



August 11, 2020

## ADDENDUM NO. 2

RE: Site Improvements and Renovations to Davis Hall  
Bridge Valley Community and Technical College  
Montgomery, West Virginia 25136  
Architect's Job No. 18046

TO: Prospective Bidders

FROM: ZMM, Inc. Architects and Engineers

This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents.

**ATTACH THIS ADDENDUM TO THE FRONT COVER OF THE PROJECT MANUAL AND ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE SPACE PROVIDED ON THE BID FORM.**

### PART 1 - CHANGES TO SPECIFICATIONS

- A. REPLACE Section 221329 "Sanitary Sewer Pumps dated 07/29/20 with replacement Section 221329 as attached to this Addendum.
- B. DELETE Section 271116 "Communications Racks, Frames, and Enclosures".

### PART 2 - CHANGES TO DRAWINGS

- A. Refer to Supplemental Drawing Nos. ESKO1 and ESKO2 as attached to this Addendum.
- B. REPLACE Drawing ME160 with ME160R1 as attached to this Addendum
- C. REPLACE Drawing E131 with E131R1 as attached to this Addendum
- D. REPLACE Drawing E141 with E141R1 as attached to this Addendum

Attachments: Section 221329 "Sanitary Sewer Pumps" ..... 6 pages  
Supplemental Drawing No. ESK01 ..... 11" x 17"  
Supplemental Drawing No. ESK02 ..... 11" x 17"  
Drawing ME160R1 ..... 42" x 30"  
Drawing E131R1..... 42" x 30"  
Drawing E141R1..... 42" x 30"

END OF ADDENDUM

## SECTION 221329 - SANITARY SEWERAGE PUMPS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

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

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Submersible sewage pumps.
  - 2. Sewage-pump basin covers.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, and mounting attachment details.
  - 2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 3. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.
  - 4. Include diagrams for power, signal, and control wiring.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For pumps and controls, to include in operation and maintenance manuals.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

- A. Retain shipping flange protective covers and protective coatings during storage.
- B. Protect bearings and couplings against damage.
- C. Comply with manufacturer's written instructions for handling.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. UL Compliance: Comply with UL 778 for motor-operated water pumps.

### 2.2 Provide products from one of the following manufacturers:

- A. Zoeller (Basis of Design)
- B. WILO-EMU USA LLC
- C. Liberty Pumps

### 2.3 SUBMERSIBLE SEWAGE DUPLEX SYSTEM PUMPS

- A. Submersible, Quick-Disconnect, Grinder Sewage Pumps:
  - 1. Drawings indicate basis of design.
  - 2. Description: Factory-assembled and factory-tested, duplex grinder sewage-pump unit with guiderail supports.
  - 3. Pump Type: Submersible, end-suction, single-stage, close-coupled, overhung-impeller, centrifugal sewage pump as defined in HI 1.1-1.2 and HI 1.3.
  - 4. Pump Casing: Cast iron, with open inlet, and discharge fittings for connection to guiderail supports.
  - 5. 304 SS fasteners and lifting bail
  - 6. Carbon/ceramic mechanical seals located in tandem.
  - 7. Impeller: balanced ductile iron vortex impeller.
  - 8. Corrosion resistant powder coated epoxy finish.
  - 9. ASTM A-48 Class 30 grey cast iron housing with integral fins for maximum heat dissipation.
  - 10. Statically and dynamically balanced, with stainless-steel cutter, grinder, or slicer assembly; capable of handling solids; and keyed and secured to shaft.
  - 11. The cutter shall be capable of forward and reverse rotation by means of an automatic or manual controller without removal from the pit.
  - 12. The cutter and shredding disc shall be capable of removal without disassembling the pump for easy surface reconditioning.
  - 13. Pump and Motor Shaft: ANSI 416 Stainless steel, with factory-sealed, grease-lubricated ball bearings.
  - 14. Motor: Hermetically sealed, capacitor-start type; with built-in overload protection; lifting eye or lug; and three-conductor, waterproof power cable of length required and with grounding plug and cable-sealing assembly for connection at pump.
    - a. Motor Housing Fluid: Oil.

15. Controls:

- a. Enclosure: NEMA 250, Type 4X wall mounted.
- b. The panel shall contain the required starting, control, and alarm circuits.
- c. The panel shall have short circuit protection.
- d. The panel shall have pump run pilot lights and pump and alarm selector switches.
- e. The panel shall be equipped circuits which automatically reverses the direction for the cutter blades.
- f. A seal leak indicator light is required as well as a thermal cut-out connection for the system.
- g. A padlock hasp shall be provided on the control panel.
- h. High water conditions shall be indicated by a visible light with polycarbonate cover.
- i. Numbered terminal strips are required.
- j. A wiring schematic and trouble shooting guide shall be included.
- k. The panel shall be UL listed and labeled for the application.
- l. Rated motor starters and circuit breakers are required for each pump.
- m. Switch Type: Four mechanical-float or pressure type, in NEMA 250, Type 6 enclosures with mounting rod and electric cables.
- n. Automatic Alternator: Start pumps on successive (lead/lag) cycles and start multiple pumps if one cannot handle load.
- o. High-Water Alarm: Rod-mounted, NEMA 250, Type 6 enclosure with mechanical-float or pressure switch matching control and electric bell; 120 V ac, with transformer and contacts for remote alarm bell.

16. Control-Interface Features:

- a. Remote Alarm Contacts: For remote alarm interface.

17. Guiderail Supports:

- a. Standard: SWPA's "Submersible Sewage Pumping Systems (SWPA) Handbook."
- b. Guide Rails: Vertical pipes or structural members, made of galvanized steel or other corrosion-resistant metal, attached to baseplate and basin sidewall or cover.
- c. Baseplate: Corrosion-resistant metal plate, attached to basin floor, supporting guide rails and stationary elbow.
- d. Pump Yoke: Motor- or casing-mounted yokes or other attachments for aligning pump during connection of flanges.
- e. Movable Elbow: Pump discharge-elbow fitting with flange, seal, and positioning device.
- f. Stationary Elbow: Fixed discharge-elbow fitting with flange that mates to movable-elbow flange and support attached to baseplate.
- g. Lifting Cable: Stainless steel; attached to pump and cover at manhole.

## 2.4 SEWAGE-PUMP BASIN COVERS

- A. Basin Covers: Fabricate metal cover with openings having gaskets, seals, and bushings; for access to pumps, pump shafts, control rods, discharge piping, vent connections, and power cables.

1. Reinforcement: Steel or cast iron, capable of supporting foot traffic for basins installed in foot-traffic areas.

B. Basin Capacities and Characteristics:

1. Existing Basin to be utilized.
2. Volume: Existing, to be verified.
3. Diameter: Existing, to be verified.
4. Depth: Existing to be verified.
5. Inlet(s) size and elevation: Existing to be verified
6. Top Outlet:
  - a. Discharge Pipe Size: 2 NPS.
7. Cover Material: Cast iron or steel with bituminous coating.
8. Cover Diameter: Match existing.
9. Vent Size: 2 NPS.

## 2.5 MOTORS

A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors.

1. Duplex pump system.
2. Motor Sizes: 2HP, 60Hz, 3450 rpm.
3. Service Factor: 1.15
4. Class F insulation - 115°C
5. Operate over the complete performance curve without overloading or excessive vibration.
6. Single upper and lower ball bearing.
7. Three phase internal thermal sensor protection.
8. Cable length: As required to meet existing conditions.
9. Integral wired-in rotor/shaft direction reversing action.
10. ANSI 416 Stainless steel rotor shaft

B. Motors for submersible pumps shall be hermetically sealed.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

A. Examine roughing-in for plumbing piping to verify actual locations of sanitary drainage and vent piping connections before sewage pump installation.

