STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0016

Janet T. Mills
GOVERNOR

Bruce A. Van Note
COMMISSIONER

October 3, 2023
Subject: Penobscot Narrows Bridge
and Observatory Lighting Improvement
State WIN: 024595.00
Location: **Verona & Prospect**
Amendment No. 1

Dear Sir/Ms.:

Make the following changes to the bid documents:

In the Bid Book:

CHANGE on page 9 "NOTICE TO CONTRACTORS", the bid opening date in the first paragraph from "October 4, 2023" to read "**October 11, 2023**". Make this change in pen and ink.

Remove pages forty to forty-Seven titled SPECIAL PROVISION SECTION 638 BRIDGE LIGHTING dated August 25, 2023, and **Replac**e with the attached SPECIAL PROVISION SECTION 638 BRIDGE LIGHTING Dated October 3, 2023, Totaling eight pages.

In the Plan Set:

Remove page E – 02 titled ELECTRICAL LEGEND, NOTES & DETAILS – 02 totaling one page dated 8/28/2023 and **Replace** with the attached ELECTRICAL LEGEND, NOTES & DETAILS totaling one page, dated 10/3/2023.

Remove page E - 03 titled ELECTRICAL SECTIONS AND ELVETATIONS – 03 dated 8/28/2023 totaling one page and **Replace** with the attached ELECTRICAL SECTIONS AND ELVETATIONS – 03 totaling one page dated 10/3/2023.

Remove pages E - 06 titled EXISTING ELEVATION AND MOUNTING DETAILS – 06 totaling one page dated 8/28/2023 and **Replace** with the attached EXISTING ELEVATION AND MOUNTING DETAILS – 06 totaling one page dated 10/3/2023.

Remove page E – 07 titled PENOBSCOT NARROWS BRIDGE AESTHETIC LIGHTING PYLON LIGHTING DETAILS – 07 totaling one page, dated 8/28/2023 and **Replace** with the attached PENOBSCOT NARROWS BRIDGE AESTHETIC LIGHTING PYLON LIGHTING DETAILS – 07 totaling one page dated

Remove page E – 10 titled PENOBSCOT NARROWS BRIDGE AESTHETIC LIGHTING, LIGHTING LAYOUT – 10 totaling one page dated 8/28/2023 and **Replace** with the attached PENOBSCOT NARROWS BRIDGE AESTHETIC LIGHTING, LIGHTING LAYOUT – 10 totaling one page dated 10/3/2023.

The following questions have been received:

Question: Drawing No. E-03 indicates an existing pullbox for the cable stay lighting. What's existing is an "LB" type fitting which will only support the connection of one fixture. Is the intent to replace the "LB" with a "T" fitting, or more preferably a small PVC pullbox. Please advise.

Response: The drawings were noted as having an existing j-box, they are in fact LB fittings. The intent for the new design is to use new PVC 4" x 4" junction boxes to feed the (2) Stay Lights at each location. Please refer to updated plans and special provision.

Question: The existing type light fixtures all use conduit bodies as junction boxes for their light whip wire feeds. The new type A and B LED fixtures call for junction boxes for their light whip wire feeds. The NEC recognizes conduit bodies as junction boxes. Are the existing conduit bodies acceptable junction boxes for the new LED light fixtures? If not, can MeDOT specify a junction box size and type for the type A and B fixtures? I believe the existing conduit bodies will work, unless the MeDOT requires dimming or color change options for the new LED fixtures.

Response: The new pylon lights are to be Type A and were incorrectly shown on the drawing as Type A for the upper pylon and Type B for the lower. The proposed lights are not equipped to be daisy chained from each other. If the existing "Tee" conduit body is in acceptable condition and the existing conduit is at least 3/4" then the conduit body would meet NEC Chapter 9 Table 1 requirements as noted in 314.28(3). The EC can then splice the specialized whips for each fixture to the next light at each fitting. In either case it is recommended that the existing rusting junction box on the interior faces of each pylon be replaced with new. Please refer to updated plans.

Question: What is the expected time schedule for this project?

Response: This project may begin on November 6th, 2023, provided all required contract documents have been submitted and approved. The completion date for this project is April 26, 2024. Please refer to SP 105 and 107.

Question: There is an existing job trailer on site, with electricity, but without internet. Will that suffice for the bid item "Field Office, Type D"?

Response: The existing MaineDOT owned office trailer located below the Penobscot Narrows Bridge on Verona Island may be utilized for the MaineDOT field office; however, Bidders need to review the requirements of *Special Provision 639 Engineering Facilities Type D Field Office* on page 49 of the bid documents for any additional requirements.

Question: Sheet E-01 states that there shall be maintained a one-way 12' traffic lane, with 4' shoulder. Both lanes, between the center median and outside rail are 20' wide. Would Maine DOT entertain allowing us to use just 6' for a narrow construction lane for electric carts or side by sides, with cones, barrels, or jersey barriers as protection? This technique would allow 14' for traffic and would allow us to keep both traffic lanes open for the vast majority of the project.

Response: Amend sheet E-01 by removing, 'and one 4' wide shoulder' from the Maintenance of Traffic note. Refer to SP 105 General Scope of Work (Limitation of Operations) on page 32 of the bid book, and to SP 107 Prosecution and Progress (Contract Time) on page 33 of the bid book for additional information.

Consider these changes and information prior to submitting your bid on **October 11, 2023**.

Sincerely,

George M. A. Macdougall P.E.
Contracts & Specifications Engineer

SPECIAL PROVISION
SECTION 638
BRIDGE LIGHTING

Document Outline:

638.01 – Description This work shall consist of furnishing and installing a bridge lighting system in accordance with these specifications and in close conformity with the plans.

638.02 – General All materials furnished by the Contractor shall be new unless otherwise specified. Substitutes for specified materials may be accepted, upon approval of the Department Engineer. Substitutes shall provide equal or better service.

A. Related Sections Related sections include the following:

Section 655.02.5 “Wiring Devices” for manual control switches.
Section 638.061 “Lighting Control Devices” for automatic control of lighting, including photoelectric relays and multiple lighting contactors.

B. Submittals Submittals shall include product data for each type of lighting fixture scheduled, arranged in order of fixture designation, and shall include data on features, accessories, and finishes.
C. Shop Drawings Shop drawings shall show details of nonstandard or custom fixtures and indicate dimensions, weights, methods of field assembly, components, features, and accessories. They shall include wiring diagrams.

D. Operation and Maintenance Data Operation and maintenance data shall be included in the submittal.

E. Quality Assurance Quality assurance shall include all electrical components, devices, and accessories. These shall be listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use. They shall comply with NFPA 70.

F. Product Manufacturers In other articles where titles below introduce lists, the following requirements apply to product selection. Available products shall be subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, products specified.

G. Lighting Fixtures Provide one of the products specified in the Lighting Fixture Schedule on the drawings.

638.03.1 – Aesthetic Lighting – General

A. Reference shall be made to drawings for all dimensions. The dimensions given on all drawings shall be checked by the Contractor before proceeding with the work, and any discrepancy shall be reported at once to the Engineer. Should it appear that the work intended to be described, or any of the matters relative thereto, are not sufficiently detailed or explained on the Drawings or in the Specifications, the Contractor shall apply to the Engineer for such further drawings or explanations as may be necessary, and shall conform to same, and in the event of any questions arising with respect to the true meaning of the Drawings and Specifications, reference shall be made to the Engineer whose decision shall be final and conclusive.

B. All luminaires shall be subject in all respects to the approval of the Department Engineer.

C. All luminaires shall be installed complete with lamps by the manufacturer specified, or an approved equal by the Department Engineer.

D. Prior to completion of the installation, the Contractor shall replace all used lamps so that at the time of luminaire final focus, all lamps are new.

E. Manufacturer's packaging shall be clearly marked to include identification by Type according to the Project Luminaire Schedule, quantity of contents, and manufacturer's component designation.

638.03.2 – Luminaire Construction

A. All luminaires shall be constructed, wired, and installed in compliance with all applicable National, State, and Local Codes. Unless otherwise specified, each luminaire shall be listed by the Underwriters' Laboratories as suitable for application and location shown and shall conform to any additional regulations necessary to obtain approval for use in locations shown. If Underwriters' Laboratories listing of luminaires is waved, all electrical components shall be UL recognized.

B. Internal wiring of luminaries shall contain a minimum number of splices and all splices shall

be made with approved connectors. Wiring and connectors shall be suitable for the current, voltage, and temperature to which they will be subjected.

C. Luminaires shall be constructed with the minimum possible number of joints. Joints shall be made only by means of approved welded, brazed, screwed, or bolted construction methods. Soldered joints shall not be acceptable. No self-tapping screws, bled metal tapping methods, or rivets shall be employed for fastening any parts which must be removed to gain access to electrical components requiring service or replacement, or for fastening any electrical component or support for same.

