



**DESIGN AND CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242**

ADDENDUM NO. 5 TO PROJECT NO. 45065

**ELECTRICAL WORK
REPLACE EXTERIOR LIGHTING
NYS POLICE TROOP B HEADQUARTERS
1097 ROUTE 86
RAY BROOK, NY 12977**

March 9, 2016

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual. Acknowledge receipt of this Addendum in the space provided on the Bid Form.

SPECIFICATION GROUP

1. SECTION 262750 – SURGE PROTECTIVE DEVICES: Page 262750-2, Paragraph 2.03 A. Change to read: “General: The Contractor shall furnish and install the Surge Protective Device (SPD) equipment as shown on the Drawings. Acceptable manufacturers: Square D Co. HWA or an approved equal having:”.
2. SECTION 271524 – OPTICAL FIBER CABLES: Add the attached Section (pages 271524-1 thru 271524-8) to the Project Manual.

ELECTRICAL WORK DRAWINGS

1. Revised Drawings;
 - a. Drawing Nos. G-001, E-001, E-101, E-201, E-202, E-301, AND E-302, noted “REVISED DRAWING 3/8/16” accompany this Addendum and supersede the same numbered originally issued drawings.
2. REVISED DRAWING 3/8/16 NO. E-301 – LIGHTING FIXTURE SCHEDULE: Replace “Manufacturer” column entry for Type SL4 lighting fixture to read: "Lithonia Lighting Cat. No. TFA 400MRB 480 CWI IS DF DDBXD. Pole Cat. SSA 306J-FBCADB. Square Bullhorn Mount Cat. No. SBA28-6ADB.".
3. REVISED DRAWING 3/8/16 NO. E-301 – LIGHTING FIXTURE SCHEDULE: "Description" column entry for Type FL-1 lighting fixture: Delete "Bullet" from the second line.

4. REVISED DRAWING 3/8/16 NO. E-301 – LIGHTING FIXTURE SCHEDULE: Replace "Lamps" column entry for Type FL-1 lighting fixture to read: "1,690 Lumen Min. 4,000K C.C.T. 70 C.R.I."
5. REVISED DRAWING 3/8/16 NO. E-301 – LIGHTING FIXTURE SCHEDULE: Replace "Manufacturer" column entry for Type FL-1 lighting fixture to read: "Lithonia Lighting Cat. No. DSXF1 LED 1 A530/40K NSP 277 IS UBV DNAXD. Pole Bracket Arms Cat. No. SMACWT 32 7-10 DNA."

END OF ADDENDUM

Margaret F. Larkin
Executive Director
Design and Construction

SECTION 271524

OPTICAL FIBER CABLES

PART 1 GENERAL

1.01 DEFINITIONS

Note: For this Section, the definition below supersedes the definition in Section 014200 for Company Field Advisor.

- A. Company Field Advisor - An individual meeting the requirements of 1 or 2 below:
1. An employee of the company producing the optical fiber cables, who is certified in writing by the company to be technically qualified in design, installation, servicing and testing of the required products. Personnel involved solely in sales do not qualify.
 2. An individual employed by an organization, other than the company producing the optical fiber cables, certified in writing by the company producing the optical fiber cables, that the individual is technically qualified in design, installation, servicing and testing of the required products and is capable to act as company field advisor in their behalf. Personnel involved solely in sales do not qualify.

1.02 SUBMITTALS

- A. Waiver of Submittals: The “Waiver of Certain Submittal Requirements” in Section 013300 does not apply to this Section.
- B. Submittals Package: Submit the product data, samples, and quality control submittals specified below at the same time as a package.
- C. Product Data:
1. Catalog sheets, specifications and installation instructions for all products.
 2. Complete manufacturer’s construction details and specifications for the cables. Include for each type of cable:
 - a. Physical and optical characteristics of the optical fibers.
 - 1) Cable manufacturer’s certified test data (attenuation, bandwidth).
 - b. Physical characteristics of strength members, and jackets.
 - c. Maximum pulling strain allowed.
 - d. Crush resistance.
 - e. Overall dimension of cable.
 3. Splicing and termination data, including the following:
 - a. List of materials.
 - b. Method of connecting cables.
 - c. Details of cable preparation.
 - d. Method of applying materials, including quantities.
 - e. Precautionary measures.

- f. Drawings showing method of splicing complete with dimensions.
 - g. Written statement from cable manufacturer that splices and terminations submitted are acceptable for use with their cable.
 - h. Written statement from splicing/termination manufacturer that the connectors submitted are suitable for the proposed application.
 - i. Written statement from cable manufacturer that the cable splitter kits submitted are acceptable for use with their cable.
- 4. Statement from the Company producing the optical fiber transmitter and receiver system for which the optical fiber cables are proposed to be used, indicating that the optical characteristics meet the requirements of the Company.
 - 5. Written statement from cable manufacturer indicating recommended pulling compounds.
 - 6. Proof of Warranty documentation.
- D. Quality Control Submittals:
- 1. Cable Installer's Qualifications Data:
 - a. Name of each person who will be performing the Work and their employer's name, business address and telephone number.
 - b. Name and addresses of the required number of similar projects worked on which meet the experience criteria.
 - 2. Company Field Advisor Qualifications Data:
 - a. Name, business address and telephone number of Company Field Advisor secured for the required services.
 - b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
 - c. Services and each product for which authorization is given by the Company, listed specifically for this project.
 - 3. Cable Splicer's Qualifications Data:
 - a. Name of each person who will be performing the Work and their employer's name, business address and telephone number.
 - b. All information required showing that the experience criteria have been met.
- E. Contract Closeout Submittals:
- 1. Post installation test report.

1.03 QUALITY ASSURANCE

- A. Equipment Qualifications For Products Other Than Those Specified:
- 1. At the time of submission provide written notice to the Director of the intent to propose an "or equal" for products other than those specified. Make the "or equal" submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.
 - 2. If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed

satisfactorily for 3 years. Certify in writing that the owners of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.

- a. Make arrangements with the owners of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.
 - b. Only references from the actual owner or owner's representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual owners of the proposed products, are not acceptable.
 - 1) Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.
3. The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.
- a. Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.
4. Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.
- B. Cable Installer's Qualifications: The persons installing the Work of this Section and their Supervisor shall be personally experienced in optical fiber cable systems and shall have been engaged in the installation of optical fiber cable systems for a minimum of 3 years.
1. Furnish to the Director the names and addresses of 5 similar projects that the foregoing people have worked on during the past 3 years.
- C. Company Field Advisor: Secure the services of the cable manufacturer's Company Field Advisor for a minimum of 16 working hours for the following:
1. Render advice regarding method of installing cable.
 2. Inspection of equipment for installing cable.
 3. Witness a representative amount of cable pulling.
 - a. Company Field Advisor must witness a minimum of 25 percent of the cable pulling.
 4. Witness installation of at least one splice and one termination by each cable splicer who will be doing the actual cable splicing.
 - a. If the splices or terminations are other than the cable manufacturer's, secure the services of the splice and termination manufacturer's Company Field Advisor to concurrently witness installation of the splices and terminations and also certify with

an affidavit that the splices and terminations were installed in accordance with the splice and termination manufacturer's recommendations.

5. Witness post installation test.
 6. Certify with an affidavit that the aforementioned particulars are satisfactory and the cable is installed in accordance with cable manufacturer's recommendations.
- D. Cable Splicers' Qualifications: The persons installing the optical fiber splices and/or terminations, and their Supervisor, shall be personally experienced in splicing and terminating optical fiber cable systems and shall have been engaged in the installation of optical fiber cable systems for a minimum of 3 years.
1. Experience should be in the same types of splices and terminations proposed for this project and each project listed should be of similar size, as this project requires.
 2. Furnish to the Director the following information on 5 similar projects that the foregoing people have worked on during the past 3 years.
 - a. Qualifications Data should include:
 - 1) Names and addresses of the similar projects.
 - 2) Types of splices and terminations performed on the similar projects.
 - 3) Number of each type of splices and terminations for each of the listed projects.

1.04 DELIVERY, STORAGE AND HANDLING

- A. Cable Delivery:
1. No cable over one year old when delivered to the site will be accepted.
 2. Keep ends of cables sealed at all times, except when making splices or terminations. Use methods approved by cable manufacturer.
 3. Include the following data durably marked on each reel:
 - a. Reel number.
 - b. Facility name and address.
 - c. Contractor's name.
 - d. Project title and number.
 - e. Date of manufacture.
 - f. Manufacturer's name.
 - g. Linear feet.
 - h. Location where cable is to be installed (i.e., Between manholes No. 1 and 2).
 4. Include the following factory test data for each cable, showing the following:
 - a. The reel number that the cable is on.
 - b. The cable manufacturer's specified optical parameters for the type of fiber installed in the cable.
 - c. Test readings for all fibers in the cable, showing that all fibers have been tested and that each fiber meets or exceeds the cable manufacturer's specified optical parameters for that fiber type.

- B. Cable Storage: Store cable at temperature recommended by cable manufacturer for optimum workability.

1.05 MAINTENANCE

- A. Spare Parts:
 - 1. Four of each type connector.
 - 2. Four type JFO connectorized optical fiber jumper cables.
 - 3. One splitter kit.

1.06 WARRANTY

- A. Fifteen - (15) year manufacturer's product and performance warranty for all wiring system components. The performance warranty shall warrant the installed cabling system including fiber optic cables. Minimum expected performance results as defined in the TIA/EIA 568, Annex h.

PART 2 PRODUCTS

2.01 NONCONDUCTIVE OPTICAL FIBER CABLES - 50 MICRON/125 MICRON (CORE/CLAD)

- A. Type SFO; Heavy duty dual jacketed indoor/outdoor fiber optic cable, Chromatic Technologies, Inc., General Cable or Remeo Products Corp. having:
 - 1. 6 optical fibers.
 - a. 6 optical fibers in one gel filled loose tube.
 - b. Fiber diameter (core/clad): 50 micron/125 micron. Must meet or exceed Fiber Standard ITU-TG.652.
 - c. Fiber type: Graded index multimode fiber.
 - d. Maximum Fiber Attenuation:
 - 1) 0.5 dB/km (@1310nm).
 - 2) 0.4 dB/km(@1550nm).
 - e. Minimum Fiber Bandwidth:
 - 1) 500 MHZ-km (@1310nm).
 - 2) 500 MHZ-km (@1550nm).
 - 2. Central strength member: Epoxy/fiber glass rod or equal.
 - 3. Inner Jacket: Flame and moisture resistant Polyvinyl chloride (PVC) or equal.
 - 4. Outer strength member: Aramid yarn.
 - 5. Outer Jacket: Ultraviolet, flame and moisture resistant jacket.
 - 6. Minimum Crush Resistance: 500 Lbsf/Inch (875 N/cm).
 - 7. Compliance the following standards:
 - a. UL 1666.
 - b. National Electrical Code for type OFNR cable.

2.02 SPLITTER KITS

- A. Splitter Kits suitable for use with fiber optic cables with multiple fibers run per tube: General Cables' series SPK-XX/C, having, for each fiber:

1. Inner buffer tube; provides individual tube per fiber.
2. Outer heavy duty protective jacket for sliding over individual fiber tube, having:
 - a. Aramid yarn inner strength member; provides additional strength to breakout jacket.

2.03 CONNECTORS

- A. General: Furnish connectors and components, and use specific tools and methods as recommended by connector manufacturer to form complete connector system:
 1. Splices:
 - a. Body Material: Steel.
 - b. Ferrule Material: Stainless steel.
 2. Terminations: To suit requirements of optical fiber video transmitter and receiver.
 - a. Body Material: Steel.
 - b. Ferrule Material: Stainless steel.

2.04 CONNECTORIZED OPTICAL FIBER JUMPER CABLES

- A. Type JFO: Jumper cable by Radiant Communications Corp., having:
 1. One 50 micron/125 micron (core/clad) multimode optical fiber.
 2. Kevlar or Aramid yarn strength member.
 3. PVC outer jacket.
 4. Cable length of 1 meter.
 5. Connectors: Factory installed, stainless steel bodies and ferrules.
 - a. One ST type connector, for connection to optical fiber termination rack (OFTR).
 - b. The other connector's type shall be as required, for connection to the optical fiber receiver or transmitter equipment.

2.05 ACCESSORIES

- A. Pulling Compounds: As recommended by cable manufacturer.
- B. Tags: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inches high.
 1. Phenolic: Two color laminated engraver's stock, 1/16 inch minimum thickness, machine engraved to expose white inner core color.
 2. Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.
- C. Markers:
 1. Premarked self-adhesive: W.H. Brady Co.'s B940, Thomas and Betts Co.'s E-Z code WSL self-laminating, Ideal Industries' Mylar/Cloth wire markers, or Markwick Corp.'s permanent wire markers.
 2. Flexible sleeve markers: Plastic Extruded Parts Inc.'s FS series.
 3. Snap-on markers: Plastic Extruded Parts Inc.'s RS series.

PART 3 EXECUTION

3.01 PREPARATION

- A. Prior to installing cable, test the cable on the reels to verify that the cable's fibers are intact.
 - 1. At the contract site, perform a continuity test on each fiber in each cable to confirm light passes through each fiber.
 - 2. Remove defective cable from the Site.
 - 3. Examine pathway elements to receive cable. Check raceways, cable trays, and other elements for compliance with space allocations, installation tolerances, hazards to cable installation, and other conditions affecting installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Installing Cables:
 - 1. Install cables in conduit after conduit system is completed.
 - 2. Keep ends of cables sealed watertight at all times, except when making splices or terminations.
 - 3. Secure and support raceway not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
 - 4. No grease, oil, lubricant other than approved pulling compound may be used to facilitate the pulling-in of cables.
 - 5. Use pulling attachment connected to the cable strength member for pulling in cables. Seal the pulling attachment watertight.
 - 6. Incorporate into the pull line at the pulling attachment a tension-control swivel containing a shear pin designed to fail if the pre-determined maximum cable strain is applied.
 - 7. Pull cables with a dynamometer or strain gage incorporated into the pulling equipment. Do not pull cables unless the Director's Representative is present to observe readings on the dynamometer or strain gage during the time of actual pulling. Do not exceed cable manufacturer's recommended pulling strain.
 - 8. Provide 2 meters of slack in each cable, at the first and last manhole that the cable is running through.
 - 9. Provide 1 to 2 meters of slack in each cable, in the enclosures that the cable terminates or is spliced.
- B. Splitter kits:
 - 1. Provide splitter kits on type SFO, MFO and TFO cables.
- C. Terminations:
 - 1. Terminate cable in accordance with manufacturer's approved installation instructions.
 - 2. No splicing of optical fiber cables will be allowed.

- D. Identification of Optical Fiber Cables: Identify cables in pullboxes and in equipment to which they connect. Conform to ANSI/TIA/EIA-606-A standards:
1. Install tags on each cable indicating cable number, month and year installed, type of cable, and manufacturer. Attach tags to cables with non-ferrous metal wire or brass chain.
 2. Use markers to identify each optical fiber in equipment to which they connect.

