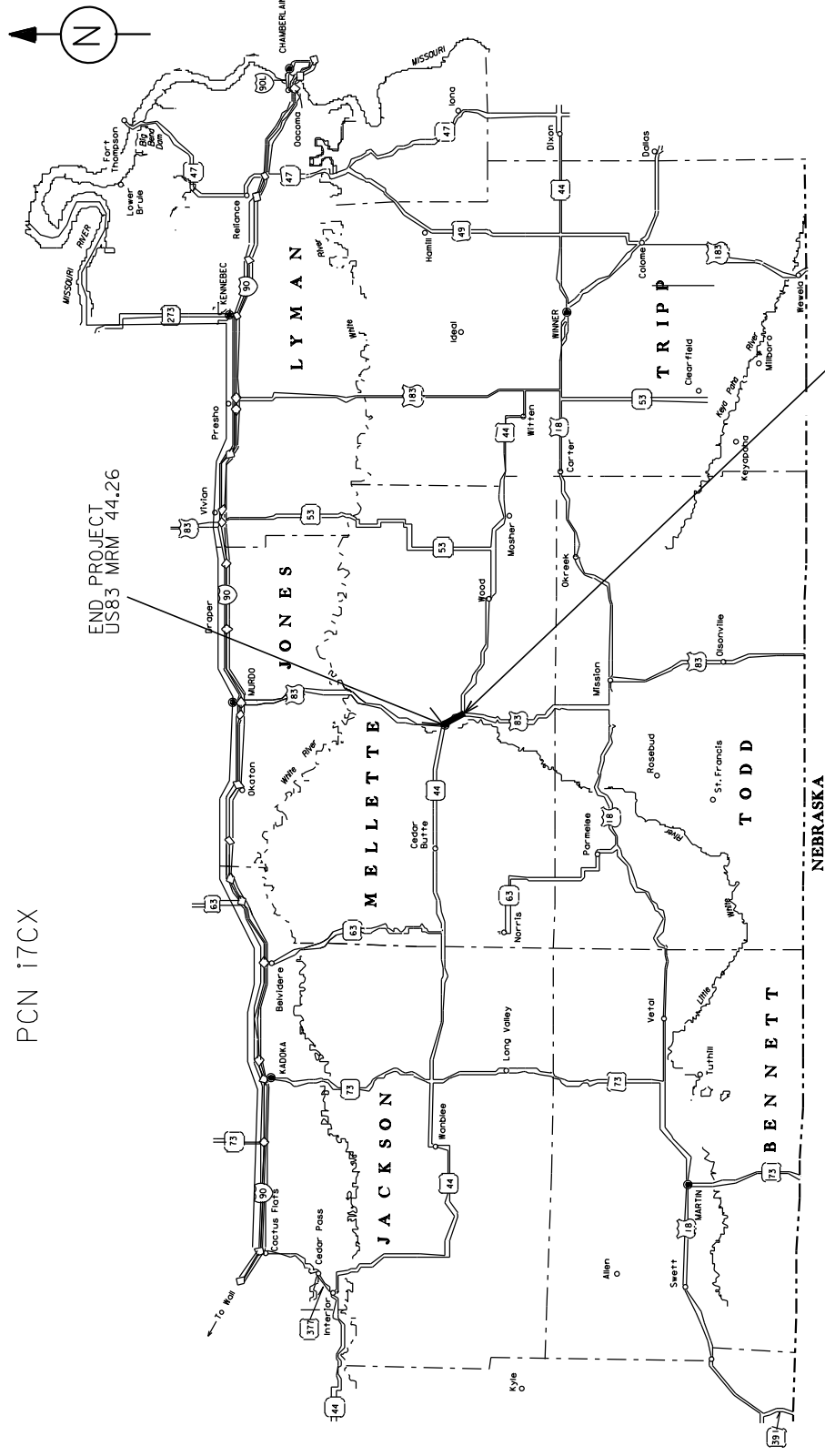


083-392

Maintenance of Roadway Lighting and Pedestrian Crossing Signal

MELLETTTE COUNTY

PCN i7CX



BEGIN PROJECT
US83 MRM 42.06

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0197	Mobilization 1	1	Each
009E0198	Mobilization 2	1	Each
009E0199	Mobilization 3	1	Each
110E1540	Remove Luminaire Pole Footing	1	Each
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	137.0	SqFt
634E0120	Traffic Control, Miscellaneous	1	LS
635E5020	2' Diameter Footing	8.0	Ft
635E5301	Type 1 Electrical Junction Box	1	Each
635E5900	Pedestrian Push Button	1	Each
635E5910	Pedestrian Push Button Pole	1	Each
635E6950	Install Luminaire	1	Each
635E6952	Install Luminaire Arm	1	Each
635E7000	Install Luminaire Pole	1	Each
635E7500	Remove and Reset Luminaire Pole	1	Each
635E8120	2" Rigid Conduit, Schedule 40	50	Ft
635E8220	2" Rigid Conduit, Schedule 80	50	Ft
635E8320	2" Innerduct, Schedule 40	50	Ft
635E9016	1/C #6 AWG Copper Wire	150	Ft
635E9018	1/C #8 AWG Copper Wire	150	Ft
635E9502	2/C #14 AWG Copper Tray Cable, K2	100	Ft
635E9506	6/C #14 AWG Copper Tray Cable, K2	100	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	100	Ft
734E0010	Erosion Control	1	LS

COMPLETION DATE

The contract will become effective on July 1, 2024, and will expire on June 15, 2025.

SCOPE OF WORK

This project consists of repair and maintenance of the highway lighting system and pedestrian push button crossing system at the following location:

US 83 from the City of White River south 2 1/2 miles along the existing walk path from MRM
42.06 to 44.26 in Mellette County.

In the event a repair call out is made, the Department has numbered the poles as per the original construction set of plans, as referenced in this plan set. The Department will notify the Contractor of the nature of the damage observed requiring repair. Based upon the extent of the damage the Contractors will utilize the appropriate mobilizations to facilitate repairs.

Repair of sites will include use of state furnished materials and then Contractor supplied materials.

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

All repairs will be made in accordance with the approved shop drawings and original construction plans (see attachments). All repairs will be the same size and type as the existing light or signal structure, or as approved by the Engineer.

Notification to the Contractor will be made by email. May also include contact by phone.

All materials poles, arms, luminaires, etc. that are not able to be reused on the contract will become the property of the Contractor to be disposed of.

UTILITIES

The Contractor is required to comply with South Dakota Codified Law and Administrative Rule addressing excavation activities. Notification of Utility companies will be in accordance with Section 5.6 of the Specifications. South Dakota One Call phone number is 1-800-781-7474.

GENERAL MAINTENANCE OF TRAFFIC

The plan quantity for Traffic Control Signs is based on the Contractor mobilizing one time to repair luminaires or the pedestrian crossing signal system. The required number of traffic control devices to construct one work zone for each mobilization. Signs that are reused at different sites during the same mobilization will be paid for only once. Signs that have tabs or are hinged to expedite changing the message will be considered as one sign for payment. Traffic control signs will be measured and paid each time the Contractor is mobilized to make a repair.

Equipment will be confined to the shoulder, or a driving lane closed to traffic.

Work activities will be conducted during daylight hours only. Traffic will be returned to the normal driving lanes during non-working hours. All construction operations will be conducted in the general direction of traffic movement.

All equipment and vehicles entering or exiting the roadway, traveling on the shoulders, traveling at speeds less than 40 MPH between work sites, or working within the right-of-way will be equipped with an activated 360-degree, SAE J845, Class II or higher warning light to warn the traveling public.

Traffic control will be in accordance with Section 634 of the specifications and the plan notes. All traffic control devices are to be in like new condition. Any traffic control device that warrants replacement due to its poor condition or absence will be replaced immediately by the Contractor at the Contractor's expense.

Driving on the walk path adjacent to US83 south of the City of White River with construction vehicles or equipment will not be allowed without approval of the Engineer.

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
		CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			
		137.0			

GENERAL LIGHTING AND SIGNAL REPAIR

The Contractor may be required to furnish some items that are not listed in the contract proposal. The Contractor is required to receive prior approval from the Engineer before making these purchases. The Contractor will be paid for invoiced materials as described under the section CONTRACTOR FURNISHED DOT REPLACEMENT MATERIALS in these plans. Installation cost for these additional items will be incidental to the various contract items unless noted in these plans or as agreed to by the Engineer.

MOBILIZATIONS

Mobilizations, as described, are the cost of mobilization to make repairs each time the Contractor mobilizes to the any contract project site at the request of the Winner Area Engineer, or his designated representative, to perform lighting and signal repairs on the project.

Mobilization 1 (SECURE SITE)

This Mobilization-1 is for mobilization costs to make repairs to secure the safety of the damaged luminaire from the public and to keep functional the remainder of the undamaged system of luminaires or pedestrian crossing signals, as needed by US Electrical Codes.

Reusable pieces will be moved out of the 30 foot clear zone or stored back at the White River Maintenance Yard. If the reusable poles and arms may become buried in snow prior to final repairs being accomplished, then the poles and arm will be required to be hauled and stored at the White River Yard.