### 3.2 INSTALLATION

A. Pump Installation Standards:

1. Comply with HI 1.4 for installation of centrifugal pumps.
2. Comply with HI 3.1-3.5 for installation of progressing-cavity sewage pumps.

B. Equipment Mounting:

C. Wiring Method: Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

D. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools.

### 3.3 CONNECTIONS

A. Comply with requirements for piping specified in Section 221316 "Sanitary Waste and Vent Piping." Drawings indicate general arrangement of piping, fittings, and specialties.

B. Where installing piping adjacent to equipment, allow space for service and maintenance.

### 3.4 FIELD QUALITY CONTROL

A. Produce a field report illustrating the basin existing conditions.

1. Basin depth.
2. Basin diameter.
3. Inlet pipe elevation.
4. Pump model number.
5. Pump serial number.
6. The pump curve for the existing pump.
7. Float elevations.
8. See general notes on detail number 1 located on drawing ME160R1.

B. Manufacturer's Field Service: Engage a factory-authorized service representative to test, inspect, and adjust components, assemblies, and equipment installations, including connections.

C. Pumps and controls will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

### 3.5 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.

### 3.6 ADJUSTING

A. Adjust pumps to function smoothly and lubricate as recommended by manufacturer.

B. Adjust control set points.

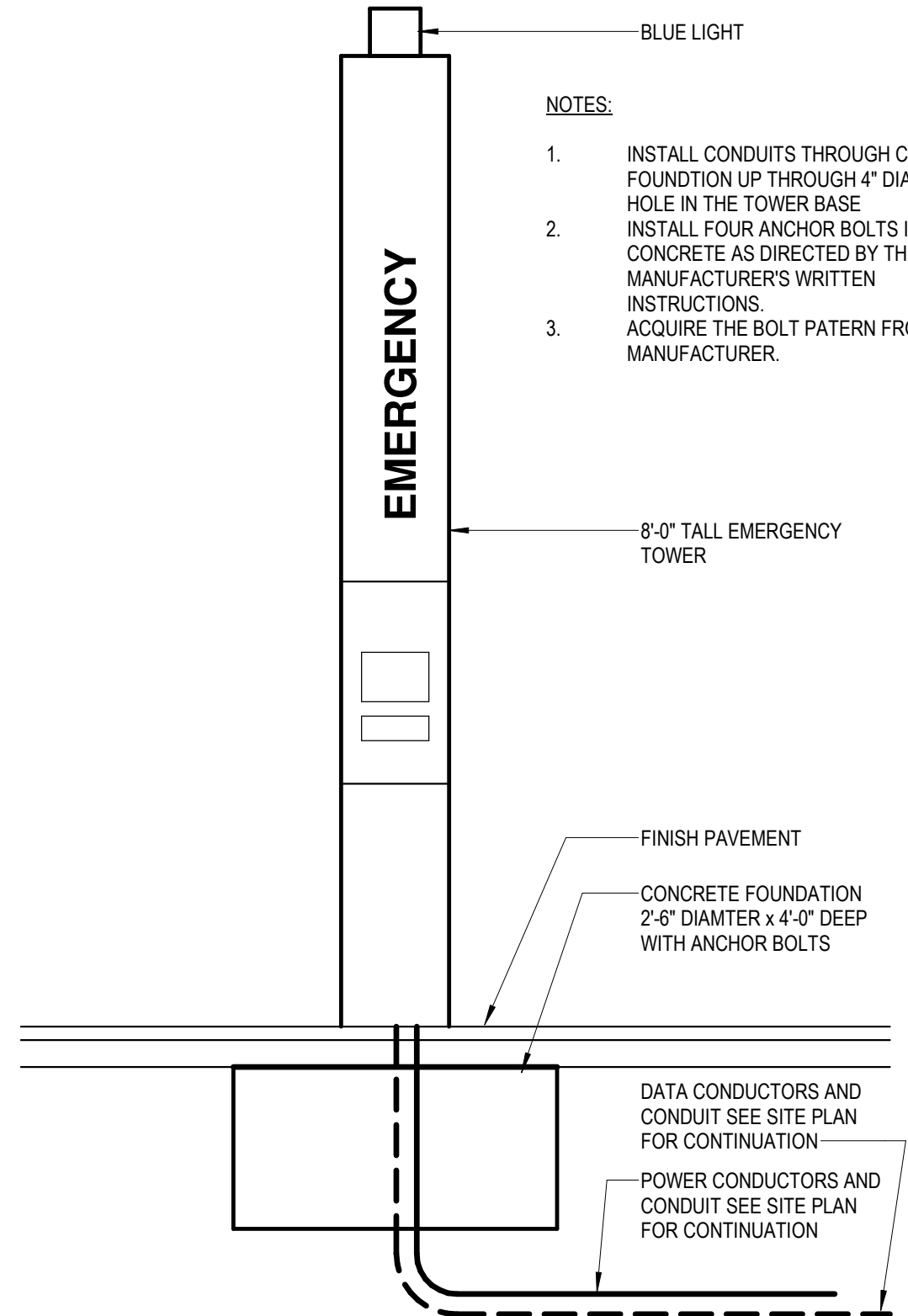
3.7 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain controls and pumps.

END OF SECTION 221329

NO.	DESCRIPTION	DATE

ATTACHMENT TO:  
 ADDENDUM NO. 2  
 CHANGE ORDER NO.  
 C.C.D. NO.



**NOTES:**

1. INSTALL CONDUITS THROUGH CONCRETE FOUNDATION UP THROUGH 4" DIAMETER HOLE IN THE TOWER BASE
2. INSTALL FOUR ANCHOR BOLTS IN THE CONCRETE AS DIRECTED BY THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ACQUIRE THE BOLT PATTERN FROM THE MANUFACTURER.