3.03 FIELD QUALITY CONTROL

- A. Post Installation Test:
1. Perform test on each active and spare optical fiber after cable has been installed complete with connectors, and prior to placing cable into service.
 - a. Demonstrate that the amount of attenuation and connector losses through the fiber is no greater than 75 percent of the parameters allowed by the optical fiber transmitter/receiver manufacturer for wavelengths of 1310nm and 1550nm.
 - 1) Example: If the optical fiber transmitter/receiver manufacturer allows a 12db loss between the transmitter and receiver. The amount of loss that would be allowed across the fiber should not be more than 8db.
 - 2) If the amount of attenuation measured across a fiber is above 75 percent, then that fiber is to be tested to determine the cause of the high measurement, faulty connector, damaged fiber, etc., and corrective actions are to be made to correct the problem
 - b. Demonstrate that the amount of attenuation and connector losses through the fiber is no greater than 75 percent of the parameters allowed by the optical fiber transmitter/receiver manufacturer for wavelengths of 1310nm and 1550nm.
 2. Perform test in the presence of the Director's Representative.
 3. Supply equipment necessary for performing test.
 4. Submit written report of test results signed by Company Field Advisor and Director's Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly adjacent to the security console.

END OF SECTION

SEQUENCE OF WORK:

GENERAL:

- A. THE SCHEDULING OF ALL WORK INVOLVING A DISRUPTION OF ANY ELECTRIC SERVICE WILL BE SUBMITTED TO AND APPROVED IN ADVANCE BY THE FACILITY THROUGH THE DIRECTOR'S REPRESENTATIVE PRIOR TO THE COMMENCEMENT OF WORK.
- B. CONTRACTOR SHALL PERFORM ALL REQUIRED WORK OF THIS CONTRACT MONDAY-FRIDAY DURING NORMAL WORKING HOURS AS ESTABLISHED BY THE DIRECTOR'S REPRESENTATIVE.
- C. REFER TO SPECIFICATION SECTION NO. 015000 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS FOR TEMPORARY POWER AND LIGHTING REQUIREMENTS.
- D. THE FOLLOWING SEQUENCE OF WORK HAS BEEN PROPOSED IN AN EFFORT TO ESTABLISH A BIDDABLE PLAN THAT ALLOWS THE CONTRACTOR TO CONSTRUCT AS MUCH OF THE SPECIFIED SCOPE OF WORK AS POSSIBLE PRIOR TO THE DISCONNECTION AND REMOVAL OF EXISTING FACILITY SITE AND BUILDING LIGHTING SYSTEM AND TO, ABOVE ALL, MINIMIZE THE LENGTH OF SCHEDULED POWER OUTAGE(S). THE CONTRACTOR MAY SUBMIT ALTERNATE SEQUENCE OF WORK FOR REVIEW AND APPROVAL PRIOR TO THE COMMENCEMENT OF WORK.

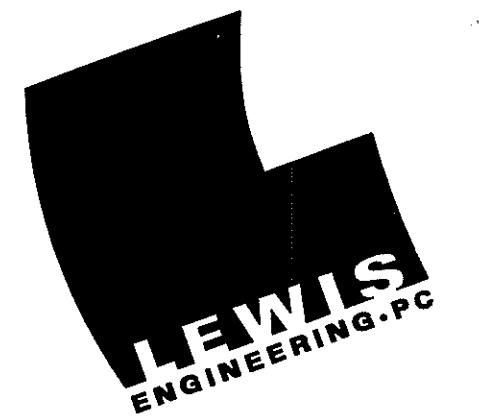
SPECIFIC:

- 1. MAINTAIN THE EXISTING SITE AND BUILDING LIGHTING SYSTEM IN GOOD WORKING ORDER THROUGHOUT ALL AREAS OF THE FACILITY, UNTIL SUCCESSFUL TRANSITION TO THE REPLACEMENT SYSTEM IS COMPLETE.
- 2. MAINTAIN TRAFFIC ACCESS TO ALL AREAS OF THE SITE AT ALL TIMES. REQUIRED ROADWAY OR PARKING AREA CLOSURES WILL BE SCHEDULED IN ADVANCE.
- 3. PROVIDE THE INSTALLATION OF UNDERGROUND SITE LIGHTING BRANCH CIRCUIT AND SITE SURVEILLANCE CAMERA CONDUIT AND WIRE AS SHOWN ON THE DRAWINGS TO THE EXTENT POSSIBLE WITHOUT AN INTERRUPTION OF POWER TO ANY PORTION OF THE FACILITY.
 - a. PERFORM ALL REQUIRED TRENCHING, PROVIDE INSTALLATION OF SPECIFIED CONCRETE ENCASED CONDUITS, PULL BOXES AND CONCRETE LIGHT POLE BASES PER DETAILS AS SHOWN ON THE DRAWINGS.
 - b. PROVIDE INSTALLATION OF SITE LIGHTING BRANCH CIRCUIT CONDUCTORS IN CONDUIT.
 - c. PROVIDE WATERTIGHT SEAL OF ALL UNDERGROUND SITE LIGHTING SYSTEM CONDUIT ENTRIES INTO FACILITY BUILDINGS. COIL, SUPPORT AND PROTECT SYSTEM CONDUCTORS WITHIN FACILITY BUILDINGS.
 - d. PROVIDE ALL REQUIRED TRENCH BACKFILL AND COMPACTION. PROVIDE ALL REQUIRED SITE RESTORATION AND PAVEMENT REPAIR/RESURFACING PER THE SPECIFICATIONS AND DRAWING DETAILS.
- 4. PROVIDE COMPLETE INSTALLATION OF REPLACEMENT SITE LIGHTING POLES AND ASSOCIATED LIGHTING FIXTURES.
- 5. PROVIDE SPECIFIC COORDINATION WITH DIRECTOR'S REPRESENTATIVE AND FACILITY FOR THE REPLACEMENT/UPGRADE OF EXISTING HELIPORT LIGHTING FIXTURES. WORK SHALL COMMENCE ONLY WITH PRIOR APPROVAL OF SCHEDULED START DATE AND ANTICIPATED OVERALL TIME DURATION.
- 6. PROVIDE THE INSTALLATION OF REPLACEMENT SITE LIGHTING CONTROL SYSTEM EQUIPMENT WITHIN BUILDING AS SPECIFIED TO THE EXTENT POSSIBLE WITHOUT INTERRUPTION OF POWER. PROVIDE CONNECTION OF CONDUCTORS/CONDUIT TO REPLACEMENT EQUIPMENT.
- 7. PROVIDE THE DISCONNECTION, REMOVAL AND REPLACEMENT OF EXISTING FUEL ISLAND CANOPY AND EAST GARAGE VESTIBULE ENTRANCE LIGHTING FIXTURES.
- 8. UPON SUCCESSFUL COMMISSIONING OF ALL REPLACEMENT SITE AND BUILDING LIGHTING SYSTEM EQUIPMENT, PERFORM ALL REMOVAL WORK AS SPECIFIED ON THE DRAWINGS TO ENTIRELY DECOMMISSION THE EXISTING SITE LIGHTING SYSTEM.

SYMBOLS & ABBREVIATIONS

— EUGS —	EXISTING UNDERGROUND SIGNAL CONDUCTORS IN CONDUIT TO REMAIN
— EUGE —	EXISTING UNDERGROUND POWER CONDUCTORS IN CONDUIT TO REMAIN
--- EUGE ---	EXISTING UNDERGROUND POWER CONDUCTORS IN CONDUIT TO BE DISCONNECTED AND REMOVED
○ □ EX-R	EXISTING POLE MOUNTED LIGHTING FIXTURE TO BE DISCONNECTED AND REMOVED
○ □ EX-1	EXISTING POLE MOUNTED LIGHTING FIXTURE TO BE MAINTAINED FOR REUSE
○ □ SL1	AREA SITE LIGHTING FIXTURE MOUNTED TO 30 FT. HIGH POLE - TYPICAL FOR TYPE SL3 & SL4 FIXTURES
○ □ SL2	POST TOP SITE LIGHTING FIXTURE MOUNTED TO 12 FT. HIGH POLE
△ FL-1	FLAG POLE SPOT LIGHTING FIXTURE
△ FL-2	SIGNAGE FLOOD LIGHTING FIXTURE
○ H-1	HELIPORT CENTERLINE LIGHTING FIXTURE
○ H-2	EXISTING HELIPORT PERIMETER LIGHTING FIXTURE
□ SM-1	SURFACE MOUNT LIGHTING FIXTURE
□ WP-1	WALL MOUNT LIGHTING FIXTURE
○ SM-2	SURFACE MOUNT LIGHTING FIXTURE
□ PB-1	ELECTRICAL PULLBOX - REFER TO DETAIL NO. 4/E-302
⊕	GROUNDING ELECTRODE
□	DISCONNECT SWITCH
⊙	JUNCTION BOX
SPD	SURGE PROTECTION DEVICE
⤴	HOMERUN CIRCUIT - DESIGNATION INDICATES POWER SOURCE PANELBOARD
— UGE —	UNDERGROUND POWER CONDUCTORS IN CONDUIT. REFER TO DETAIL 1/E-302.
— UGS —	UNDERGROUND SITE SURVEILLANCE POWER & FIBER OPTIC CONDUCTORS IN CONDUIT - REFER TO DETAIL 1/E-302
---	TRENCH BENEATH EXISTING ROADWAY PAVEMENT OR SIDEWALK
EGC	EQUIPMENT GROUNDING CONDUCTOR
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
AFF	ABOVE FINISHED FLOOR
BFG	BELOW FINISHED GRADE
C.	CONDUIT
GND.	GROUND
HOA	HAND-OFF-AUTO SELECTOR SWITCH

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REVISED DRAWING: 3-8-16

WARNING:
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CONTRACT:	ELECTRICAL
TITLE:	REPLACE EXTERIOR LIGHTING
LOCATION:	NYS POLICE TROOP B HEADQUARTERS 1097 ROUTE 86 RAY BROOK, NY 12977
CLIENT:	NEW YORK STATE POLICE

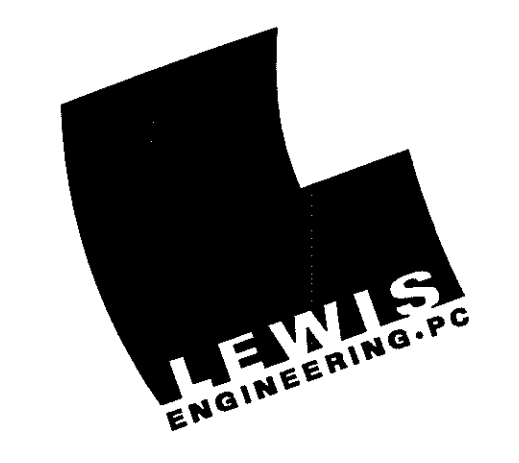
MARK	DATE	DESCRIPTION
—	11/16/2015	BID DOCUMENT
PROJECT NUMBER:	45065 - E	
DESIGNED BY:	KJH	
DRAWN BY:	JML	
FIELD CHECK:		
APPROVED:	KJH	

LEGEND, ABBREVIATIONS & SEQUENCE OF WORK

DRAWING NUMBER: E-001

GENERAL NOTES
 1. REFER TO DRAWING NO. E-101 FOR APPROXIMATE LOCATION OF ALL KNOWN UNDERGROUND UTILITIES.

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REVISED DRAWING: 3-8-16

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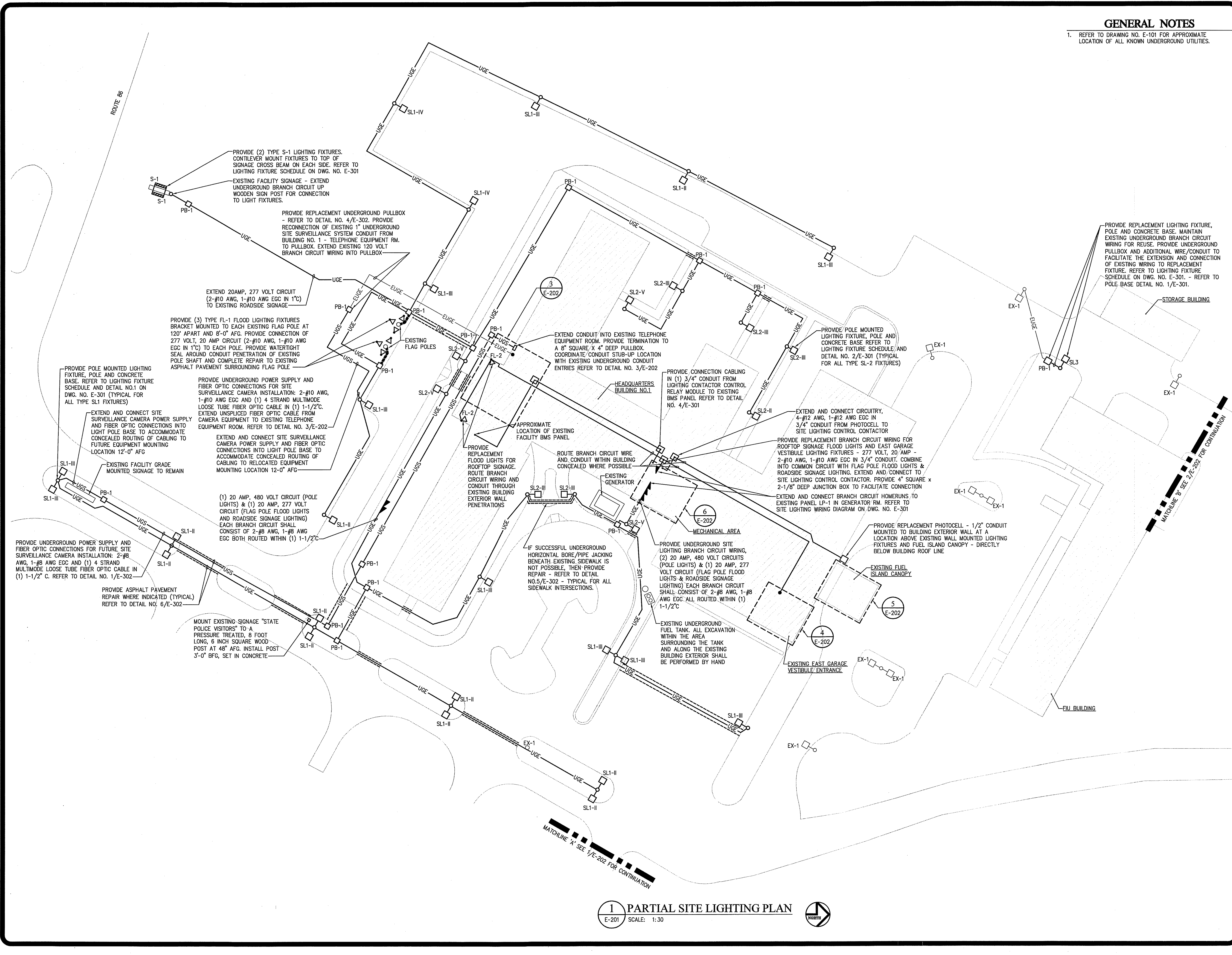


CONTRACT: **ELECTRICAL**
 TITLE: **REPLACE EXTERIOR LIGHTING**
 LOCATION: **NYS POLICE TROOP B HEADQUARTERS
 1097 ROUTE 86
 RAY BROOK, NY 12977**
 CLIENT: **NEW YORK STATE POLICE**

