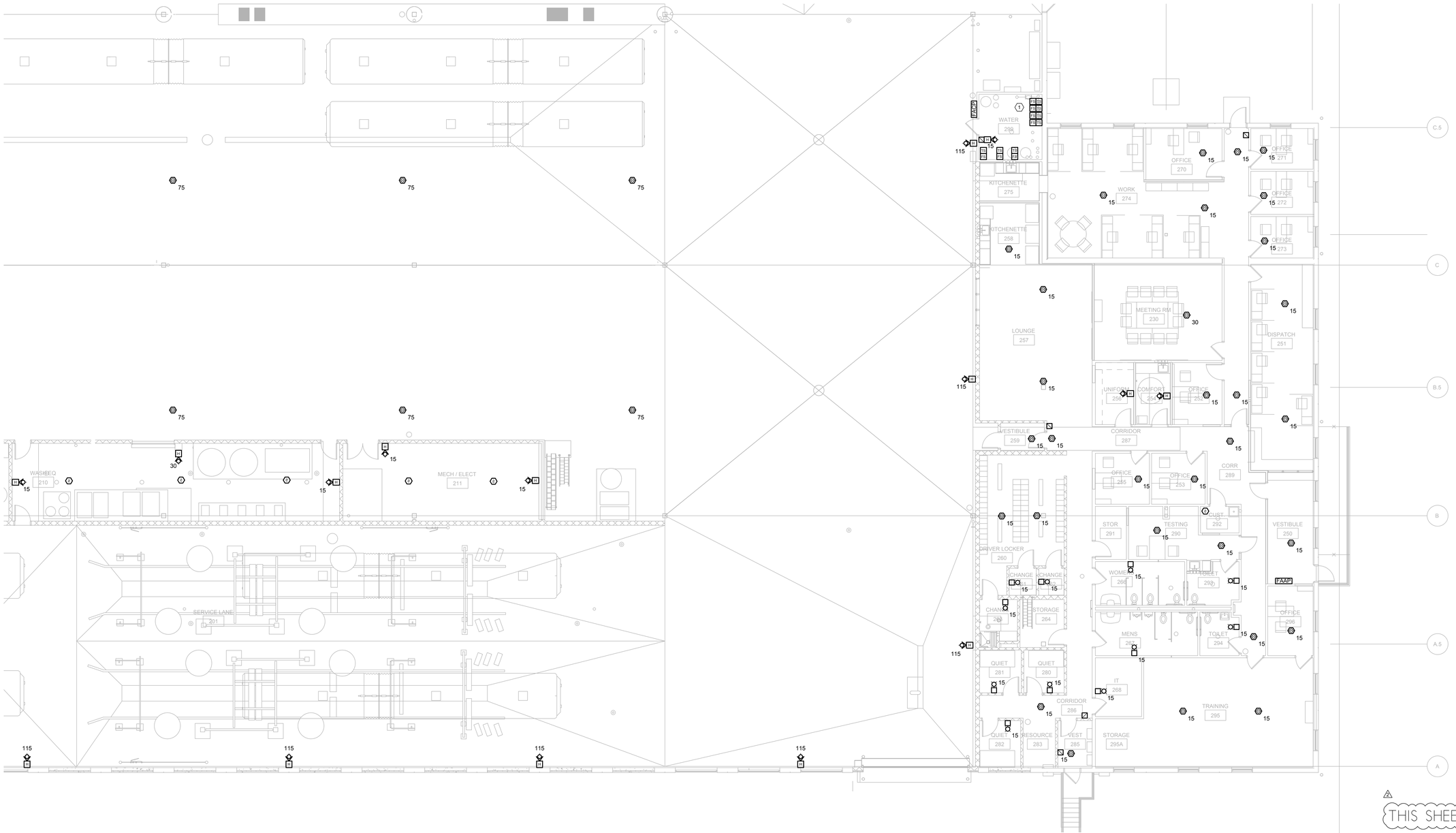
- LOSS OF PHASE
- PHASE REVERSAL
- CONTROLLER OR SYSTEM TROUBLE (GROUND-FAULT, PRESSURE-SENSING, VARIABLE SPEED TROUBLE, FAIL-TO-START.)



THIS SHEET ADDED

(1) FIRE ALARM NEW WORK PLAN - 3901 STORAGE BLDG. - SECTION D
SCALE: 1/8" = 1'-0"

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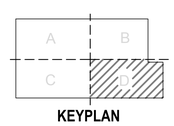
FIRE ALARM NEW WORK PLAN - 3901 STORAGE BLDG. - SECTION D



KEYPLAN

E501D

LIGHT FIXTURE SCHEDULE

TAG	DESCRIPTION	MOUNTING	VOLTAGE	INPUT WATTS	LAMP TYPE	MANUFACTURER	CATALOG NUMBER	NOTES
A	HIGH BAY	SUSPENDED	277	190	LED	CURRENT (GLI BRANDS)	ABC1430481DQQ41ACW	6
A1	HIGH BAY	SUSPENDED	277	190	LED	CURRENT (GLI BRANDS)	ABC1430481DQQ41ACWAWN	1,6
B1	2X2 FLAT PANEL WITH DRYWALL ADAPTOR	RECESSED	278	34	LED	CURRENT (GLI BRANDS)	LPL22D03XMW6XXVQLTWHTE + GESK07	2,6
B2	2X2 FLAT PANEL	GRID/LAY-IN	277	34	LED	CURRENT (GLI BRANDS)	LPL22D03XMW6XXVQLTWHTE	6
C	WET RATED HIGH BAY	WALL	277	200	LED	CURRENT (GLI BRANDS)	PRC02X80088LQVSTAQB	6
C1	WET RATED HIGH BAY	CEILING	277	200	LED	CURRENT (GLI BRANDS)	PRC02X80088LQVSTAQB	6
D	4' LINEAR STRIP LIGHT	WALL	277	26	LED	CURRENT (GLI BRANDS)	ALV204T04T481DSQQOSTKQW	6
F	4' LINEAR STRIP LIGHT	SURFACE/ SUSPENDED	277	26	LED	CURRENT (GLI BRANDS)	ALV204T04T481DSQQO51ACW	3,6
F1	8' LINEAR STRIP LIGHT	SURFACE/ SUSPENDED	277	52	LED	CURRENT (GLI BRANDS)	ALV208T08T481DSQQO51ACW	3,6
G	4" RECESSED DOWNLIGHT - WET RATED	RECESSED	277	9	LED	CURRENT (GLI BRANDS)	LRXD R4 07 9 CWMD - FRAME 4R	6
S1	EXTERIOR	WALL MOUNT	277	186	LED	CURRENT (GLI BRANDS)	EALS030J4AF740XAV1DKBZ	6
S2	EXTERIOR WALL PACK	WALL MOUNT	277	17	LED	CURRENT (GLI BRANDS)	EWLS02025AF740N1FMDKBZ	6
S3	EXTERIOR WALL PACK	WALL MOUNT	277	89	LED	CURRENT (GLI BRANDS)	EWAS010E4AF740N1FMDKBZ	6
EM	BATTERY OPERATED EMERGENCY LIGHT	SUSPENDED	277	4	LED	EELP	EM20-E-HO-SD	4,6
EM1	OUTDOOR EMERGENCY LIGHT	WALL	277	11.6	LED	EELP	DEM-LED-BR-ACEM-PC	5,6
EM2	WET RATED EMERGENCY LIGHT	WALL	277	1.9	LED	EELP	WLEM-LED	6
EX/EM	EXIT SIGN/ COMPBO EM. LIGHT WITH BATTERY	SUSPENDED	277	4	LED	EELP	XCS2RW-HO-SD	4,6

NOTES:

1. WITH LUTRON ATHENA NODE
2. WITH DRYWALL MOUNT KIT
3. 5FT CABLE, 6FT CORD A7 TWIST LOCK PLUG FOR SUSPENDED MOUNT
4. VERIFY MOUNTING METHOD
5. VERIFY OPERATION
6. EQUIVALENT LIGHT FIXTURES AND ASSOCIATED CONTROL SYSTEMS WILL BE CONSIDERED. ALL PROPOSED SUBSTITUTIONS MUST BE REVIEWED AND APPROVED IN WRITING BY OWNER/ARCHITECT/ENGINEER AT LEAST 5 DAYS PRIOR TO BID. NO SUBSTITUTIONS WILL BE CONSIDERED AFTER THIS DATE HAS PASSED.

