

March 19, 2024

**ADDENDUM NO. 3**

**RE: Item #1, March 20, 2024 Letting - NH-CR 0037(158)126, PCN 06A2, Beadle County - Urban Grading, PCC Surfacing, Storm Sewer, Curb & Gutter, Sidewalk, Lighting, Signals, Crossing Surface**

**TO WHOM IT MAY CONCERN:**

The following addenda to the plans shall be inserted and made a part of your proposal for the referenced project.

**SPECIAL PROVISIONS:** Please remove the Index of Special Provisions and replace with attached Index of Special Provisions revised 3/18/24.

Please remove the "Special Provision for Contract Time", dated 3/15/24 and replace with the "Special Provision for Contract Time", dated 3/18/24.

"2<sup>nd</sup> Street N/SD37 Intersection Underground Utility Work 14 Calendar Day Completion Requirement" section was added

**SDEBS BID PROPOSAL:** NO CHANGE

**PLANS:** Please destroy sheet L3 and replace with enclosed sheets L3 and L3-A dated 3/19/24.

**Sheet L3:** DECORATIVE LUMINAIRE POLES note was revised.

**Sheet L3-A:** Sheet was added due to note spacing adjustment.

Sincerely,

Sam Weisgram  
Engineering Supervisor

SW/cj

CC: Mark Peterson, Aberdeen Region Engineer  
Brad Letcher, Huron Area Engineer

REV 3/18/24

INDEX OF SPECIAL PROVISIONS

PROJECT NUMBER(S): NH-CR 0037(158)126 PCN: 06A2

TYPE OF WORK: URBAN GRADING, PCC SURFACING, STORM SEWER, CURB & GUTTER, SIDEWALK, LIGHTING, SIGNALS, CROSSING SURFACE

COUNTY: BEADLE

The following clauses have been prepared subsequent to the Standard Specifications for Roads and Bridges and refer only to the above described improvement, for which the following Proposal is made.

The Contractor's attention is directed to the need for securing from the Department of Environment & Natural Resources, Foss Building, Pierre, South Dakota, permission to remove water from public sources (lakes, rivers, streams, etc.). The Contractor should make his request as early as possible after receiving his contract, and insofar as possible at least 30 days prior to the date that the water is to be used.

Robin Wallum is the official in charge of the Huron Career Center for Beadle County.

**THE FOLLOWING ITEMS ARE INCLUDED IN THIS PROPOSAL FORM:**

**Special Provision for Contract Time, dated 3/18/24.**

**Special Provision Regarding Combination Bids, dated 2/7/24.**

**Special Provision for On-The-Job Training Program, dated 3/10/16.**

**Special Provision Regarding Right of Entry/Work Limits, dated 2/1/24.**

**Special Provision for Prosecution and Progress, dated 1/21/21.**

**Special Provision for Cooperation by Contractor and Department, dated 8/17/17.**

**Special Provision for Traffic Control Supervisor, dated 1/23/24.**

**Special Provision Regarding Railroad Insurance Requirements for RCP&E Railroad, dated 11/16/23..**

**NOTE: The Contractor WILL NOT be granted permission to proceed with any work on Railroad Right-of-Way until he has been notified by the Railroad that the insurance has been approved and the insurances and certificates has been provided to the SDDOT area office.**

**Special Provision Regarding Working on Railroad Property and Associated Contractor Permits needed for RCP&E Railroad, dated 11/16/23.**

**Special Provision for PI PCC Pavement Smoothness with 0.2” Blanking Band, dated 11/30/18.**

**Special Provision for Contractor Furnished Mix Design for PCC Pavement, dated 8/30/18.**

**Special Provision for Battery Backup System for Traffic Signal, dated 1/23/24.**

**Special provision for Optical Activated Emergency Vehicle Pre-Emption System, dated 1/23/24.**

**Special Provision for Contractor Staking with Machine Control Grading Option, dated 1/24/24.**

**List of Utilities.**

Special Provision for Acknowledgment and Certification Regarding Article 3, Section 12 of the South Dakota Constitution, dated 8/24/23.

Special Provision for Buy America, dated 12/6/23.

Special Provision for Liability Insurance, dated 4/21/22.

Special Provision for Responsibility for Damage Claims, dated 4/21/22.