MARK	DATE	DESCRIPTION
-	11/16/2015	BID DOCUMENT
PROJECT NUMBER:	45065 - E	
DESIGNED BY:	KJH	
DRAWN BY:	JML	
FIELD CHECK:		
APPROVED:	KJH	
SHEET TITLE:		

PARTIAL SITE LIGHTING PLAN

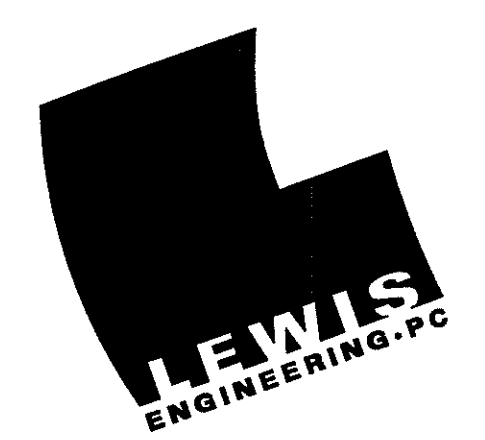
DRAWING NUMBER: **E-201**
 SHEET 4 OF 7



1 PARTIAL SITE LIGHTING PLAN
 E-201 SCALE: 1:30

36x24 PLOT SHEET

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REVISED DRAWING: 3-8-16

WARNING:
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CONTRACT: **ELECTRICAL**

TITLE: **REPLACE EXTERIOR LIGHTING**

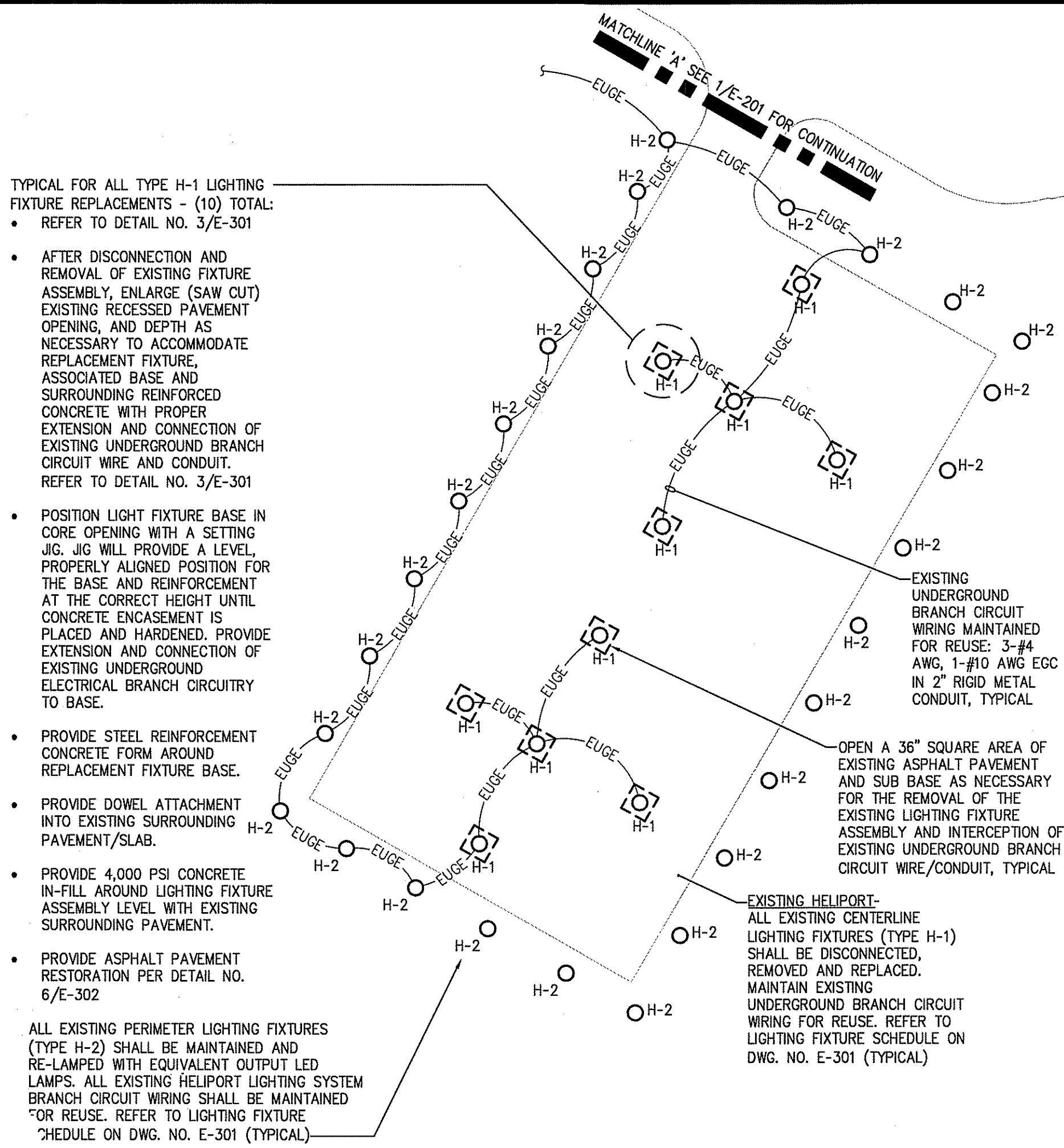
LOCATION: **NYS POLICE TROOP B HEADQUARTERS
1097 ROUTE 86
RAY BROOK, NY 12977**

CLIENT: **NEW YORK STATE POLICE**

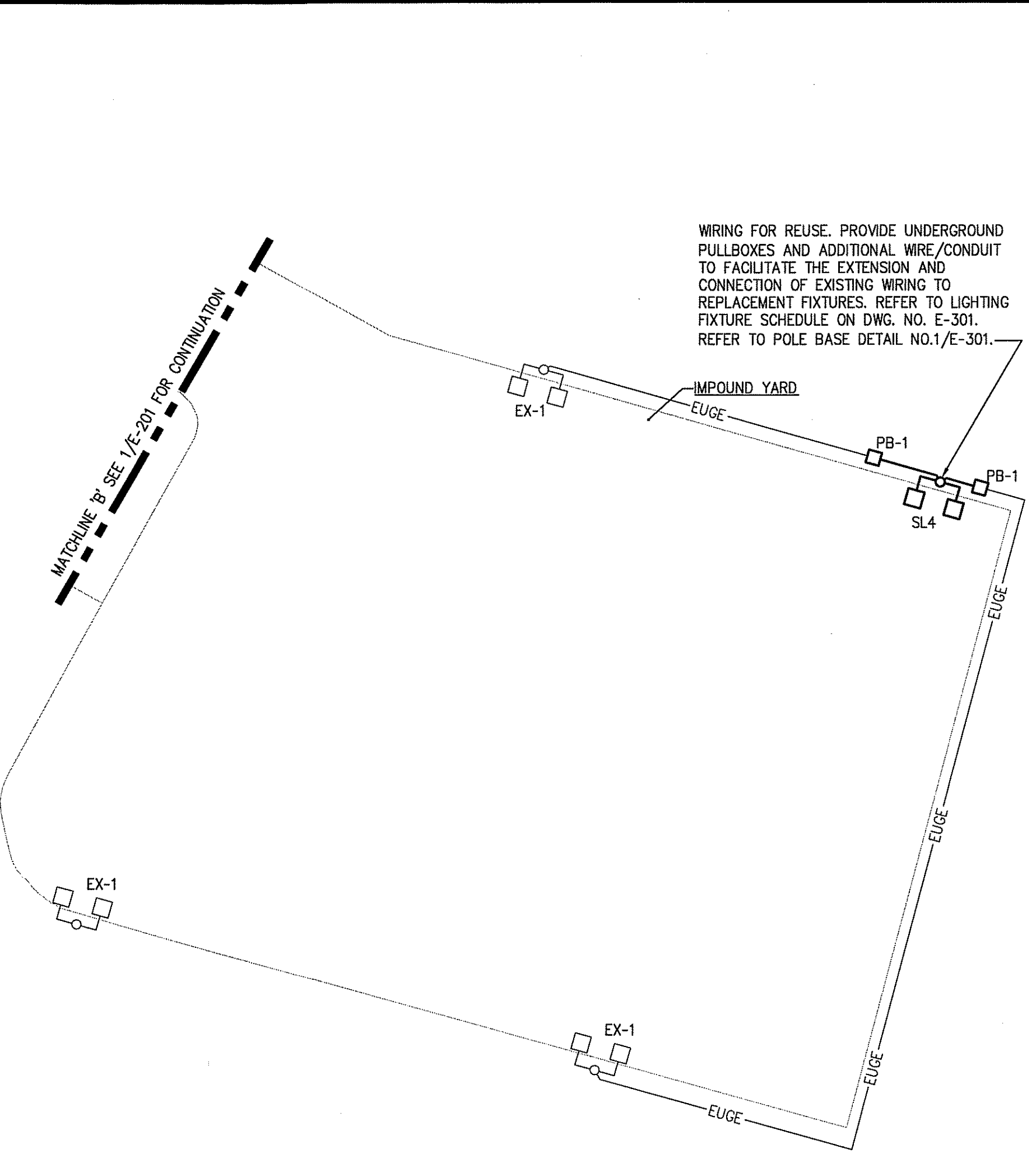
MARK	DATE	DESCRIPTION
-	11/16/2015	BID DOCUMENT
PROJECT NUMBER:	45065 - E	
DESIGNED BY:	KJH	
DRAWN BY:	JML	
FIELD CHECK:		
APPROVED:	KJH	

SHEET TITLE: **PARTIAL SITE & BUILDING LIGHTING PLANS**

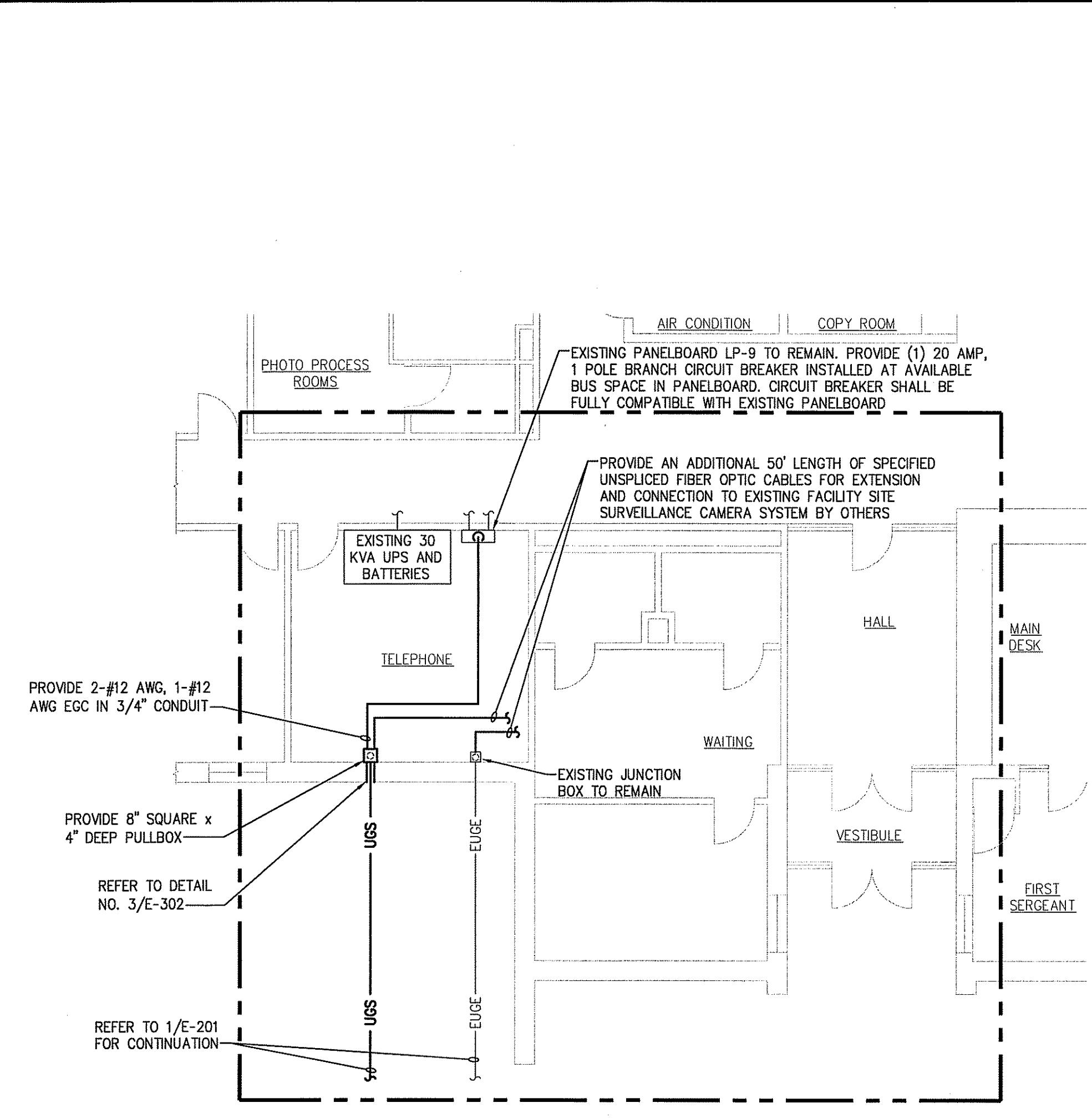
DRAWING NUMBER: **E-202**



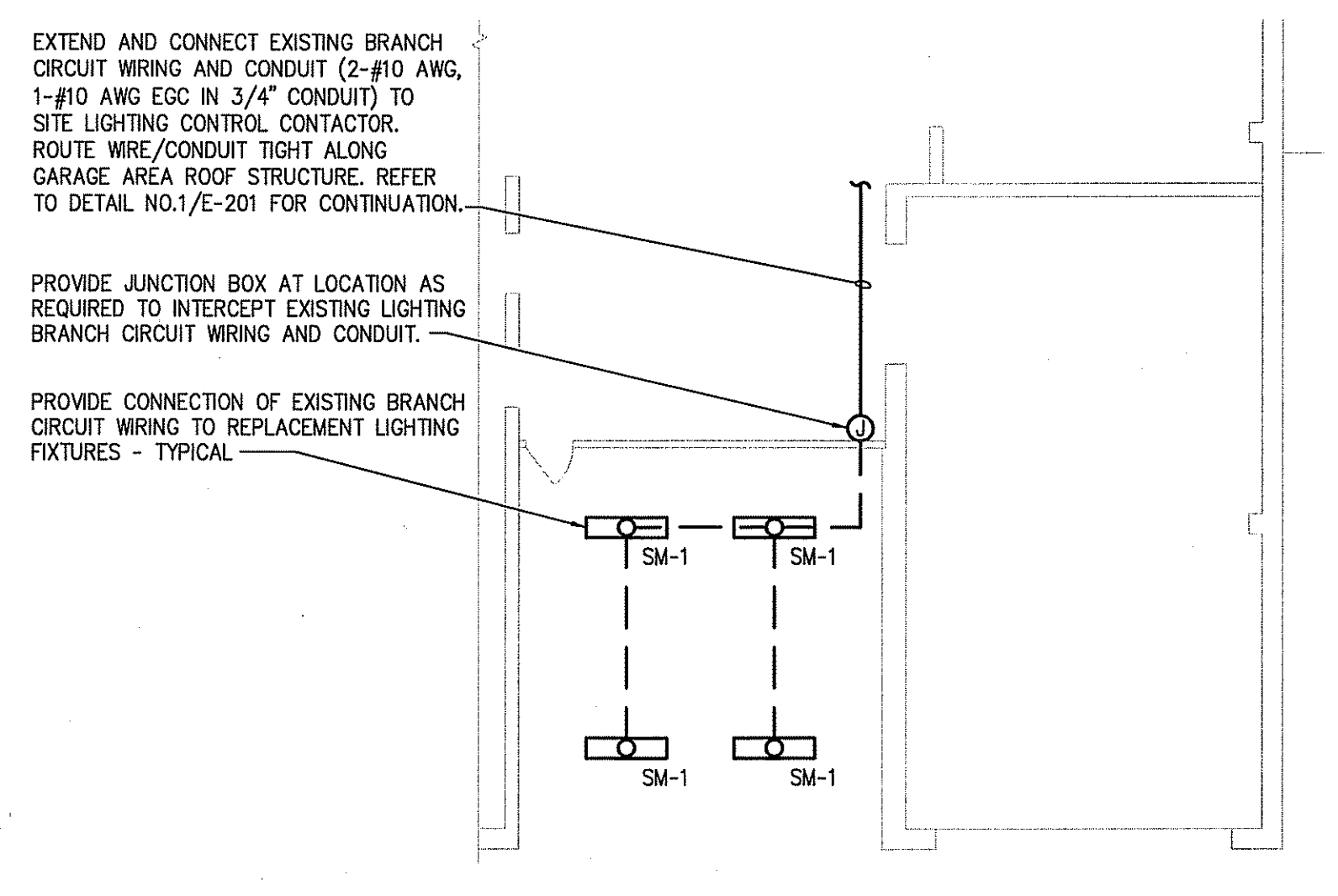
1 PARTIAL SITE LIGHTING PLAN
E-202 SCALE: 1:30