MOTOR AND EQUIPMENT SCHEDULE

EQUIP. TAG	EQUIPMENT	LOAD					SOURCE OF POWER		PROTECTION (AMPS)	STARTER		DISCONNECT		NOTES
		VOLTS	PHASE	H.P.	AMP	KVA	PANEL	CIRCUIT. NO.		SIZE	TYPE	SIZE	TYPE	
CP-1	CIRCULATION PUMP	120	1	-	-	55W	LP-1	82	15A-1P	-	-	-	-	
CP-2	CIRCULATION PUMP	120	1	-	-	39W	LP-4	15	15A-1P	-	-	-	-	
EF-20	EXHAUST FAN	115	1	1/15 TH	-	-	LP-3	28	20A-1P	-	-	BY MC	BY MC	
EF-21	EXHAUST FAN	115	1	1/4	-	-	LP-2	33	20A-1P	-	-	BY MC	BY MC	
EF-22	EXHAUST FAN	460	3	7.5	-	-	PP-2	19,21,23	15A-3P	1	COMBO	30	3R	
ERV-1	ENERGY RECOVERY UNIT	460	3	-	10.5	-	PP-3	25,27,29	20A-3P	1	COMBO	30	3R	
ERV-3	ENERGY RECOVERY UNIT	208	1	-	-	4KW	LP-2	35,37	25A-2P	-	-	-	-	
EWH-1	ELECTRIC WATER HEATER	208	3	-	-	9KW	LP-5	10,12,14	35A-3P	-	-	-	-	
EWH-2	ELECTRIC WATER HEATER	208	3	-	-	6KW	LP-4	9,11,13	20A-3P	-	-	-	-	
FC-1	FAN COIL UNIT	230	1	-	60	-	LP-5	3,5,	80A-2P	-	-	FACTORY	INSTALLED	
FP-2	FIRE PUMP	480	3	115	-	-	MG&E	-	-	-	-	-	-	
FSD	FIRE/SMOKE DAMPER	120	1				LP-4	4						1
HP-1	HEAT PUMP	230	1	-	30	-	LP-5	2,4	45A-2P	-	-	-	-	
JP-2	JOCKEY PUMP	480	3	10	-	-	PP-4	13,15,17	20A-3P					
AC-2-1	AIR COMPRESSOR	480	3	60	-	-	PP-4	7,9,11	125A-3P	-	-	-	-	
AC-2-2	AIR COMPRESSOR			60			PP-4	2,4,6	125A-3P	-	-	-	-	
RAD-2-1	AIR DRYER	460	3	-	15	-	PP-4	8	20A-1P	-	-	-	-	
RAD-2-2	AIR DRYER	460	3				PP-4	8	20A-1P	-	-	-	-	
15	EV BATTERY TENDER	480	3	-		54	SEE PLAN	SEE PLAN	90A-3P	-	-	-	-	
16	LIFT CONTROL	208	3	(3) @5	-	-	SEE PLAN	SEE PLAN	60A-3P	-	-	-	-	
24	50' HOSE REEL	120	1	-	-	-	SEE PLAN	SEE PLAN	20A-1P	-	-	-	-	
31	TIRE CAROUSEL	208	3	-	15	-	LP-3	15,17,19	20A-1P	-	-	-	-	
32	TIRE CHANGER	240	3	-	14.5	-	LP-3	30,32,34	20A-1P	-	-	-	-	
33	ENCLOSED TIRE INFLATION CAGE	120	1	-	15	-	LP-3	21	20A-1P	-	-	-	-	
35	FLOOR STANDING DRILL PRESS	120	1	-	15	-	LP-3	36	20A-1P	-	-	-	-	
36	SHOP PRESS	480	3	3		-	PP-3	22,24,26	20A-3P	-	-	-	-	
38	RECEIVING COUNTER	120	1	-		-	LP-3	29	20A-1P	-	-	-	-	
41	TOOL CONSUMABLE VENDING	120	1	-	15	-	SEE PLAN	SEE PLAN	20A-1P	-	-	-	-	
42	BATTERY BENCH	120	1	-	15	-	LP-4	2	20A-1P	-	-	-	-	
45	FUEL MANAGEMENT PEDESTAL	120	1	-		-	LP-1	40	20A-1P	-	-	-	-	
62	OIL FILTER CRUSHER	120	1	-	15	-	LP-4	6	20A-1P	-	-	-	-	
67	MULTI FUNCTION PRINTER	120	1	-	5	-	LP-1	76	20A-1P	-	-	-	-	
75	FUEL DISPENSOR PUMP	120	1	1	-	-	LP-1	40	20A-1P	-	-	-	-	
76	1000 GALLON ABOVE GROUND FUEL TANK	120	1	-	-	-	LP-1	40	20A-1P	-	-	-	-	
77	EMERGENCY FUEL SHUT OFF	120	1	-	-	-	LP-1	40	20A-1P	-	-	-	-	

NOTES:

1. CONNECT TO NEW FIRE ALARM SYSTEM. PROVIDE CONTROL MODULES, ETC. AS REQUIRED.

FEEDER SCHEDULE

FEEDER AMPACITY	CONDUCTOR SIZE (kcmil)		CONDUIT SIZE	
	# & N	GRD	(3) & (3G)	(4) & (4G)
50	#6	#10	1"	1"
70	#4	#8	1-1/4"	1-1/4"
80	#3	#8	1-1/4"	1-1/4"
100	#1	#8	1-1/2"	2"
110	#2	#6	1-1/4"	1-1/2"
125	#1	#6	1-1/2"	2"
150	#1/0	#6	1-1/2"	2"
175	#2/0	#6	2"	2"
200	#3/0	#6	2"	2-1/2"
225	#4/0	#4	2"	2-1/2"
250	#250	#4	2-1/2"	3"
300	#350	#4	3"	3"
350	#500	#3	3"	3-1/2"
380	#500	#3	3"	3-1/2"
400	(2) # 3/0	(2) # 3	(2) 2"	(2) 2-1/2"
450	(2) # 4/0	(2) # 2	(2) 2"	(2) 2-1/2"
500	(2) # 250	(2) # 2	(2) 2-1/2"	(2) 3"
600	(2) # 350	(2) # 1	(2) 3"	(2) 3"
700	(2) # 500	(2) # 1/0	(2) 3"	(2) 3-1/2"
800	(2) # 600	(2) # 1/0	(2) 3-1/2"	(2) 4"
1000	(3) # 400	(3) # 2/0	(3) 3"	(3) 3-1/2"
1200	(3) # 600	(3) # 3/0	(3) 3-1/2"	(3) 4"
1600	(4) # 600	(4) # 4/0	(4) 3-1/2"	(4) 4"
2000	(5) # 600	(5) # 250	(5) 3-1/2"	(5) 4"

GENERAL NOTES:

1. THE ABOVE FEEDER SCHEDULE IS A SCHEDULE OF TYPICAL FEEDERS AND SOME SIZES MAY NOT BE UTILIZED.
2. ALL CONDUCTOR AMPACITIES ARE BASED ON TABLE 310-16 OF THE NEC FOR COPPER CONDUCTOR TYPE THW/THWN.
3. FEEDER SIZES SHOWN ON THE RISER DIAGRAM INDICATE FEEDER AMPACITIES AND DO NOT NECESSARILY CORRESPOND TO CIRCUIT BREAKER AMPACITIES. CERTAIN FEEDERS MAY BE SIZED FOR THE DERATION FACTORS REQUIRED BY CODE AND/OR ARE OVERSIZED FOR VOLTAGE DROP.

2

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MOTOR AND EQUIPMENT SCHEDULES - 3829 MAINT. BLDG.