**4** **EMERGENCY TOWER**  
 NO SCALE

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**SUPPLEMENTAL DRAWING**

NEW DRAWING or DETAIL  
 REVISION OF DRAWING or DETAIL 4  
 CLARIFICATION OF DRAWING or DETAIL

**DAVIS HALL**  
 MONTGOMERY, WV

DRAWN  
**M ESTEP**

DATE  
**08/11/20**

COMM. NO.  
**18046**

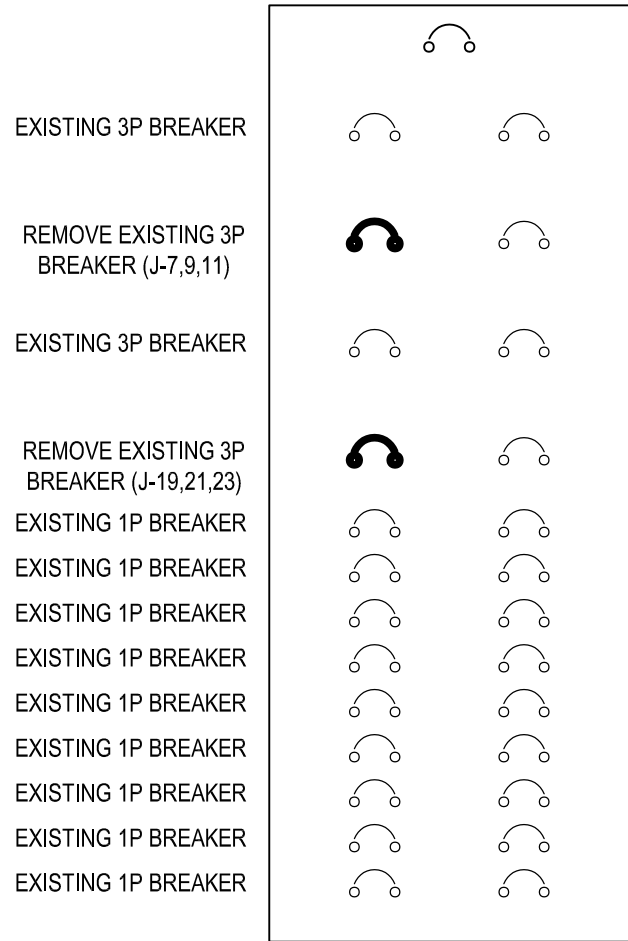
**E SK01**





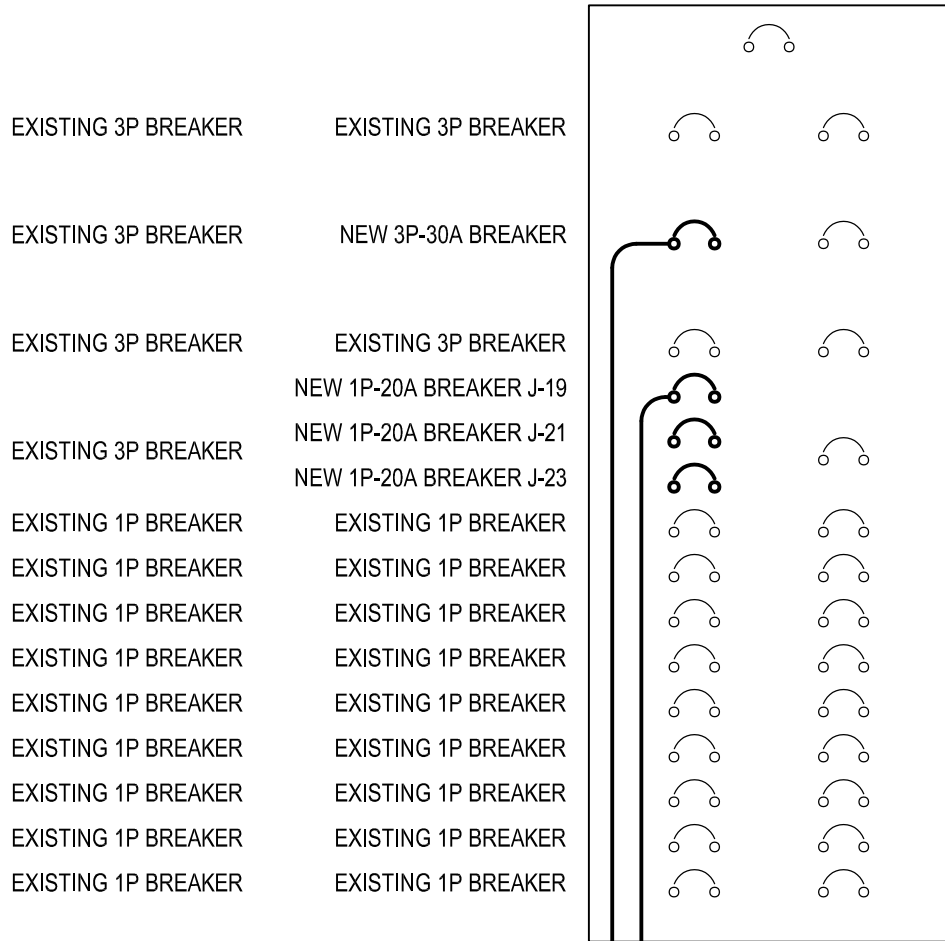
**DEMOLITION**

EXISTING 480Y/277V PANEL 'J'  
LOCATED WITHIN ROOM 108

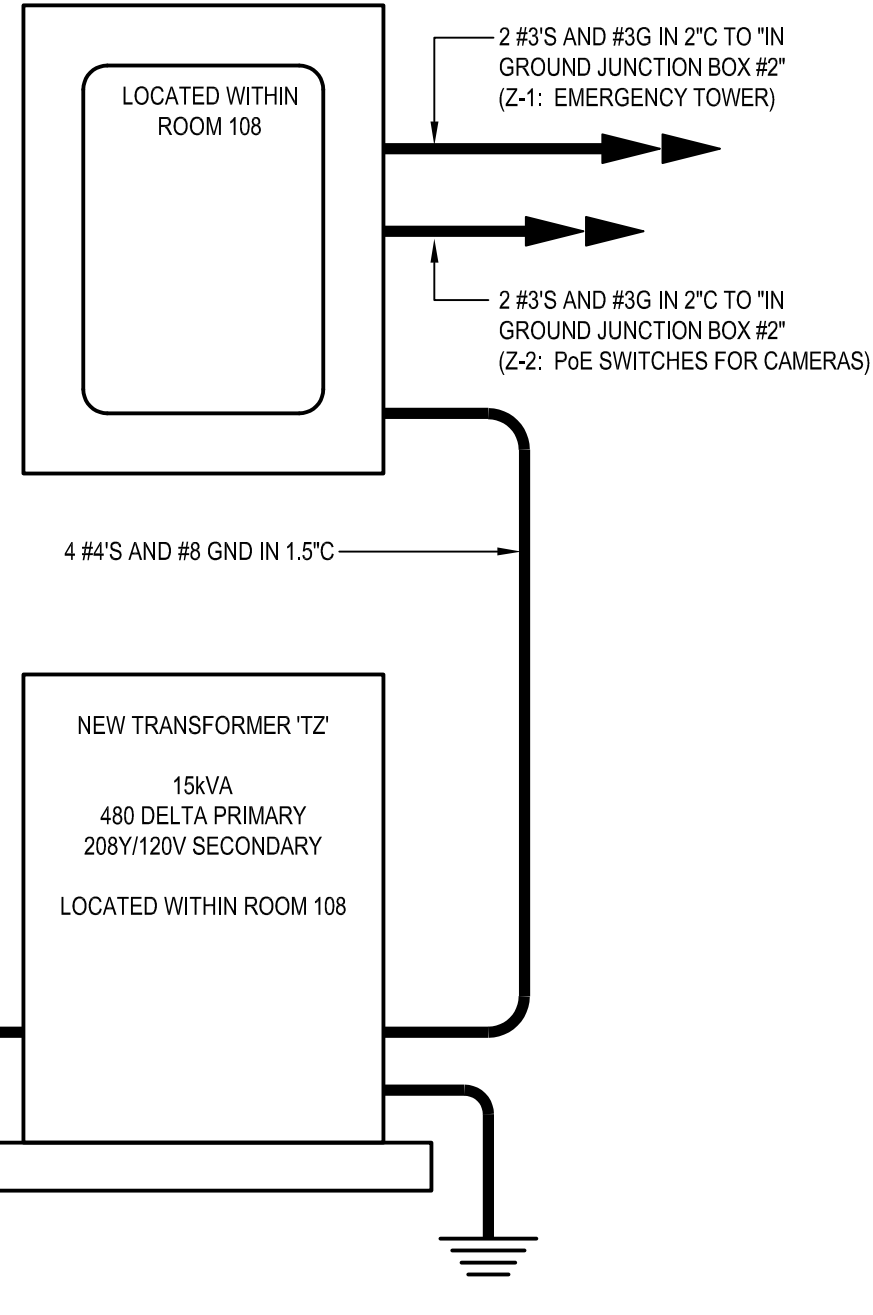


**NEW**

EXISTING 480Y/277V PANEL 'J'  
LOCATED WITHIN ROOM 108



NEW 208Y/120V PANEL 'Z'  
LOCATED WITHIN ROOM 108



PANEL 'J' CKRT # 7,9,11  
3 #10'S AND #12 GND IN 1" C

2 #8'S AND #8 GND IN 2" C  
TO SITE LIGHTING SEE  
E141 FOR CONTINUATION

**ELECTRICAL RISER DIAGRAM**

**SUPPLEMENTAL DRAWING**

- NEW DRAWING or DETAIL \_\_\_\_\_ on sheet E540
- REVISION OF DRAWING or DETAIL \_\_\_\_\_ on sheet \_\_\_\_\_
- CLARIFICATION OF DRAWING or DETAIL \_\_\_\_\_ on sheet \_\_\_\_\_