This Mobilization-1 does not include permanent repairs. This mobilization will also include evaluation of materials that can be reused or new materials necessary to make permanent repairs. This mobilization will be a onetime payment regardless of the number of repair items needed in its respective call out.

If the Contractor's schedule permits that permanent repair can be made within the response time allocated for Mobilization-1, then only the appropriate Mobilization-2 or Mobilization-3 will be made.

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

Mobilization 2 (REPAIR SITE)

Mobilization-2 is a cost of mobilization to complete all permanent repairs. Repairs include, but not limited to removing & hauling damaged or reusable items, repair of anchor bolts and/or footing, setting of poles, installing arms, luminaires, wiring, and other miscellaneous items required to make permanent repairs. Mobilization-2 also covers the setting of temporary poles if required. This mobilization will cover all labor, equipment to make these repairs. This mobilization will be a onetime payment regardless of the number of repair items needed in its respective call out.

Mobilization 3 (GENERAL SERVICE)

Mobilization-3 is the mobilization cost to make routine general service repairs to the roadway lighting system or the pedestrian push button system. Repairs may include luminaires, PE's, wiring fixes, LED replacement, PED Poles, PED push Buttons, etc. This mobilization is not for the setting luminaire poles, arms or installing new footings. This mobilization will be a onetime payment regardless of the number of repair items needed in its respective call out.

RESPONSE TIMES

Secure Site – Mobilization 1: When the Contractor is notified of a damaged luminaire or pedestrian push button pole, the Contractor will have 3 calendar days to secure the site as described in Mobilization-1.

Repair Site – Mobilization 2: When the Contractor is notified of a damaged luminaire or pedestrian push button pole, the Contractor will have 4 weeks to make permanent repairs that were called out in the initial notification.

If parts are not available from the DOT White River Yard for repairs, the Contractor will have 5 business days to order the required parts from completing Mobilization-1. The Contractor will be granted 4 weeks beyond the delivery date of the controlling part to make permanent repairs.

General Service – Mobilization 3: When general service is required of the luminaire or pedestrian push button systems, the Contractor will have 4 weeks to make repairs from the time of notification.

If parts are not available from the DOT White River Yard for repairs, the Contractor will have 5 business days to order the required parts from completing Mobilization-1 or from notification. The Contractor will be granted 4 weeks beyond the delivery date of the controlling part to make permanent repairs.

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

DOT FURNISHED REPAIR MATERIALS

To expedite and facilitate repairs the Department has available the following materials available for repairs at the Department's White River Maintenance Shop located on US83 at 26522 US Hwy 83.

US 83 South of White River – Original Project NH-EM 0083(74)55; PCN 06L6.

1-15' luminaire pole assembly with anchor bolts, breakaway base, 6' luminaire arm, luminaire, and photoelectric eye.

2-50' luminaire pole assemblies with anchor bolts, breakaway bases, 6' luminaire arms, luminaires, and photoelectrical eye.

In the segment of poles from L50-L59, if the proper length of pole is not available to make a permanent repair and the state supplied 15' pole is available, the Contractor will temporarily install a 15' pole until such time as the correct length pole is available for installation, or as directed by the Engineer. Once, the correct pole length has become available the contractor will be paid an additional Mobilization 2 to make final repairs.

All labor and equipment to temporarily set the DOT furnished 15' luminaire pole assembly will also include the future cost to remove and disassemble this temporary pole set and delivery of the 15' luminaire assembly back to the White River Yard. Payment for this work will be at the unit bid price for REMOVE and RESET LUMINAIRE POLE.

CONTRACTOR FURNISHED DOT REPLACEMENT MATERIALS

The Contractor will be required to order replacement parts that are supplied by the Department to replenish the Department's supply within five (5) business days of completing Mobilization-1. The items listed above will be as per approved shop drawings from the initial installation project (see attachments) or as approved by the Engineer.

Initial Installation Project: US 83 South of White River -Project NH-EM 0083(74)55; PCN 06L6 in Mellette County in 2022

Payment for these replacement parts to replenish the Department supply will be paid based upon invoice price and include administration and profit as allowed by the SDDOT Standard Specifications for labor, materials, and equipment.

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

Calculations for payment will be based upon the following, as per the SDDOT Standard Specifications under Section 9:

- A) Total Cost of Materials + Total Cost of Freight to the White River Maintenance Yard
- B) A 15% Material & Administration Cost of "A" above.
- C) Profit will be based upon 10% of "A" above.
- D) Excise Tax @ 2.041% of the sum of "A+B+C" above.
- E) Total Payment will be the sum of "A+B+C+D" above.

The Contractor will submit the original invoice(s) plus a copy of the Materials Billing Sheet worksheet for payment of materials ordered for the project. (See Materials Billing Sheet)

The Contractor will provide an invoice to the Department that will include the following:

Manufactures original invoice with expected delivery date.

Cost of delivery and stockpiling to the White River Maintenance yard

If at no fault of the Contractor the Contractor incurs delays from the manufacture or supplier of any invoiced items to the project, the Contractor will notify and submit to the Department a new updated delivery invoice or statement from the manufacture or supplier. This notification from the manufacture or supplier will state the new delivery date, representative contact, along with pertinent information for verification of the order by the Department.

Once this new delivery invoice has been accepted by the Department, the Contractor will be issued a new completion date for repairs to be made, as determined by the Engineer.

The Contractor will be required to unload any materials in the White River Yard. The Department will not supply equipment or personnel for the loading or unloading of materials.

LUMINIARE POLE ASSEMBLY & PAYMENTS

The Contractor will be paid for labor & equipment of various roadway luminaire pole assembly components items on this contract. Payment for each respective item will cover labor and equipment cost for utilizing DOT furnished materials, Contractor supplied materials, the reuse of the existing items, or a combination of the items to make the required permanent repairs on each repair site.

Install Luminaire –All labor and equipment costs required to complete luminaire repairs on a damaged luminaire. This work will include the luminaire housing, LED, Photoelectric Eye, and wiring needed. Payment will be at the bid price each for INSTALL LUMINAIRE.

Install Arm – All labor and equipment costs required to complete arm repairs on a damaged arm. Payment will be at the unit bid price each for INSTALL ARM.

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

Install Luminaire Pole - All labor and equipment costs required to complete pole repairs on a damaged luminaire pole. This work will include the pole and breakaway base. Payment will be at the unit bid price each for INSTALL LUMINAIRE POLE.

Other items required to make payments will be as listed in these plans. The Contractor will notify the Department when items needed for repair are not specifically called out under these plans. These items, as approved by the Engineer, will be paid for as detailed in the section of the plans for CONTRACTOR FURNISHED DOT REPLACEMENT MATERIALS

PEDESTRIAN CROSSING

The Contractor will be paid for labor & equipment of various pedestrian crossing components items on this contract. Payment for each respective item will cover labor and equipment cost of Contractor supplied materials, the reuse of the existing items, or a combination of the items to make the required repairs on each repair site.

Pedestrian Push Button -All labor and equipment costs required to complete push button repairs on a damaged pedestrian push button assembly. This work will include the housing, push button, and wiring needed. This item will also be for removing and resetting the push button if required to mounted a new pole or base. Payment will be at the bid price each for PEDSTRIAN PUSH BUTTON.

Pedestrian Push Button Pole- All labor and equipment costs required to complete luminaire repairs on a damaged pedestrian push button pole. This work will include the base, pole and wiring needed. Payment will be at the bid price each for INSTALL PEDESTRIAN PUSH BUTTON POLE.

Other items required to make payments will be as listed in these plans. The Contractor will notify the Department when items needed for repair are not specifically called out under these plans. These items, as approved by the Engineer, will be paid for as detailed in the section of the plans for CONTRACTOR FURNISHED DOT REPLACEMENT MATERIALS

FOOTINGS - NEW

If during Mobilization-1 it is determined that the existing footing for the light pole is damaged beyond repair a new footing will be installed. New replacement footings will be installed as per the original construction plans for each respective route and located in the same location or as determined by the Engineer.

The Contractor will be required to supply steel cages as described in the original constructions plans for each respective site.

State supplied anchor bolts will be available at the White River Maintenance Yard. If anchor bolts are not available from the DOT White River Yard for repairs, the Contractor will have 5 business days to order the required parts from completing Mobilization-1.

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

New concrete footing bases are to be installed a minimum of 2 weeks prior to the expected installation date of the pole on the project as determined from the submitted pole invoice.

Payment for the installation of the new footing will include all labor, equipment, materials needed to complete the installation and be at the established unit bid price per foot for 2' Diameter Footing.

FOOTINGS - REPAIRABLE

Footing damaged that is deemed repairable by the Department will be as needed at each specific location. All repair methods & materials will be approved by the Department's Office of Bridge Design. The Contractor may be requested to supply manufacture datasheets, certifications and/or shop drawings for approval for any repairs prior to making repairs.

If parts are not available from the DOT White River Yard for repairs, the Contractor will have 5 business days to order the required parts from the date of the Contractor receives approval of the repairs from the Department. The Contractor will be granted 4 weeks beyond the delivery date of the controlling part to make permanent repairs.