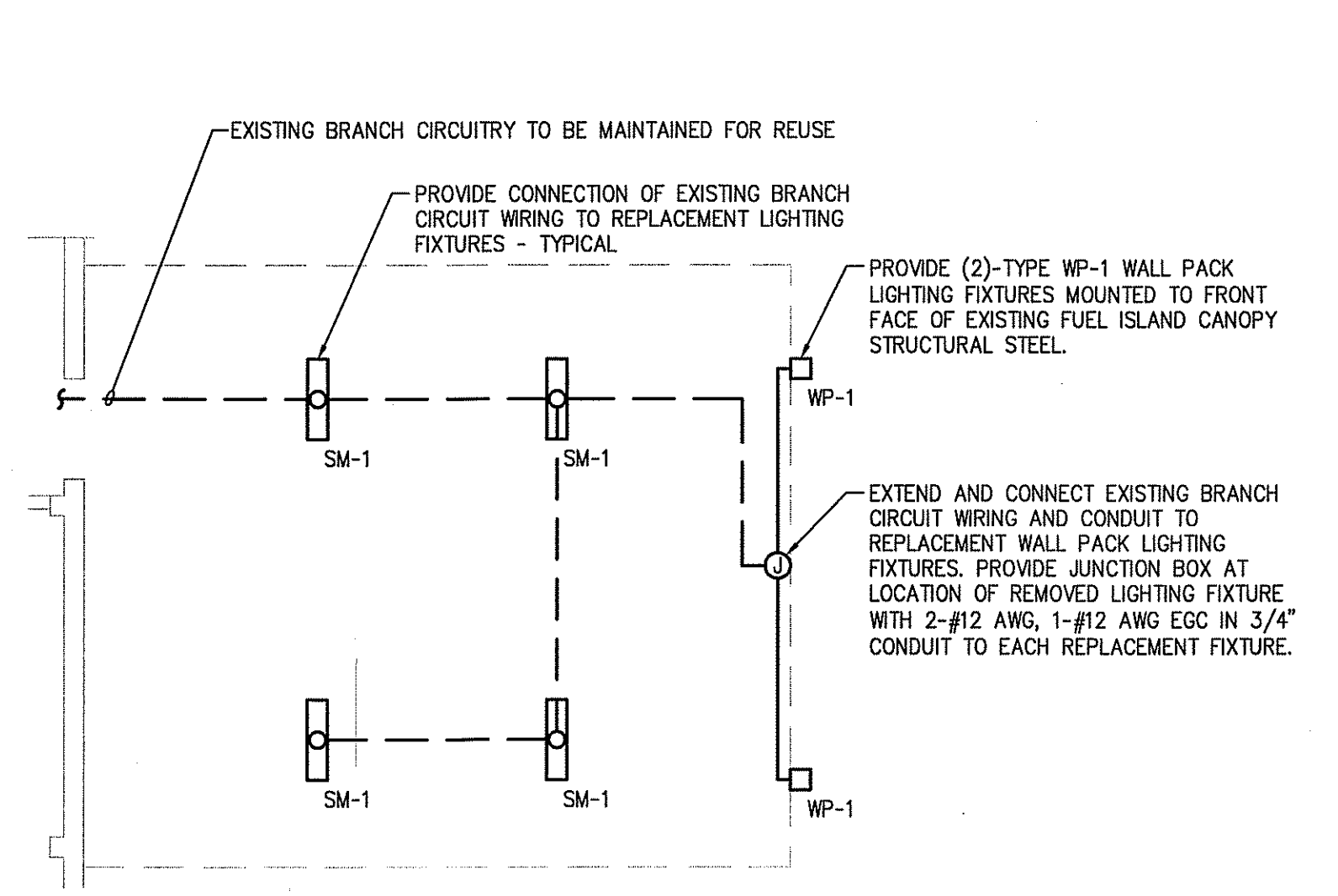
2 PARTIAL SITE LIGHTING PLAN
E-202 SCALE: 1:30



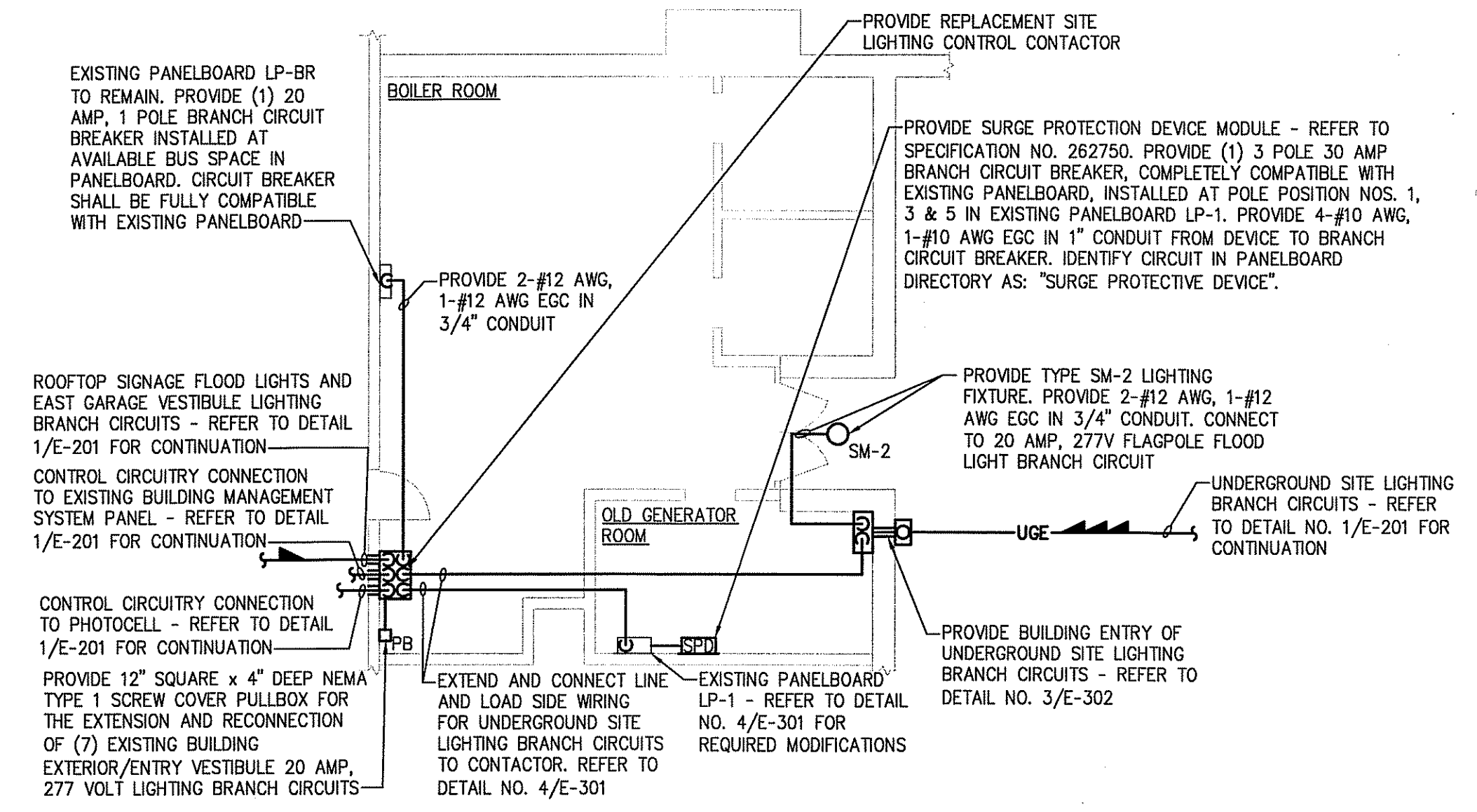
3 HQ - BLDG. NO. 1 - FRONT ENTRY PLAN
E-202 SCALE: 1/8" = 1'-0"



4 EAST GARAGE ENTRANCE VESTIBULE LIGHTING PLAN
E-202 SCALE: 1/8"=1'-0"

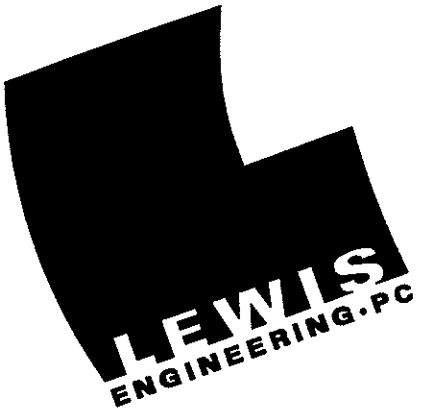


5 FUEL ISLAND CANOPY LIGHTING PLAN
E-202 SCALE: 1/8"=1'-0"



6 MECHANICAL AREA PLAN
E-202 SCALE: 1/8"=1'-0"

CONSULTANT



REVISED DRAWING: 3-8-16

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.