E600

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

TECHNOLOGY ABBREVIATIONS

Key Name	Comments
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AV	AUDIO VISUAL
BET	BUILDING ENTRANCE TERMINAL
BFC	BELOW FINISHED CEILING
C	CONDUIT
CCTV	CLOSED CIRCUIT TELEVISION
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
DVR	DIGITAL VIDEO RECORDER
EC	ELECTRICAL CONTRACTOR
ER	TELECOMMUNICATIONS ENTRANCE ROOM
FO	FIBER OPTIC
GC	GENERAL CONTRACTOR
HC	HVAC CONTRACTOR
HH	HAND HOLE
LEC	LOCAL EXCHANGE CARRIER
MDF	MAIN DISTRIBUTION FRAME
MH	MANHOLE
MM	MULTIMODE FIBER OPTIC CABLE
MON	MONITOR
MTR	MAIN TELECOMMUNICATIONS ROOM
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OSP	OUTSIDE PLANT
PP	PATCH PANEL
PR	PAIR
PS	PRINTER STATION
RR	RELAY RACK
RU	RACK UNIT
SIO	STANDARD INFORMATION OUTLET
SM	SINGLEMODE FIBER OPTIC CABLE
STP	SHIELDED TWISTED PAIR
TBB	TELECOMMUNICATIONS BONDING BACKBONE
TGB	TELECOMMUNICATIONS GROUND BUS
TMGB	TELECOMMUNICATIONS MAIN GROUND BUS
TR	TELECOMMUNICATIONS ROOM
TV	TELEVISION
UTP	UNSHIELDED TWISTED PAIR
WAP	WIRELESS ACCESS POINT

LEGEND			
⬢	WIRELESS ACCESS POINT - 2 CAT6A DATA CABLES	A	AUDIBLE ALARM -
△	DATA JACK - 2 CAT6 DATA CABLES	E	ELECTRIC STRIKE -
S	SPEAKER	ACS	ACCESS CONTROL SYSTEM -
PH	PAGING HORN - ETR	GO	GATE OPERATOR -
W ▼	WALL PHONE - 1 CAT6 DATA CABLE @ 48" A.F.F.	ACP	ACCESS CONTROL PANEL -
TV	TV - 2 CAT6 DATA CABLE - VERIFY EXACT MTG. HT.	SEC	SECURITY SYSTEM DISPLAY -
C	CARDREADER -	TGB	COMMUNICATIONS GROUND BUS BAR -
K	KEYPAD -		2-POST TELECOMMUNICATIONS EQUIPMENT RACK
M	MOTION DETECTOR		SURFACE RACEWAY - REFER TO KEYED NOTES & SPECIFICATIONS FOR TYPES
DS	DOOR POSITION SWITCH		

GENERAL NOTES

A. WORK PERFORMED INCLUDES ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED TO INSTALL COMPLETE TECHNOLOGY SYSTEMS AS INDICATED ON THESE DRAWINGS AND AS SPECIFIED.

B. ALL TELECOMMUNICATIONS OUTLETS SHALL BE MOUNTED AT HEIGHTS ABOVE FINISH FLOOR AS SHOWN IN THE DEVICE MOUNTING HEIGHT DETAIL U.N.O..

C. SEE ELECTRICAL SPECIFICATIONS FOR LOCATIONS WHERE GRS CONDUIT SHALL BE USED, OR WHERE IMC, EMT, OR PVC CONDUIT MAY BE USED.

D. BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE-RATED WALLS SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. "THRU-TH-WALL" BOXES SHALL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER.

E. TECHNOLOGY SYSTEMS EQUIPMENT/DEVICES SHALL BE MOUNTED SO AS TO ALLOW ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF TECHNOLOGY SYSTEMS EQUIPMENT/DEVICES ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR SHALL BE COORDINATED WITH AND APPROVED BY THAT CONTRACTOR IN ADVANCE OF INSTALLATION.

F. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENING SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS. PENETRATIONS THROUGH FLOORS AND FIRE-RATED WALLS SHALL BE FIRESTOPPED IN A MANNER THAT MAINTAINS THE RATING OF THE FLOOR OR WALL PENTRATED.

G. ALL TELEPHONE AND DATA JACKS SHALL BE TERMINATED WITH ALL 4 PAIRS TO ALLOW FOR INTERCHANGABILITY.

H. ALL CONDUIT STUBS SHALL HAVE PLASTICE NYLON BUSHINGS INSTALLED PRIOR TO THE INSTALLATION OF CABLES.

KEY NOTES

1. GATE CONTROL 3829.
2. GATE CONTROL 3901.
3. POLE MOUNTED CAMERA, POLE LOCATIONS AND PROPOSED PATHWAYS IDENTIFIED ON SHEET Q601.

Sheet List	
Sheet Number	Sheet Name
Q001	NOTES, SYMBOLS, AND ABREVIATIONS
Q100	OVERALL BUILDING 3829 PLAN
Q101	OFFICE AREA BUILDING 3829 PLAN
Q102	AV BUILDING 3829 PLAN
Q103	ENLARGED IT ROOM BUILDING 3829 PLAN
Q200	OVERALL BUILDING 3901 PLAN
Q201	OFFICE AREA BUILDING 3901 PLAN
Q202	AV BUILDING 3901 PLAN
Q203	AV - BUILDING 3901 PLAN
Q204	ENLARGED IT ROOM BUILDING 3901 PLAN
Q501	DETAILS
Q502	DETAILS
Q601	SCHEDULES - CARD ACCESS AND CAMERA
Q701	ONE LINE DRAWINGS
QD100	BUILDING 3829 DEMOLITION PLAN
QD200	BUILDING 3901 DEMOLITION PLAN

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KMTECHNOLOGYDESIGN

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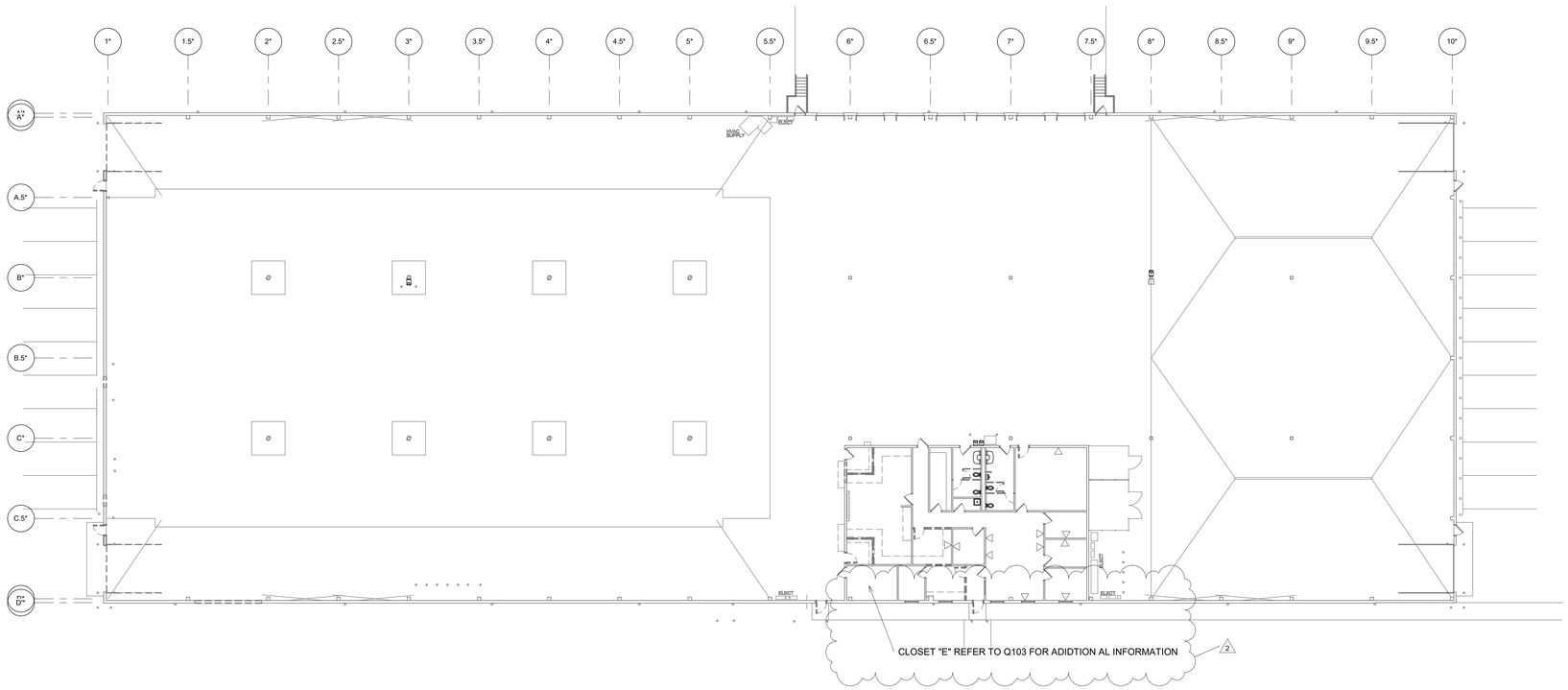
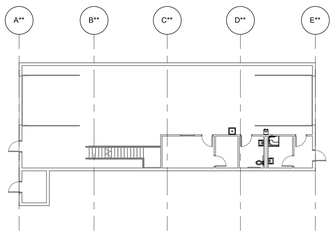
NOTES, SYMBOLS, AND ABREVIATIONS

Q001



1 DATA- DEMO-FLOOR PLAN-3829
SCALE: 1/16" = 1'-0"



3 DATA- DEMO-FLOOR PLAN-MAINTENANCE
SCALE: 1/16" = 1'-0"

2 DATA- DEMO-FLOOR PLAN-GUARDHOUSE
SCALE: 1/16" = 1'-0"

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SATELLITE BUS FACILITY REMODEL