Special Provision for Restriction of Boycott of Israel, dated 1/31/20.

Special Provision for Contractor Administered Preconstruction Meeting, dated 12/18/19.

Fuel Adjustment Affidavit, DOT form 208 dated 7/15.

Standard Title VI Assurance, dated 3/1/16.

Special Provision For Disadvantaged Business Enterprise, dated 8/14/18.

Special Provision For EEO Affirmative Action Requirements on Federal and Federal-Aid Construction Contracts, dated 9/1/97.

Special Provision For Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. October 23, 2023), dated 10/18/23.

Required Contract Provisions Federal-Aid Construction Contracts, Form FHWA 1273 (Rev. 10/23/23).

Special Provision Regarding Minimum Wage on Federal-Aid Projects, dated 10/24/19.

Wage and Hour Division US Department of Labor Washington DC. - US Dept. of Labor Decision Number SD20230032, dated 3/10/23.

Special Provision for Supplemental Specifications to 2015 Standard Specifications for Roads and Bridges, dated 9/7/22.

Special Provision for Price Schedule for Miscellaneous Items, dated 12/6/23.

Special Provision Regarding Storm Water Discharge, dated 5/8/18.

General Permit for Storm Water Discharges Associated with Construction Activities, dated 4/1/18

<https://danr.sd.gov/OfficeOfWater/SurfaceWaterQuality/stormwater/StormWaterConstruction.aspx>

**STATE OF SOUTH DAKOTA  
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION FOR  
CONTRACT TIME & BLOCK RENTAL**

**PROJECT NH-CR 0037(158)126, PCN 06A2  
BEADLE COUNTY**

**MARCH 18, 2024**

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**Field Work Completion**

The Contractor will complete the project by the October 3, 2025 field work completion date.

**2<sup>nd</sup> St N/SD 37 Intersection Underground Utility Work 14 Calendar Day Completion Requirement**

The Contractor may utilize the Railroad Closure Detour as detailed in Section C of the plans while completing the underground utility work at the 2<sup>nd</sup> St N/SD37 Intersection for a maximum of 14 calendar days.

The Contractor will not close the 2<sup>nd</sup> St N/SD 37 intersection at the same time the railroad crossing is closed to SD 37 through traffic.

The Department will begin the calendar day count when the Contractor closes the intersection to through traffic using the detour. The Department will continue to count calendar days until the Contractor completes the work required to restore through traffic to the intersection and traffic is no longer using the detour. The Department will count calendar days in accordance with Section 8.6 B.

If the Contractor does not complete the work within the calendar day completion requirement, the Department will make a disincentive assessment in the amount of \$5,000 per calendar day. A contract item for incentive/disincentive pay is included in the bid schedule for the Department's use in assessing disincentive. The Department will use a negative quantity of days for assessing disincentives.

**November 15, 2024 Interim Completion Requirement**

The Contractor will complete all work including roadway lighting, permanent pavement, driveways, and sidewalks, from Sta. 25+50 to Sta. 44+00 by the November 15, 2024 interim completion date. If the Contractor does not complete all work from Sta. 25+50 to

Sta. 44+00 by the interim completion date, the Contractor will meet the hard surface requirement below and restore roadway lighting.

The Contractor may complete Phase 1 (Sta. 44+00 to Sta. 58+84) or Phase 3 (Sta. 9+42 to Sta. 25+50) in 2024 or 2025. If the Contractor begins work on Phase 1 (Sta. 44+00 to Sta. 58+84) or Phase 3 (Sta. 9+42 to Sta. 25+50) in 2024, the Contractor will complete all work in the Phase by the November 15, 2024 interim completion date. If the Contractor does not complete all work in the Phase by the interim completion date, the Contractor meet the hard surface requirement below and restore roadway lighting.

If the Contractor does not complete the work by the interim completion requirement, the Department will assess liquidated damages per working day in accordance with Section 8.8 Table A and will make a disincentive assessment in the amount of \$1000 per working day. A contract item for incentive/disincentive pay is included in the bid schedule for the Department's use in assessing disincentive. The Department will use a negative quantity of days for assessing disincentives. The Department will count working days in accordance with Section 8.6 C.

### **Hard Surface Requirement**

If the Contractor begins any work in 2024, the Contractor will provide a hard surface by the November 15, 2024 interim completion date to any portion of the project where the existing surfacing is disturbed in 2024.