D. Ferrous metal parts and supports of luminaires other than parts manufactured out of stainless steel, shall be completely rust proofed after fabrication and before finishing coatings are applied by treatment with a two-part chrome-free polyvinyl butyral resin, and phosphoric acid self-etching wash primer. Total mil thickness to be a minimum of 1.0 mils and a maximum of 1.5 mils dry. Pre-treated sheet steel shall not be accepted unless treated as above. Mounting frames and all screws, bolts, nuts, and other fastening or latching hardware shall be zinc, cadmium, or equivalent plated unless otherwise specified.

E. Non-ferrous metal, cast or extruded parts of luminaires shall be close grained, sound and free from imperfections or discolorations. Cast or extruded parts shall be rigid, true to pattern, and of ample weight and thickness. Parts to be visible after installation on job shall be properly fitted, filed, ground, buffed, and chased to provide finished surfaces and joints free of imperfections. Finished thickness of all cast parts shall not be less than 1/8 inch.

F. Where anodized aluminum finishes are required, the aluminum shall be surface treated as specified before anodizing. The final finish shall be color selected, uniform, even in appearance and free from surface imperfections. Color of all visible parts shall match.

G. Prior to painting, all parts shall receive proper cleaning and etched surface preparation to assure paint adherence and durability. Finish shall be uniform, even in appearance and free from runs and surface imperfections.

H. Luminaires shall be suitably sealed and/or gasketed to prevent access of moisture into electrical components or enclosing diffusers, lenses, or globes.

I. Unpainted aluminum parts of luminaires shall be anodized to protect against corrosion. Visible surfaces and trim shall be anodized with minimum coating of 35 mg. per square inch.

J. Where luminaires require porcelain enameled finish, such finish shall be free of crazing, cracking, and orange peeling and shall meet or exceed RLM standards in all respects. Porcelain coating shall be not less than 7.5 mils thick. Reflective surfaces shall be white, non-yellowing, and with minimum reflectance of 85 percent.

K. Where stainless steel or non-ferrous metal surfaces (other than reflectors) are to remain unpainted, or where steel surfaces are to be electroplated, unless otherwise specified, they shall be coated with a baked-on clear lacquer. Where aluminum surfaces are anodized, the clear lacquer coating may be omitted.

L. Aluminum reflectors, unless otherwise specified, shall be Alzak processed or approved equal

with anodic coating weights minimum prescribed for Alzak Class designations stated below. Reflectors shall be free of ripples, tool marks and other surface imperfections.

M. Sockets for all luminaires shall be suitable for the specified lamps and shall be set so that lamps are positioned in an optically correct relationship to lenses, reflectors, baffles, etc.

N. Face trims fabricated in pieces for rectangular or square luminaires shall have mitered corners, continuously welded and smoothed before finishing. Lapping of trim metal shall not be acceptable.

O. Glass used for lenses, refractors, or diffusers shall be water-white crystal quality and provide minimum 88 percent light transmittance.

638.03.3 – Luminaire Installation

A. Luminaires shall be installed complete with all equipment, materials, parts, attachments, devices hardware, hangers, cables, supports, channels, frames, and brackets necessary to make a safe, complete, and fully operative installation. Manufacturer of each luminaire shall supply complete installation instructions including diagrams, illustrations, etc. The Contractor shall install in strict conformance with such instructions.

B. Luminaires, when installed, shall be set true and be free of light leaks, warps, dents, or other irregularities.

C. Supports for luminaires shall be adequate for the weight of the luminaires. Where necessary, the Contractor shall provide extra supports from the structure at no additional cost.

D. Each luminaire shall be installed at location shown on the plans. Where field conditions require deviation from location shown, the Department Engineer shall be so notified by the Contractor and final installation made as directed by the Department Engineer.

E. The Contractor shall provide manpower and tools for final focusing, at no additional cost, of all adjustable luminaires, including such focusing as may be necessary after regular working hours. This includes, but is not limited to, the focusing of all adjustable luminaires on the pylon, at the base of the cables, and in and around the elevator tower. Such focusing must be completed to the satisfaction of the Department Engineer.

F. Blemished, damaged, or unsatisfactory luminaires shall be replaced in manner satisfactory to the Department Engineer.

G. Pylon luminaire circuit feeds shall be fed through a 4” x 4” PVC junction box mounted directly on the pylon and gain support from the pylon structure. Each luminaire circuit will transition to its respective luminaire through the junction box.

638.04 – Submittal Drawings and Data

A. Prior to the installation of any luminaire furnished as part of this specification, shop drawings and, if directed, a full-size sample shall be submitted to the Department Engineer for approval.

1. No luminaire furnished as part of this Specification shall be installed without the Department Engineer's approval of its shop drawing and/or sample.
2. Unless otherwise noted, shop drawings shall be submitted in accordance with Maine Department of Transportation Standard Specifications Section 105 and with the paragraphs below. Catalog sheets, brochures and similar material will not be accepted in lieu of shop drawings unless specifically authorized by the Department Engineer.

B. Shop drawings shall show materials, finishes, metal gauges, overall and detail dimensions, sizes, electrical and mechanical connections, fasteners, welds, provisions for the work of others, and similar information. Shop drawings shall indicate complete details of the luminaire, including manufacturer's catalog numbers for sockets, ballasts, diffusers, lenses, switches, and type of wiring. Adjustable luminaires shall indicate focusing and locking devices. A note confirming specific UL listing shall be included.

C. Photometric data, developed by an independent laboratory, shall be provided by the Contractor, at no additional, as directed by the Department Engineer.

638.03.5 – Discrepancies Anything shown on the plans and not mentioned in the specifications, or mentioned in the specifications and not shown on the plans shall have the same effect as if shown or mentioned respectively in both. In case of any conflict or inconsistency between the plans and specifications, the one requiring greater quantity or superior quality shall prevail, as determined by the Department Engineer.

638.03.6 – Individual Specifications – Luminaire Schedule Luminaire shall be furnished for each luminaire symbol shown on the plans and as scheduled below. The lamp ordering codes serve to establish the specific lamps required. The descriptions and catalog numbers serve to establish the quality, appearance, and performance of the scheduled luminaires.

TYPE A – PYLON FLOODLIGHT

A. Type A Pylon Floodlight shall include a 6-5/8" flat bottom mounting yoke on rear casting, luminaire and ballast housing, door with fully gasketed lens, 300-watt (Type A) lamp for above the roadway and 100-watt (Type B) lamp for below the roadway, mounting hardware, mounting accessories, and all other devices required to make a complete and safe installation.

B. The luminaire housing shall be nominally 24.25” deep x 27.68” wide x 17.68” tall and made of a two-part die-cast aluminum assembly with integral ballast fixed to rear of floodlight. The lens housing shall be removable for top re-lamping without disturbing the aiming angle by three stainless steel latches that securely fasten the front and rear lamp housing. Latches to be tamper proof. The housing shall be equipped with tilt locking indexing plate to secure luminaire aiming angle after adjustment. Provide safety cable securing front casting to rear casting during re-lamping.

C. The lens shall be an impact and heat resistant tempered clear glass roundel, with a matte anodized aluminum lens ring to hold the borosilicate glass lens in the front housing compartment. The lens shall have a 10° beam spread. Silicone gaskets shall seal the

fixture and lens from dirt and moisture.

D. All exposed hardware shall be stainless steel. The mounting hardware shall include a yoke with threaded bolts and a base plate with 7/16” slots for 3/8” stainless steel locking bolts, nuts, and washers to allow for 45° rotation and locking, a steel indexing plate to allow tilt locking. Contractor to provide any additional hardware necessary to properly attach the luminaire to the concrete pylon of the bridge.

E. The custom mounting bracket shall be designed to mount directly on the bridge and gain support from the bridge pylon structure. Bracket shall be constructed with 3-1/2" x 3-1/2" hot-dipped galvanized steel angle iron. Each bracket must accommodate one luminaire and provide 90° horizontal rotation in two directions. The bracket shall be designed to mount fixture 24” from pylon face and have an EPA rating greater than or equal to the rating of the fixture to be mounted. Each mounting plate shall include a vibration dampener mounted between the mounting bracket and the bridge.

F. The ballast housing shall be a two-part marine grade copper-free aluminum alloy die-casting fixed to the rear section of the main luminaire housing and shall contain the ballast, factory wired to the luminaire housing. The ballast shall be secured to its housing so that itwill remain attached regardless of the vibration or movement of the bridge.

G. Luminaire shall be UL listed for wet location. Luminaire shall have color (TBD), epoxy finished, cast aluminum lamp and component housing. All exposed surfaces shall be anodized, or hot dip galvanized, and painted with a suitable lacquer, enamel, powder coat or other paint togive a uniform finish. All hardware such as, but not limited to, hinges, latches, springs, nuts, screws, washers, pins, and other similar parts shall be made of electrolytically compatible materials which are inherently corrosion-proof in this application or have been protected by finishes approved for corrosion resistance. All hinges and latches shall be made to withstand the vibrations and winds encountered in this application. All joints shall be gasketed to be watertight.