3829-3901 HANSON ROAD
MADISON, WI 53704

CITY OF MADISON
METRO TRANSIT
1245 E WASHINTON AVE #201
MADISON, WI 53703

PROJECT NUMBER 213419.00

ISSUED FOR:

BID SET	09/15/2023

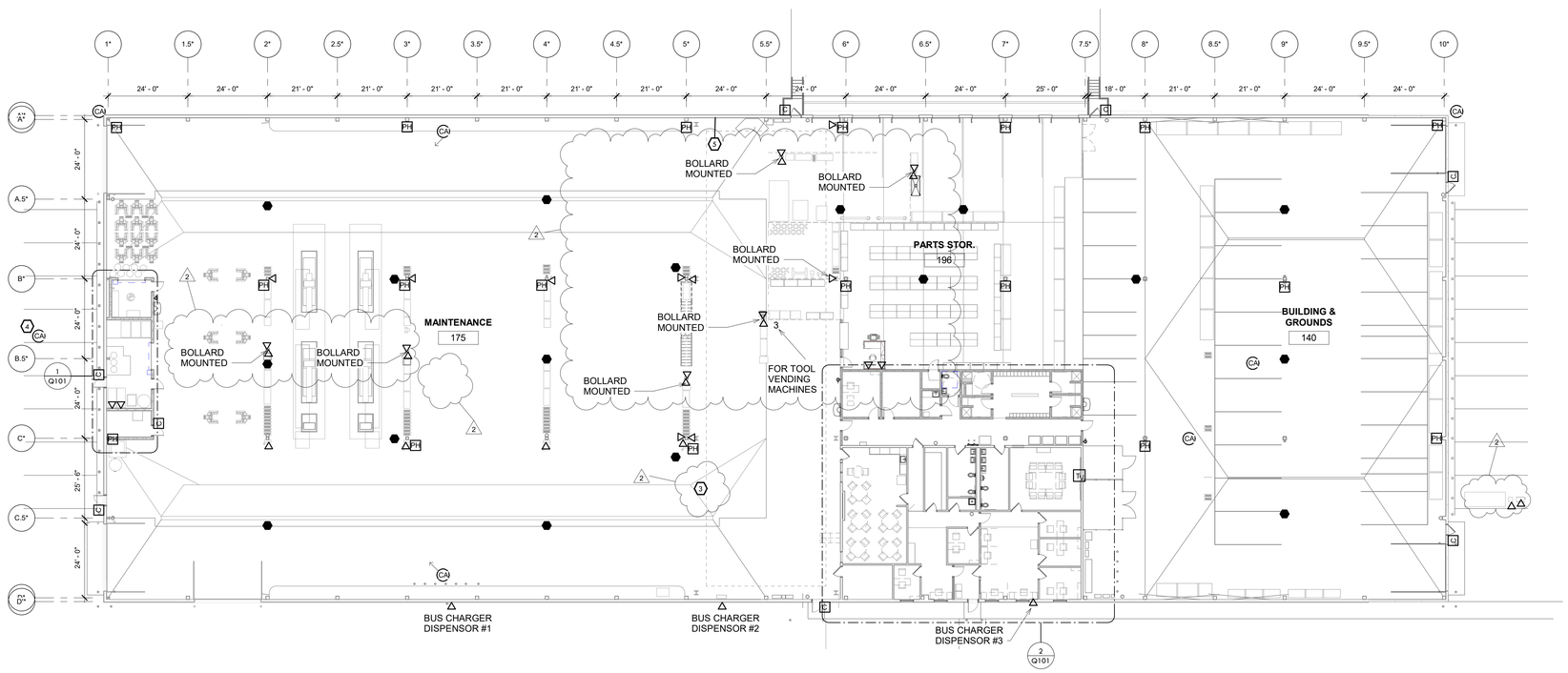
REVISION FOR:

NO.	DESCRIPTION	DATE
2	ADDENDUM 2	10-13-23

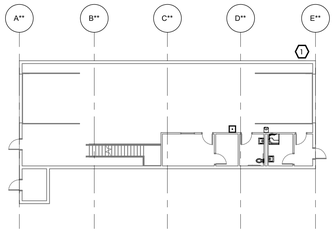
DRAWN BY	Author
CHECKED BY	Checker

BUILDING 3829
DEMOLITION PLAN

QD100



1 DATA- NEW WORK-FLOOR PLAN 3829
SCALE: 1/16" = 1'-0"



3 DATA- NEW WORK-FLOOR PLAN-MAINTENANCE
SCALE: 1/16" = 1'-0"

2 DATA- NEW WORK-FLOOR PLAN-GUARDHOUSE
SCALE: 1/16" = 1'-0"

KEY NOTES

1. LOCATION OF FIBER CONDUIT ENTRANCE.
2. LOCATION OF CONDUIT ENTRANCE.
3. ADD 9 DATA FOR CRANE LOCATIONS. COORDINATE FINAL PLACEMENT WITH EQUIPMENT DRAWINGS.
4. COORDINATE CAMERA LOCATION PRIOR TO CABLE INSTALLATION.
5. INSTALL NEMA RATED CABINET AT 4' A.F.F., SEE DETAIL 2 ON SHEET Q701.

NORTH

LEGEND			
⬢	WIRELESS ACCESS POINT - 2 CAT6A DATA CABLES	A	AUDIBLE ALARM -
△	DATA JACK - 2 CAT6 DATA CABLES	E	ELECTRIC STRIKE -
S	SPEAKER	ACS	ACCESS CONTROL SYSTEM -
PH	PAGING HORN - ETR	GO	GATE OPERATOR -
W ▼	WALL PHONE - 1 CAT6 DATA CABLE @ 48" A.F.F.	ACP	ACCESS CONTROL PANEL -
TV	TV - 2 CAT6 DATA CABLE - VERIFY EXACT MTG. HT.	SEC	SECURITY SYSTEM DISPLAY -
C	CARDREADER -	TGB	COMMUNICATIONS GROUND BUS BAR -
K	KEYPAD -		2-POST TELECOMMUNICATIONS EQUIPMENT RACK
M	MOTION DETECTOR		SURFACE RACEWAY - REFER TO KEYED NOTES & SPECIFICATIONS FOR TYPES
DS	DOOR POSITION SWITCH		

Engberg Anderson ARCHITECTS
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KMTECHNOLOGYDESIGN