This requirement may include the Contractor placing temporary hard surfacing over any uncompleted portion including, but not limited to, driving lanes, driveways, and sidewalks to tie partially completed work with the existing pavement.

The Department will define hard surfacing as new permanent surfacing, existing permanent surfacing, temporary surfacing, and any combination of new permanent surfacing, existing permanent surfacing, and temporary surfacing. For the hard surfaced roadway requirement, the temporary surfacing must consist of granular material topped with either asphalt concrete or PCC pavement. The Department will provide the surfacing thickness requirements. The temporary surfacing must bring the temporary surface to the final grade elevation and provide proper drainage throughout the project leaving no bumps, dips, or vertical drop offs throughout the project.

The Department will not make payment for any temporary surfacing necessary to meet the hard surfacing requirements. In addition, the Department will not make payment for any permanent surfacing placed under conditions not meeting the specifications (the Department will also consider this temporary surfacing) necessary to meet the hard surfacing requirements. The Department will also not make payment for the removal of any surfacing or the reshaping of any subgrade/granular material necessary due to the Contractor's failure to meet the November 15, 2024 interim completion requirement.

The Contractor will apply pavement markings as required to safely accommodate traffic prior to opening all lanes of Dakota St. to unimpeded traffic. The Department will not make payment for any additional temporary pavement markings, or any additional traffic control required in the spring of 2025 due to the Contractor's failure to meet the November 15, 2024 interim completion date requirement.

The Contractor will provide maintenance of any temporary surfacing through the winter months. This may include temporary stabilization of all exposed soils, maintenance of traffic control devices, filling potholes, asphalt patching, or other work as determined necessary to safely maintain the existing roadway.

The Contractor will not be responsible for snow removal. The Contractor will be responsible for any damage to traffic control items caused by snow removal operations after November 15, 2024 until the Department suspends the project for the winter of 2024/2025. Any damage to traffic control items caused by the Department's snow removal operations from the date the Department suspends the project for the winter of 2024/2025 until the Contractor resumes work in the spring of 2025 will be at the Department's expense.

### **Campbell Park 150 Calendar Day Count Requirement**

The Contractor must complete all work within the limits of Campbell Park within 150 calendar days.

The Department will begin the calendar day count when the Contractor begins any work, including tree removal, within the limits of Campbell Park (Sta. 17+88 to Sta. 23+01) left of centerline. The Department will continue to count calendar days until the Contractor completes all work within the limits of Campbell Park. The Department will count calendar days in accordance with Section 8.6 B.

If the Contractor does not complete the work within the calendar day completion requirement, the Contractor be responsible for all additional costs the Department incurs from the National Park Service due to the Contractor's failure to meet the Campbell Park 150 calendar day count requirement. The Department will not grant time extensions for the Campbell Park 150 calendar day count requirement for any reason.

### **Block Rental Requirements**

- I. **General:** The Department is using the following block rental requirements to minimize the delay and inconvenience to the traveling public caused by roadway closures. The Contractor is encouraged to use innovative construction or staging techniques to minimize the number and duration of roadway closures. The Department will assess a rental charge for each calendar day (or a portion thereof) that a block is closed or obstructed until traffic is fully restored to the roadway,

intersecting streets, and approaches; pedestrian traffic is restored to the sidewalk; and all work is complete except Streetscape ,Lighting, and Erosion Control.

**II. Definitions and Terms:** For the purposes of this Special Provision, the following definitions apply:

**A. Calendar day:** A day shown on the calendar, beginning and ending at midnight, including Saturdays, Sundays, and legal holidays.

**B. Block Closure:** A block closure is a block or any portion of a block that is not open to public traffic due to the Contractor's operations (measured to the nearest one block). The Department will not consider one-half block closures and will count all closures as at least one block. If the Contractor closes one intersection, the Department will consider the closure as one block. If both intersections at the end of a block are closed, the Department will consider the closure as two blocks. No more than two adjacent intersections may be closed at once.

There are 4 blocks on this project, identified as follows:

5<sup>th</sup> Street South to 4<sup>th</sup> Street South  
4<sup>th</sup> Street South to 3<sup>rd</sup> Street South  
3<sup>rd</sup> Street South to 2<sup>nd</sup> Street South  
2<sup>nd</sup> Street South to Market Street

Not all blocks are the same length. The block closure rental charge specified below will remain the same regardless of the length of the block.