H. The luminaire and ballast enclosures shall each bear a nameplate or other type of indelible and aesthetically acceptable marking that shall identify it as to type, catalog number, manufacturer, wattage, and voltage.

I. Acceptable Manufacturers and Product Numbers:

1. Color Kinetics Reachelite Intellihue Powercore, 300W, 100-277VUL/CE/CQC, 4K or equal upon approval of the Department Engineer.

TYPE B – CABLE STAY FLOODLIGHT

A. The custom mounting plate shall be designed to mount directly on the bridge and gain support from the bridge deck structure. Each mounting plate must accommodate one luminaire and provide 90° horizontal rotation in two directions. Each mounting plate shall include a vibration dampener between the bridge deck and the bracket.

B. Type B circuit feeds shall be fed through a 4” x 4” PVC junction box mounted directly

on the bridge and gain support from the bridge deck structure. Each luminaire circuit will transition to its respective luminaire through the junction box.

C. Acceptable Manufacturers and Product Numbers:

1. Color Kinetics Reachelite Intellihue Powercore, 100W, 100-277VUL/CE/CQC, 4K or equal upon approval of the Department Engineer.

2. Progress Lighting Field Adjustable 50LED 4k or equal upon approval of the Department Engineer.

TYPE C – LED RAIL LUMINAIRE

A. Acceptable Manufacturers and Product Numbers:

1. Color Kinetics ArchiPoint iColor Powercore: Clear Flat Lens with Conduit Mounting Base, ¾ in. NPTWhite LEDs or equal to be approved by the Department Engineer.

B. Acceptable Manufacturers and Product Numbers:

1. Griven-USA: GRI130-40K-UNV-SD-SG or equal to be approved by the Department Engineer.

2. Phoenix: Cube-Light CL-13LED-120-240-TW or equal to be approved by the Department Engineer.

638.03.7 – Luminaire Substitutions

A. Proposed Luminaire Substitutions must meet or exceed the requirements stated in this specification. All proposed substitutions must be accompanied by a sample luminaire (complete with lamp, cord, and plug) for approval by the Department Engineer.

B. Proposed lamp substitutions must be accompanied by a sample luminaire, complete with proposed substitute lamp, cord, and plug for approval by Department Engineer.

638.04.1– FAA Lighting Existing FAA lighting to remain.

Related Sections include the following:

1. Section 638.061 “Lighting Control Devices” for automatic control of lighting, including: photoelectric relays and multipole lighting contactors.

A. Submittals Submittals shall include the following:

1. Product Data: For lighting fixture type scheduled, arranged in order of fixture designation. Include data on features, accessories, and finishes.

2. Shop Drawings: Show details of nonstandard or custom fixtures. Indicate

dimensions, weights, methods of field assembly, components, features, and accessories, including wiring diagrams.

3. Operation and maintenance data.

B. Quality Assurance Quality assurance shall include Electrical Components, Devices, and Accessories. Existing FAA Obstruction lighting is to remain.

C. Product Manufacturers In other articles where titles below introduce lists, the following requirements apply to product selection: Available Products shall be subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

D. Lighting Fixtures Type "OL" Existing FAA Type 'OL' lighting is to remain

E. Fixture Support Components Fixture support components shall comply with Section 655.02.1 "Basic Electrical Materials and Methods" for channel supports.

F. FAA Lighting Control and Monitoring All existing FAA Type 'OL' and Types 'NR' & 'NG' Obstruction lighting is to remain.

638.05.1– Navigation Lighting All existing navigation lighting is to remain.

638.06.1 - Lighting Control Devices All existing control systems and devices are to remain.

638.07- Measurement, Payment and Warranty Payment will be made at the contract unit price. All wiring and electrical work associated with the lighting and not specifically listed below shall be incidental to the cost of the fixtures. For Item 638.04, the protection plate that covers this lighting shall be included in the total cost for the item.

A. Payment will be made under:

Pay Item	Description	Pay
634.316	#10 AWG Copper Wire	LF
638.0211	Feature Lights (Type 'A' – Pylon Lights)	LS
638.0211	Feature Lights (Type 'B' – Stay Lights)	LS
638.04	Bridge Walkway Lighting (Type 'C' – Rail Lights)	LS

B. Warranty (Refer to Section 638.021 — Maintenance Lighting and Subsection)

END OF SECTION

ELECTRICAL LEGEND

GENERAL:

——————— DENOTES EXISTING TO REMAIN

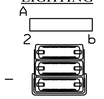
——————— DENOTES NEW WORK

CONDUIT AND WIRE

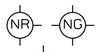
——————— CONDUCTORS RUN IN CONDUIT

- - - - - - - - - - - - - - - - - RACEWAY CONCEALED IN CEILING OR WALLS, OR EXPOSED IN UNFINISHED AREAS.

LIGHTING



LIGHTING FIXTURE 'A' DENOTES TYPE (REFER TO LIGHTING FIXTURE SCHEDULE), NUMERAL DENOTES CIRCUIT NUMBER, 'b' DENOTES FIXTURE CONTROLLED BY SWITCH/CIRCUIT b.



NAVIGATION LIGHTS: R = RED, G = GREEN

FAA OBSTRUCTION LIGHT

SWITCHING

PHOTOCELL CONTROL DEVICE

MISCELLANEOUS

JUNCTION BOX

DISCONNECT SWITCH

ABBREVIATIONS

WP	WEATHERPROOF
A.F.F.	ABOVE FINISHED FLOOR
N.T.S.	NOT TO SCALE
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
LC	LIGHTING CONTACTOR
JB, J-BOX	JUNCTION BOX
O.C.	ON CENTER
TYP.	TYPICAL
C	CONDUIT

DEMOLITION NOTES:

1. CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT UTILITIES AND STRUCTURES FROM DAMAGE. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF THE UTILITY OR STRUCTURE OWNER AT NO COST TO THE DEPARTMENT.
2. IN GENERAL, DEMOLITION WORK INCLUDES THE FOLLOWING: REMOVAL OF ELECTRICAL FEEDS, LUMINIAIRES, CONDUITS, LUMINAIRE MOUNTS, JUNCTION BOXES AND ASSOCIATED ITEMS RELATED TO THE EXISTING LIGHTING SYSTEM. REMOVED LUMINAIRES AND ASSOCIATED EQUIPMENT SHALL BE TURNED OVER TO OWNER.
3. DEMOLITION WORK SHALL BE COMPLETED IN A PHASED MANNER SUCH THAT NIGHTTIME ROADWAY ILLUMINATION WILL BE MANTAINED THROUGHOUT THE DURATION OF CONSTRUCTION BY EITHER NEW OR EXISTING LIGHTING SYSTEM.
4. EXISTING JUNCTION BOXES AND ASSOCIATED CONDUIT AND CONDUCTORS EXCEPT WHERE OTHERWISE NOTED FOR DEMOLITION SHALL RETAIN THEIR INTEGRITY FOR NEW OR CONTINUED USE IN NEW LIGHTING SYSTEM.
5. ALL MATERIAL REMOVED AND NOT TURNED OVER TO OWNER SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS APPLICABLE TO CONSTRUCTION DEMOLITION DEBRIS.

LIGHTING FIXTURE SCHEDULE PENOBSCOT BRIDGE MDOT

TAG	MFGR	DISTRIBUTION	COLOR	WATTS	DESCRIPTION	CATALOG NUMBER	LIGHTING NOTES	QUANTITY
A	COLORKINETICS	10º BEAM	4K	300W	PYLON UPLIGHTING	523-000303-03 912400135526 ReachElite High Punch Powercore, eW 300W, 4000 K, 100 to 277 VAC (SEE NOTES BELOW)	300W LUMINAIRES ARE FOR PYLON LIGHTING ABOVE & BELOW ROADWAY QUANTITY = 12 LUMINAIRES FOR UPPER AND 12 FOR LOWER LIGHTING	24
B	COLORKINETICS	10º BEAM	4K	100W	STAY LIGHTING	523-000104-03 912400137781 ReachElite High Punch Powercore gen2, eW 100W, 4000 K, 100 to 277 VAC, 3°, Native (no spread lens), UL/cUL, CE, CQC (SEE NOTES BELOW)	100W TYPE 'B' LUMINAIRES ARE USED FOR STAY LIGHTS	96
C	COLORKINETICS	3º BEAM	4K	25W	RAIL LIGHTING	999-049000-10 823500503210 SPECIAL, ARCHIPOINT EW POWERCORE, 4000K, CLEAR FLAT LENS, 100-240V, UL/CE		104