Due to footing repairs each being unique in nature, payment for this work will be negotiated and agreed to by the Contractor and the Department for each respective site prior to the beginning of the repair work. This agreed to work will be added to the contract by construction change order.

ACCESS TO THE WHITE RIVER YARD

The White River Yard is typically open as follows:

April thru September are 7am-5:30 pm Central, Monday -Thursday.

October thru March are 8am-4:30 pm Central, Monday – Friday.

If access is needed other than at these listed times, the Contractor will need to coordinate with the Maintenance Supervisor Gregg Ulmer @ 605.842.0810. Access to the yard will be at the Department's discretion.

PROGRESS PAYMENTS

At the preconstruction meeting the Contractor will be given a Roadway Lighting Billing Sheet to record the work done at the repair areas. This sheet will be used by the Contractor to record the location of each repair site and the actual materials and quantities required to make repairs.

Progress payments will be processed upon receipt of the Roadway Lighting Billing Sheet from the Contractor for repairs completed.

Maintenance of Roadway Lighting and Pedestrian Crossing Signals
Project 083-392; PCN i7CX
Mellette County

EROSION CONTROL

Areas disturbed because of work necessary under this contract will be reshaped and/or restored to the satisfaction of the Engineer.

The estimated area requiring erosion control is 100 square feet. All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, seeding, and mulching will be incidental to the contract lump sum price for "Erosion Control".

The limits of erosion control work will be determined by the Engineer during construction.

Seeding

Slopes and berms disturbed will be leveled and excess material removed. Area will be tilled to the minimum depth of three inches and seeded with Intermediate Wheatgrass (Oahe) at the rate of one-half (1/2) pound "Pure Live Seed" per 1000 square feet. The seed will be noxious weed free. Cost for reshaping, leveling, removal of excess material, tilling, and seeding disturbed areas on the slopes and berms will be incidental to the contract unit price for the various items.

Hand seeding and mulching may be approved by the Engineer.

ATTACH MATERIAL

Material Billing Sheet - SDDOT, Winner Area

Project _____ **PCN** _____ **Date** _____ **POLE#**

Materials (attach invoices)

Item#	Description	Unit	Qty	Cost	Subtotal
1					\$ -
2					\$ -
3					\$ -
4					\$ -
5					\$ -
6					\$ -
7					\$ -
8					\$ -
9					\$ -
10					\$ -
Total Cost Materials =					\$ -

Freight to White River Yard

#	Item #'s from Above	Cost	Subtotal
i			\$ -
ii			\$ -
iii			\$ -
iv			\$ -
Total Cost Freight=			\$ -

A) Total Cost of Materials & Freight = Total Cost of Materials + Total Cost of Freight	\$ -
B) 15% Material & Administration Cost (15% of A) =	\$ -
C) Profit = (10% of A) =	\$ -
D) Excise Tax = (2.041% of (A + B + C) =	\$ -
TOTAL Payment =	\$ -

Invoice Delivery Date: _____

+4 Weeks for Installation Due Date: _____

Prepared By: _____

Signature _____ Date _____

Printed Name _____

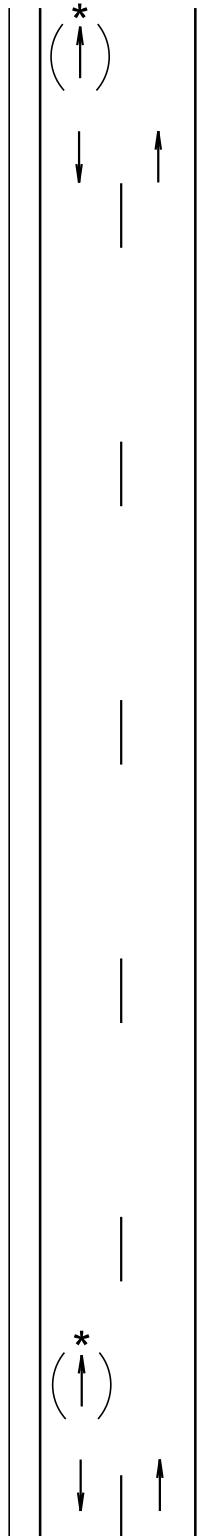
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

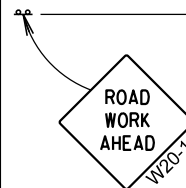
The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 80	1000



January 22, 2021

Published Date: 2024

**S
D
D
O
T**

WORK BEYOND THE SHOULDER

PLATE NUMBER
 634.01

Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45	500	600	25
50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

END ROAD WORK
G20-2

The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

WORK SPACE

Published Date: 2024

SDOT

WORK ON SHOULDERS

January 22, 2021

PLATE NUMBER
634.03

Sheet 1 of 1

*In situations where multiple work locations in a limited distance make it practical to place stationary signs, the distance between the advance warning sign and the work should not exceed 5 miles.

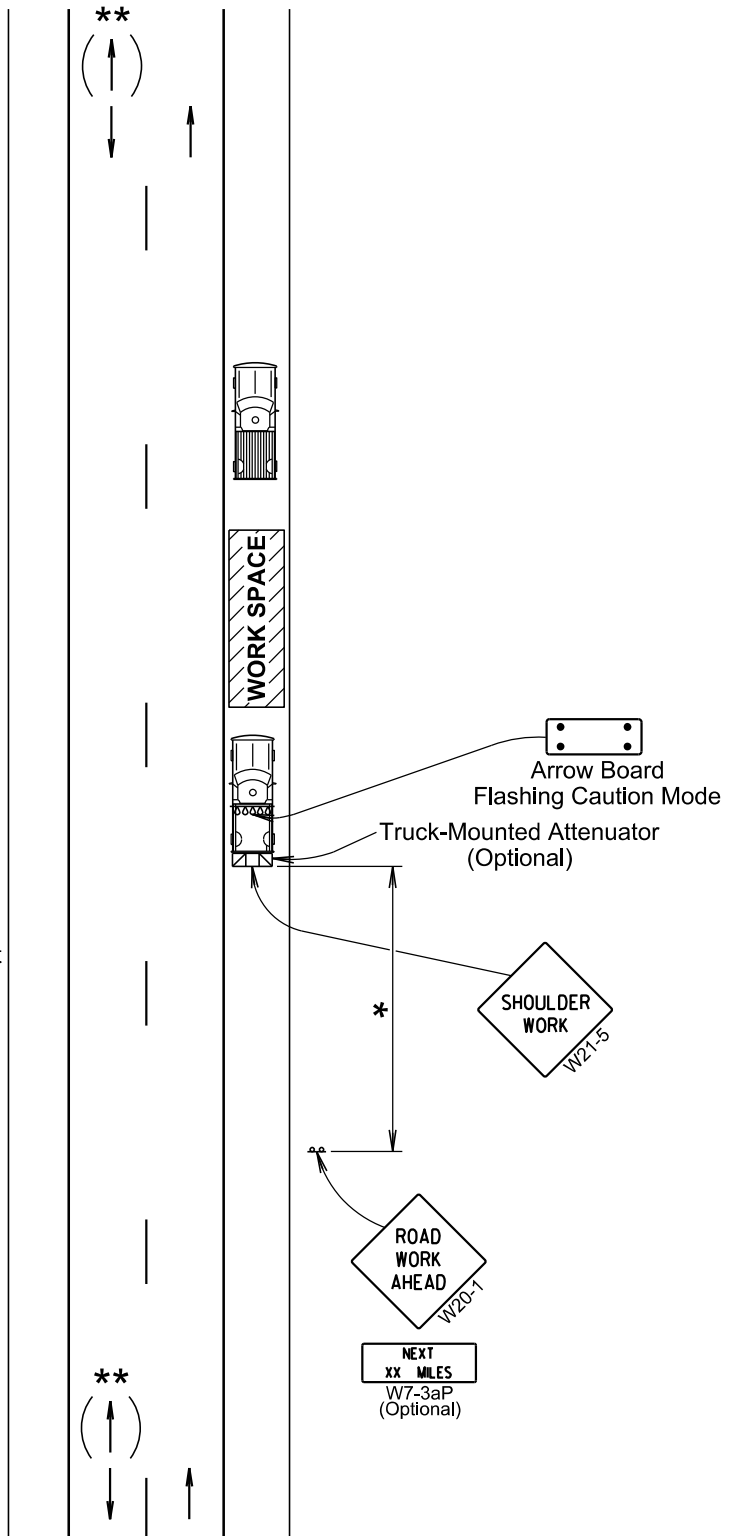
The ROAD WORK NEXT xx MILES sign may be used instead of the ROAD WORK AHEAD sign if the work locations occur over a distance of more than 2 miles.

Arrow board is required for intermittently and continuously moving mobile operations when work exceeds 1 hour.

**If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

In situations where the distance between the advance warning signs and the work is 2 miles to 5 miles, a Supplemental Distance plaque should be used with the ROAD WORK AHEAD sign.

All costs associated with the traffic control for mobile operation including signs, arrow boards and equipment will be incidental to the contract lump sum price for "Traffic Control, Miscellaneous".