**C. Block Closure User Cost:** The daily cost of interference and inconvenience to the road user specified by the Department. The Daily Block User Cost is derived from the total daily cost of interference and inconvenience to the road user for the entire project.

**D. Rental Charge:** The daily user cost assessed against the contract for a block closure.

**E. Block-Closure-Day:** The unit of measure for block rental, equivalent to one block of roadway being closed for one calendar day.

**III. Block Rental:** Block rental will be applied to Phase 2 of this project. The Contractor will be assessed a rental charge for each day a block is closed for construction operations. The daily rental charge will be defined as follows:

Block Closure is based on one block.

Daily Block Rental Charge is computed at a rate of \$1000 per block-closure-day.

The Engineer will count the number, length, and duration of the block closures used for construction.

For the purpose of counting closures occurring at different areas, all closures will be considered as separate closures and block closure rental charges are applied to each individual closure.

The Contractor will comply with the plan notes (Sequence of Operation and Maintenance of Traffic) in regards to block closures and construction operations.

The Contractor will identify each block closure and provide the following information to the Engineer for the work related to each closure:

- (1) a description of the work,
- (2) the length of the block closure,
- (3) the start and finish dates for the work, and
- (4) any special conditions applicable during the performance of the work.

**IV. Preparation of Proposal:** As specified in Section I of this Special Provision, the contract includes a block closure rental provision on a calendar day basis. The bidder must enter a quantity in the proposal for Block Closure Rental Payment & Assessment by the block-closure-day. The bidder will base the quantity for this item on the bidder's estimate of the total number of block-closure-days required to rent block closures necessary to perform the specified work. The quantity will be multiplied by the unit cost (\$1000 per block-closure-day) for block closure rental.

If the Contractor leaves the Block Closure Rental Payment & Assessment quantity blank or inserts a zero or negative quantity, the Department will consider the bid proposal to be non-responsive.

The low bidder will be selected and awarded on the basis of the total dollar amount of all bid items plus the total amount bid for Block Closure Rental Payment & Assessment.

**V. Block Closure Rental Payment and Assessment - Daily Basis:** To determine the block closure rental payments and assessments the following procedure will be used:

The Department will document and tally daily block closure rental charges on each bi-weekly work progress report. This process will continue until the project is completed and the Contractor is no longer closing (renting) blocks.

To determine block closure rental charges, a block closed during any portion of a calendar day will be considered one-block closure day. The



block closures will be measured to the nearest one-block per each closure regardless if the closure is moved further down the road or not. Block closure days will be measured in increments of 1 Block Closure Day. Block closure rental charges will be assessed for all in place block closures until the project is completed.

- A. Bonding:** This provision amends Section 3.7 Requirement of Contract Performance Bond, such that the bond will equal the total contract amount less the amount for block closure rental under Block Closure Rental Payment & Assessment. All other bonding requirements are unchanged by this provision.
- B. Payments:** If at the end of the project the cumulative block closure rental charges are less than the original quantity bid for this item, the Department will pay the Contractor the difference between the amount bid and the total block closure rental charges.
- C. Assessments:** If at the end of the project the cumulative block closure rental charges exceed the original quantity bid for this item, the Department will deduct the excess block closure rental charges from moneys due the Contractor for other items of work in the bi-weekly estimate or the final estimate.
- D. Weather:** block closure rental charges will be assessed for all block closures including delays caused by normal weather conditions when the Contractor cannot work and block closures are in effect.
- E. Construction Change Orders:** The Department will increase or decrease the contract item for Block Closure Rental Payment & Assessment in direct proportion to the percentage increase or decrease of the total dollar amount (summation) of all work subject to block closure rental in the contract (Storm Sewer, PCC Pavement, Curb & Gutter, Sidewalk, Approach Pavement, Intersecting Street Pavement, Asphalt Concrete, Preformed Detector Loop, Joint Sealing, Traffic Signals, Roadway Lighting and Pavement Marking). If the Contractor feels the increase to the contract item of Block Closure Rental Payment & Assessment on a monetary basis is insufficient for the increased work involved, the Contractor may submit written information to the Engineer to justify the request. Such information must show how the increased work delays the field work completion of the entire project. The Contractor will submit the written information as soon as possible after performing the increased work. If the information submitted justifies additional Block Closure Rental Payment & Assessment the Engineer will prepare a construction change order increasing the Block Closure Rental Payment & Assessment. If it is determined the increased work does not require additional block rental, the Department will make no increase to the contract item Block Closure Rental Payment & Assessment.