ATTACHMENT TO:  
 ADDENDUM NO. 2  
 CHANGE ORD. NO. \_\_\_\_\_  
 C.C.D. NO. \_\_\_\_\_

BY: M ESTEP

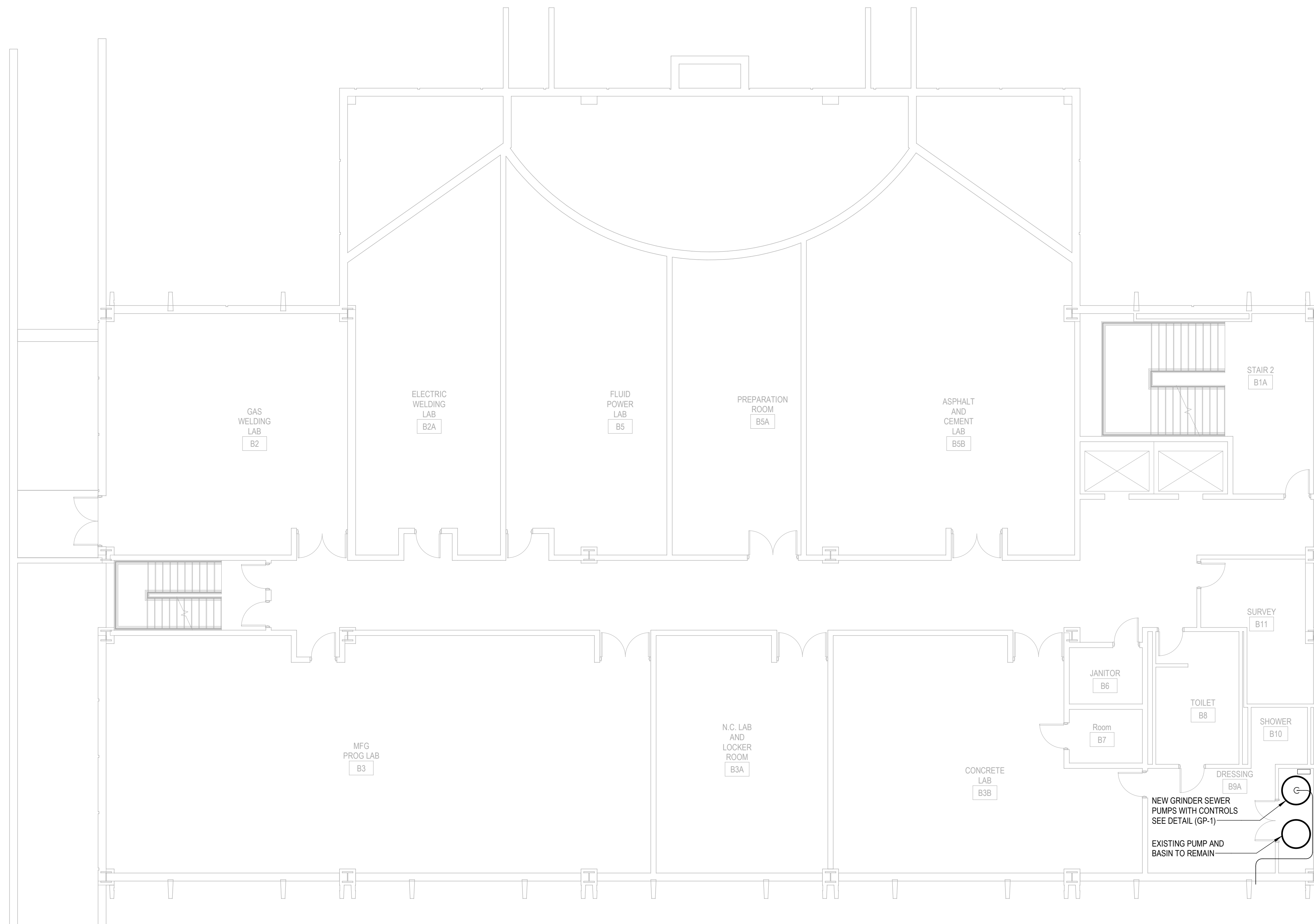
DWG. NO. **E SK02**

**DAVIS HALL**  
MONTGOMERY, WV

**ZMM**  
ARCHITECTS  
ENGINEERS

222 Lee Street, West  
Charleston, West Virginia 25302  
Phone: 304.342.0159  
Fax: 304.345.8144

COMM. NO. **18046**

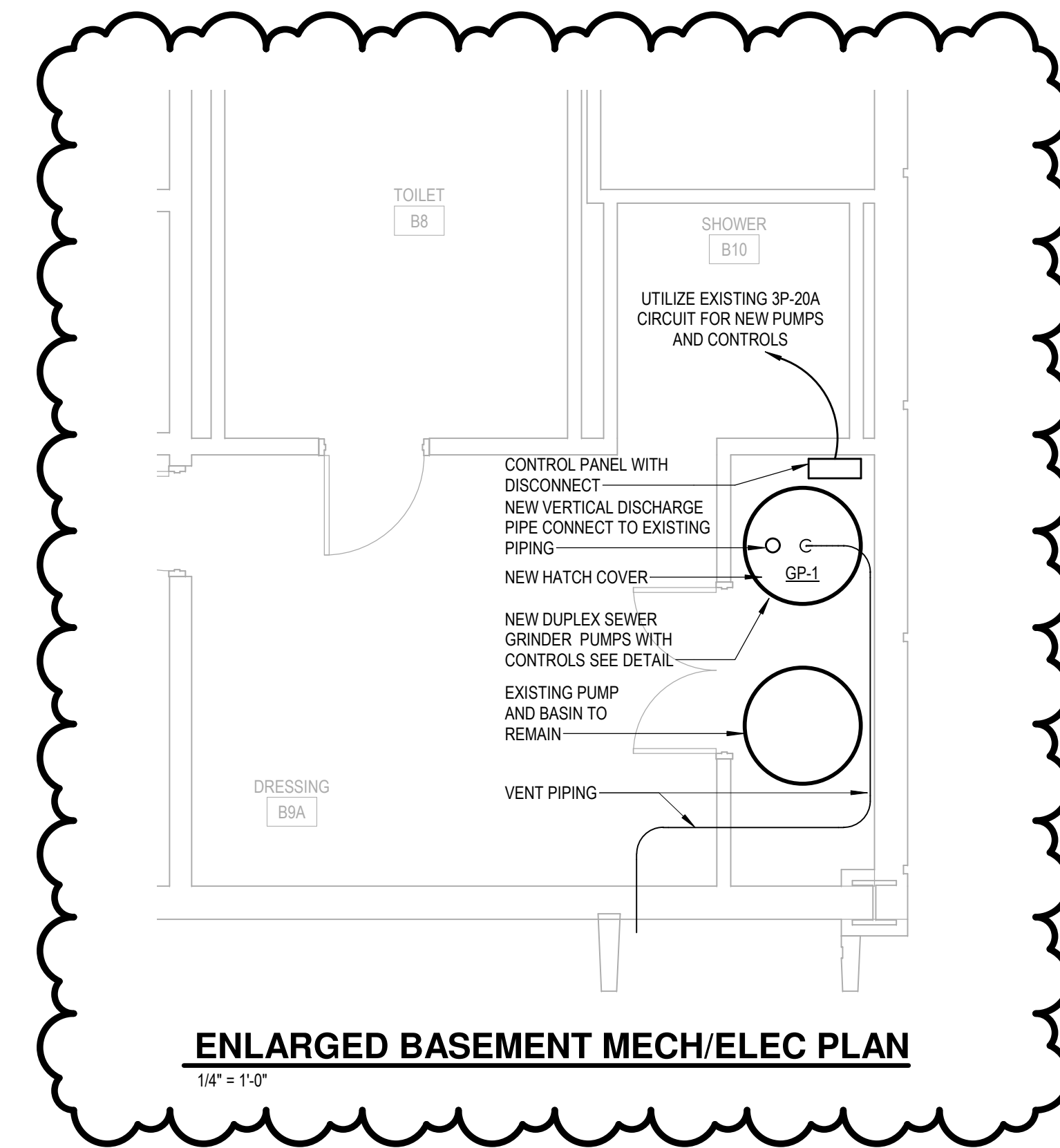


**BASEMENT MECH/ELEC PLAN**

1/8" = 1'-0"