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ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
626.28	CONDUIT REPAIR	25	EA
629.05	HAND LABOR, STRAIGHT TIME	20	HR
631.10	AIR COMPRESSOR (INC OPERATOR)	20	HR
631.11	AIR TOOL (INCLUDING OPERATOR	20	HR
631.171	TRUCK - SMALL (INCLUDING OPERATOR)	20	HR
634.316	*10 AWG COPPER WIRE	750	LF
638.0211	FEATURE LIGHTS (TYPE 'A' - PYLON LIGHTS)	1	LS
638.0211	FEATURE LIGHTS (TYPE 'B' - STAY LIGHTS)	1	LS
638.04	BRIDGE WALKWAY LIGHTING (TYPE 'C' - RAIL LIGHTS)	1	LS
639.21	FIELD OFFICE, TYPE D	1	EA
652.34	CONE	100	EA
652.35	CONSTRUCTION SIGNS	300	SF
652.36	MAINTENANCE OF TRAFFIC CONTROL DEVICES	90	CD
652.38	FLAGGERS	2900	HR
652.41	PORTABLE CHANGEABLE MESSAGE SIGN	3	EA
659.10	MOBILIZATION	1	LS

NOTE:

CONTRACTOR SHALL COORDINATE WITH SPECIFIED MANUFACTURER (3) QUANTITY TYPE "A", AND (2) QUANTITY TYPE "B" LIGHTING FIXTURES FOR MOCK-UP PURPOSE TO DETERMINE BRIGHTNESS LEVELS, AIMING, AND FIXTURE POSITIONING PRIOR TO FINAL INTEGRATION. CONTRACTOR SHALL MAKE AVAILABLE ON-SITE POWER FOR MOCK-UP.

TYPE A ACCESSORIES:

A 120-000197-07 912400135537 ACCESSORY, REACHELITE POWERCORE, DIFFUSER LENS WITH TRIMBEZEL, 10 DEG (NSP)
A 120-000197-06 912400135536 ACCESSORY, REACHELITE POWERCORE, DIFFUSER LENS WITH TRIMBEZEL, 5 DEG (VNSP)
A 108-000055-03 910503704066 iW/COLORGRAZE OR REACH POWERCORE, UPGRADE, LEADER CABLE, 10FT, UL
A 120-000197-00 912400135530 ACCESSORY, REACHELITE POWERCORE, GLARE SHIELD, FULLCUT-OFF

TYPE B ACCESSORIES:

B 120-000197-12 912400135542 ACCESSORY, REACHELITE POWERCORE, DIFFUSER LENS WITH TRIMBEZEL, 10X40 DEG ELLIPTICAL
B 108-000055-03 910503704066 iW/COLORGRAZE OR REACH POWERCORE, UPGRADE, LEADER CABLE, 10FT, UL
B 120-000197-00 912400135530 ACCESSORY, REACHELITE POWERCORE, GLARE SHIELD, FULLCUT-OFF

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TYPE C ACCESSORIES:

C 123-000152-01 910503702575 ARCHIPOINT ICOLR POWERCORE, CONDUIT MOUNTING BASE, M25.

GENERAL NOTES:

1. SPECIFICATIONS: 'STATE OF MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS".
2. RADIOGRAPHY, OR OTHER MEANS APPROVED BY ENGINEER, SHALL BE USED TO VERIFY THE ABSENCE OF REINFORCING BARS AND PRESTRESSING STEEL CONFLICTS WITH WITH THE HOLE LOCATION PRIOR TO DRILLING OR CORING ANY HOLE DEEPER THAN 2.5 INCHES INTO THE CONCRETE.
3. PAYMENTS FOR LUMINAIRES SHALL INCLUDE ALL INSTALLATION REQUIRED, AND ADJUSTMENT OF FIXTURE TO PROPER ALIGNMENT.
4. PAYMENT OF ELECTRICAL SYSTEMS SHALL INCLUDE INSTALLATION OF CONDUITS AND WIRES.
5. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CURRENT EDITION OF THE NATIONAL ELECTRIC CODE (NEC): COUNTY OF HANCOCK AND LOCAL UTILITY COMPANY REQUIREMENTS; AND MOST RECENT MAINE DEPARTMENT OF TRANSPORTATION (MEDOT) SPECIFICATIONS FOR MISCELLANEOUS CONSTRUCTION SECTION 634 HIGHWAY LIGHTING: STANDARD DETAILS FOR DIVISION 600 MISCELLANEOUS CONSTRUCTION AND SECTION 715 LIGHTING MATERIALS, UNLESS NOTED OTHERWISE.
6. SCOPE OF WORK: INSTALL BRIDGE LIGHTING IS SHOWN ON THESE PLANS.
7. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO APPLICABLE PROVISIONS OF THE MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND STANDARD DETAILS. NATIONAL ELECTRIC CODE, AND ANY REQUIREMENTS OF THE POWER COMPANY.
8. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING TO ENSURE AWARENESS OF SITE CONDITIONS THAT COULD AFFECT THE BID PERIOD.
9. ALL LIGHTING CIRCUITS ARE TO BE CONTROLLED THROUGH EXISTING CONTROLS.
10. LIGHTING FIXTURES SHALL BE IES FULL CUT OFF, LIGHT EMITTING DIODE (LED) FIXTURES. LED MODULES SHALL BE IP65 OR IP66 RATED PERIOD. ALL FIXTURES SHALL BE GASKETED AND HAVE SURGE PROTECTION AND A FUSE KIT PERIOD. REFER TO SPECIAL PROVISIONS. OTHER MANUFACTURERS AND MODELS MAY BE CONSIDERED FOR USE INTHIS PROJECT. EVALUATION BY MAINEDOT OF ALTERNATIVE LED LUMINAIRES THAT MAY BE PROPOSED BY THE CONTRACTOR FOR SUBSTITUTION WILL REQUIRE SUBMITTAL OF THE FOLLOWING AT A MINIMUM: IS LM79-19 ABSOLUTE TESTING REPORT FOR THE PROPOSED ALTERNATIVE LUMINAIRE, IES LM-80-20 TESTING REPORT FOR LED CHIPS TO BE USED IN THE ALTERNATIVE LUMINAIRE. DOCUMENTING, TESTING FOR A MINIMUM OF 8500 HOURS PERIOD. IES TM-21-19. REPORT FOR PROJECTED LONG TERM LUMEN MAINTENANCE PERIOD, INCLUDING INCREMENTAL LUMEN DEPRECIATION TABLE AT 25 DEGREES CELSIUS TO A MINIMUM OF 50,000 HOURS. IES PHOTOMETRIC FILE FROM THE MANUFACTURER FOR THE PROPOSED ALTERNATIVE LUMINAIRE: PHOTOMETRIC PLOT, OVERLAID ON THE LAYOUT OF THE LUMINAIRE LOCATIONS FOR THIS SPECIFIC PROJECT SHOWING LIGHT CONTOURS, ILLUMINATION STATISTICS FOR EACH OF THE LIGHTING GROUPS AND VALUE OF LIGHT LOSS FACTOR USED IN THE ANALYSIS: VALUES OF LLD, LDD, BALLAST FACTOR, AND OTHER FACTORS USED FOR CALCULATION OF THE ASSUMED LIGHT LOSS FACTOR PERIOD. SPECIFICATION DATA REGARDING OPTICS, CHROMATIC COLOR, TEMPERATURE, DRIVER, SURGE PROTECTION, HOUSING, AND GASKETING PERIOD REFER TO SPECIAL PROVISIONS.
11. THE LUMINAIRES, INCLUDING LED'S AND DRIVERS AND ASSOCIATED COMPONENTS SHALL BE WARRANTIED FOR 10 YEARS FROM THE DATE OF INSTALLATION. ALL COSTS ASSOCIATED WITH THE REPAIR OR REPLACEMENT OF DEFECTIVE EQUIPMENT DURING THIS PERIOD SHALL BECOME THE RESPONSIBILITY OF THE EQUIPMENT MANUFACTURER. SUCH COSTS MAY INCLUDE, BUT ARE NOT LIMITED TO LABOR COSTS, EQUIPMENT REPLACEMENT, CRANE OR LIFT EQUIPMENT RENTAL, REMOVAL AND REINSTALLATION OF GUARDRAIL IF REQUIRED FOR ACCESS.
12. BUSHINGS SHALL BE INSTALLED ON ALL CONDUIT TERMINATIONS.
13. PULL WIRE SHALL BE INSTALLED IN ALL CONDUIT.
14. ALL CONDUIT THREADS ARE TO BE RED-HEADED.
15. UPON COMPLETION OF THIS PROJECT, THE CONTRACTOR SHALL FURNISH TO MAINEDOT A SET OF AS BUILT PLANS FOR FUTURE REFERENCE AND SYSTEM MAINTENANCE.
16. PORTABLE CHANGEABLE MESSAGE BOARD LOCATIONS TO BE DETERMINED BY THE RESIDENT IN THE FIELD.