CONTRACT: ELECTRICAL

TITLE: REPLACE EXTERIOR LIGHTING

LOCATION: NYS POLICE TROOP B HEADQUARTERS
1097 ROUTE 86
RAY BROOK, NY 12977

CLIENT: NEW YORK STATE POLICE

DATE	DESCRIPTION
11/16/2015	BID DOCUMENT

PROJECT NUMBER:	45065 - E
DESIGNED BY:	KJH
DRAWN BY:	JML
FIELD CHECK:	
APPROVED:	KJH

SHEET TITLE: SCHEDULES & DETAILS

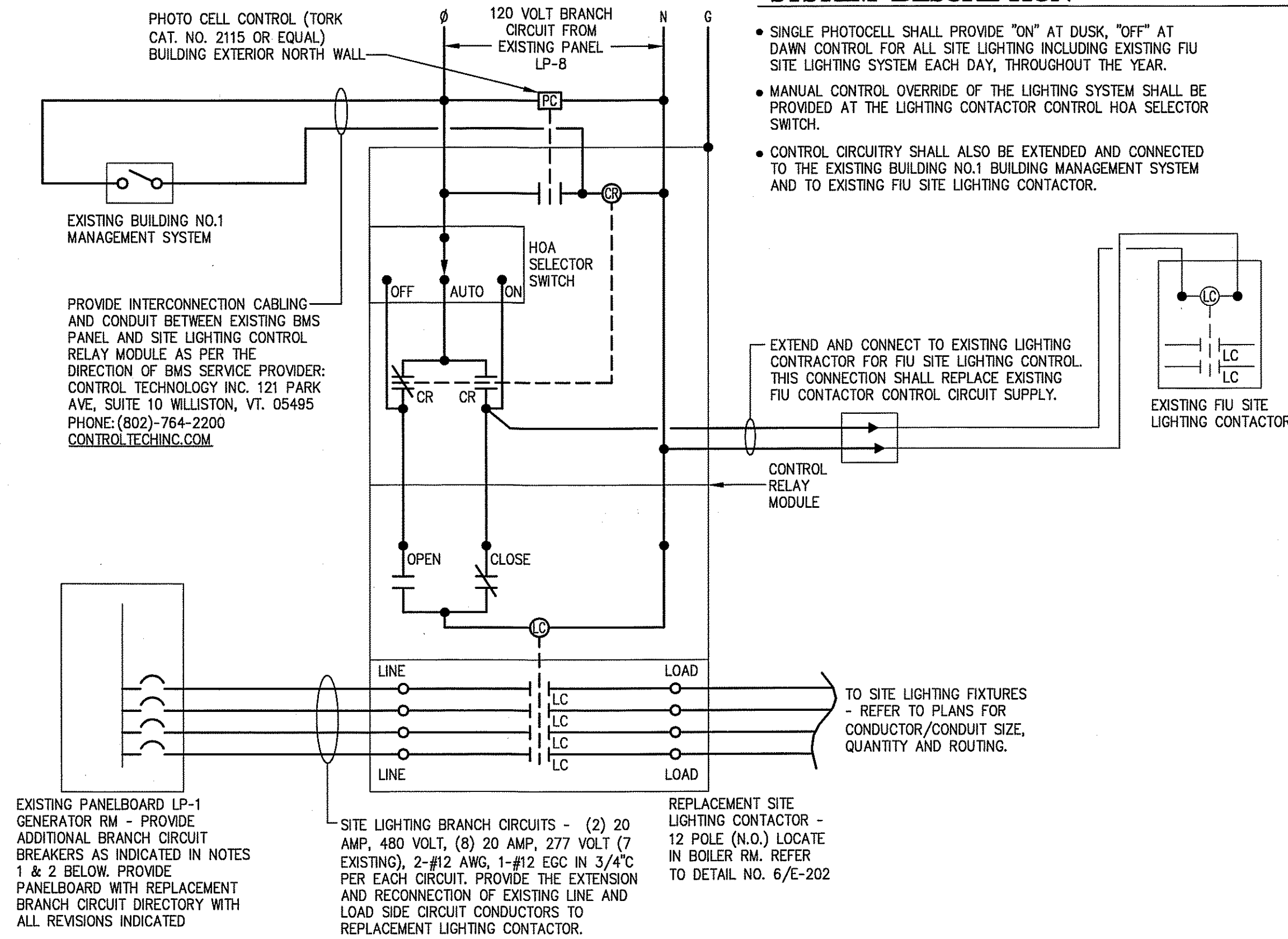
DRAWING NUMBER: E-301

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS	VOLTAGE	MOUNTING	MANUFACTURER	REMARKS
SL1	LED POLE MOUNTED AREA FIXTURE MOUNTED ON 30FT ALUMINUM POLE	40 LEDS (TWO ENGINE) 700MA DRIVE CURRENT 4,000K C.C.T 9,500 LUMEN MIN.	480	30FT HIGH SQUARE ALUMINUM POLE	LITHONIA LIGHTING D-SERIES SIZE 1 CAT. NO. DSX1LED240C 700 40K ± 480 SPA DFDDBXD. POLE CAT. NO. SSA 306J-FBCADB	PHOTOMETRIC DISTRIBUTION TYPES: • T2M - "I" DRAWING TAG SUFFIX • T3M - "II" DRAWING TAG SUFFIX • T4M - "IV" DRAWING TAG SUFFIX
SL2	LED POST TOP FIXTURE MOUNTED ON 12FT ALUMINUM POLE	48 LEDS (ONE ENGINE) 350MA DRIVE CURRENT 4,000K C.C.T 5,000 LUMEN MIN.	480	12FT HIGH ROUND ALUMINUM POLE	LITHONIA LIGHTING MRP LED CAT. NO. MRPLED 42C 530/40K ± 480 MRPT35DFDDBXD. POLE CAT. NO. RSA0124C DDB	PHOTOMETRIC DISTRIBUTION TYPES: • SR2 - "I" DRAWING TAG SUFFIX • SR3 - "II" DRAWING TAG SUFFIX • SR5 - "V" DRAWING TAG SUFFIX
SL3	METAL HALIDE POLE MOUNTED AREA FIXTURE MOUNTED ON 30FT ALUMINUM POLE WITH TYPE III ASYMMETRIC PHOTOMETRIC DISTRIBUTION	320 WATT PULSE START METAL HALIDE	480	30FT HIGH SQUARE ALUMINUM POLE	LITHONIA LIGHTING CAT. NO. KSE2 320M R3 480 SCWA SP04DFDDBXD. POLE CAT. NO. SSA 306J-FBCADB	
SL4	TWIN (2) METAL HALIDE FLOODLIGHTS MOUNTED ON 30FT ALUMINUM POLE	(2)-400 WATT METAL HALIDE	480	30FT HIGH SQUARE ALUMINUM POLE	LITHONIA LIGHTING CAT. NO. IFA 400MR 480 CWDFDDBXD. POLE CAT. NO. SSA 306J-FBCADB. PARALLEL ARM MOUNT CAT. NO. RCTMADM2T25ADB	PROVIDE FLOODLIGHT FIXTURES WITH VERTICAL NEMA TYPE 6 (6HX6V) WIDE BEAM SPREAD DISTRIBUTION
SM-1	SURFACE MOUNT 4.5 FT LONG LED ROUGH SERVICE LED FIXTURE WITH WET LOCATION LABEL, POLYCARBONATE HOUSING CLEAR POLYCARBONATE LENS AND INTEGRAL SURGE PROTECTION	6,000 LUMEN MIN. 1,265 LUMEN MIN. 700MA DRIVE CURRENT 3,500K C.C.T 90 C.R.I	277	SURFACE	LITHONIA LIGHTING CAT. NO. VAP6000 LM PCL MD277 GZ1040K90CRWLFFEND2VAPQMB	
SM-2	SURFACE MOUNT ROUND LED ROUGH SERVICE FIXTURE WITH WET LOCATION LABEL, BOROSILICATE GLASS LENS, DIE-CAST ALUMINUM HOUSING AND INTEGRAL SURGE PROTECTION	50 WATT 1,265 LUMEN MIN. 700MA DRIVE CURRENT 3,500K C.C.T	277	SURFACE	LITHONIA LIGHTING CAT. NO. VGR1CSOLEDGL277DDBTLPI	
FL-1	FLAG POLE LED SPOT LIGHTS - DIE-CAST ALUMINUM BULLET FIXTURE WITH TRIPLE POLE MOUNTING ARMS -120° ORIENTATION AND 16 INCH EXTENSION	800 LUMEN MIN. 5,000K C.C.T 66 C.R.I	277	EXISTING FLAG POLE 8'-0" AFG	LITHONIA LIGHTING CAT. NO. OLSB850KDDDB. POLE BRACKET ARMS CAT. NO. SMACW127-10 DNA	PROVIDE SPOTLIGHT FIXTURES WITH NEMA TYPE 2 (2HX2V) NARROW BEAM SPREAD DISTRIBUTION. PROVIDE WITH SLIPFITTERS FOR 2 3/8" OD TENONS
FL-2	ROOF MOUNTED LED FLOOD LIGHTS - DIE-CAST ALUMINUM BULLET FIXTURE WITH HORIZONTAL FLOOD BEAM SPREAD DISTRIBUTION, UPPER VESOR, INTEGRAL SLIPFITTER AND 2-3/8" O.D. STEEL RIGHT ANGLE ARM (8" RADIUS CURVE) BUILDING MOUNT BRACKET	1,750 LUMEN MIN. 4,000K C.C.T 70 C.R.I 530MA DRIVE CURRENT	277	BUILDING EXTERIOR WALL	LITHONIA LIGHTING CAT. NO. DSX1LED240C530/40K HMF277SUBY DDBDXD BUILDING MOUNT BRACKET CAT. NO. FRWBDD	
H-1	OMNIDIRECTIONAL HELIPOINT CENTERLINE INSET LED LIGHTING FIXTURES WITH MOUNTING BASE AND GASKET	LED	120	RECESSED IN EXISTING PAVEMENT	POINT LIGHTING CORP. CAT. NO. PRL-97004-1H-G-PLBGRMT BASE CAT. NO. PLB-40300-125GR	PROVIDE FIXTURE ASSEMBLY WITH GROUND LUG, DRAIN HOLE AND MARINE TREATMENT
H-2	EXISTING ELEVATED HELIPOINT PERIMETER LIGHTING FIXTURES - PROVIDE REPLACEMENT LAMP (BULB) ONLY	12.2 WATT 1,520 LUMENS 5,000K C.C.T A19	120	EXISTING	LAMP (BULB): XLEDIA CAT. NO. X10X OR APPROVED EQUIVALENT	PROVIDE CLEAN AND RELAMP OF EXISTING FIXTURE. REPORT ANY EXISTING DAMAGE OR DEFICIENCY.
WP-1	WALL MOUNTED LED FIXTURE WITH DIE-CAST ALUMINUM HOUSING, IES TYPE III DISTRIBUTION AND INTEGRAL SURGE PROTECTION	3,700 LUMEN MIN. 4,000K C.C.T 530MA DRIVE CURRENT	277	CANOPY SIDE WALL	LITHONIA LIGHTING CAT. NO. DSX1LED240C530/40K HMF277SFSPDDDBDXD	
S-1	CANTILEVER HANGER MOUNT, 6FT (2-3FT FIXTURES TOTAL LENGTH) LED SIGNAGE LIGHTING FIXTURE WITH INTEGRAL CURRENT DRIVER. UL LISTED WET LOCATION. 1FT LONG HANGER WITH SPLICE BOX.	18 LEDS @ 350MA 1,180 LUMEN MIN. 21 WATTS PER 3FT FIXTURE	277	CONTINUOUS ROW CANTILEVER HANGER	(2) ELLIPTIPAR (THE LIGHTING QUOTIENT) CAT. NO. S17H-J318-H-08-2-0F-0-40-00 WITH CAT. NO. HDC & HDD CANTILEVER HANGERS	EACH TYPE S-1 INDICATED ON THE DRAWING CONSISTS OF (2) FIXTURES INSTALLED IN A CONTINUOUS ROW

SYSTEM DESCRIPTION

- SINGLE PHOTOCELL SHALL PROVIDE "ON" AT DUSK, "OFF" AT DAWN CONTROL FOR ALL SITE LIGHTING INCLUDING EXISTING FIU SITE LIGHTING SYSTEM EACH DAY, THROUGHOUT THE YEAR.
- MANUAL CONTROL OVERRIDE OF THE LIGHTING SYSTEM SHALL BE PROVIDED AT THE LIGHTING CONTACTOR CONTROL HOA SELECTOR SWITCH.
- CONTROL CIRCUITRY SHALL ALSO BE EXTENDED AND CONNECTED TO THE EXISTING BUILDING NO.1 BUILDING MANAGEMENT SYSTEM AND TO EXISTING FIU SITE LIGHTING CONTACTOR.



4 SITE LIGHTING SCHEMATIC CONTROL WIRING DIAGRAM

E-301 SCALE: NONE

NOTE 1: PROVIDE (2) 2 POLE, 20 AMP BRANCH CIRCUIT BREAKERS, COMPLETELY COMPATIBLE WITH EXISTING PANELBOARD, INSTALLED AT POLE POSITION NOS. 37, 39 AND 38, 40. PROVIDE CONNECTION OF 480 VOLT POLE LIGHTING BRANCH CIRCUITS. IDENTIFY CIRCUITS IN PANELBOARD DIRECTORY AS: "POLE MOUNTED SITE LIGHTING".

NOTE 2: PROVIDE CONNECTION OF A 20 AMP, 277 VOLT BRANCH CIRCUIT SERVING FLAGPOLE FLOOD LIGHTS, ROADSIDE SIGNAGE LIGHTS, FRONT ROOFTOP SIGNAGE FLOOD LIGHTS AND EAST GARAGE VESTIBULE LIGHTING TO AN AVAILABLE EXISTING SPARE 20 AMP, 1 POLE BRANCH CIRCUIT BREAKER AT POLE POSITION NO. 8. IDENTIFY CIRCUIT IN PANELBOARD DIRECTORY AS "SIGNAGE/EAST GARAGE VESTIBULE LIGHTING".

NOTE 3: PROVIDE (1) 3 POLE, 30 AMP BRANCH CIRCUIT BREAKER, COMPLETELY COMPATIBLE WITH EXISTING PANELBOARD, INSTALLED AT POLE POSITION NOS. 1, 3 AND 5. PROVIDE CONNECTION OF SURGE PROTECTIVE DEVICE CIRCUIT. IDENTIFY CIRCUIT IN PANELBOARD DIRECTORY AS: "SURGE PROTECTIVE DEVICE".

SPECIFICATIONS

CONCRETE: 5,000 PSI @ 28 DAYS
ENTRAINED AIR: 5% - 9%
REINFORCING: Fy = 60,000 PSI ASTM A615

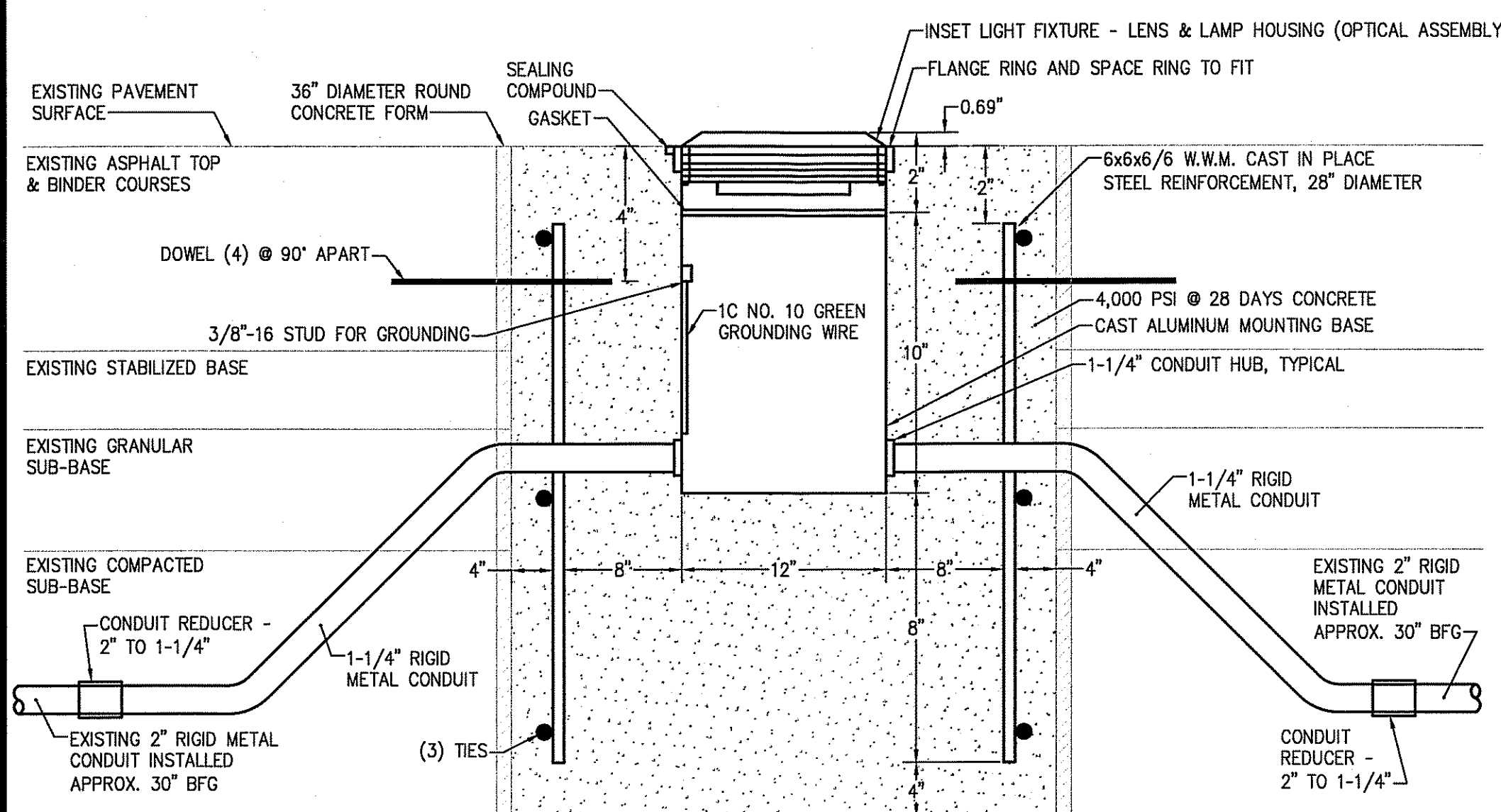
NOTES

- ANCHOR BOLTS SUPPLIED BY LIGHTPOLE MANUFACTURER.
- SIZE AND TYPE OF CONDUIT SPECIFIED ON PLAN.
- STEEL REINFORCEMENT AS SPECIFIED.

ANCHOR ROD LAYOUT & MOUNTING PROCEDURE AS PER MANUFACTURER'S SPECIFICATIONS. EACH ROD SHALL HAVE TWO NUTS AND WASHERS FOR LEVELING AND LOCKING POLE INTO POSITION.