**REVISION #1: REVISED SCHEDULE**

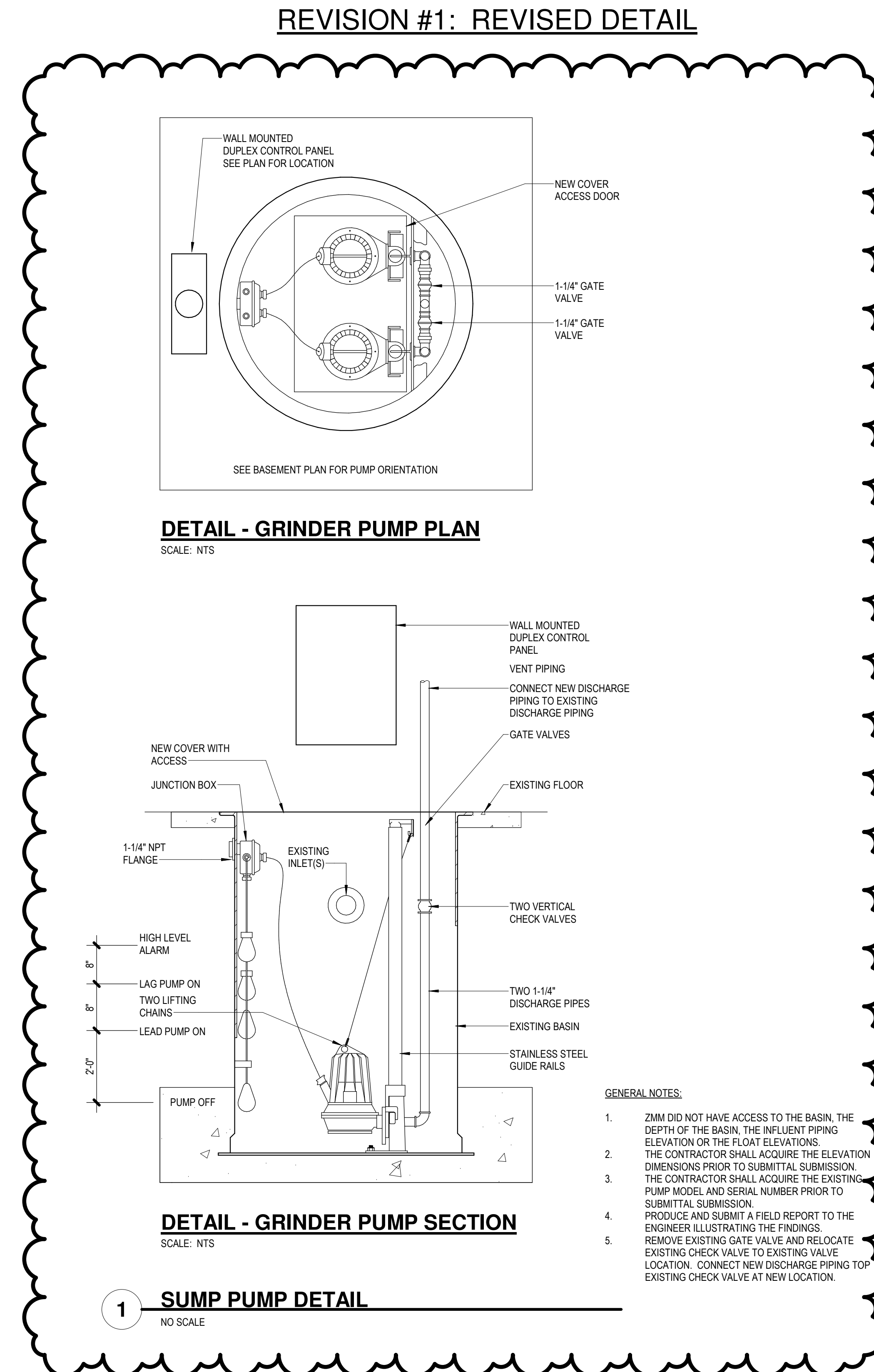
SUBMERSIBLE DUPLEX GRINDER PUMP								
MARK	ZOELLER MODEL NO.	GPM	TDH	HP	VOLT/PH	RPM	DISCHARGE PIPE SIZE/TYPE	REMARKS
GP-1								
PUMP #1	G842	30	40'	2	480 / 3	1750	2" BLACK STEEL ROUTED FROM PUMP TO SAN MAIN	ZOELLER IS THE BASIS OF DESIGN. PROVIDE GAS TIGHT STEEL HATCH COVER TO FIT THE EXISTING BASIN. PROVIDE DUPLEX PUMP CONTROL PANEL.
PUMP #2	G842	30	40'	2	480 / 3	1750		



**ENLARGED BASEMENT MECH/ELEC PLAN**

1/4" = 1'-0"

**REVISION #1: ENLARGED PLAN**



**DETAIL - GRINDER PUMP PLAN**

SCALE: NTS

**DETAIL - GRINDER PUMP SECTION**

SCALE: NTS

**1 SUMP PUMP DETAIL**

NO SCALE

- GENERAL NOTES:**
- ZMM DID NOT HAVE ACCESS TO THE BASIN, THE DEPTH OF THE BASIN, THE INFLUENT PIPING ELEVATION OR THE FLOAT ELEVATIONS. THE CONTRACTOR SHALL ACQUIRE THE ELEVATION DIMENSIONS PRIOR TO SUBMITTAL SUBMISSION.
  - THE CONTRACTOR SHALL ACQUIRE THE EXISTING PUMP MODEL AND SERIAL NUMBER PRIOR TO SUBMITTAL SUBMISSION.
  - PRODUCE AND SUBMIT A FIELD REPORT TO THE ENGINEER ILLUSTRATING THE FINDINGS.
  - REMOVE EXISTING GATE VALVE AND RELOCATE EXISTING CHECK VALVE TO EXISTING VALVE LOCATION. CONNECT NEW DISCHARGE PIPING TOP EXISTING CHECK VALVE AT NEW LOCATION.

NO.	REVISION	DESCRIPTION	DATE
1	Revision 1		

SITE IMPROVEMENTS AND RENOVATIONS TO  
**DAVIS HALL**  
BRIDGEVALLEY COMMUNITY & TECHNICAL COLLEGE  
MONTGOMERY, WV  
OWNER REVIEW SET