January 22, 2021

Published Date: 2024

**S
D
D
O
T**

MOBILE OPERATIONS ON SHOULDERS

PLATE NUMBER
634.04

Sheet 1 of 1

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices will be drums or 42" cones.

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

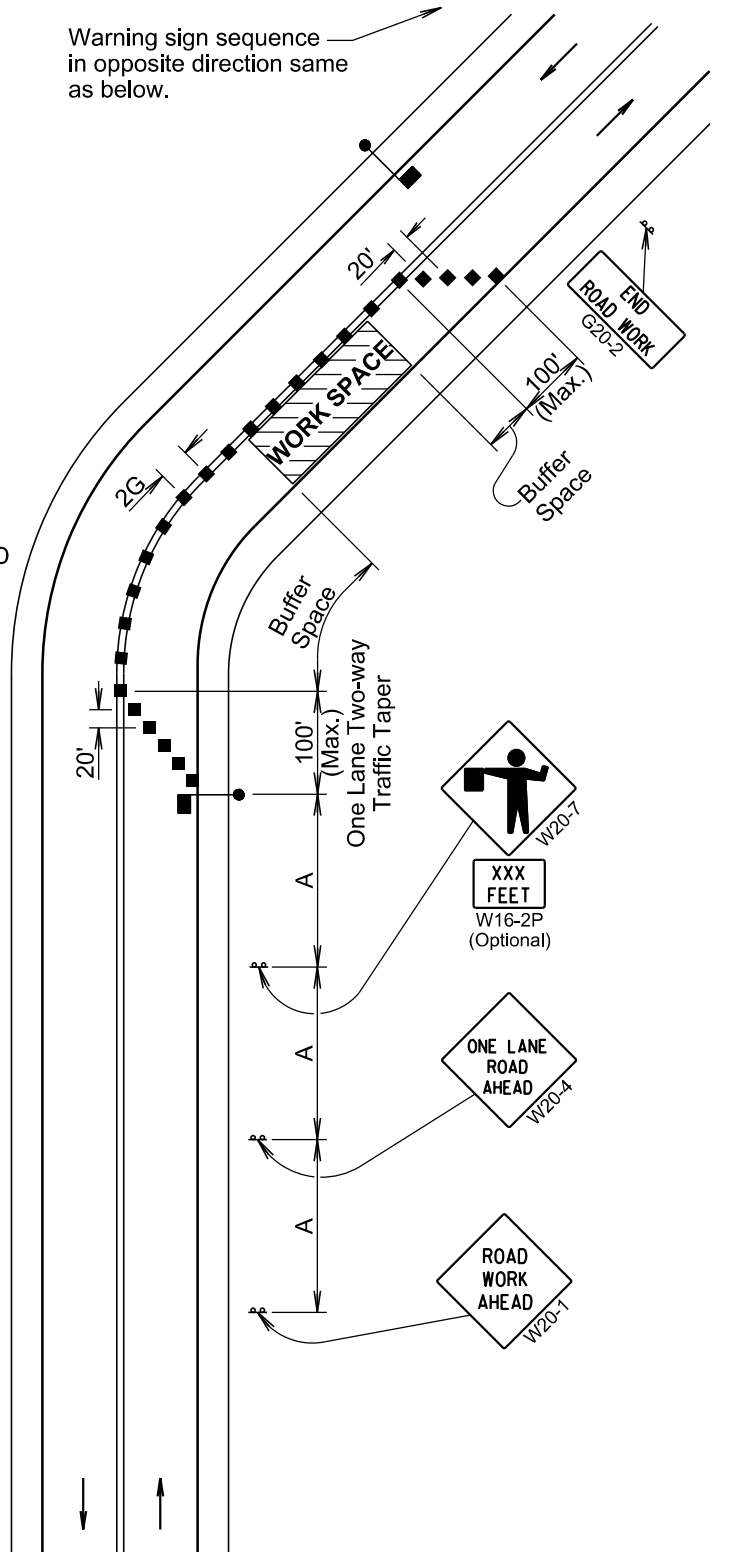
G20-2
END ROAD WORK

Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.

Warning sign sequence in opposite direction same as below.



January 22, 2021

Published Date: 2024

S
D
D
O
T

LANE CLOSURE WITH FLAGGER PROVIDED

PLATE NUMBER
634.23

Sheet 1 of 1

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

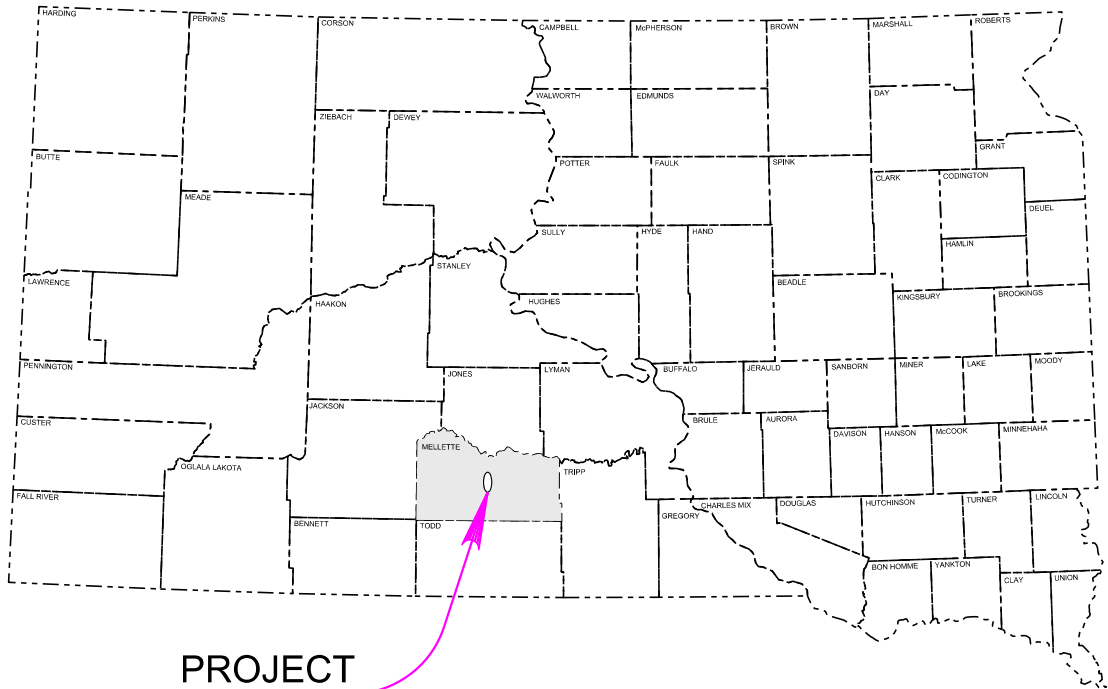
PROJECT NH-EM 0083(74)55
US HIGHWAY 83
MELLETTE COUNTY
SHARED USE PATH CONSTRUCTION & LIGHTING
PCN 06L6

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-EM 0083(74)55	1	138

Plotting Date: 4/20/2021

INDEX OF SECTIONS

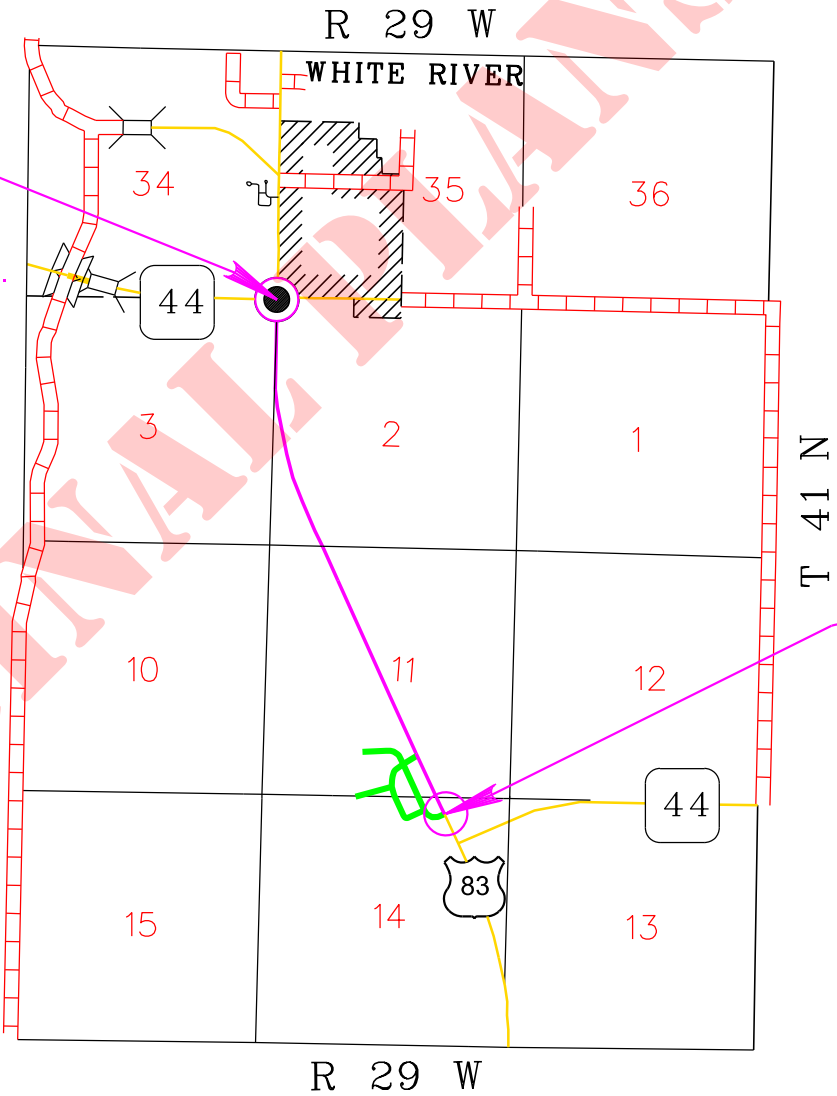
- Section A: Estimate of Quantities and Environmental Commitments
Section B: Grading Plans
Section C: Traffic Control Plans
Section D: Erosion and Sediment Control Plans
Section L: Lighting Plans
Section S: Permanent Signing Plans
Section X: Cross Sections
Section Z: Pipe Sections