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HIGHWAY PLANS

	BY	DATE
PROJ. MANAGER	$PROJMANAGER$	
DESIGN-DETAILED	$designer15$	$proj.date15$
CHECKED-REVIEWED	$detailer15$	
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1	CLARIFICATION TO LIGHTING SCHEM	10/03/2023
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

PENOBSCOT NARROWS BRIDGE
AESTHETIC LIGHTING

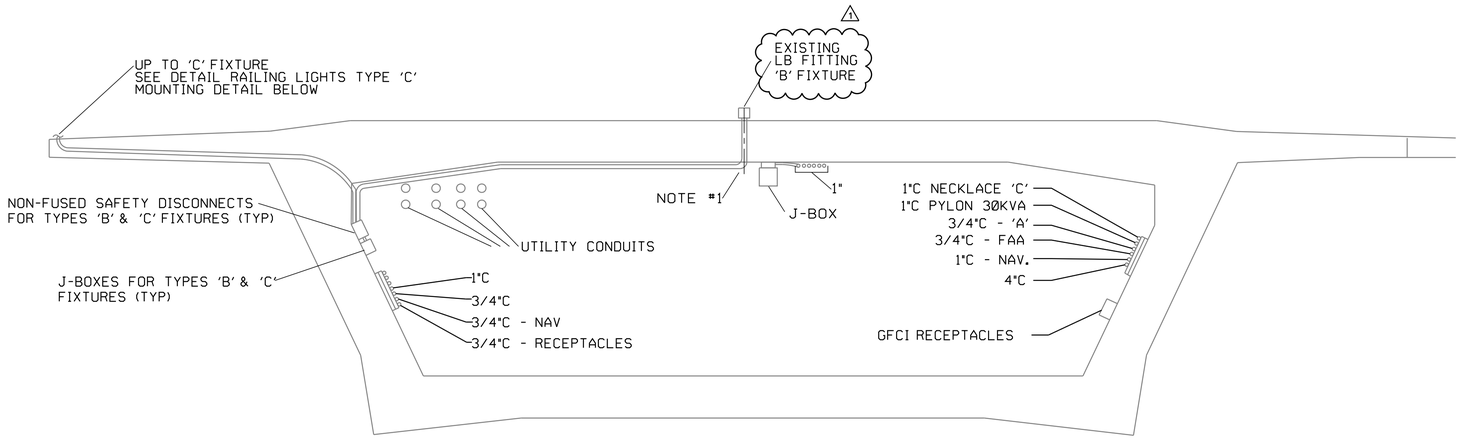
ELECTRICAL LEGEND, NOTES & DETAILS - 02

SHEET NUMBER

E-02

OF 12

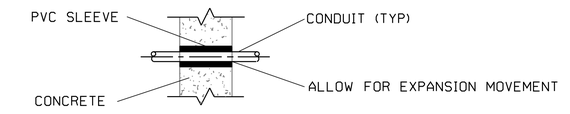
Filename: ...\002_Lighting-Details_02-11.dgn Division: HIGHWAY Username: Date:10/3/2023



EXISTING SECTION (FOR REFERENCE ONLY)

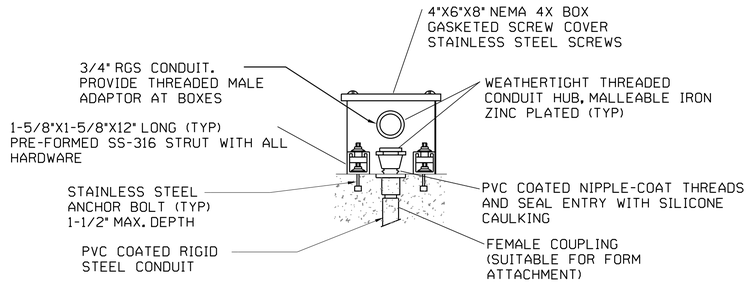
NO SCALE

NOTES:
1.MAINTAIN INTEGRITY OF CONDUIT AND CONDUCTOR FEEDS TO TYPE 'B' STAY LIGHTS FOR CONNECTION TO NEW LAYOUT.



TYPICAL CONCRETE PENETRATION

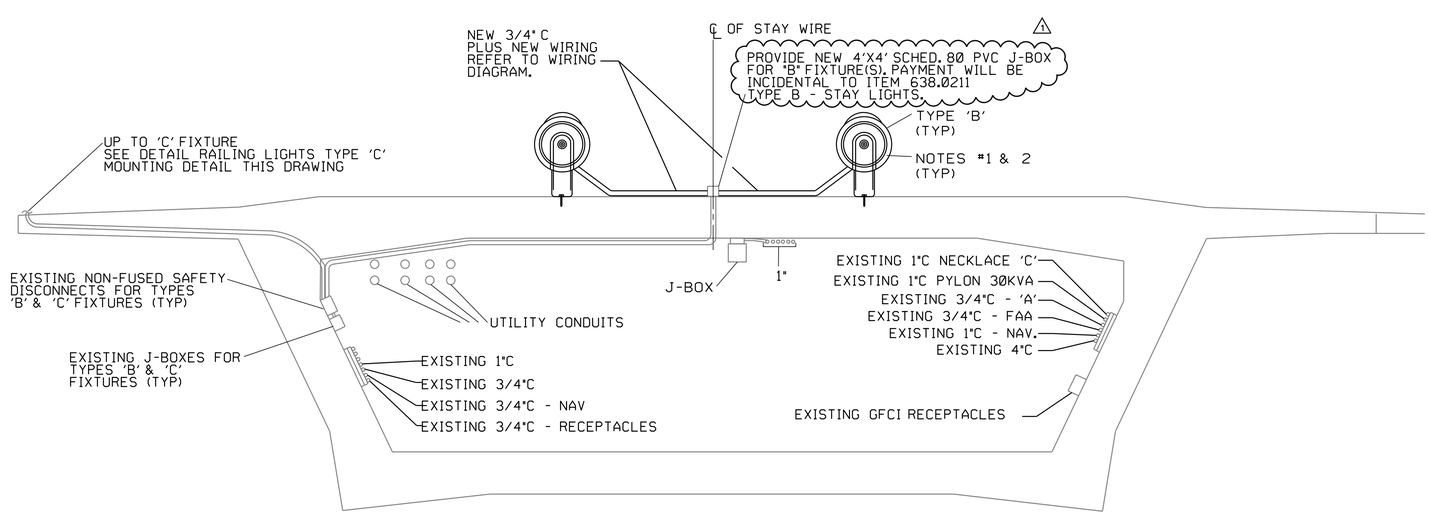
NO SCALE



PULLBOX DETAIL

NO SCALE

NOTE: JUNCTION BOX MOUNTED WITHIN BOX GIRDER



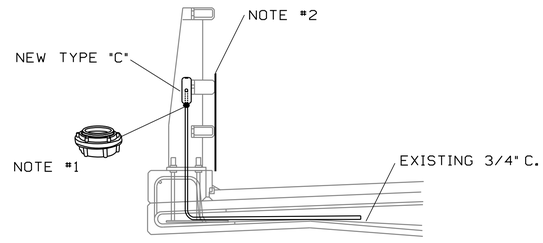
NEW SECTION

NO SCALE

NOTES:
1. COORDINATE TYPE 'B' (STAY LIGHT) MOUNTING AND AIMING WITH MANUFACTURERS PLAN SHEET AND DETAILS.

2. REFER TO BRIDGE LIGHTING DIAGRAM FOR CIRCUITING INFORMATION, DRAWING E-11.

3. REFER TO LIGHTING FIXTURE TYPE 'B' MOUNTING DETAIL.



RAILING LIGHTS TYPE 'C' MOUNTING DETAIL

NO SCALE

NOTES:
1. PROVIDE ALUMINUM, INSULATED WATERTIGHT CONDUIT HUB, SIMILAR TO APPLETON HUB100A. COORDINATE WITH CONDUIT SIZE PRIOR TO ORDERING.