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**BASEMENT MECH/ELEC PLAN**

DRAWN	CHECKED
PAS	MWE
MWE	DATE
	07/27/20
	COMM. NO.
	18046

**LIGHTING SYMBOLS LEGEND**

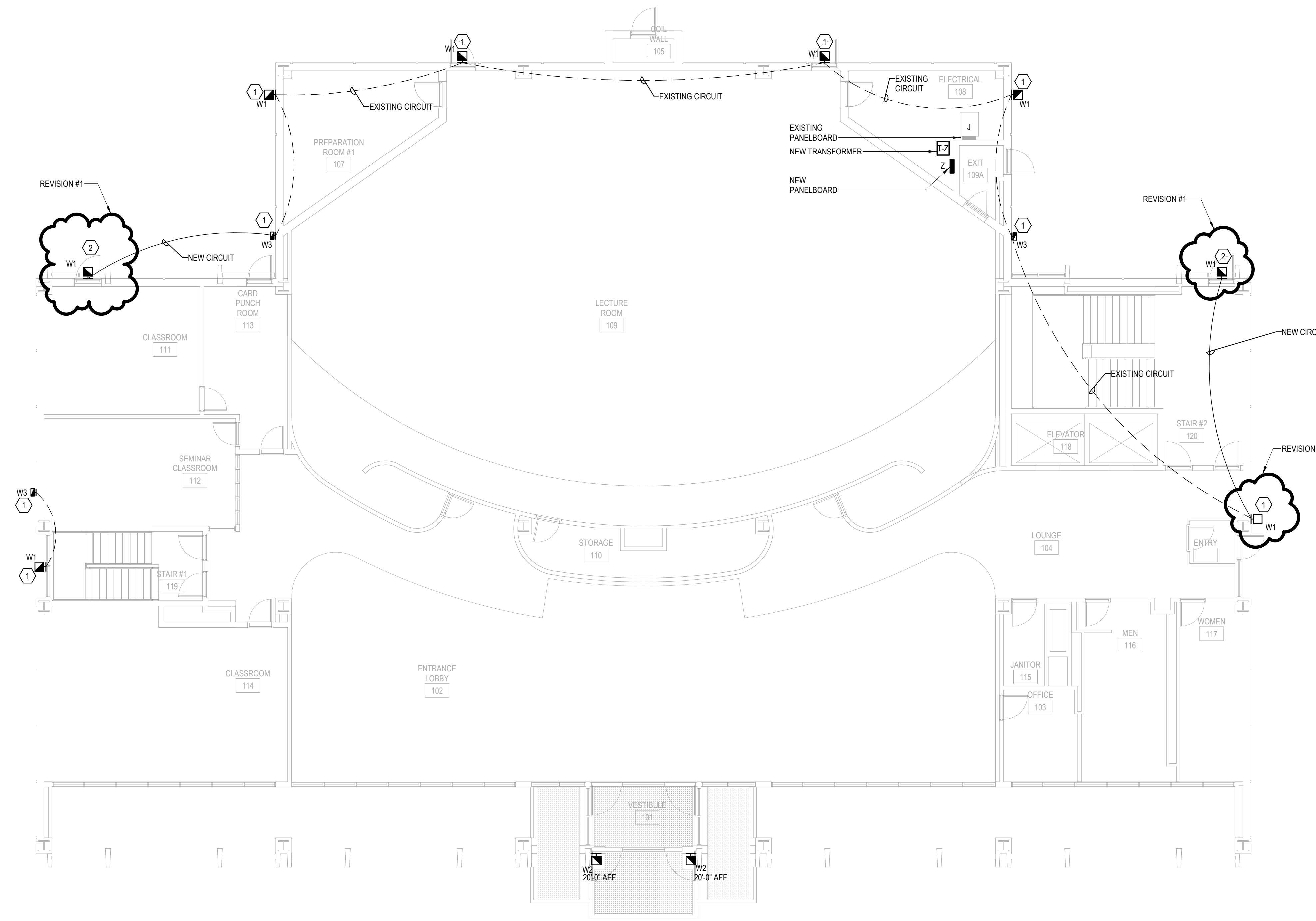
- LED EXTERIOR WALL MOUNTED FIXTURE WITH EMERGENCY BATTERY
- HOMERUN TO PANELBOARD
- NEW CONDUIT AND WIRING
- EXISTING CONDUIT AND WIRING

**GENERAL NOTES**

1. ELECTRICAL CONTRACTOR TO PROVIDE ALL MATERIALS REQUIRED TO SEAL FIRE AND SMOKE WALL PENETRATIONS PER U.L. STANDARDS INDICATED IN FIRESTOPPING SPECIFICATIONS.
2. TYPE MC CABLE SHALL NOT BE UTILIZED AS A GENERAL WIRING METHOD IN LIEU OF CONDUIT OR RACEWAY.
3. IDENTIFY PANELBOARD AND CIRCUIT NUMBER ON BACK SIDE OF SWITCH PLATES AS INDICATED IN SPECIFICATION SECTION 269553.

**KEYED NOTES**

1. INSTALL A NEW LUMINAIRE UTILIZE THE EXISTING CIRCUIT.
2. INSTALL A NEW LUMINAIRE POWER FROM CIRCUIT AS INDICATED.



**FIRST FLOOR LIGHTING PLAN**  
1/8" = 1'-0"

NO.	REVISIONS	DESCRIPTION	DATE
1	Revision 1		

SITE IMPROVEMENTS AND RENOVATIONS TO  
**DAVIS HALL**  
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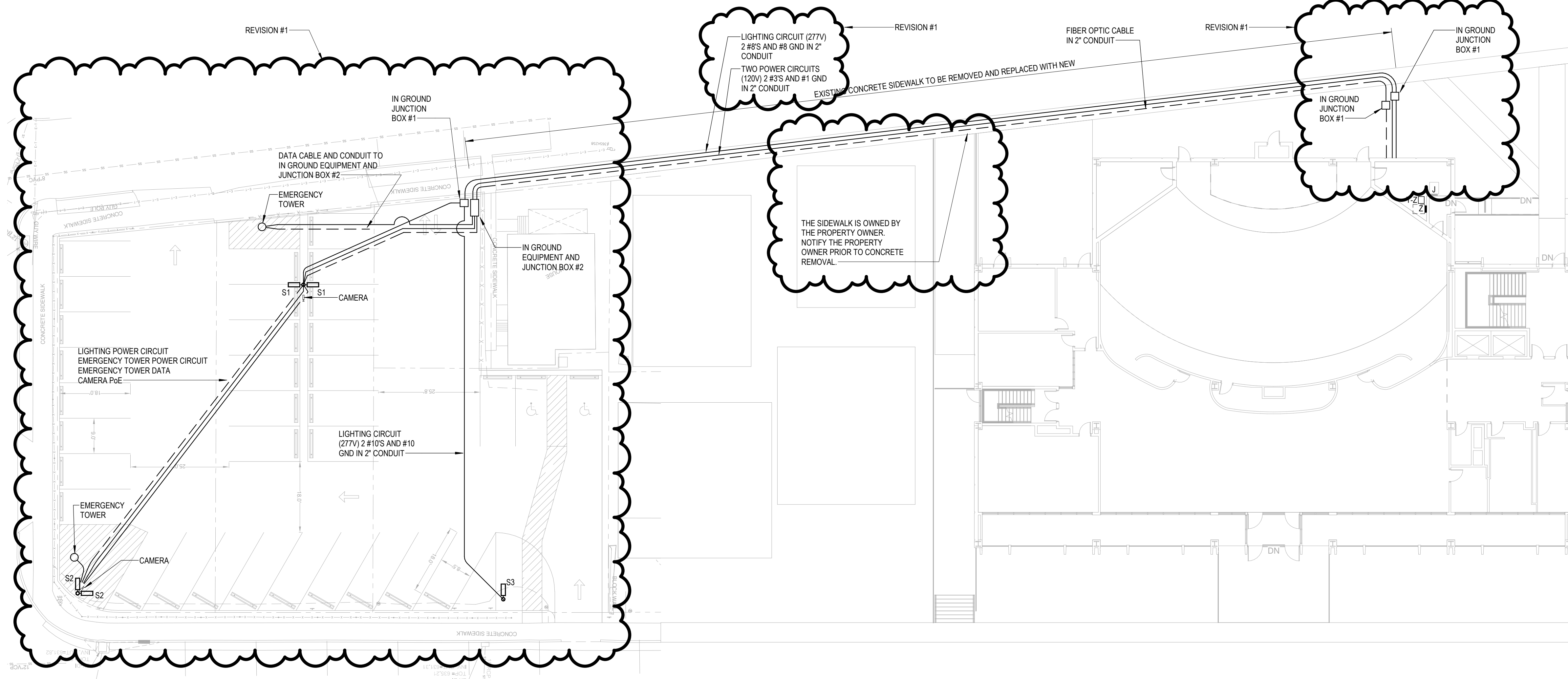
**FIRST FLOOR LIGHTING PLAN**