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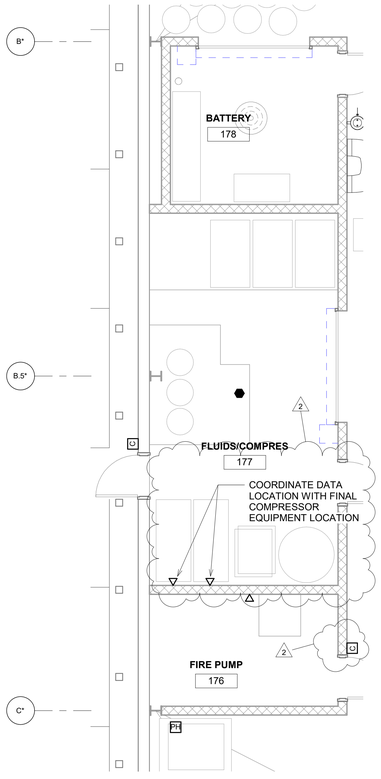
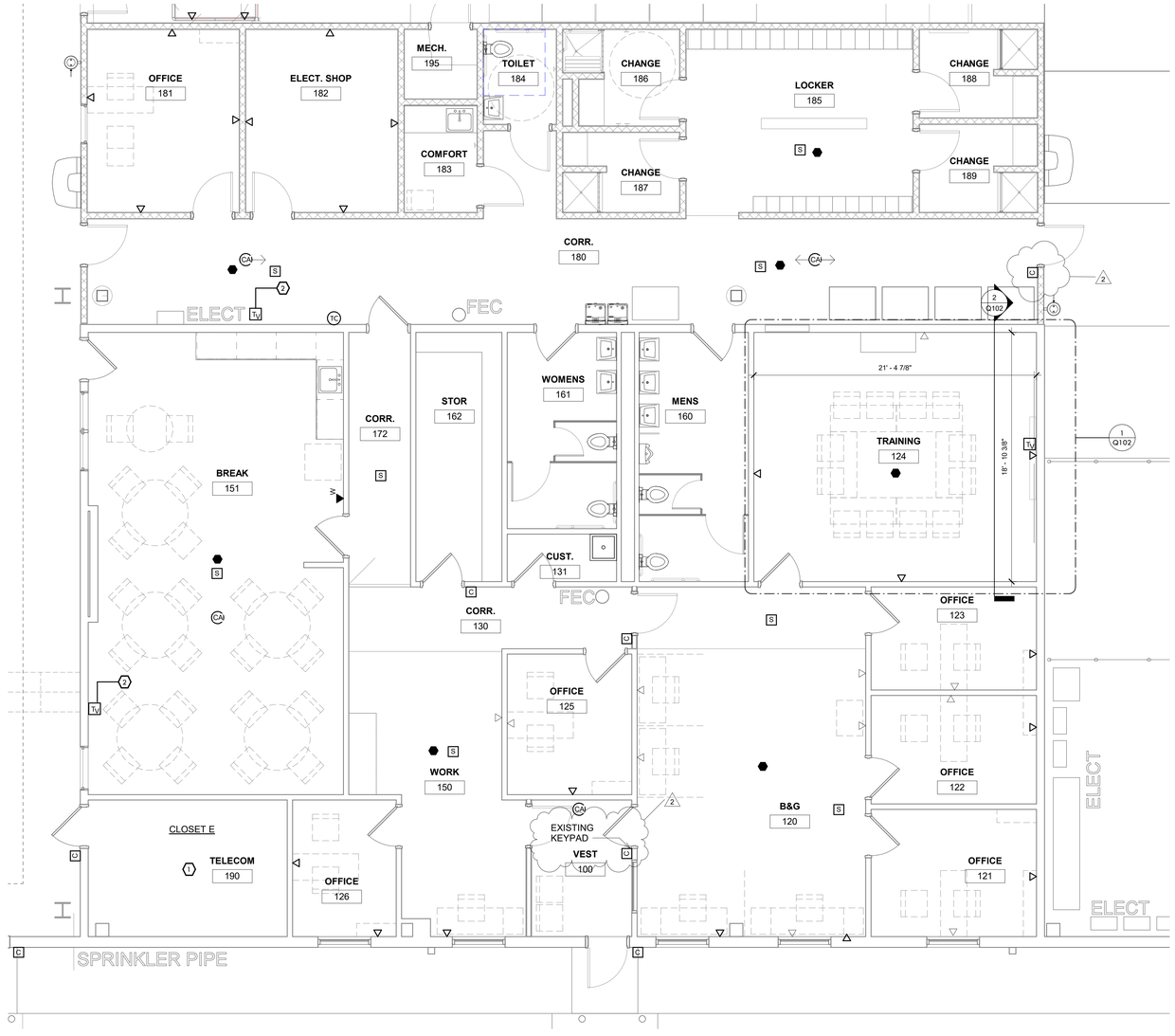
OVERALL BUILDING 3829 PLAN

Q100



1 DATA- NEW WORK-FLOOR PLAN 3829 - Callout 2
SCALE: 1/4" = 1'-0"



2 DATA- NEW WORK-FLOOR PLAN 3829 - Callout 1
SCALE: 1/4" = 1'-0"

KEY NOTES

1. SEE SHEET Q103 DRAWING 1 FOR ROOM LAYOUT.
2. CONTRACTOR TO MOUNT OWNER PROVIDED BRIGHT UNIT.

LEGEND			
⬢	WIRELESS ACCESS POINT - 2 CAT6A DATA CABLES	A	AUDIBLE ALARM -
△	DATA JACK - 2 CAT6 DATA CABLES	E	ELECTRIC STRIKE -
S	SPEAKER	ACS	ACCESS CONTROL SYSTEM -
PH	PAGING HORN - ETR	GO	GATE OPERATOR -
W ▼	WALL PHONE - 1 CAT6 DATA CABLE @ 48" A.F.F.	ACP	ACCESS CONTROL PANEL -
TV	TV - 2 CAT6 DATA CABLE - VERIFY EXACT MTG. HT.	SEC	SECURITY SYSTEM DISPLAY -
C	CARDREADER -	TGB	COMMUNICATIONS GROUND BUS BAR -
K	KEYPAD -		2-POST TELECOMMUNICATIONS EQUIPMENT RACK
M	MOTION DETECTOR		SURFACE RACEWAY - REFER TO KEYED NOTES & SPECIFICATIONS FOR TYPES
DS	DOOR POSITION SWITCH		

NORTH

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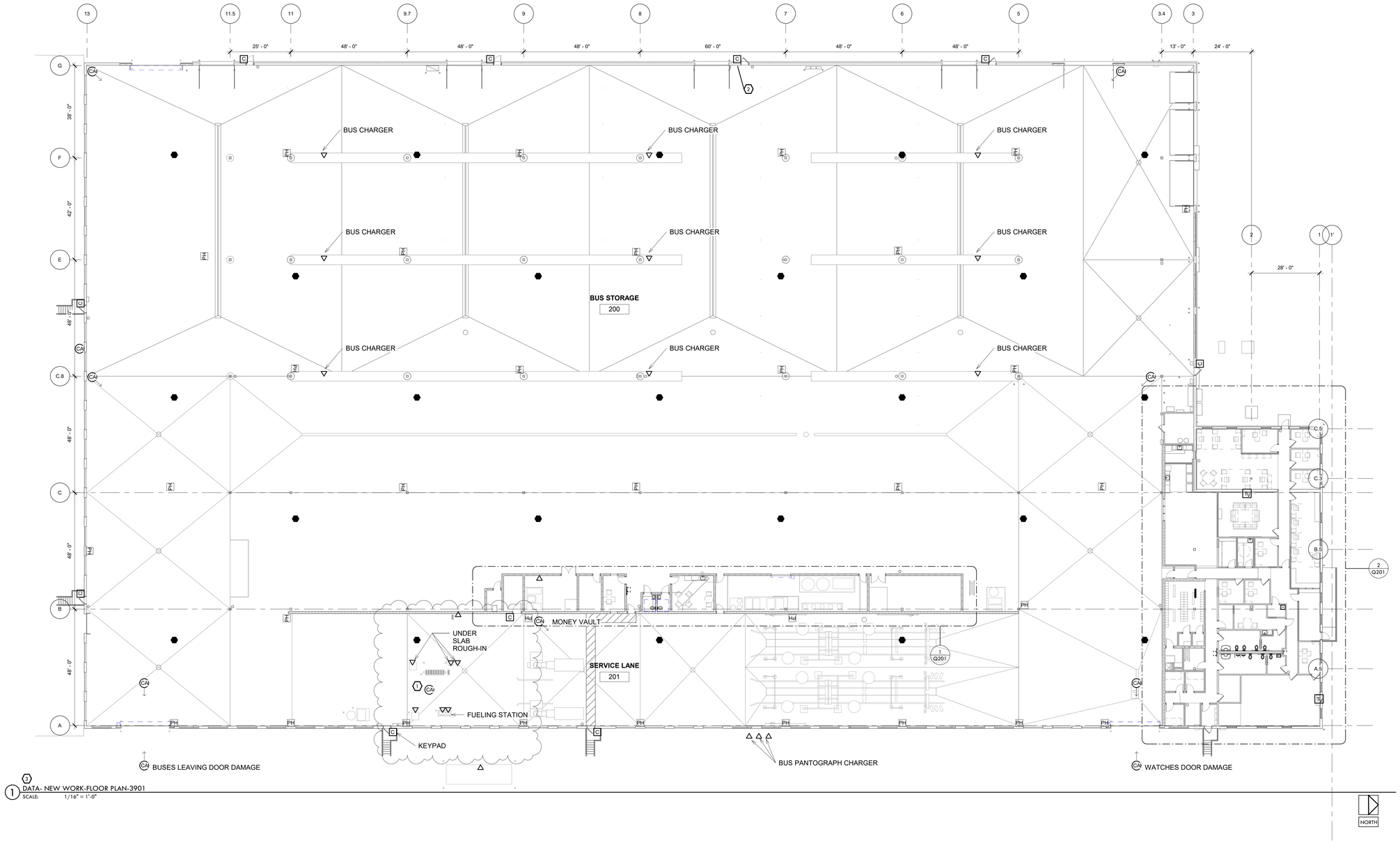
OFFICE AREA BUILDING 3829 PLAN

Q101



3 DATA- NEW WORK-FLOOR PLAN-3901

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

KEY NOTES

1. CAMERA TO MONITOR FUELING STATION. COORDINATE EXACT LOCATION PRIOR TO INSTALL.
2. INSTALL NEMA RATED CABINET AT 4' A.F.F., SEE DETAIL 1 ON SHEET Q701.
3. COORDINATE CAMERA PLACEMENT.