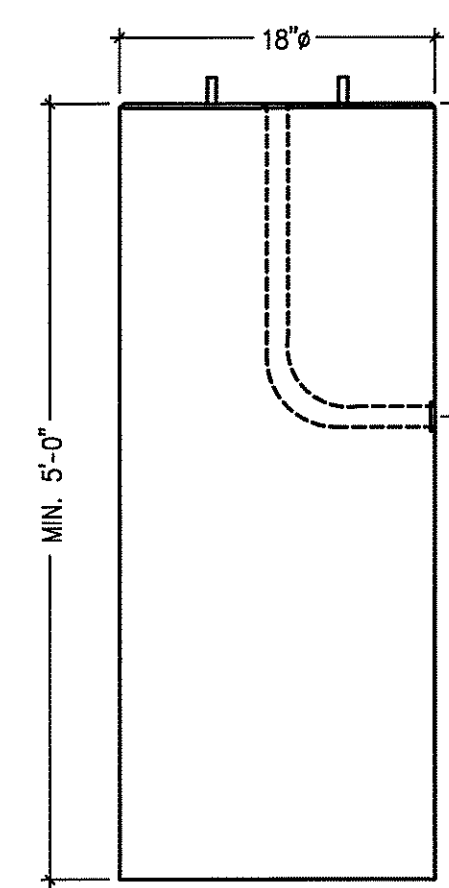
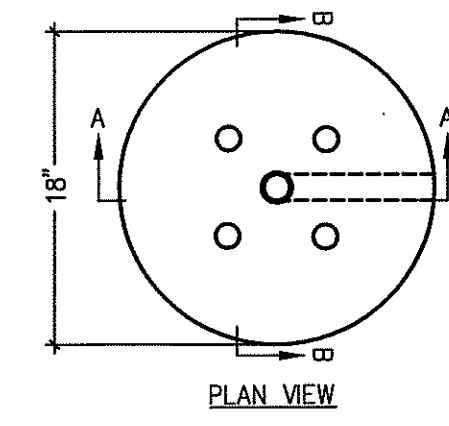
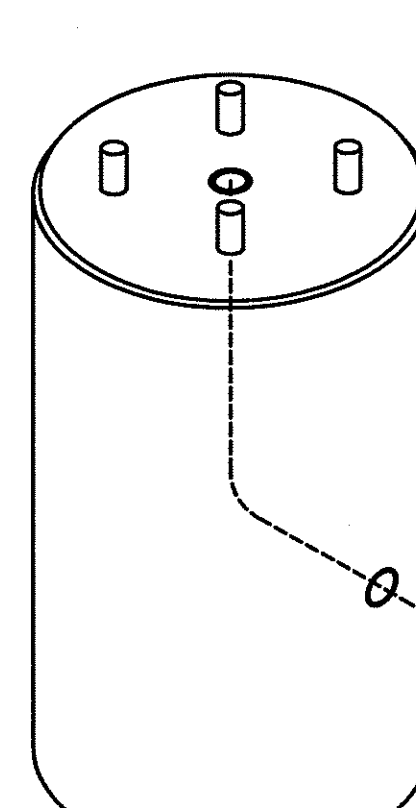
PROVIDE CAST ALUMINUM FULL BASE COVER AS FURNISHED BY POLE MANUFACTURER. PROVIDE NONSHRINK GROUT COMPACTED AND TOOLED TO A 45 DEGREE ANGLE BETWEEN BASE COVER PERIMETER AND POLE BASE WITH DRAIN HOLE CAST IN PLACE.

PROVIDE CONNECTION OF GROUNDING CONDUCTOR TO POLE GROUNDING LUG LOCATED INSIDE HANDHOLE RIM. BAND CONDUCTOR TO INSULATED GROUNDING BUSHINGS AND BRANCH CIRCUIT EQUIPMENT GROUNDING CONDUCTOR.



3 TYPE H-1 LIGHTING FIXTURE INSTALLATION DETAIL

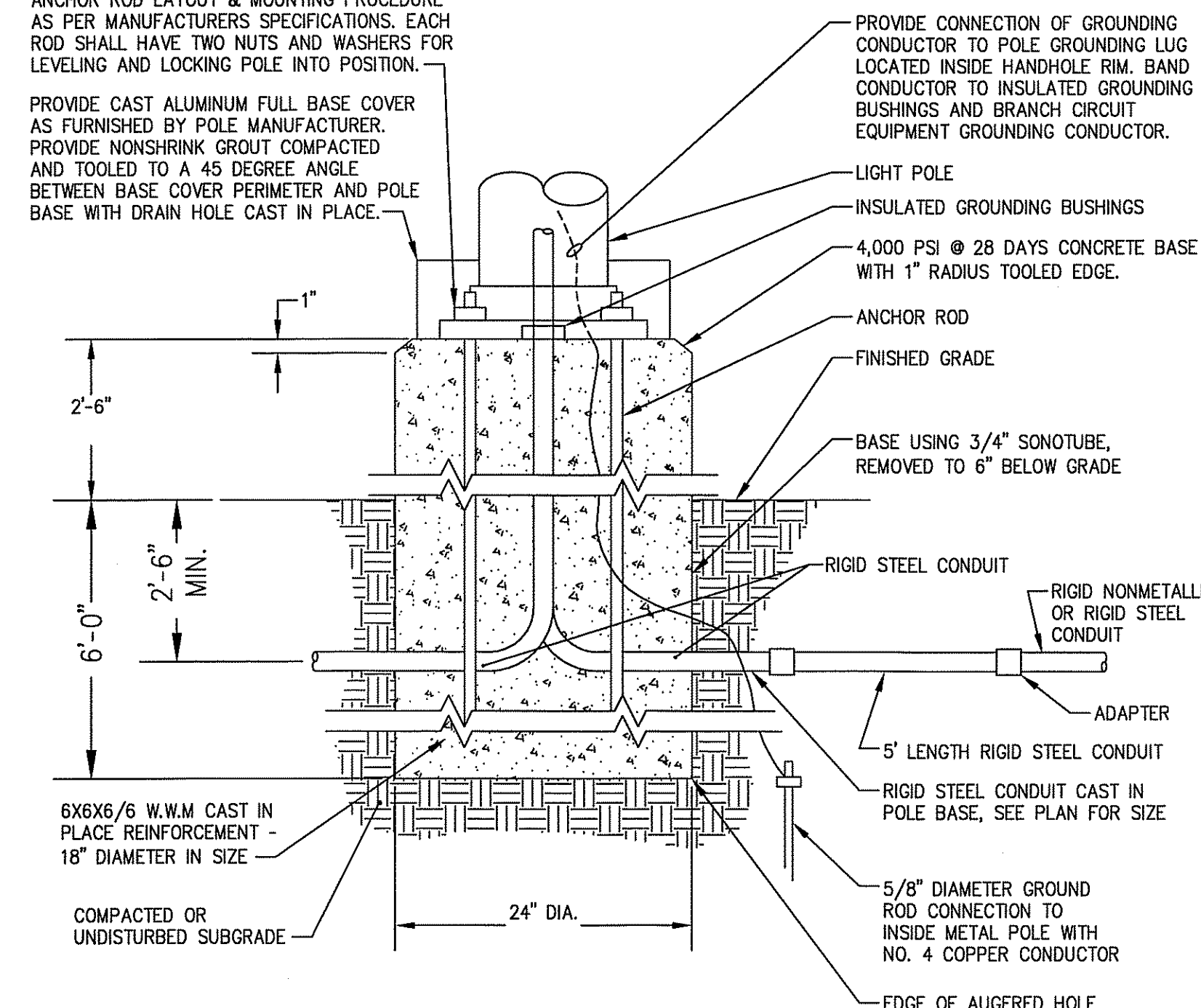
E-301 SCALE: NONE



2 TYPE SL2 LIGHTING FIXTURE POLE BASE DETAIL

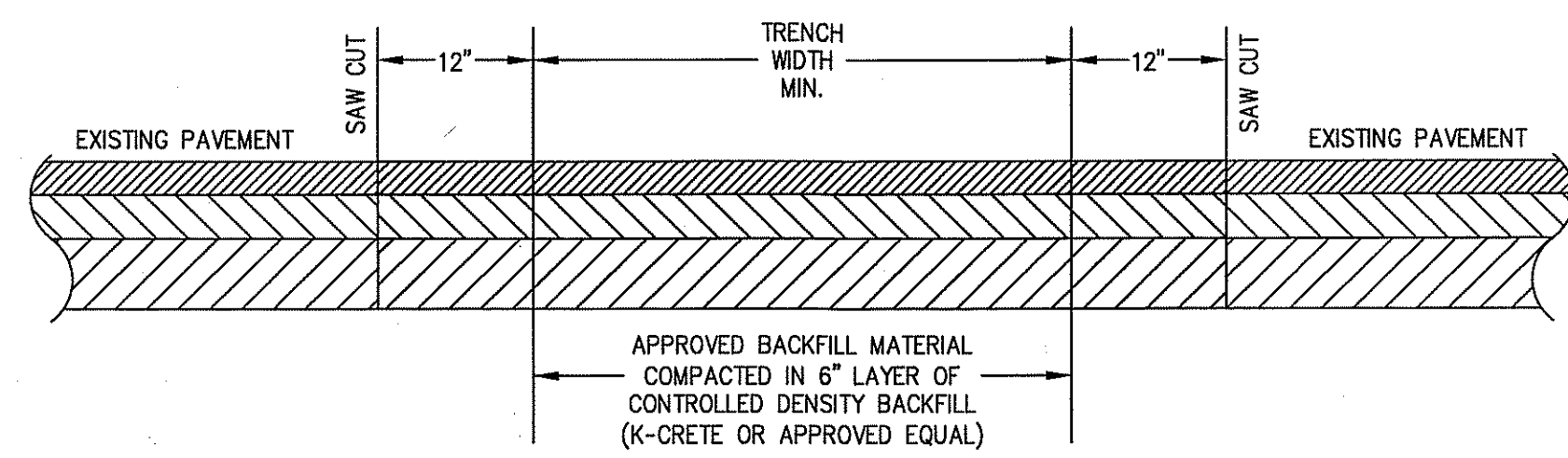
E-301 SCALE: NONE

NOTE: REFER TO DETAIL NO.1/E-301 FOR CONDUIT INSTALLATION AND GROUNDING CONNECTION REQUIREMENTS.