### **Failure to Complete on Time**

The Contractor will complete all work by the field work completion requirement. If the Contractor does not complete all work by the field work completion requirement, the Department will assess liquidated damages in accordance with Section 8.8. The Department will assess liquidated damages for each working day the work (project) is late until the Contractor completes all field work. In the event the Contractor does not complete all field work on time, the Department will count working days in accordance with Section 8.6 C.

The Department will continue to assess block closure rental charges, in accordance with the block rental requirements portion of this provision, for all in place block closures until the Contractor completes all work subject to block rental.

### **Expected Adverse Weather Days**

The Department has provided Attachment 1 for information purposes only as a guide to bidders. This table depicts the typical number of adverse weather days expected for any given month, based on historical records. The Department will consider this project a grading project in Zone 5.

The Department will consider expected adverse weather days cumulative in nature over the time period when the Contractor is actively pursuing completion of the work. The Department will not consider adverse weather days during an extended period of time when the Contractor is not pursuing completion of the work. When considering a time extension for calendar day count or overall completion of the project, the Engineer will compare the total number of expected adverse weather days against the total number of actual adverse weather days for the time period during which the work was being completed.

\* \* \* \* \*

# ATTACHMENT 1

Figure A - Expected Adverse Weather Days for South Dakota

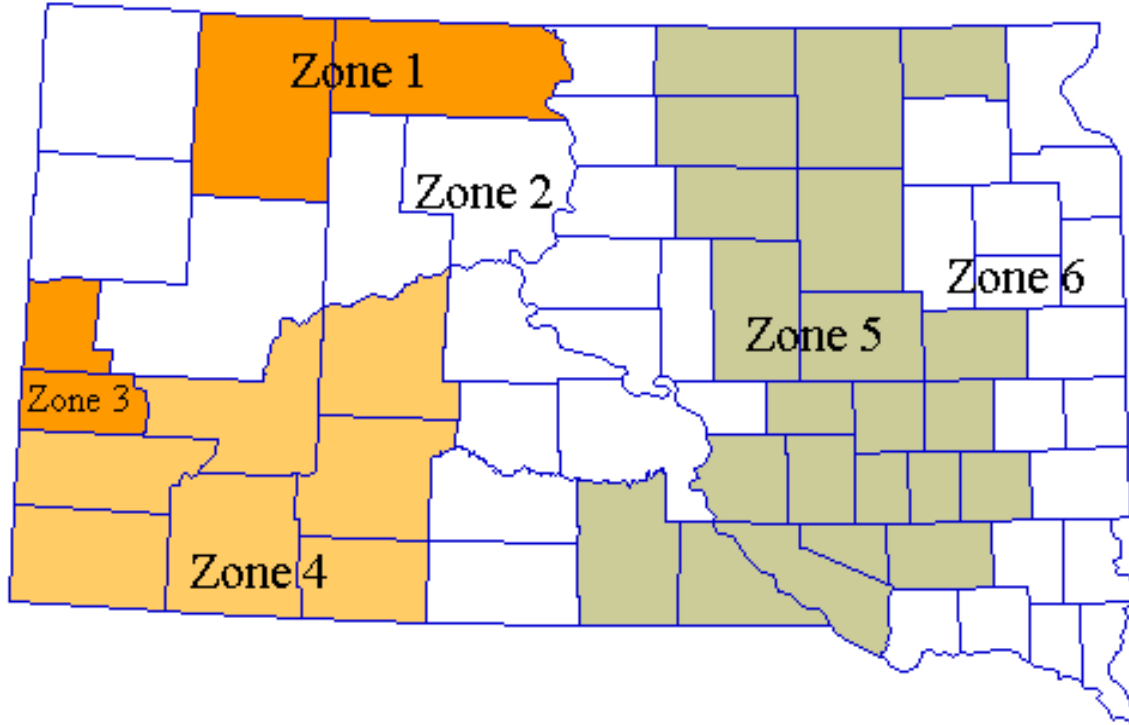


Table 1 - Expected Adverse Weather Days for South Dakota

	Grading Projects						Surfacing and Structural Projects					
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Jan	18	18	16	16	22	24	18	18	15	16	21	23
Feb	19	18	12	14	19	21	19	18	12	14	19	21
Mar	12	10	9	8	11	13	12	10	9	8	10	12
Apr	6	5	8	5	6	6	5	4	6	4	4	4
May	6	6	8	6	6	6	5	5	6	4	4	5
Jun	7	6	7	6	7	8	5	5	5	4	5	6
Jul	5	5	6	5	6	7	4	4	5	3	4	5
Aug	4	4	5	4	5	6	3	3	4	3	4	4
Sep	3	3	4	3	4	5	2	2	3	2	3	4
Oct	4	3	5	3	4	4	3	3	4	2	3	3
Nov	11	9	8	7	10	12	11	9	8	7	10	11
Dec	21	19	15	14	20	22	21	19	15	14	20	22

NOTE: Includes Holidays and Weekends.

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0037(158)126	L3	L54

Revised 3/19/2024 - RR

## SALVAGE SIGNAL EQUIPMENT

The existing signal equipment identified on the plans will be salvaged and delivered to the City of Huron by the Contractor. The Contractor will notify the city 5 days before the delivery of the salvaged signal equipment for a time and location of delivery. The city contact is Brett Runge at (605) 530-9607.

Any equipment damaged during salvaging or delivery will be repaired or replaced by the Contractor at no cost to the State.