PROJECT

END NH-EM 0083(74)55

Station 116+00.00
192.28 feet South and
28.05 feet West of the Northeast
Corner of Section 3 -
Township 41 North - Range 29 West of the 6th P.M.
MRM = 44.26



BEGIN NH-EM 0083(74)55

Station 0+00.00
450.29 feet South and
1368.41 feet West of the Northeast
Corner of Section 14
Township 41 North - Range 29 West of the P.M.
MRM = 42.06

DESIGN DESIGNATION

AADT (2018)	1946
AADT (2040)	2777
DHV	328
DHV T%	6.7%
AADT T%	14.7%

STORM WATER PERMIT

Major Receiving
Body of Water: Little White River
Area Disturbed: 20.2 Acres
Total Project Area: 31.0 Acres
Approx. Begin Lat,Long: 43°33'54"N, 100°45'1"W




Gross Length 11600 Feet 2.197 Miles

4

October 20, 2021

SECTION L: LIGHTING PLANS

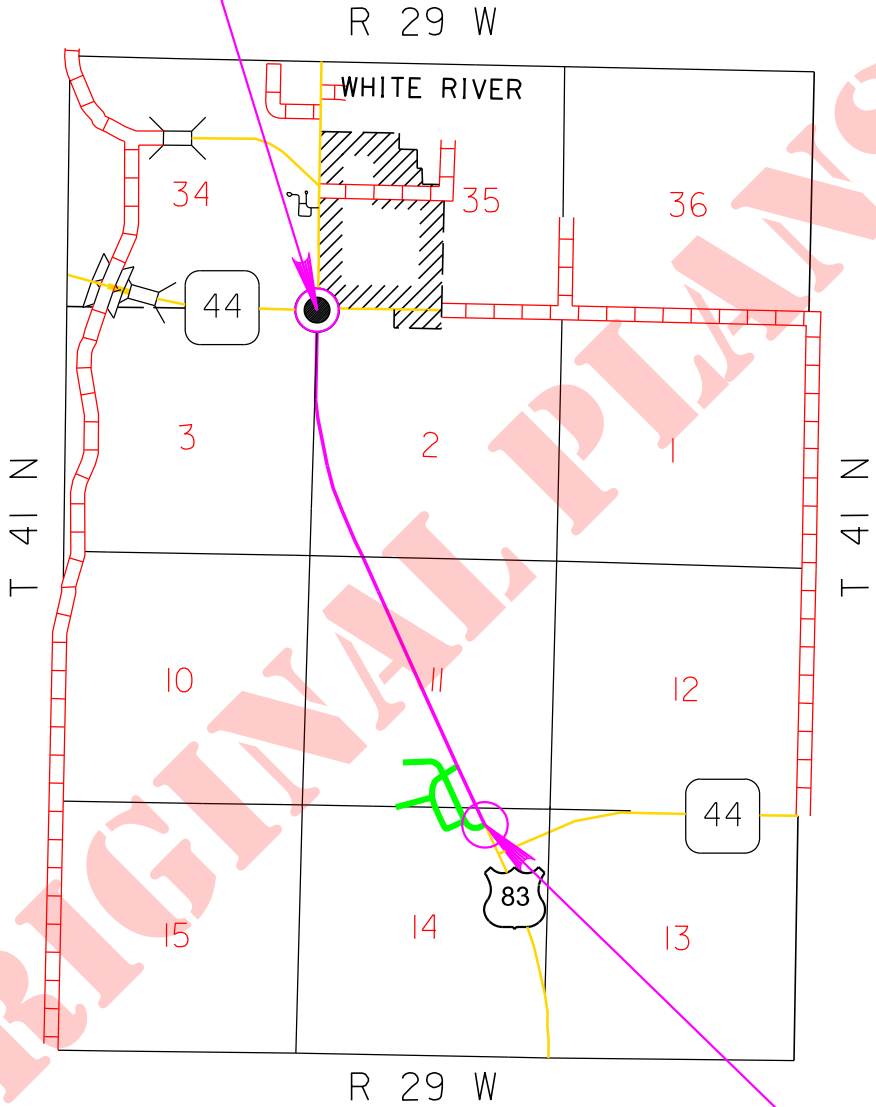
	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L1	L31

Plotting Date: 04/14/2021

INDEX OF SHEETS

L1	General Layout with Index
L2-L5	Estimate with General Notes & Tables
L6-L25	Conduit Layouts
L26-L27	Wiring Diagrams
L28-L31	Standard Plates

END NH-EM 0083(74)55
End Grading
Station 116+00



BEGIN NH-EM 0083(74)55
Begin Grading
Station 0+00

SECTION L ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
635E0015	Breakaway Base Luminaire Pole with Arm, 15' Mounting Height	5	Each
635E0025	Breakaway Base Luminaire Pole with Arm, 25' Mounting Height	5	Each
635E0040	Breakaway Base Luminaire Pole with Arm, 40' Mounting Height	5	Each
635E0050	Breakaway Base Luminaire Pole with Arm, 50' Mounting Height	49	Each
635E0115	Breakaway Base Luminaire Pole with Twin Arms, 15' Mounting Height	1	Each
635E3700	Roadway Luminaire, LED with Photoelectric Cell	66	Each
635E5020	2' Diameter Footing	493.0	Ft
635E5301	Type 1 Electrical Junction Box	5	Each
635E5400	Electrical Service Cabinet	5	Each
635E8120	2" Rigid Conduit, Schedule 40	11,360	Ft
635E8220	2" Rigid Conduit, Schedule 80	605	Ft
635E9016	1/C #6 AWG Copper Wire	40,255	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	4,165	Ft

SUPPLYING AS BUILT PLANS

The contractor will provide as built plans for the lighting systems. The plans will be supplied to the Engineer, the Winner Area Engineer, and the Traffic Design Engineer. The as built plans will depict the actual pole locations, the actual conduit & junction box locations, the actual wiring diagrams, and the plans will also include any other drawings that explain or depict the actual construction.

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

The Contractor will submit shop drawings and catalog cuts in accordance with Section 985 of the Specifications.

Adobe PDF submittals will be sent to the following email addresses:

Ryley.Rapp@state.sd.us
Kelly.VanDeWiele@state.sd.us

LUMINAIRE POLES

Luminaire poles L1-L49 will have a mounting height of 50-feet with 9-foot arms.

Luminaire poles L50-L54 will have a mounting height of 40-feet with 9-foot arms.

Luminaire poles L55-L59 will have a mounting height of 25-feet with 9-foot arms.

Luminaire poles L60 and L62-L65 will have a mounting height of 15-feet with 6-foot arms.

Luminaire pole L61 will have a mounting height of 15-feet with twin 6-foot arms.

LUMINAIRES

The lighting design used the following parameters and provides 1.0 and greater average maintained foot-candles for the roadway and 0.6 and greater average maintained foot-candles for the walk path with uniformity ratios of 3:1 (average maintained to minimum maintained foot-candles) and 6:1 (maximum to minimum maintained foot candles:

Pole Setback: 9 Ft.
Lamp Loss Factor (LLF): 0.8
Width of Lighted Area: 24 Ft. Roadway
10 Ft. Walk path
Spacing: Varies
Configuration: One-Sided
Mounting Height: L1-L49 50 Ft.
L50-L54 40 Ft.
L55-L59 25 Ft.
L60-L65 15 Ft.
Arm Length 9 Ft. (50 Ft., 40 Ft., and 25 Ft. Poles)
6 Ft. (15 Ft. Poles)
Light Source: LED

For poles L1-L49 the following LED luminaires meet the requirements for this design:

- a.) GE Evolve: ERL2-0-27-E3-40-GRAY
b.) Cree Traveyo: TRVXL-A-HT-2ME-30L-40K7-UL-GY
c.) Cooper Navion NAV-AF-06-D-U-T3-AP

For poles L50-L54 the following LED luminaires meet the requirements for this design:

- a.) GE Evolve: ERL2-0-23-E3-40-GRAY
b.) Cree Traveyo: TRVXL-A-HT-2ME-25L-40K7-UL-GY

For poles L55-59 the following LED luminaires meet the requirements for this design:

- a.) GE Evolve: ERLH-0-14-E3-40-GRAY
b.) Cooper Navion NVN-AA-02-D-U-RWQ-AP

For poles L60-L65 the following LED luminaires meet the requirements for this design:

- a.) GE Evolve: ERL1-0-03-C3-40-GRAY
b.) American Electric Lighting ATB0-10BLED70-MVOLT-R2

SUBSURFACE

Groundwater may be encountered within the footing excavations that are near or below existing ditch grade elevations. During construction of the cylindrical footings, concrete placement operations should closely follow excavation procedures. The longer the excavations are left open, the more likely caving may occur.