2. REFER TO STEEL DEFLECTOR PLATE LUMINAIRE PROTECTIVE DEVICE ON DRAWING E-12.

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HIGHWAY PLANS

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CHECKED-REVIEWED				SIGNATURE
DESIGN2-DETAILED2				
DESIGN3-DETAILED3				P.E. NUMBER
REVISIONS 1	CLARIFICATION TO LIGHTING SCSON		10/03/2023	
REVISIONS 2				
REVISIONS 3				DATE
REVISIONS 4				
FIELD CHANGES				

PENOBSCOT NARROWS BRIDGE
AESTHETIC LIGHTING

ELECTRICAL SECTIONS AND ELEVATIONS - 03

SHEET NUMBER

E-03

OF 12

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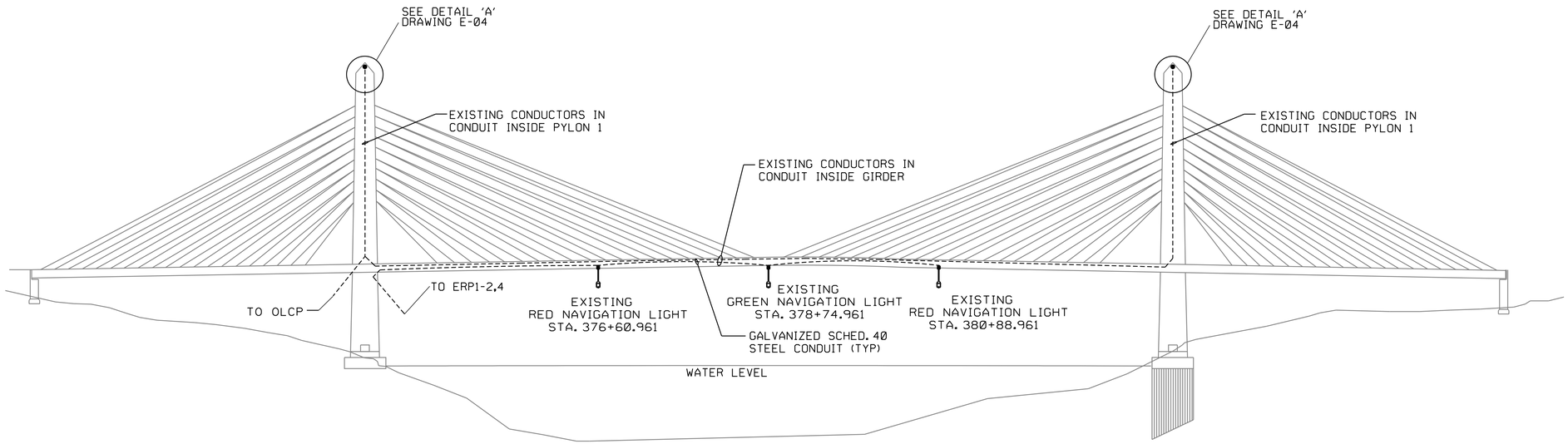
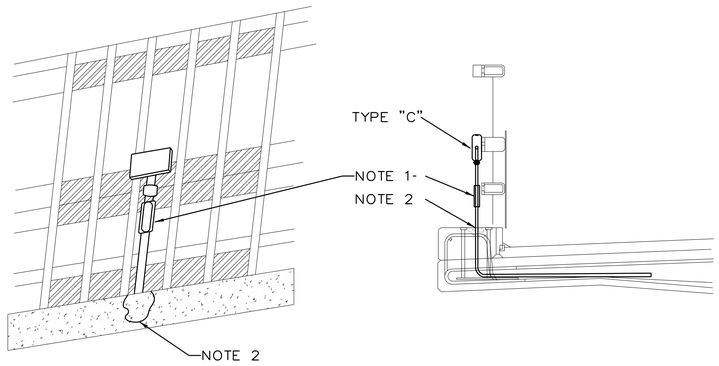
Filename: ...\002_Lighting-Details_02-11.dgn Division: HIGHWAY Username: Date:10/3/2023



ELEVATION - EXISTING OBSTRUCTION AND NAVAGATION LIGHTS (FOR REFERENCE ONLY)

NO SCALE

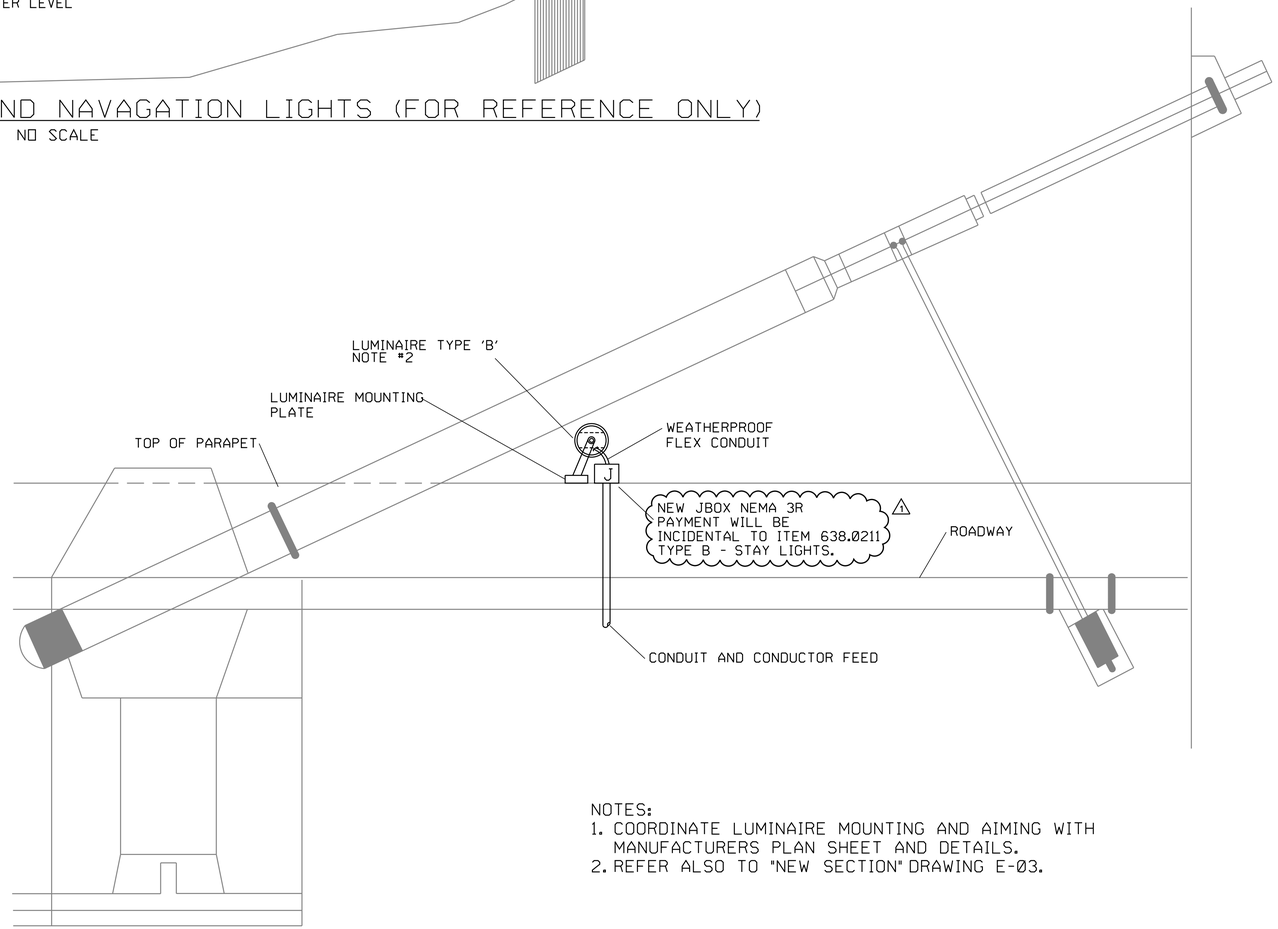


RAILING LIGHTS TYPE 'C' CONDUIT REPAIR DETAIL

NO SCALE

NOTES:

1. THE PROCEDURE FOR REPAIR OF DAMAGED PVC CONDUIT WILL CONSIST OF CUTTING OFF CONDUIT ONLY TO THE EXTENT REQUIRED TO REMOVE DAMAGED SECTION AND INSTALLING NEW FITTING SUITABLE FOR INSTALLATION OF A NON METALLIC FLEXIBLE CONDUIT CONNECTOR AT THE END OF THE EXISTING CONDUIT AND EXTEND FLEXIBLE CONDUIT UP TO FIXTURE.
2. IF THE CONDUIT IS BROKEN TO THE SURFACE OF THE CONCRETE CURB INSTALL A NON METALLIC CONNECTOR AND EXTEND FLEXIBLE NON METALLIC CONDUIT AS REQUIRED UP TO THE FIXTURE. USING THE CARLON PVC CONDUIT REPAIR SYSTEM, PART NUMBER E910REAME ¾" REAMER, REAM THE END OF THE CONDUIT, INSTALL CARLON E910E OR E920E FITTING AND EXTEND CONDUIT TO FIXTURE WITH NON METALLIC FLEXIBLE CONDUIT. IF THE CONDUIT IS DAMAGED TO AND BELOW THE SURFACE OF THE CONCRETE COORDINATE REPAIR WITH RESIDENT ENGINEER BEFORE PROCEEDING.
3. NOT ALL CONNECTIONS TO THE RAIL LIGHTING NEED REPAIR. THE CONTRACTOR AND RESIDENT ENGINEER WILL INVENTORY CONNECTIONS AND DETERMINE THOSE REQUIRING REPAIR. PAYMENT TO BE MADE UNDER THE APPROPRIATE CONTRACT ITEM."