All costs for work involved in the salvage and delivery of the existing signal equipment will be incidental to the contract lump sum price for "Salvage Signal Equipment".

## SIGNAL POLES

The signal poles and arms from 5<sup>th</sup> to Market Street will be galvanized and have a painted or powder coated black finish.

Cantilever traffic signal supports, including anchor bolts, will be designed for fatigue in accordance with Fatigue Importance Category III without galloping and truck induced gusts.

The pole fabricator will be responsible for the determining the diameter, length, and number of anchor bolts.

Signal poles will have rotatable mast arms.

Luminaire extension(s) will have a 50-foot mounting height with 8-foot arm.

## DECORATIVE LUMINAIRE POLES

Luminaire poles DL1 to DL24 will be decorative street lighting using fluted Millerbernd Contemporary Style Poles with a lower-level back/pedestrian luminaire. The poles will have a height of 35-feet with twin arms, the arm orientated towards the street will have a mounting height of 35-feet with a 6-foot arm, and the arm orientated away from the street (towards the sidewalk) will have a mounting height of 15-feet with a 3-foot arm. Poles and arms will have a painted or powder coated black finish. Pole, arms, and base will be incidental to the contract unit price per each "Decorative Luminaire Pole with Twin Arms".

### Decorative Pole Information

-Pole: Contemporary (DTA) Part # DTA-B-095-350-F-GP  
 -Pole Base: Burlington (BBNF), BBNF4424  
 -6' Front Arm: Decorative Mast Arm with Decorative Scroll Brace, DN6  
 -3' Back Arm: Decorative Luminaire Arm, DN3-1BS-001

The pole fabricator will be responsible for the determining the diameter, length, and number of anchor bolts.

Decorative Luminaire poles will be designed to include loadings created by banners that are 30 inches wide by 80 inches long, mounted 15 feet from the top of footing to the bottom of the banner and will be able to support decorations that are 30lbs and 5'x5' dimensions.

Luminaire poles DL1-DL24 will have a convenience duplex festoon outlet receptacle (15-amp, 3 wire) suitable for outdoor use. Festoon will be placed 90° counterclockwise to the pole arm. All costs associated with making the festoon receptacles operational including but not limited to, the necessary hardware and

#14 AWG wiring, will be incidental to the contract unit price per each "Decorative Luminaire Pole with Twin Arms".

## LUMINAIRE POLES

Luminaire poles L1-L11 will have a mounting height of 50-feet with a 8-foot arm.

The pole fabricator will be responsible for the determining the diameter, length, and number of anchor bolts.

Luminaire poles will be designed to include loadings created by banners that are 30 inches wide by 80 inches long, mounted 15 feet from the top of footing to the bottom of the banner and will be able to support decorations that are 30lbs with 5'x5' dimensions.