If caving soils are encountered it may be necessary to use casing or drilling fluids to maintain an open excavation. Casing will be of sufficient strength to withstand handling and installation procedures. Casing material may consist of Sonotube, corrugated metal pipe, pvc, smooth metal pipe or any other material as approved by the Engineer. Drilling fluids can be water or other slurries as approved by the Engineer. Concrete placed through drilling fluids will be tremied. If caving is not an issue but water is present, it will be removed prior to concrete placement or the concrete will be tremied.

TABLE OF FOOTING DATA


Site Designation	Footing Diameter	* Footing Depth	**Spiral Diameter	**Spiral Length	Vertical Reinforcement
L55-L65	2' - 0"	6' - 0"	1' - 8"	44' - 3"	8-#7 x 5' - 6"
L50-L54	2' - 0"	7' - 0"	1' - 8"	49' - 6"	8-#7 x 6' - 6"
L1-L49	2' - 0"	8' - 0"	1' - 8"	54' - 9"	8-#7 x 7' - 6"

* Footing depth will be below ground level.
** The size of all spirals will be #3.

WIRE SPLICING FOR LIGHTING

All wire splices for lighting will be made using TE Connectivity GTAP connectors, NSI Industries Polaris Blue connectors, or an approved equal.


CONDUIT AND CABLE QUANTITIES

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L3	L31

Plotting Date: 04/14/2021

Location to Location		Rigid Conduit				Copper Wire		Pole and Bracket Cable																													
		Schedule 40		Schedule 80																																	
		2"		2"		1/C #6 AWG		2/C #10 AWG																													
Ft			Ft			Ft		Ft																													
LIGHTING (US HWY 83)																																					
L1	L2	210					650																														
L2	L3	210					650																														
L3	L4	210					650																														
L4	L5	210					650																														
L5	JL1	40					125																														
JL1	SERVICE CABINET	60					375																														
JL1	L6	175					545																														
L6	L7	210					650																														
L7	L8	150		60			650																														
L8	L9	210					650																														
L9	L10	210					650																														
L10	L11	210					650																														
L12	L13	210					650																														
L13	L14	210					650																														
L14	L15	210					650																														
L15	L16	210					650																														
L16	L17	210					650																														
L17	JL2	50					155																														
JL2	SERVICE CABINET	80					495																														
JL2	L18	175					545																														
L18	L19	205					635																														
L19	L20	210					650																														
L20	L21	210					650																														
L21	L22	210					650																														
L22	L23	210					650																														
L23	L24	210					650																														
L25	L26	210					650																														
L26	L27	210					650																														
L27	L28	210					650																														
L28	L29	210					650																														
L29	JL3	45					140																														
JL3	SERVICE CABINET	75					465																														
JL3	L30	170					525																														
L30	L31	210					650																														
L31	L32	155		70			1,395																														
L32	L33	210					650																														
L33	L34	210					650																														
L34	L35	210					650																														
L36	L37	190					590																														
L37	L38	160		70			1,425																														
L38	L39	210					650																														
L39	L40	210					650																														
L40	L41	210					650																														
L41	JL4	40					125																														
JL4	SERVICE CABINET	80					495																														
JL4	L42	70		70			865																														
L42	L43	210					650																														
L43	L44	210					650																														
L44	L45	210					650																														
L45	L46	210					650																														
L46	L47	210					650																														
L48	L49	210					650																														
L49	L50	180					560																														
L50	L51	180					560																														
Subtotal:		9,630	0	270	0	0	33,420	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0								

CONDUIT AND CABLE QUANTITIES

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L4	L31

Plotting Date: 04/14/2021

Location to Location		Rigid Conduit				Copper Wire		Pole and Bracket Cable																													
		Schedule 40		Schedule 80																																	
		2"		2"		1/C #6 AWG		2/C #10 AWG																													
Ft		Ft				Ft		Ft																													
LIGHTING (US HWY 83) (CONT'D)																																					
L51	L52	180				560																															
L52	L53	180				560																															
L53	JL5	170				525																															
JL5	SERVICE CABINET	135				835																															
JL5	L54	15				50																															
L54	L55	160				495																															
L55	L56			120		375																															
L56	L57	120				375																															
L57	L58	120				375																															
L58	L59	130				405																															
L59	L60	320		80		1,240																															
L60	L61	65				205																															
L61	L63	55				170																															
L63	L65			55		170																															
L61	L62	25		80		325																															
L62	L64	55				170																															
LUMINAIRE POLES																																					
LUMINAIRE POLE	L1					70																															
LUMINAIRE POLE	L2					70																															
LUMINAIRE POLE	L3					70																															
LUMINAIRE POLE	L4					70																															
LUMINAIRE POLE	L5					70																															
LUMINAIRE POLE	L6					70																															
LUMINAIRE POLE	L7					70																															
LUMINAIRE POLE	L8					70																															
LUMINAIRE POLE	L9					70																															
LUMINAIRE POLE	L10					70																															
LUMINAIRE POLE	L11					70																															
LUMINAIRE POLE	L12					70																															
LUMINAIRE POLE	L13					70																															
LUMINAIRE POLE	L14					70																															
LUMINAIRE POLE	L15					70																															
LUMINAIRE POLE	L16					70																															
LUMINAIRE POLE	L17					70																															
LUMINAIRE POLE	L18					70																															
LUMINAIRE POLE	L19					70																															
LUMINAIRE POLE	L20					70																															
LUMINAIRE POLE	L21					70																															
LUMINAIRE POLE	L22					70																															
LUMINAIRE POLE	L23					70																															
LUMINAIRE POLE	L24					70																															
LUMINAIRE POLE	L25					70																															
LUMINAIRE POLE	L26					70																															
LUMINAIRE POLE	L27					70																															
LUMINAIRE POLE	L28					70																															
LUMINAIRE POLE	L29					70																															
LUMINAIRE POLE	L30					70																															
LUMINAIRE POLE	L31					70																															
LUMINAIRE POLE	L32					70																															
LUMINAIRE POLE	L33					70																															
LUMINAIRE POLE	L34					70																															
LUMINAIRE POLE	L35					70																															
LUMINAIRE POLE	L36					70																															
Subtotal:		1,730	0	335	0	0	6,835	0	0	2,520	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					