NOTES:
1. COORDINATE LUMINAIRE MOUNTING AND AIMING WITH MANUFACTURERS PLAN SHEET AND DETAILS.
2. REFER ALSO TO "NEW SECTION" DRAWING E-03.

LIGHTING FIXTURE TYPE 'B' MOUNTING DETAIL

NO SCALE

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HIGHWAY PLANS

PROJ. MANAGER	$PROJMANAGER$	BY
DESIGN-DETAILED	$designer$	$date$
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1	CLARIFICATION TO LIGHTING DESIGN	10/03/2023
REVISIONS 2		
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REVISIONS 4		
FIELD CHANGES		

SIGNATURE

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DATE

PENOBSCOT NARROWS BRIDGE
AESTHETIC LIGHTING

EXISTING ELEVATION AND
MOUNTING DETAILS - 06

SHEET NUMBER

E-06

OF 12

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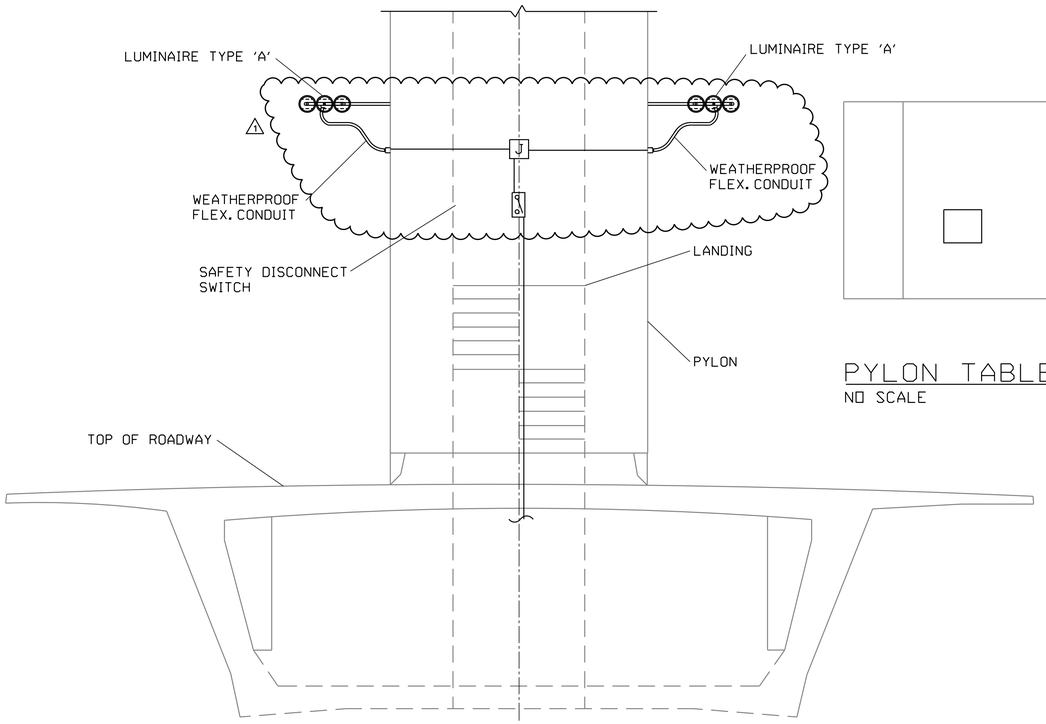
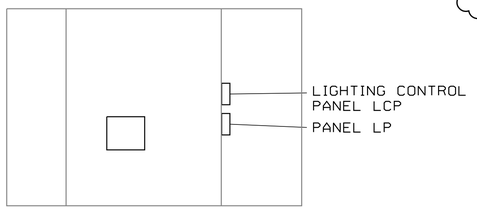
Filename: ...\002_Lighting-Details_02-11.dgn Division: HIGHWAY Username: Date:10/3/2023



ELEVATION: UPPER PYLON LIGHTING

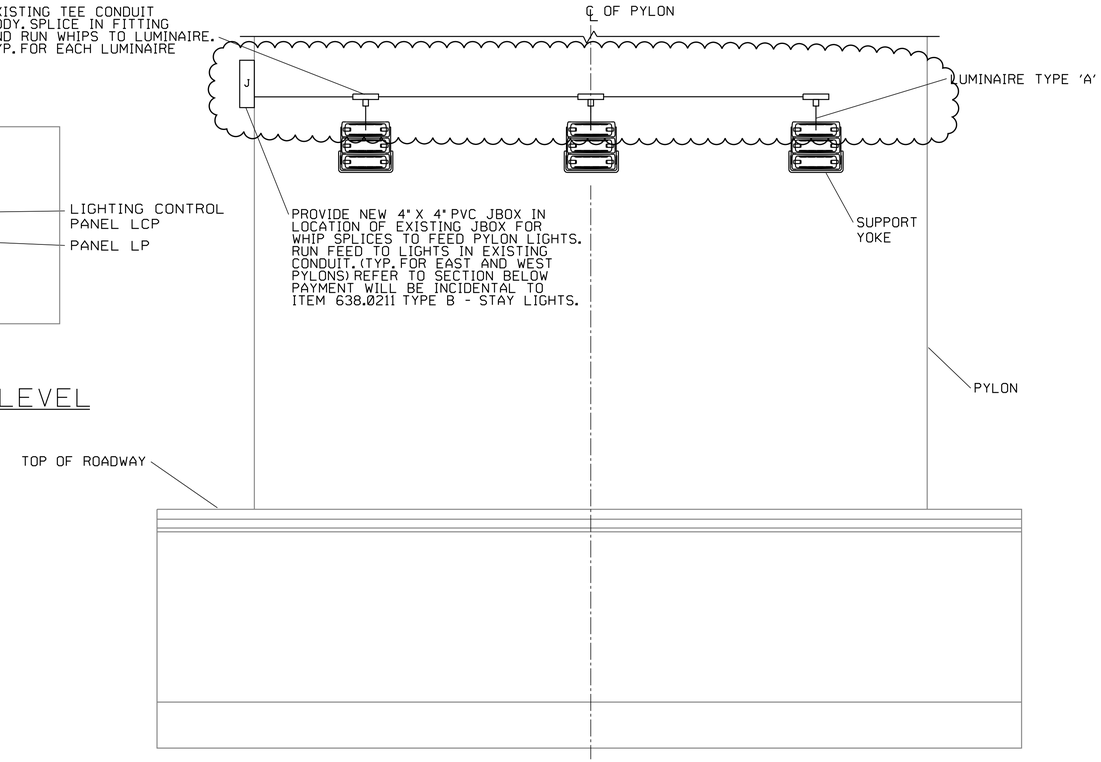
NO SCALE

NOTE: REFER TO DETAIL, THIS DRAWING FOR LOWER PYLON LIGHTING.