Luminaire poles L1-L11 will have a convenience duplex festoon outlet receptacle (15-amp, 3 wire) suitable for outdoor use. Festoon will be placed 90° counterclockwise to the pole arm. All costs associated with making the festoon receptacles operational including but not limited to, the necessary hardware and #14 AWG wiring, will be incidental to the contract unit price per each "Breakaway Base Luminaire Pole with Arm, 50' Mounting Height".

## PEDESTAL SIGNAL POLES

Pedestal signal poles may be aluminum. Aluminum poles will conform to the following requirements:

Aluminum will conform to ASTM B221, Alloy 6061, and Temper T6.

Poles will be round with a minimum outside pole diameter of 4 inches, and the pole assembly will have a square, cast aluminum base with aluminum access door. The base will conform to the breakaway requirements of NCHRP 350 or MASH. A grounding lug will be provided in the base.

The pole to base connection will be a threaded connection; threads will be 8 TPI, NPT. A collar (integral or non-integral) to prevent wind-induced loosening of pole will be provided. All bolt and connection threads will be coated with a commercially available anti-seize compound intended for use in aluminum-to-aluminum and steel-to-aluminum connections.

The pole finish will either be brushed satin or spun. The top of the pole will be sealed by the traffic signal head mounting hardware or by an aluminum cap.

Measurement and payment for aluminum poles will be as specified in Specifications Section 635.

## DECORATIVE LUMINAIRES

The lighting design used the following parameters and provides 1.1 and greater average maintained foot-candles and uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles) and 6:1 (maximum to minimum maintained foot candles):

Pole Setback: 2 Ft.  
 Lamp Loss Factor (LLF): 0.8  
 Width of Lighted Area: 65 Ft.  
 Luminaire Cycle Length: Varies.  
 Configuration: Staggered  
 Mounting Height: 35 Ft./15 Ft.  
 Arm Length: 6 Ft. / 3 Ft.  
 Light Source: LED

The following LED luminaires meet the requirements for this design:

Roadside/Forward facing luminaire at 35' will be a:

Holophane: ESL3-P35S-40K-MVOLT-BG3-BK-PR7

Sidewalk/Rear facing arm at 15' will be a:

Holophane: GVD3-P10-40K-MVOLT-CLF-GL3-TBK

## LUMINAIRES

The lighting design used the following parameters and provides 1.1 and greater average maintained foot-candles and uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles) and 6:1 (maximum to minimum maintained foot candles):

Pole Setback: 2 Ft.  
 Lamp Loss Factor (LLF): 0.8  
 Width of Lighted Area: Varies  
 Luminaire Cycle Length: Varies  
 Configuration: Staggered  
 Mounting Height: 50 Ft.

Arm Length: 8Ft.  
 Light Source: LED

The following LED luminaires or approved equivalents meet the requirements for this design:

GE Evolve: ERL2-0-30-C5-40-A

AEL Autobahn: ATB2-P602-MVOLT-R3-P7

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-CR 0037(158)126	L3-A	L54

Revised 3/19/2024 -RR

### **SIGNAL BACKPLATES**

All new vehicle signal heads will have backplates with retroreflective border. The vehicle signal head backplates will have a factory applied 3-inch wide yellow retroreflective border. Sheeting for the border will be Type XI or Type IX in conformance with ASTM D4956. Backplates will be polycarbonate, aluminum, or aluminum-composite. Minimum material thicknesses are:

- Polycarbonate, 0.10-inch
- Aluminum, 0.06-inch
- Aluminum-Composite, 0.08-inch

Signal backplates will extend not less than 5 inches from the edge of the signal head at the top, bottom, and sides. The bottom of the backplate on vehicle signal faces mounted directly above pedestrian signal indications will be sized to permit the separate adjustment of the vehicle and pedestrian signal indication and may be less than 4 inches.

All costs involved with furnishing and installing backplates with retroreflective border for the new vehicle signal heads will be incidental to the contract unit price per each for "3 Section Vehicle Signal Head", "4 Section Directional Vehicle Signal Head".

Plot Scale - 1:200

Plotted From - TRPR17199

File - ...:\p7\bead06\2\NotesSectionL.dgn