T AND CABLE QUANTITIES

STA
SO
DA

Plotting

1:200

Plot Scale -

TRPR17199

Plotted From -

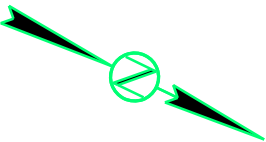
File - ...\\mell06L6\\TableConduit.dgn

CONDUIT LAYOUT

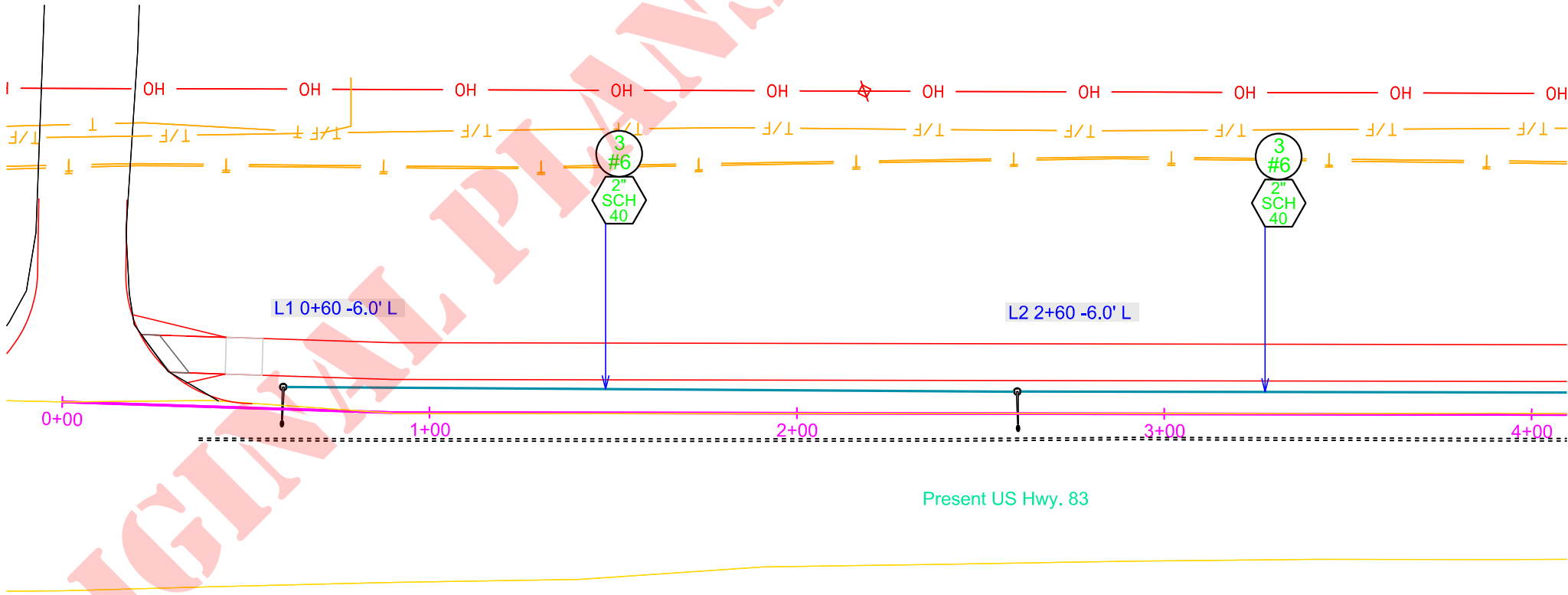
US HWY 83

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-EM 0083(74)55	L6	L31

Plotting Date: 04/14/2021



ESTIMATE OF QUANTITIES			
KEY	ITEM	EST QUANT	UNIT
	Breakaway Base Luminaire Pole w/9' Arm 50' Mounting Height (L1-L49)	49	EACH
	Breakaway Base Luminaire Pole w/9' Arm 40' Mounting Height (L50-L54)	5	EACH
	Breakaway Base Luminaire Pole w/9' Arm 25' Mounting Height (L55-L59)	5	EACH
	Breakaway Base Luminaire Pole w/6' Arm 15' Mounting Height (L60,62-L65)	5	EACH
	Breakaway Base Luminaire Pole w/Twin 6' Arms 15' Mounting Height (L61)	1	EACH
	Roadway Luminaire, LED with P.E. (L1-L65)	66	EACH
	2' Diameter Footing (L1-L65)	493	FT
	Type 1 Electrical Junction Box (JL1-JL5)	5	EACH
	Electrical Service Cabinet	5	EACH
	Galvanized Steel Utility Pole Not a Bid Item	5	EACH
	Meter Socket Not a Bid Item	5	EACH
	2" Rigid Conduit, Schedule 40	11,360	FT
	2" Rigid Conduit, Schedule 80	605	FT
	1/C #6 AWG Copper Wire	40,255	FT
	2/C #10 AWG Copper Pole & Bracket Cable	4,165	FT



CONDUIT LAYOUT

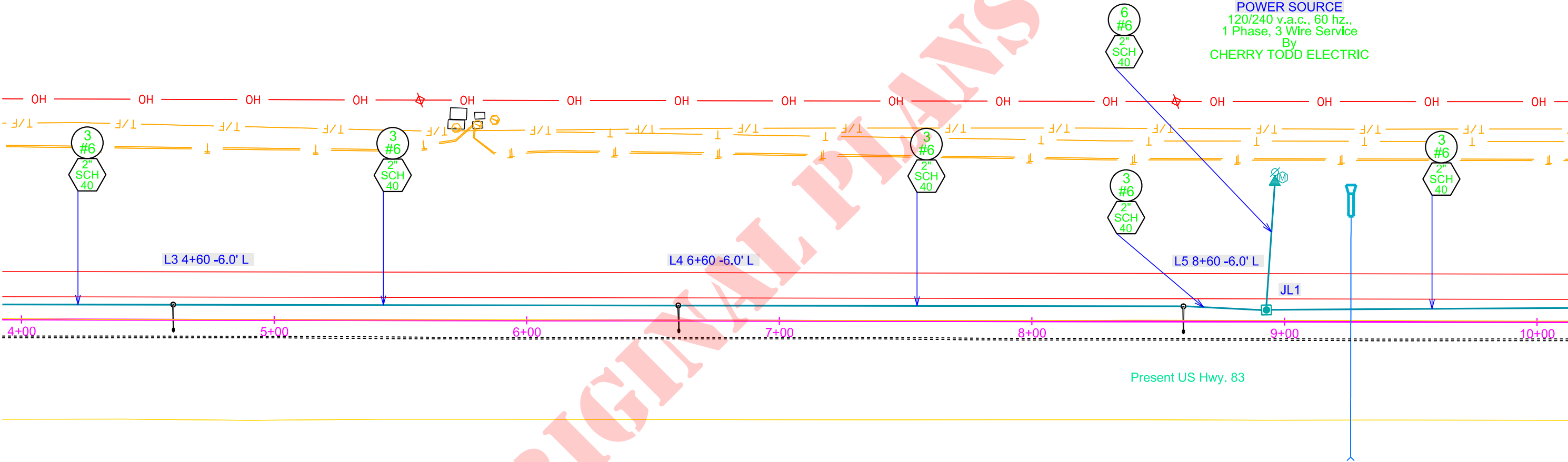
US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L7	L31

Plotting Date: 04/14/2021

Plot Scale - 1:40

Plotted From - TRPR17199



File - U:\trp\jml\0616\004c.dgn

CONDUIT LAYOUT

US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L8	L31

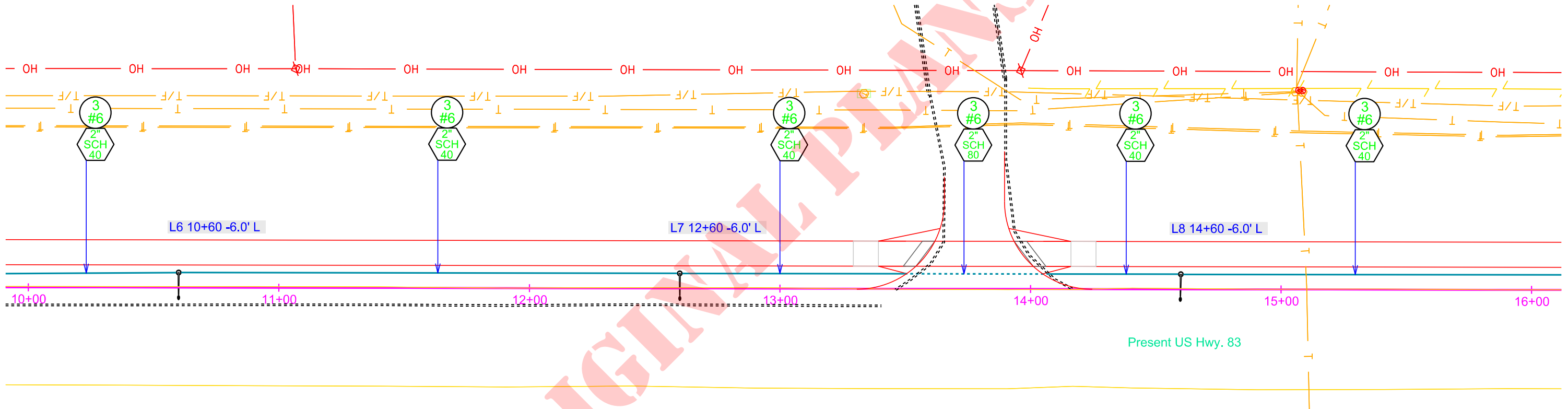
Plotting Date: 04/14/2021

Plot Scale - 1:40

Plotted From - TRPR17199


File - U:\trproj\mell061010c.dgn

ORIGINAL

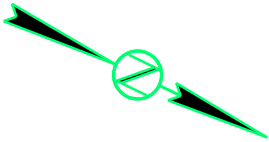


CONDUIT LAYOUT

US HWY 83

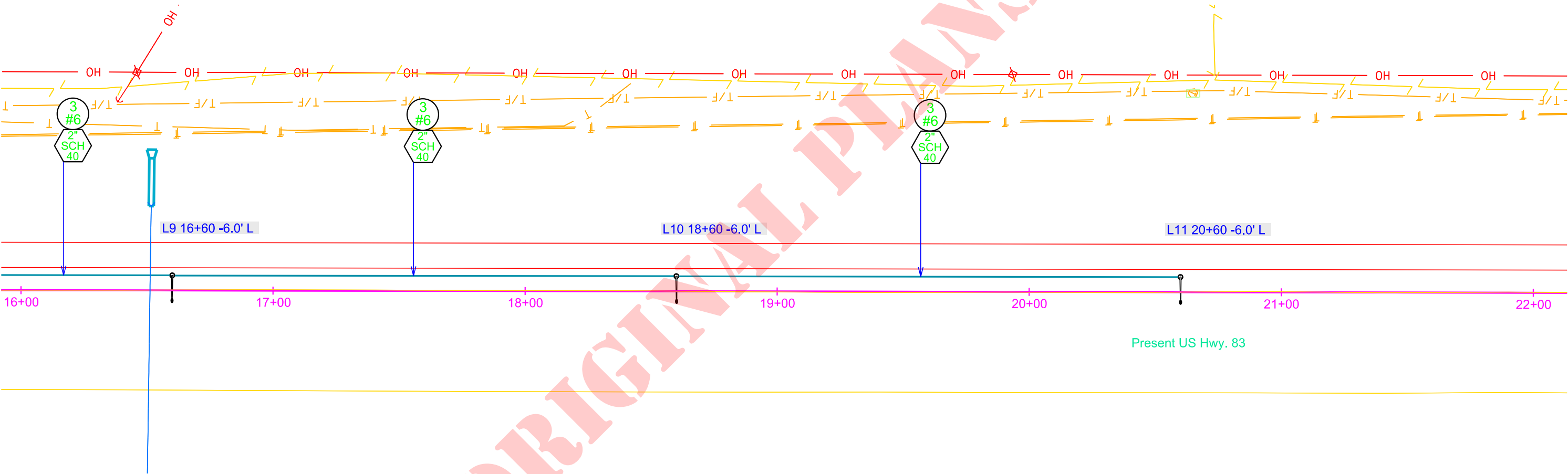
	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L9	L31