LEGEND			
⬢	WIRELESS ACCESS POINT - 2 CAT6A DATA CABLES	A	AUDIBLE ALARM -
△	DATA JACK - 2 CAT6 DATA CABLES	E	ELECTRIC STRIKE -
S	SPEAKER	ACS	ACCESS CONTROL SYSTEM -
PH	PAGING HORN - ETR	GO	GATE OPERATOR -
W ▼	WALL PHONE - 1 CAT6 DATA CABLE @ 48" A.F.F.	ACP	ACCESS CONTROL PANEL -
TV	TV - 2 CAT6 DATA CABLE - VERIFY EXACT MTG. HT.	SEC	SECURITY SYSTEM DISPLAY -
C	CARDREADER -	TGB	COMMUNICATIONS GROUND BUS BAR -
K	KEYPAD -		2-POST TELECOMMUNICATIONS EQUIPMENT RACK
M	MOTION DETECTOR		SURFACE RACEWAY - REFER TO KEYED NOTES & SPECIFICATIONS FOR TYPES
DS	DOOR POSITION SWITCH		

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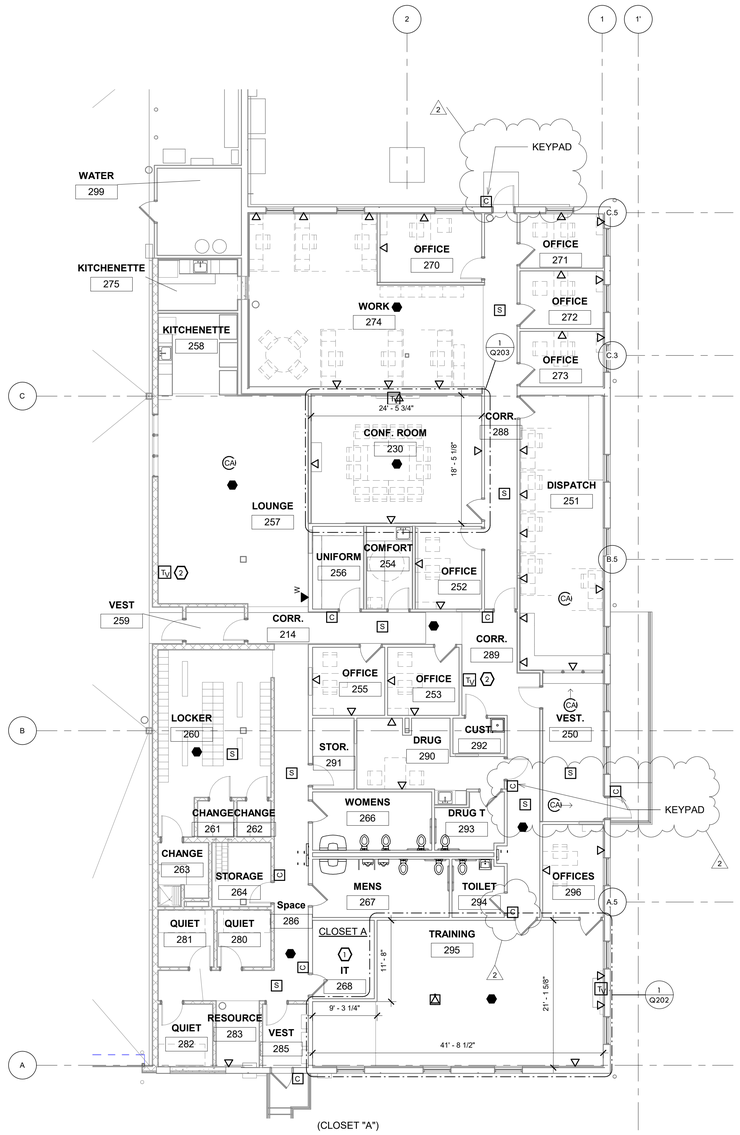
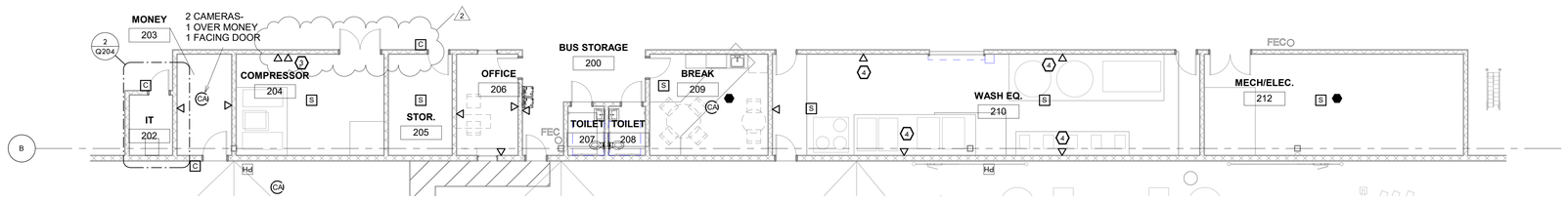
OVERALL BUILDING 3901 PLAN

Q200



DATA- NEW WORK-FLOOR PLAN-3901 -
Callout 1
SCALE: 1/8" = 1'-0"



DATA- NEW WORK-FLOOR PLAN-3901 -
Callout 2
SCALE: 1/8" = 1'-0"

NORTH

LEGEND			
⬢	WIRELESS ACCESS POINT - 2 CAT6A DATA CABLES	A	AUDIBLE ALARM -
△	DATA JACK - 2 CAT6 DATA CABLES	E	ELECTRIC STRIKE -
S	SPEAKER	ACS	ACCESS CONTROL SYSTEM -
PH	PAGING HORN - ETR	GO	GATE OPERATOR -
W ▼	WALL PHONE - 1 CAT6 DATA CABLE @ 48" A.F.F.	ACP	ACCESS CONTROL PANEL -
TV	TV - 2 CAT6 DATA CABLE - VERIFY EXACT MTG. HT.	SEC	SECURITY SYSTEM DISPLAY -
C	CARDREADER -	TGB	COMMUNICATIONS GROUND BUS BAR -
K	KEYPAD -		2-POST TELECOMMUNICATIONS EQUIPMENT RACK
M	MOTION DETECTOR		SURFACE RACEWAY - REFER TO KEYED NOTES & SPECIFICATIONS FOR TYPES
DS	DOOR POSITION SWITCH		

GENERAL NOTES

A. REFER TO CARD ACCESS SCHEDULE ON Q601 AND DOOR HARDWARE SECTION FOR EXACT DOOR REQUIREMENTS.

KEY NOTES

1. SEE SHEET Q203 FOR IT ROOM LAYOUT.
2. CONTRACTOR TO MOUNT OWNER PROVIDED BRIGHT UNIT.
3. COORDINATE DATA LOCATION WITH FINAL COMPRESSOR EQUIPMETN LAYOUT.
4. COORDINATE LOCATIONS WITH FINAL WASH EQUIPMENT LAYOUT.

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OFFICE AREA BUILDING
3901 PLAN

Q201

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

KEY NOTES

1. CONTRACTOR TO PROVIDE BORING SERVICES TO COMPLETE THE OUTSIDE CABLING FOR OUTSIDE CAMERAS. BORE FROM MAINTENANCE BUILDING TO DESIGNATED LIGHTPOLE (APPROX. 100 FEET STRAIGHT BORE).
   - A. RUN CAT 6 OUTSIDE RATED CABLE FROM MAINTENANCE PATCH PANEL THRU HDPE INNERDCT TO LIGHT POLE. LEAVE 40 FEET AT POLE.
   - B. CONTRACTOR IS RESPONSIBLE FOR PENETRATION INTO BUILDING, BORING, HDPE INNERDUCT AND CABLE RUN.
   - C. OWNER WILL PROVIDE CAMERA, MOUNT AND PATHWAY.

2. CONTRACTOR TO PROVIDE BORING SERVICES TO COMPLETE THE OUTSIDE CABLING FOR OUTSIDE CAMERAS. BORE FROM MAINTENANCE BUILDING TO DESIGNATED LIGHTPOLE (APPROX. 200 FEET STRAIGHT BORE).
   - A. RUN CAT 6 OUTSIDE RATED CABLE FROM MAINTENANCE PATCH PANEL THRU HDPE INNERDCT TO LIGHT POLE. LEAVE 40 FEET AT POLE.
   - B. CONTRACTOR IS RESPONSIBLE FOR PENETRATION INTO BUILDING, BORING, HDPE INNERDUCT AND CABLE RUN.
   - C. OWNER WILL PROVIDE CAMERA, MOUNT AND PATHWAY.