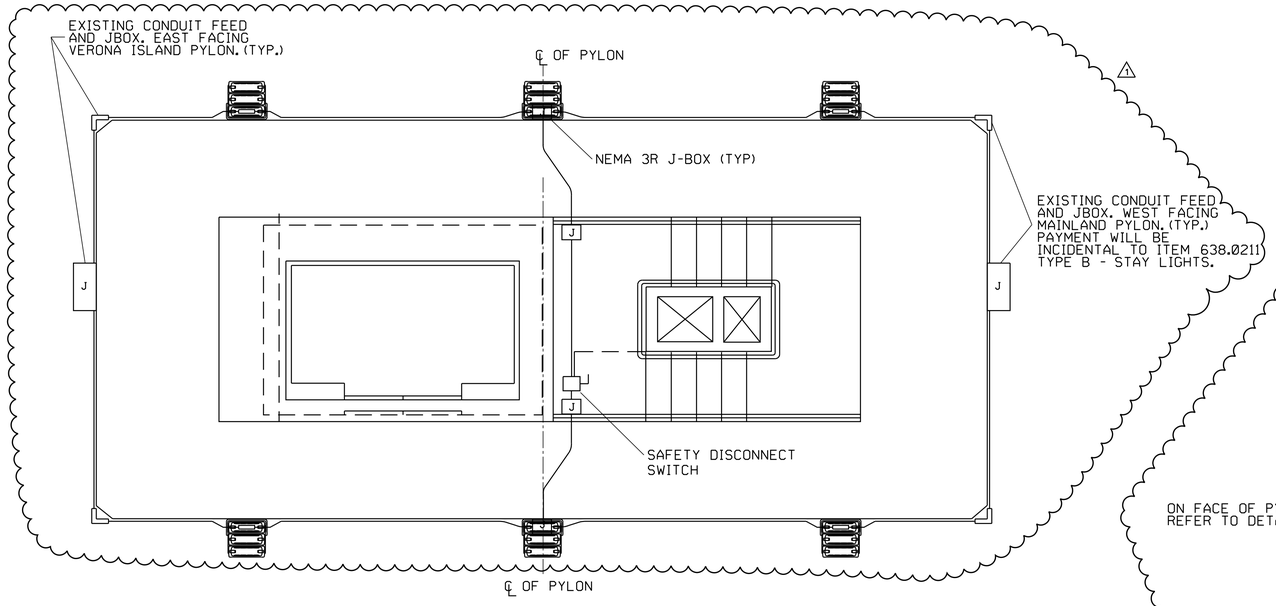
PYLON TABLE LEVEL

NO SCALE



ELEVATION: UPPER PYLON LIGHTING

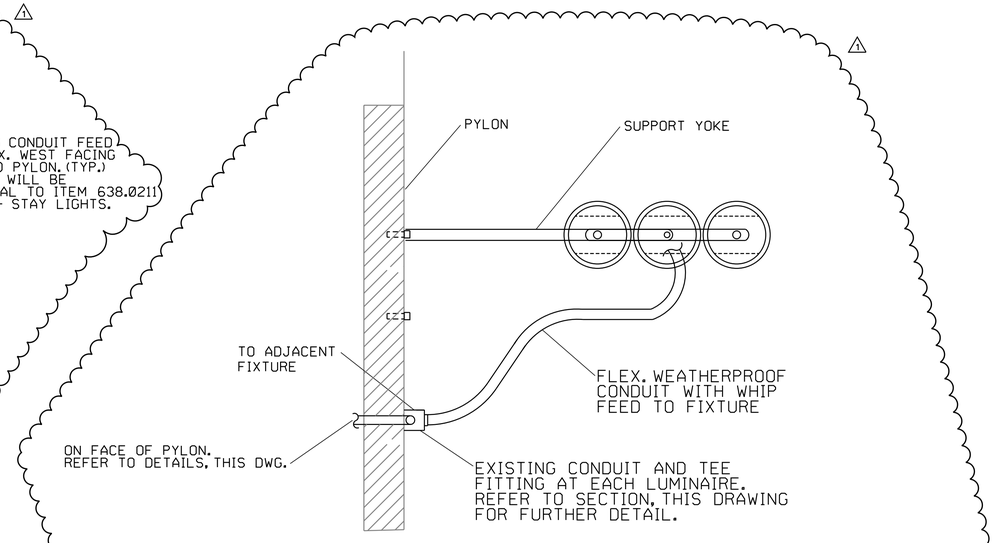
NO SCALE



SECTION: PYLON LIGHTING

NO SCALE

NOTE: CONDUIT TO PYLON LIGHTING RUNS ON EXTERIOR OF PYLON. VERONA ISLAND PYLON JBOX IS ON WEST FACE OF PYLON. MAINLAND PYLON JBOX IS ON THE EAST FACE OF PYLON, FACING EACH OTHER.



DETAIL: UPPER AND LOWER PYLON LIGHTING

NO SCALE

NOTE: COORDINATE LUMINAIRE MOUNTING AND AIMING WITH MANUFACTURERS PLAN SHEET AND DETAILS.

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HIGHWAY PLANS

	BY	DATE
PROJ. MANAGER	$PROJMANAGER$	$proj date$
DESIGN-DETAILED	$designer$	$detailer$
CHECKED-REVIEWED		
DESIGN2-DETAILED2		
DESIGN3-DETAILED3		
REVISIONS 1	CLARIFICATION TO LIGHTING SCSON	10/03/2023
REVISIONS 2		
REVISIONS 3		
REVISIONS 4		
FIELD CHANGES		

SIGNATURE

P.E. NUMBER

DATE

PENOBSCOT NARROWS BRIDGE
AESTHETIC LIGHTING

PYLON LIGHTING DETAILS - 07

SHEET NUMBER

E-07

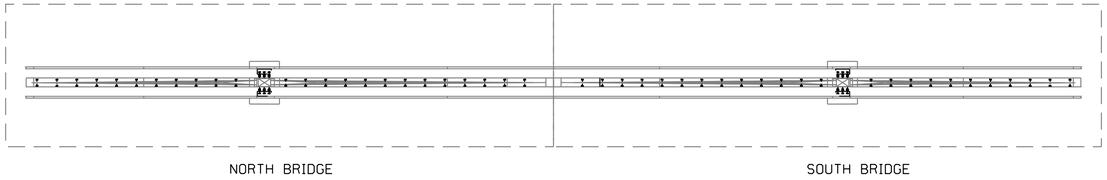
OF 12

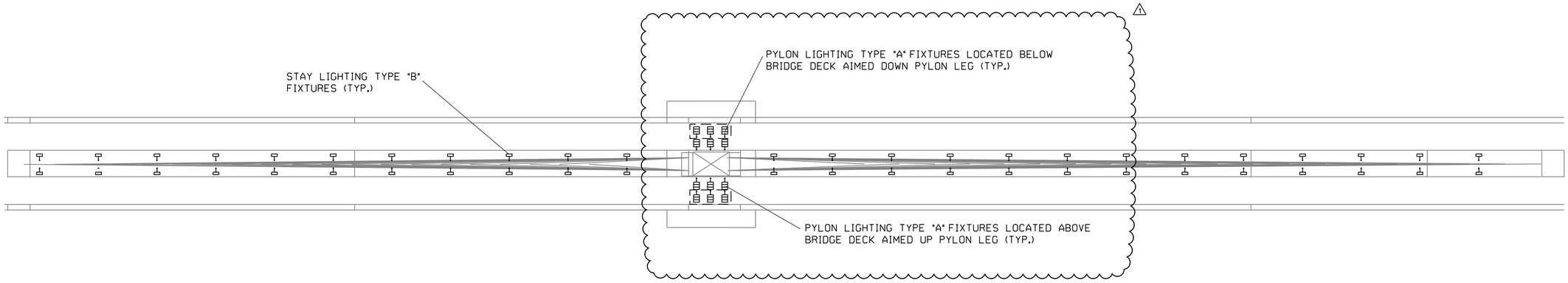
Username:

Date:10/3/2023

Division: HIGHWAY

Filename: ...\002_Lighting-Details_02-11.dgn



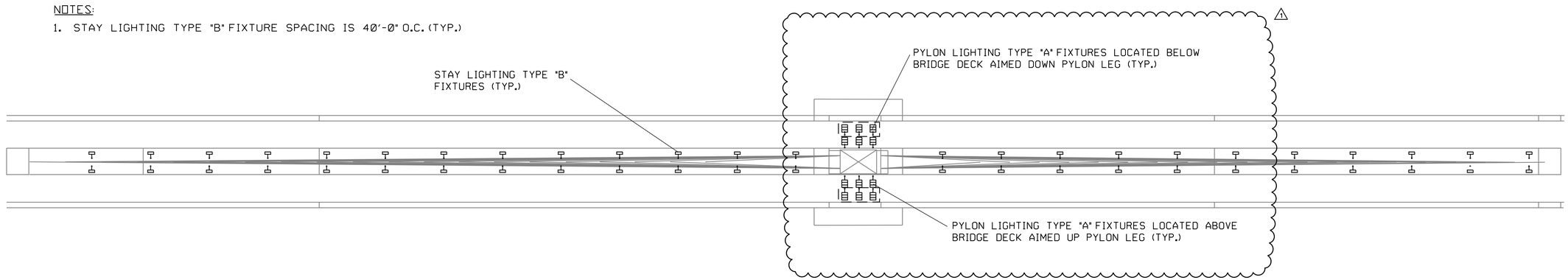


NEW STAY AND PYLON LIGHTING LAYOUT NORTH BRIDGE (PROSPECT SIDE)

NO SCALE

NOTES:

1. STAY LIGHTING TYPE "B" FIXTURE SPACING IS 40'-0" O.C. (TYP.)



NEW STAY AND PYLON LIGHTING LAYOUT SOUTH BRIDGE (VERONA SIDE)

NO SCALE

NOTES:

1. STAY LIGHTING TYPE "B" FIXTURE SPACING IS 40'-0" O.C. (TYP.)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STP-2265(500)

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HIGHWAY PLANS

		BY	DATE
PROJ. MANAGER	$PROJMANAGER$	BY	DATE
DESIGN-DETAILED	$designer1$	$detailer1$	$proj date1$
CHECKED-REVIEWED			
DESIGN2-DETAILED2			
DESIGN3-DETAILED3			
REVISIONS 1	CLARIFICATION TO LIGHTING DESIGN	10/03/2023	
REVISIONS 2			
REVISIONS 3			
REVISIONS 4			
FIELD CHANGES			

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DATE

PENOBSCOT NARROWS BRIDGE
AESTHETIC LIGHTING

LIGHITNG LAYOUT - 10

SHEET NUMBER

E-10

OF 12

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Filename: ...\002_Lighting-Details_02-11.dgn Division: HIGHWAY Username: Date:10/3/2023