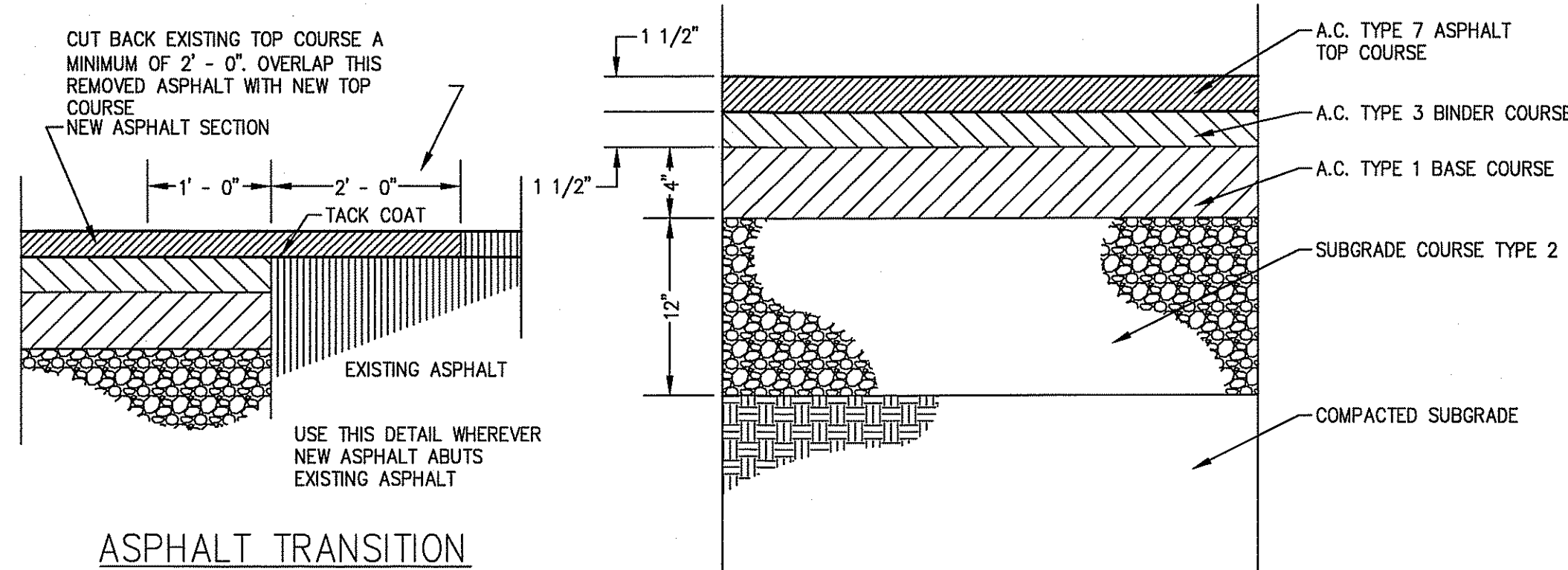


1 TYPE SL1 LIGHTING FIXTURE POLE BASE DETAIL

E-301 SCALE: NONE

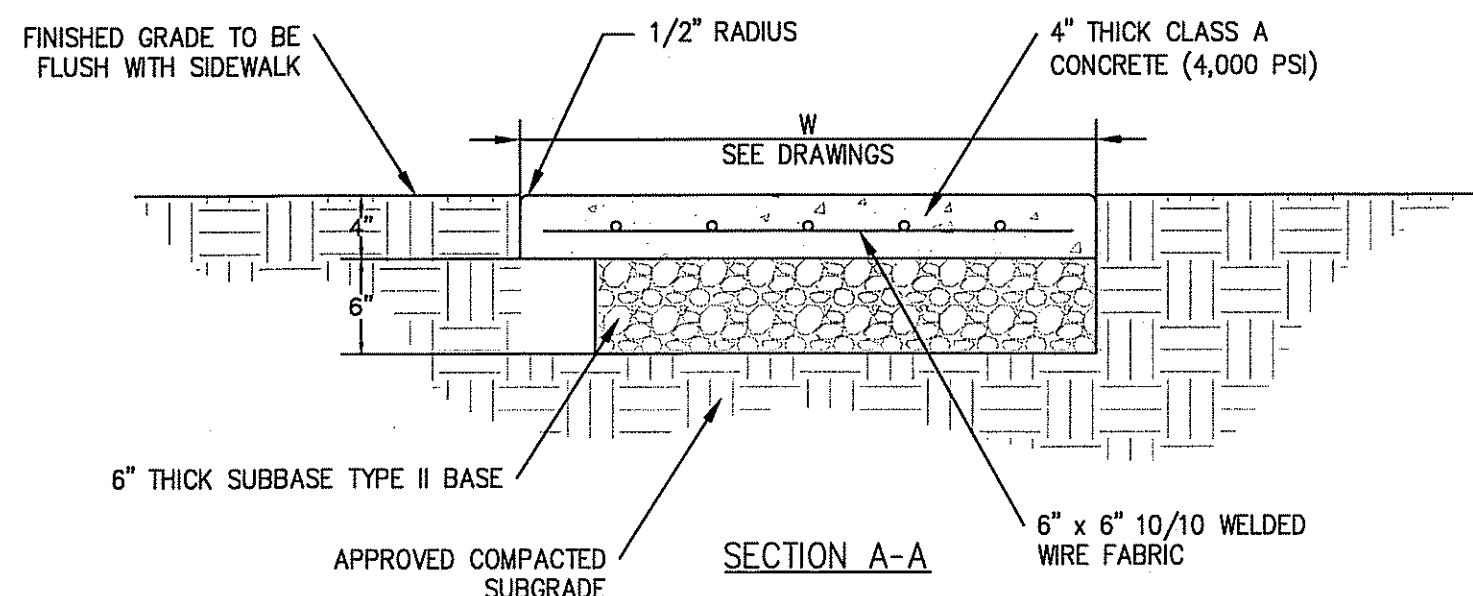
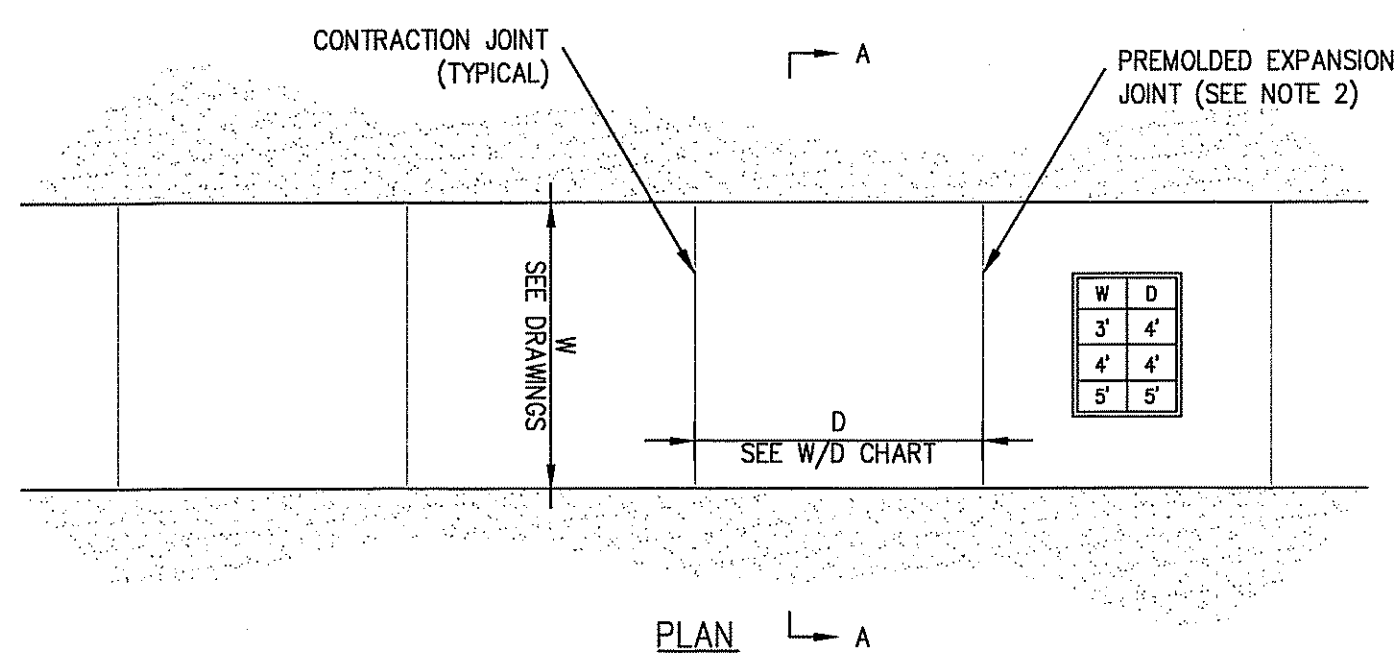


TRENCH RESTORATION
SCALE: NTS



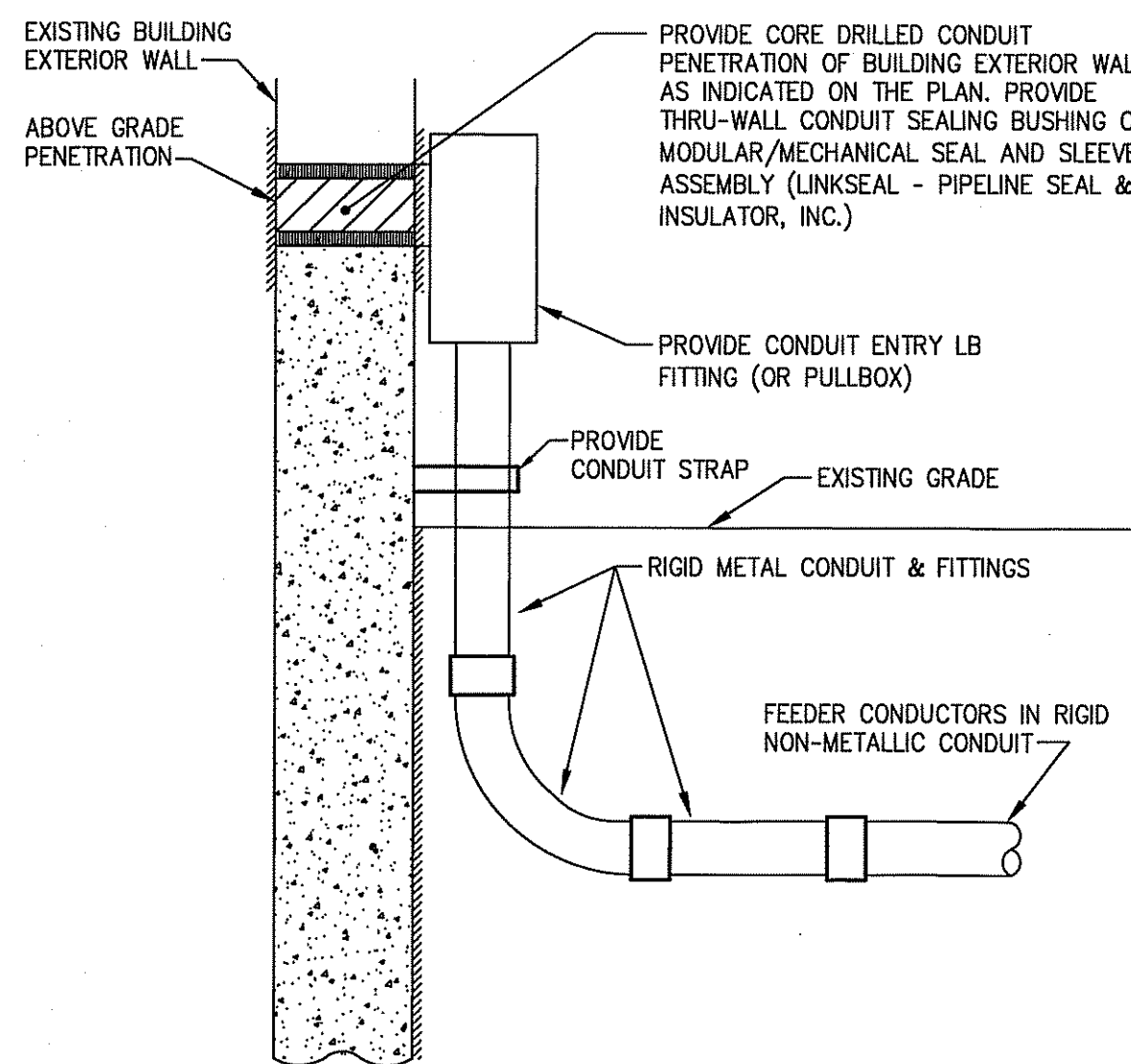
ASPHALT TRANSITION
SCALE: NTS

6 ASPHALT PAVEMENT RESTORATION
E-302 SCALE: NONE
NOTE: PROVIDE PAVING FABRIC IN ASPHALT TRANSITION - A 1'-0" SECTION INTO NEW ASPHALT AND A 2'-0" SECTION INTO EXISTING ASPHALT.

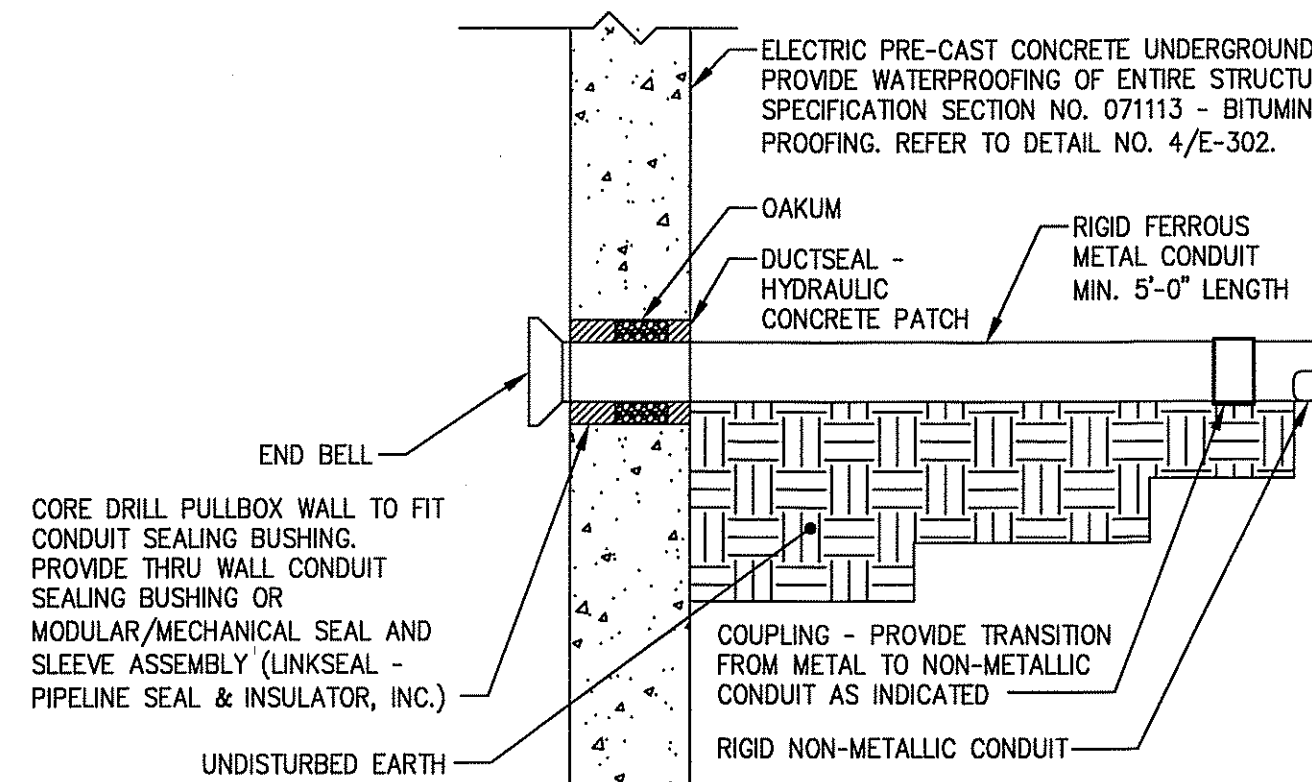


- NOTES:**
1. MINIMUM CROSS SLOPE SHALL BE 1/4" PER FOOT, UNLESS OTHERWISE INDICATED ON DRAWINGS.
 2. PROVIDE 1/2" PREMOLDED EXPANSION JOINTS AT 20' INTERVALS UNLESS OTHERWISE DIRECTED.
 3. REINFORCING SHALL NOT EXTEND THROUGH EXPANSION JOINTS.
 4. PROVIDE REBAR CONNECTION BETWEEN EXISTING AND NEW CONCRETE WALK SECTIONS.
 5. SIDEWALK SHALL HAVE LIGHT BROOM FINISH.

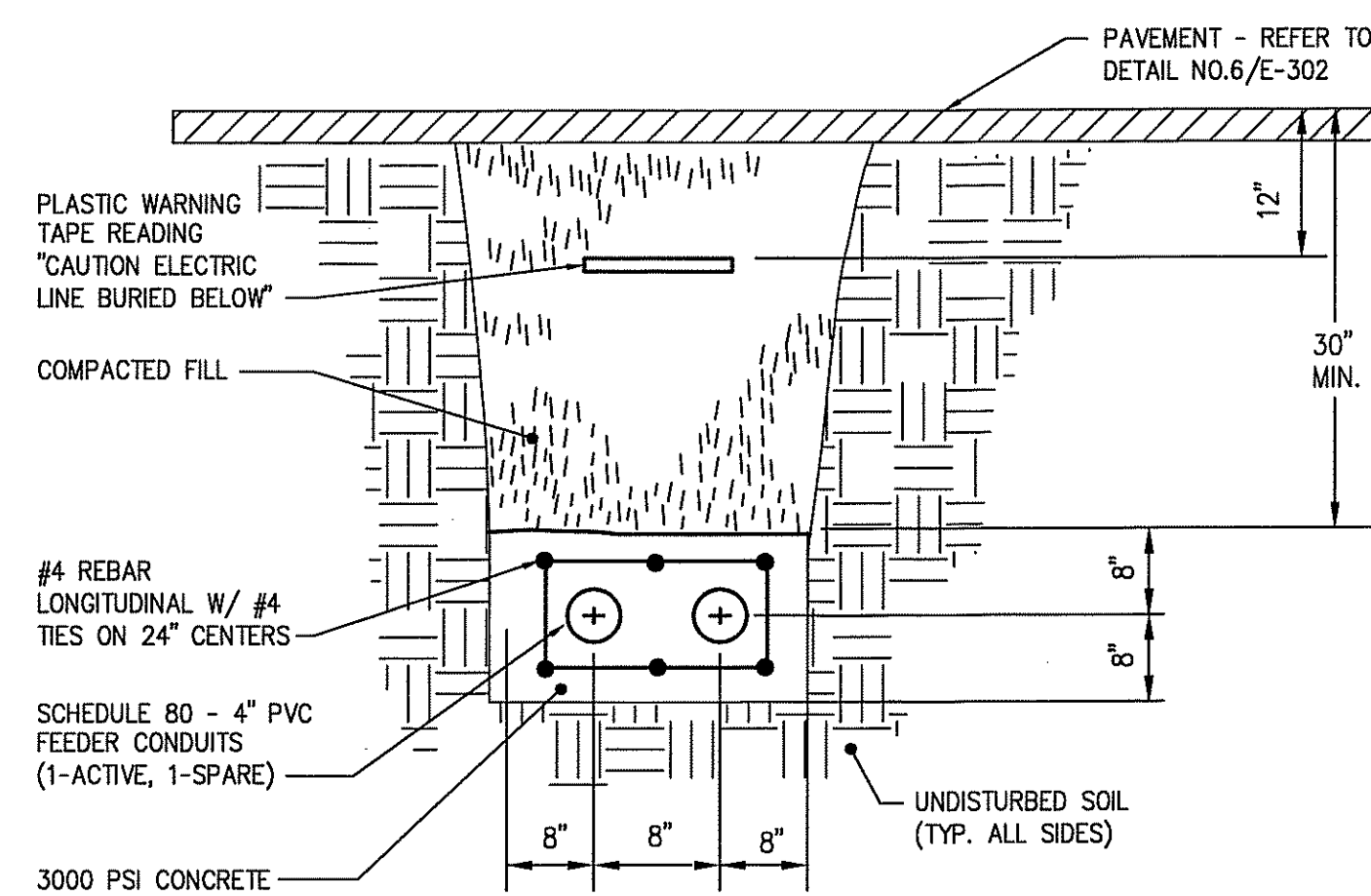
5 CONCRETE SIDEWALK RESTORATION
E-302 SCALE: NONE