3. CONTRACTOR TO PROVIDE BORING SERVICES TO COMPLETE THE OUTSIDE CABLING FOR OUTSIDE CAMERAS.BORE FROM BUILDING 3829 BUILDING TO DESIGNATED LIGHTPOLE (APPROX. 80 FEET STRAIGHT BORE).
   - A. RUN CAT 6 OUTSIDE RATED CABLE FROM CABINET LOCATED ON WEST WALL PATCH PANEL THRU BUILDING, HDPE INNERDCT TO CAMERA POLE. LEAVE 40 FEET AT POLE.
   - B. CONTRACTOR IS RESPONSIBLE FOR PENETRATION INTO BUILDING, BORING, HDPE INNERDUCT AND CABLE RUN.
   - C. OWNER WILL PROVIDE CAMERA, MOUNT AND PATHWAY. POLE FOR CAMERA MOUNTING WILL BE PROVIDED IN CIVIL CONTRACT.
   - D. COORDINATE POLE LOCATION WITH OWNER.

Camera #	Location	View	Building
1	OUTSIDE - ON BUILDING	North West Corner	3829
2	OUTSIDE - ON BUILDING	Back Entrance	3829
3	INSIDE - WAREHOUSE	Bus Lane	3829
4	INSIDE - WAREHOUSE	Bus Lane	3829
5	INSIDE - WAREHOUSE	Building and Ground Area	3829
6	INSIDE - WAREHOUSE	Building and Ground Area	3829
7	OUTSIDE - ON BUILDING	Parking Lot and NE	3829
8	INSIDE - WAREHOUSE	Bus Lane	3901
9	INSIDE - WAREHOUSE	Bus Lane	3901
10	INSIDE - WAREHOUSE	Bus Lane	3901
11	INSIDE - WAREHOUSE	Side Bus Entrance	3901
12	INSIDE - WAREHOUSE	Exit Garage Door	3901
13	OUTSIDE - POLE (New)	Exit Garage Door	3901
14	OUTSIDE - ON BUILDING	Rear 3901	3901
15	OUTSIDE - ON BUILDING	Rear 3901	3901
16	OUTSIDE - POLE (New)	Side Bus Entrance	3901

2 CAMERA SCHEDULE
SCALE: 1/8" = 1'-0"

CARD ACCESS SCHEDULE

Door	Location	Card Reader	Request Exit	Electric Strike	Elec Lock	Door Contact	HW SET	Key Pad	NOTES
100	Outside Door Bldg 3829	X				X		X	
140A	Outside Door Bldg 3829	X				X			
140C	Outside Door Bldg 3829	X				X			
140D	Outside Door Bldg 3829	X				X		X	
175A	Outside Door Bldg 3829	X				X		X	
175D	Outside Door Bldg 3829	X				X			
177A	Outside Door Bldg 3829	X				X		X	
175F	Outside Door Bldg 3829	X				X			
120	Office	X				X		X- existing	
130	Office	X				X			
152	Storage	X				X			
176	Fire Pump	X				X		X	
180B	Vending	X				X			
190	IT Room	X				X			
176	Fire Pump Room	X				X			
200B	Outside Door Bldg 3901	X				X			
200C	Outside Door Bldg 3901	X				X		X	
200G	Outside Door Bldg 3901	X				X			
200F	Outside Door Bldg 3901	X				X			
200K	Outside Door Bldg 3901	X				X			
200M	Outside Door Bldg 3901	X				X		X	
200R	Outside Door Bldg 3901	X				X			
200P	Outside Door Bldg 3901	X				X			
200W	Outside Door Bldg 3901	X				X			
202	IT Room	X				X			
203	Money Roomt	X				X			
206	Storeroom	X				X			
250A	Front Entrance	X				X		X	
256	Uniform Room	X				X			
264	Storage	X				X			
268	IT Room	X				X			
274	Office Space Entrance	X				X		X	
285A	South Outside Door	X				X		X	
288	Classroom Hallway	X				X		X	* needs to be able to be released from Dispatch
290	Testing	X				X		X	
295	Training Room	X				X			

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SCHEDULES - CARD ACCESS AND CAMERA

Q601

For Reference Only
Owner Furnished/Owner Installed

PRODUCT LEAFLET

Electric Vehicle Infrastructure

HVC Depot (UL) charging for electric fleets

ABB HVC-C Depot charging systems offer a highly reliable, intelligent and cost-effective solution to charge large EV fleets such as buses, trucks and other commercial vehicles.

—
HVC Depot Boxes and power cabinets, lined up at a depot site.

A practical solution for busy depots
ABB Heavy Vehicle Charger (HVC) products enable electric buses and trucks to charge at the depot ensuring flexibility and scale for every fleet operation that is transitioning to zero-emission transportation.

Key Benefits
+ Smart charging
+ Small infrastructure footprint at vehicle interface
+ Flexible design for roof and floor mounting
+ SAE J1772 CCS and OCPP 1.6 compliant
+ Remote diagnostics and management tools

Sequential Charging
Improving total cost of ownership is easy using the sequential charging feature offered by ABB's depot chargers. This feature allows connection of up to three depot charge boxes with a single power cabinet and vehicles are charged sequentially over time. The system can follow an embedded, predefined charging process or remote triggers sent by a fleet management system via OCPP 1.6.

- Vehicles are charged with high power, maximizing vehicle availability
- The required grid connection is smaller, reducing upfront investments and operational costs
- The compact depot box is easy to install at sites with space constraints
- Optimal utilization of installed infrastructure meaning lower investments in charging equipment.

Buy America
ABB can offer the HVC-C Depot Charging Solution with compliance to the Buy America Act Rule 49 CFR Part 661.5.

Future-proof modular design
Power cabinets can be upgraded from 100 or 150 kW in the field, as well as add additional depot charge boxes, allowing operators to scale their operation and to spread investments over time.

Safe and reliable operation
ABB fast chargers are designed to the highest international electrical, safety, and quality standards, and are certified by notified bodies - guaranteeing safe and reliable operation.

Connectivity and remote services
ABB chargers come with an extensive suite of connectivity features including remote services such as monitoring, management, diagnostics and software upgrades. These advanced services provide equipment owners with powerful insights into their charging operations while enabling high uptime.

ABB E-mobility is your experienced partner
ABB HVC products are based on a decade of high power experience in EV charging solutions. ABB has sold over 30,000 DC fast charging systems in more than 85 countries – and is the leading EV infrastructure technology supplier globally.

Overnight charging 100 kW - 150 kW

A field upgradeable system with future proof reliability

HVC 100C

upgradable

HVC 150C

—

A power upgrade can be done in the field by adding an extra power module. No groundworks, digging and disturbance to the site are required.

HVC 150C*

—

* 150 kW overnight charging system with three depot charge boxes; shown mounted on pedestal option.

Technical specifications

Configurations		**HVC 100C**	**HVC 150C**
Maximum output power		100 kW	150 kW
AC Input voltage		UL: 3-phase, 480Y/277 VAC +/- 10% (60 Hz) CSA: 3-phase, 600Y/347 VAC +/-10% (60 Hz)	
AC Input connection		L1, L2, L3, GND (no neutral)	
Rated input power		117 kVA	170 kVA
Rated input current		UL: 132 A / CSA: 108 A	UL: 198 A / CSA: 168 A
Recommended upstream circuit breaker(s)		UL: 1 x 200 A / CSA: 1 x 150 A	UL: 1 x 250 A / CSA: 1 x 250 A
Output voltage range		150 – 850 VDC	
Maximum DC output current		166 A	200 A
Vehicle connection interface		CCS/Combo Type 1 Connector	
Cable length		3.5 m (11.5 ft) standard; 7 m (23 ft) optional	
DC connection standard		SAE J1772 - IEC 61851-23 / DIN 70121 - ISO 15118	
Environment		Indoor/Outdoor	
Operating temperature		Standard: -10 °C to +50 °C (de-rating characteristic applies) Optional: -35 °C to +50 °C	
Protection		Power Cabinet: IP54 – IK10 (equivalent to NEMA 3R) Depot Charge Box: IP65 - IK10	
Network connection		GSM/3G modem | 10/100 base-T Ethernet	
Compliance and Safety		CSA No. 107.1-16 and UL 2202 certified by TUV BA Rule 49 CFR Part 661.5 (Optional)	
Dimensions			
Power Cabinet	Dimensions (H x W x D)	2030 x 1170 x 770 mm / 79.9 x 46.1 x 30.3 in	
	Weight	1340 kg / 2954 lbs	
Depot Charge Box (without pedestal)	Dimensions (H x W x D)	800 x 600 x 210 mm / 31.5 x 23.6 x 8.3 in	
	Weight	61 kg / 134.5 lbs (with 7 m / 23 ft cable)	
Depot Charge Box (with pedestal)	Dimensions (H x W x D)	1914 x 600 x 400 mm / 75.4 x 23.6 x 16.3 in	
	Weight	181 kg / 398 lbs (with 7 m / 23 ft cable)	

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9AKK107680A4436 D

For Reference Only
Owner Furnished/Owner Installed

PRODUCT LEAFLET

Electric Vehicle Infrastructure

HVC-PD UL opportunity charging for electric buses

ABB's HVC-PD opportunity charging system offers high-power charging via an automated rooftop connection. With typical charge times of 3 to 6 minutes the system can be easily integrated in existing operations by installing chargers at endpoints, terminals and intermediate stops.