DRAWN	CHECKED
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	COMM. NO.
	18046

**REVISION #1: REVISED  
GENERAL NOTES**

**GENERAL NOTES**

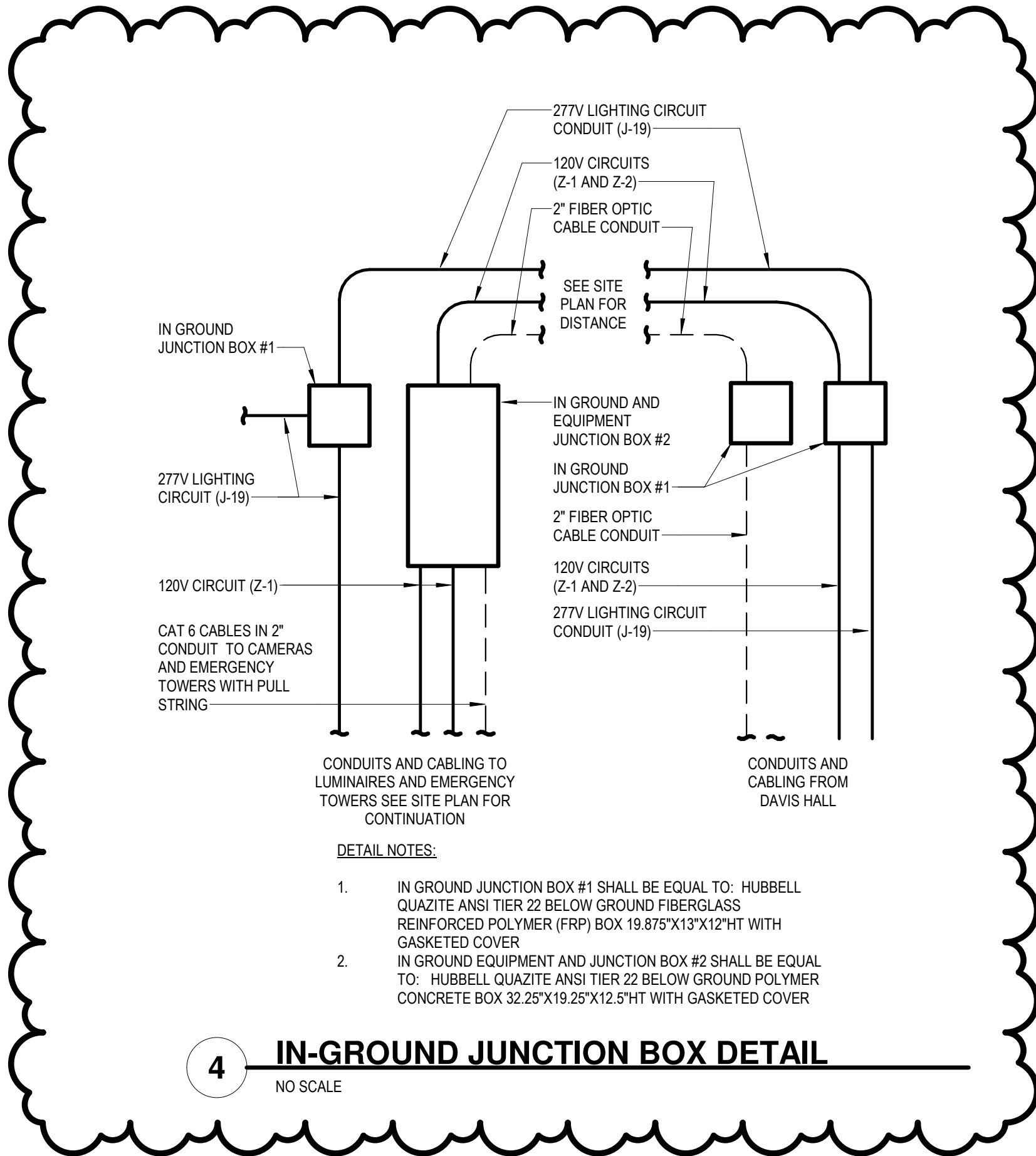
- ALL EXTERIOR UNDERGROUND CONDUITS SHALL BE 1" PVC MINIMUM SIZE INGROUND POLYMER CONCRETE PULLBOXES AS REQUIRED PER NEC FOR CONDUIT ENTRY AND EXITING.
- SEE SPECIFICATIONS FOR INDUSTRIAL POE SWITCH. INSTALL POE SWITCH IN A NEMA 3R BOX WITHIN THE INGROUND JUNCTION BOX #2. SEE SPECIFICATIONS.
- SEE SPECIFICATIONS FOR CAMERA. THE CAMERA SHALL BE INCORPORATED INTO THE EXISTING SURVEILLANCE SYSTEM. MOUNT THE CAMERA TO THE SITE LIGHTING POLES. COORDINATE THE WORK WITH OTHER TRADES. SEE SPECIFICATIONS.
- SEE SPECIFICATIONS FOR EMERGENCY TOWER.



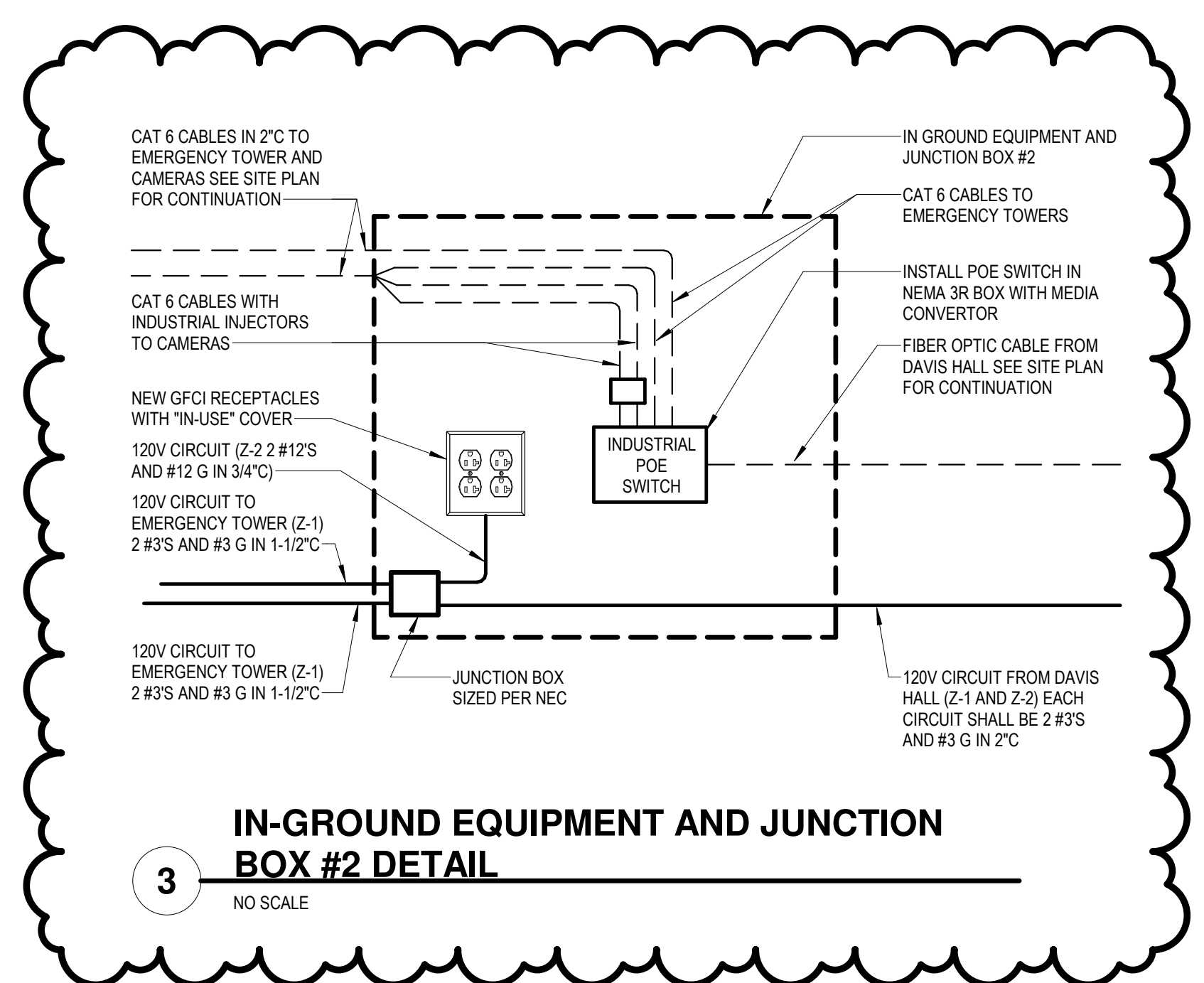
**SITE LIGHTING PLAN**  
1/16" = 1'-0"