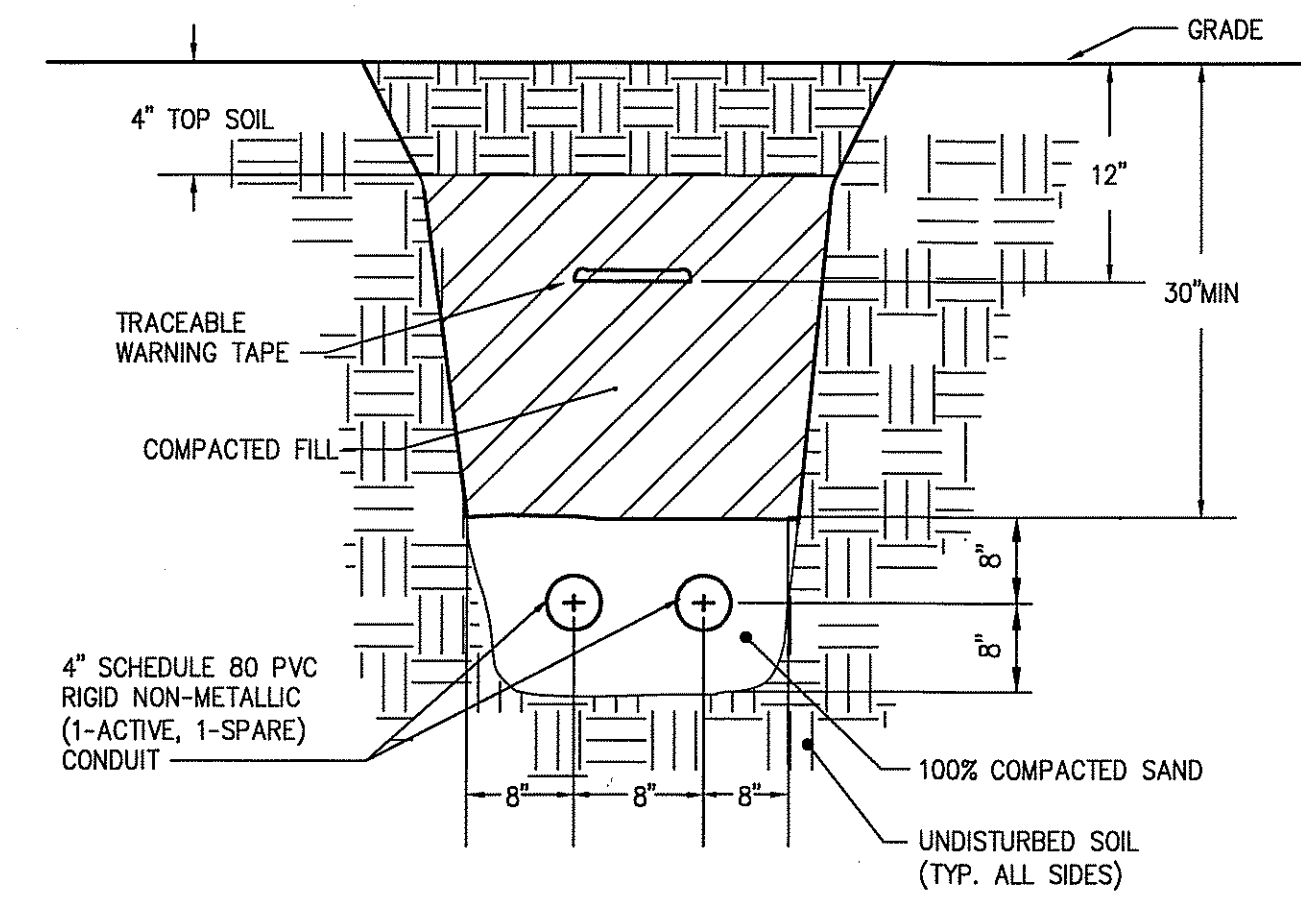
3 UNDERGROUND CONDUITS ENTERING EXISTING BUILDING WALL ABOVE GRADE
E-302 SCALE: NONE



2 UNDERGROUND CONDUITS ENTERING PRE-CAST PULLBOXES
E-302 SCALE: NONE



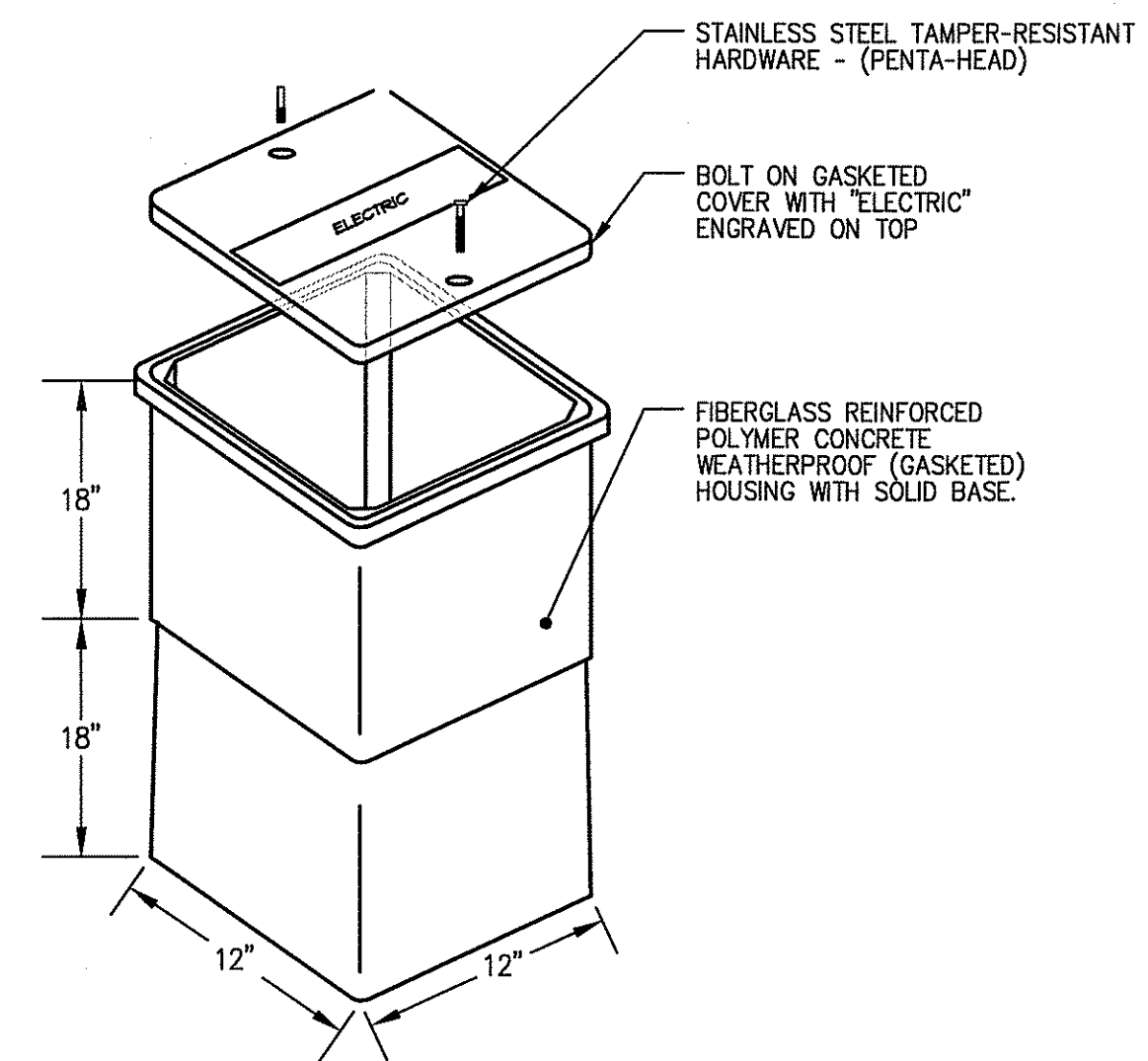
SECTION DETAIL - PAVED AREAS



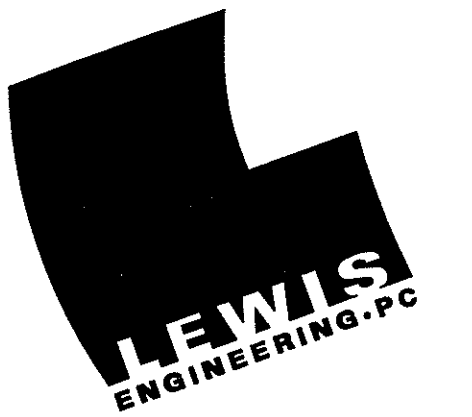
SECTION DETAIL - LAWN AREAS

1 UNDERGROUND SITE LIGHTING CONDUIT INSTALLATION
E-302 SCALE: NONE

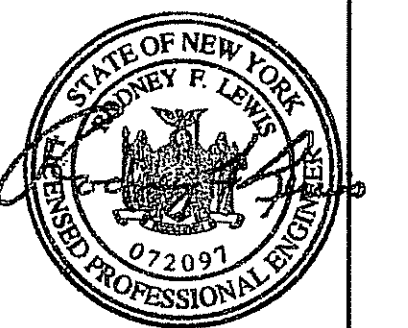
- NOTES:**
- A. ALL OPENINGS FOR CONDUITS SHALL BE MADE IN FIELD ACCORDING TO CONDUIT SIZES AND QUANTITIES.
 - B. SUITABLE FOR DIRECT BURIAL IN CONCRETE AND GRASS AREAS.
 - C. COVER SHALL SUPPORT 8,000 LBS.
 - D. PROVIDE STACKABLE SECTIONS AS REQUIRED FOR A 36" OVERALL DEPTH.
 - E. RESISTANT TO SUNLIGHT, WEATHERING, AND FREEZING.
 - F. DESIGN MAKE QUAZITE PC STACKABLE SERIES OR APPROVED EQUIVALENT. REFER TO SPECIFICATION SECTION NO. 337119



4 ELECTRIC PULLBOX "PB-1" DETAIL
E-302 SCALE: NONE



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CONTRACT: **ELECTRICAL**

TITLE: **REPLACE EXTERIOR LIGHTING**

LOCATION: **NYS POLICE TROOP B HEADQUARTERS
1097 ROUTE 86
RAY BROOK, NY 12977**

CLIENT: **NEW YORK STATE POLICE**

MARK	DATE	BID DOCUMENT	DESCRIPTION
	11/16/2015		

PROJECT NUMBER: **45065 - E**

DESIGNED BY: KJH

DRAWN BY: JML

FIELD CHECK:

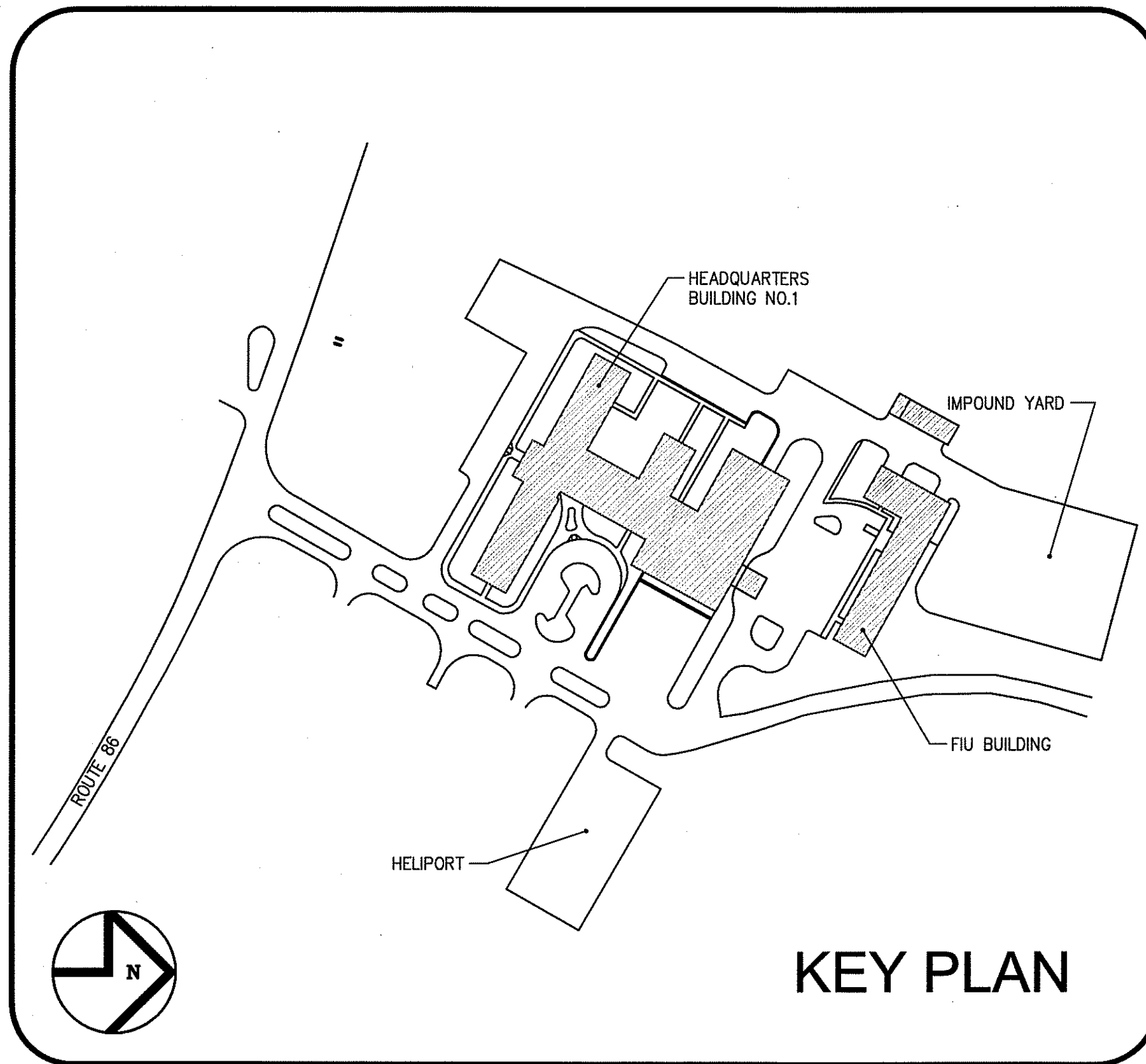
APPROVED: KJH

SHEET TITLE: **DETAILS**

DRAWING NUMBER: **E-302**

REPLACE EXTERIOR LIGHTING

NYS POLICE TROOP B HEADQUARTERS
1097 ROUTE 86 RAY BROOK, NY 12977
O.G.S. PROJECT NO. 45065-E



KEY PLAN

DRAWING LIST

- G-001 COVER SHEET
- E-001 LEGEND, ABBREVIATIONS & SEQUENCE OF WORK
- E-101 ELECTRICAL REMOVALS PLAN
- E-201 PARTIAL SITE LIGHTING PLAN
- E-202 PARTIAL SITE & BUILDING LIGHTING PLANS
- E-301 SCHEDULES & DETAILS
- E-302 DETAILS



NEW YORK STATE
DIVISION OF STATE POLICE



**Office of
General Services**

DESIGN & CONSTRUCTION

REVISED DRAWING: 3-8-16

DRAWING NUMBER:
G-001
SHEET 1 OF 7