The HVC-PD charging system leverages an automated connection to enable extremely fast charge times.

A practical solution for route charging
ABB's Heavy Vehicle Charger (HVC) system architecture offers an ideal solution for opportunity charging, ensuring zero-emission public transit during the day without impacting daily route operations.

Key Benefits
+ Charge in 3 to 6 minutes
+ One charger serves many vehicle makes and models
+ Safe and reliable fully automated connection
+ SAE J3105-1 and OCPP 1.6 compliant
+ Remote diagnostics and management tools

Future-proof modular design
Additional power cabinets can be installed at any time, allowing operators to scale their operation and flexibly spread out infrastructure investments as their fleet grows.

Safe and reliable operation
ABB fast chargers are designed to the highest international electrical, safety, and quality standards, and are certified by notified bodies - ensuring safe and reliable operation.

Interoperability
ABB HVC chargers are based on international standards for operational compatibility with multiple vehicle types and brands. This allows operators to select vehicles from multiple vendors and not be locked into a single supplier.

Connectivity and remote services
ABB chargers come with an extensive suite of connectivity features including remote services such as monitoring, diagnostics and software upgrades. These advanced services provide equipment owners with powerful insights into their charging operations while delivering high uptime.

OCPP 1.6
ABB HVC-PD charging systems can be connected to standardized charging infrastructure management platforms using OCPP 1.6. ABB's HVC suite supports OCPP 1.6 Core and Smart Charging Profiles.

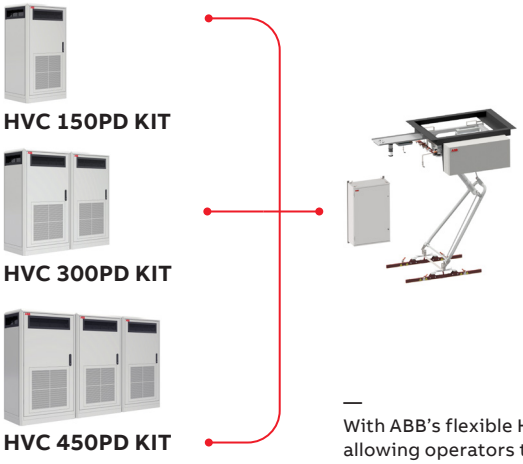
Buy America
ABB can offer the HVC-PD Depot Charging Solution with compliance to the Buy America Act, Rule 49 CFR Part 661.5.

ABB is your experienced partner
ABB HVC products are based on a decade of high-power experience in EV charging solutions. ABB has installed over 50,000 fast charging systems in more than 85 countries – and is the leading EV infrastructure technology supplier globally.

Opportunity charging 150 kW to 450 kW

A scalable system with future-proof reliability

Charging on existing structure



Charging on route

With ABB's flexible HVC architecture, power capability can be expanded over time, allowing operators to spread out infrastructure investments as their fleet grows.

Technical specifications

Configurations		HVC 150PD	HVC 300PD	HVC 450PD
Maximum output power		150 kW	300 kW	450 kW
Input AC connection		UL: 3-phase, 480Y/277 VAC +/- 10 % (60 Hz); CSA: 3-phase, 600Y/347 VAC +/-10% (60 Hz)		
Rated input power		170 kVA	2x 170 kVA	3x 170 kVA
Rated input current		UL: 198 A CSA: 168 A	UL: 2x 198 A CSA: 2x 168 A	UL: 3x 198 A CSA: 3x 168 A
Recommended upstream circuit breaker(s)		1 x 250 A	2 x 250 A	3 x 250 A
Output voltage range		150 – 850 VDC		
Maximum DC output current		250 A	500 A	600 A*
Vehicle connection interface		Inverted crossrail pantograph - OppCharge		
DC connection standard		SAE J3105-1 - IEC 61851-23-1 - ISO 15118		
Environment		Indoor/Outdoor		
Operating temperature		Standard: -10 °C to +50 °C (de-rating characteristic applies); Optional: -35 °C to +50 °C		
Protection		IP54 – IK10 (NEMA 3R)		
Network connection		GSM/3G/4G modem | 10/100 base-T Ethernet		
Compliance and safety		CSA No. 107.1-16 and UL 2202, certified by TUV BA Rule 49 CFR Part 661.5 (Optional)		
Dimensions				
Power cabinet (each)	Number of Power Cabinets	1	2	3
	Dimensions (H x W x D)	2030 x 1170 x 770 mm / 79.9" x 46.1" x 30.3"		
	Weight	1340 kg / 2954 lbs		
Charge pole (includes Pantograph & ACM)	Dimensions (H x W x D)	5240 x 1040 x 300 mm / 206.3" x 40.9" x 11.8"		
	Outreach	4670 mm / 183.9" x 30.3"		
	Weight	1706 kg / 3762 lbs		
ACM Control Module KIT	Dimensions (H x W x D)	1600 x1000 x 476.9 mm / 63" x 39.4" x 18.8"		
	Weight	193 kg / 425 lbs		
Pantograph KIT	Dimensions (H x W x D)	(resting position / bolt-hole pattern) 574 x 1300 x 900mm / 22.6"H x 51.2"W x 35.4"D		
	Weight	387 kg / 854 lbs		

* Limited by inverted pantograph contact ratings

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For Reference Only
Owner Furnished/Owner Installed

Mobile 50 kW

Simple. Durable. Portable.

With durable and portable design, the Heliox Mobile DC charger is built with the daily activities of service and maintenance personnel in mind. And with no fixed installation required, you'll save thousands on infrastructure costs as well.

Manufactured and tested in the United States ensuring Buy America Act compliance.

Perfect for getting started with EV or scaling up. Simply connect to a 480V AC wall socket and start charging.

With a compact design and no fixed installation, Mobile 50 can be moved to charge anywhere it can be plugged in.

Mobile 50 kW

Durable: A strong metal casing and wheel system means Mobile 50 kW stands up to daily wear and tear in ways other portable chargers simply cannot. And with a NEMA 3R rated enclosure, Mobile can be safely operated both indoors and outside.

Future-proof: The Mobile 50 kW is the perfect EV charging companion, now and in the future. No matter what direction your business is headed, this charger will always be by your side, providing reliable charging when and where you need it.

96.2%
Efficiency

General

Charging standard:	SAE J1772 (CCS type-1)
Communication standard:	DIN70121 / ISO15118-1/2/3
Compliance and safety:	UL 2202 / UL 2231
Power factor above 50% rated:	>0.98
Peak efficiency:	96.2%
Dielectric withstand:	3000 V
Network cellular:	4G modem
Back office:	OCPP 1.6J
Temperature range:	-4 to 104 °F
Operational noise level:	<55 dB(A) @ 40"
System weight:	270 lbs.
Dimensions:	H: 36", W: 20", D 20"
Protection	NEMA 3R
Environment operating:	ISO 12944: C4 H

Input

Input connections, Frequency:	3P + G, 47-63 Hz
Input current limit values:	15 A / 25 A / Max. (user selected)
Full load / idle input power:	54 kVA / 15 VA
Input line-line voltage range:	480 V AC +/- 10%, 60 Hz
Input max. AC phase current:	65 A, inrush current limited

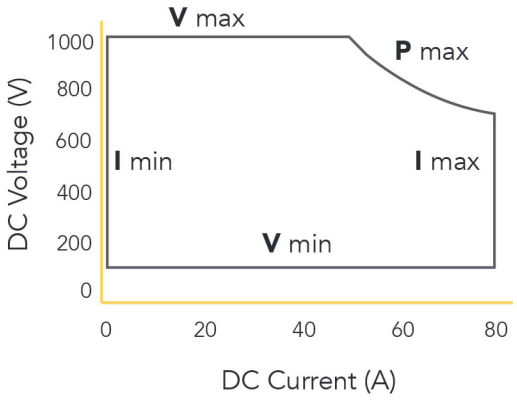
Output

Output DC voltage range:	100 - 1000 V
Rated DC output power:	50 kW
Output power limits:	11 kW (@ 15 A AC input current) 19 kW (@ 25 A AC input current) 50 kW (@ Max. input current)
Maximum DC output current:	80 A

One charger, three settings

Raise or lower your charger input with the turn of a dial, enabling you to activate sessions in situations where power supply may be limited.

Actual power maybe impacted due to vehicle parameters



heliox

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