SITE LIGHTING FIXTURE SCHEDULE								
TYPE	LAMPS	VOLTAGE	LUMENS	LOAD	DESCRIPTION	MOUNTING	MANUFACTURER	COMMENTS
S1	LED	277V	22,327 LUMENS DUAL 3000K	185W	LED PARKING LOT FIXTURE 70 LEDS, 700mA DRIVER 3000K, FORWARD THROW MEDIUM DISTRIBUTION 22,327 LUMENS, INTEGRAL PHOTOCELL, TEXTURED WHITE FINISH, DUAL HEADS	GROUND MOUNTED 30' ABOVE GRADE	LITHONIA D-SERIES (2) DSX2 LED P2 30K TFTM MVOLT SPA HAPCO SSA 22 DS 4 D2 DWHGX	PROVIDE 27" 5" SQUARE ALUMINUM POLE MOUNTED ATOP CONCRETE PEDESTAL BASE, DUAL HEADS
S2	LED	277V	22,327 LUMENS DUAL 3000K	185W	LED PARKING LOT FIXTURE 70 LEDS, 700mA DRIVER 3000K, FORWARD THROW MEDIUM DISTRIBUTION 22,327 LUMENS, INTEGRAL PHOTOCELL, TEXTURED WHITE FINISH, DUAL HEADS	GROUND MOUNTED 30' ABOVE GRADE	LITHONIA D-SERIES (2) DSX2 LED P2 30K TFTM MVOLT SPA HAPCO SSA 22 DS 4 D2 DWHGX	PROVIDE 27" 5" SQUARE ALUMINUM POLE MOUNTED ATOP CONCRETE PEDESTAL BASE, DUAL HEADS @ 90°
S3	LED	277V	22,327 LUMENS DUAL 3000K	185W	LED PARKING LOT FIXTURE 70 LEDS, 700mA DRIVER 3000K, FORWARD THROW MEDIUM DISTRIBUTION 22,327 LUMENS, INTEGRAL PHOTOCELL, TEXTURED WHITE FINISH, DUAL HEADS	GROUND MOUNTED 30' ABOVE GRADE	LITHONIA D-SERIES (2) DSX2 LED P2 30K TFTM MVOLT SPA HAPCO SSA 22 DS 4 D2 DWHGX	PROVIDE 27" 5" SQUARE ALUMINUM POLE MOUNTED ATOP CONCRETE PEDESTAL BASE.

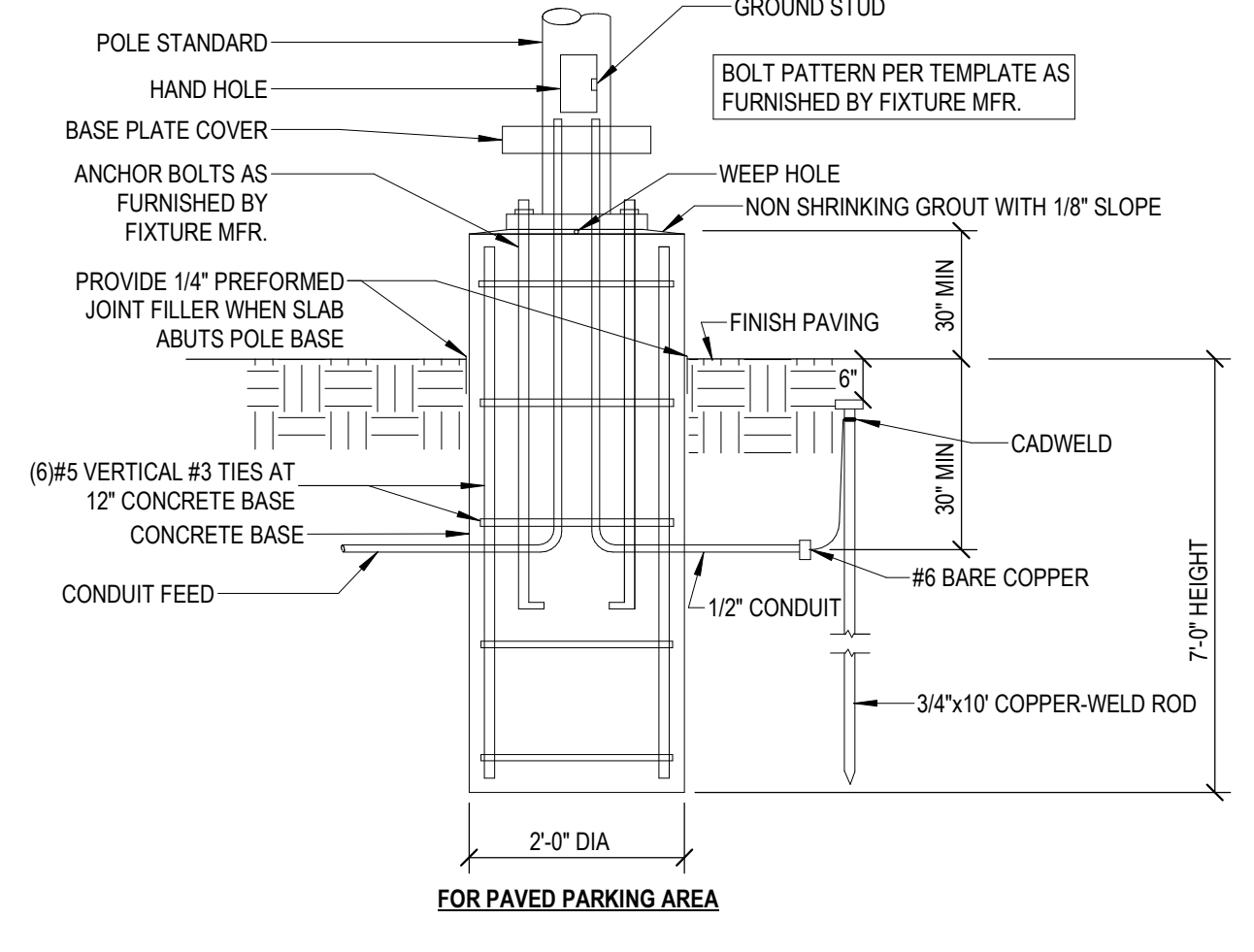
**REVISION #1: ADDED DETAIL**



**REVISION #1: REVISED DETAIL**



**3 IN-GROUND EQUIPMENT AND JUNCTION BOX #2 DETAIL**  
NO SCALE



**1 POLE BASE DETAIL PAVED PARKING**  
NO SCALE

NO.	REVISIONS	DESCRIPTION	DATE
1	Revision 1		

SITE IMPROVEMENTS AND RENOVATIONS TO  
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**SITE ELECTRICAL PLAN**

DRAWN	CHECKED
PAS	MWE
MWE	DATE
	07/27/20
	COMM. NO.
	18046