Plotting Date: 04/14/2021



Plot Scale - 1:40

Plotted From - TRPR17199



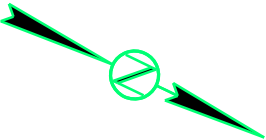
File - U:\trproj\mell06\l016c.dgn

CONDUIT LAYOUT

US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L10	L31

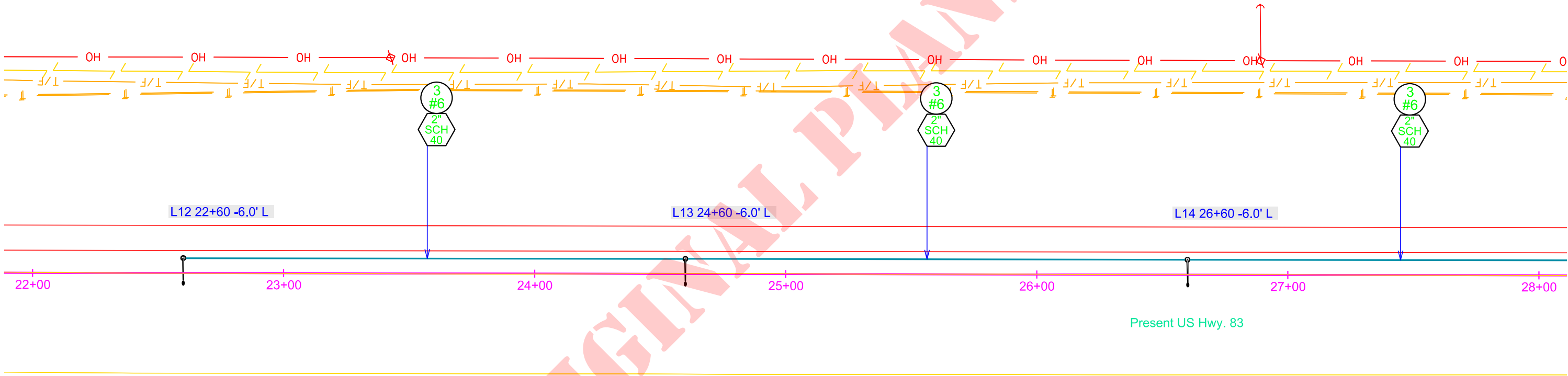
Plotting Date: 04/14/2021



Plot Scale - 1:40

Plotted From - TRPR17199

File - U:\proj\mell0616\022c.dgn



CONDUIT LAYOUT

US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L11	L31

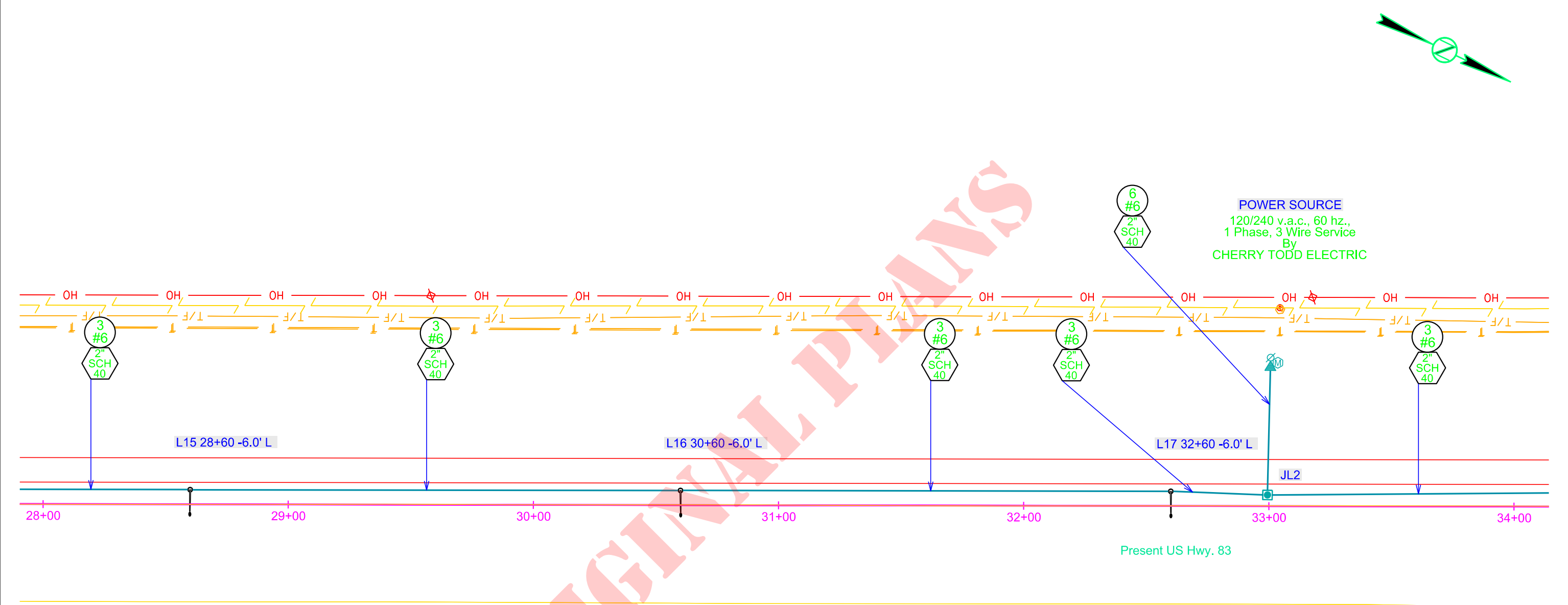
Plotting Date: 04/14/2021

Plot Scale - 1"=40'

Plotted From - TRPR17199


File - U:\trproj\mell0616\028c.dgn

ORIGINAL DRAFT



CONDUIT LAYOUT

US HWY 83

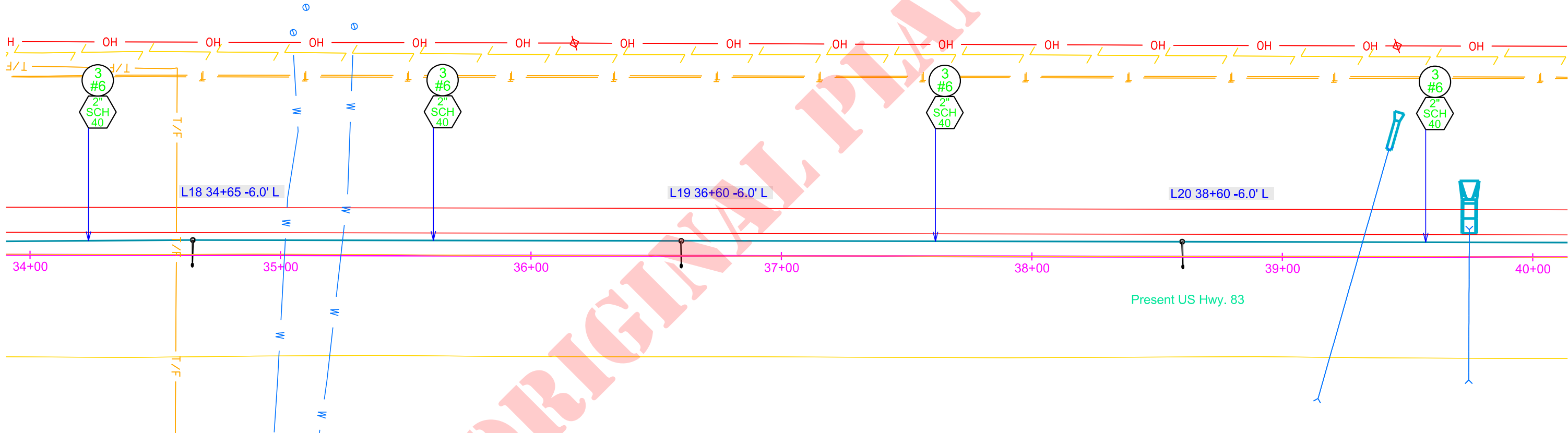
	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L12	L31

Plotting Date: 04/14/2021

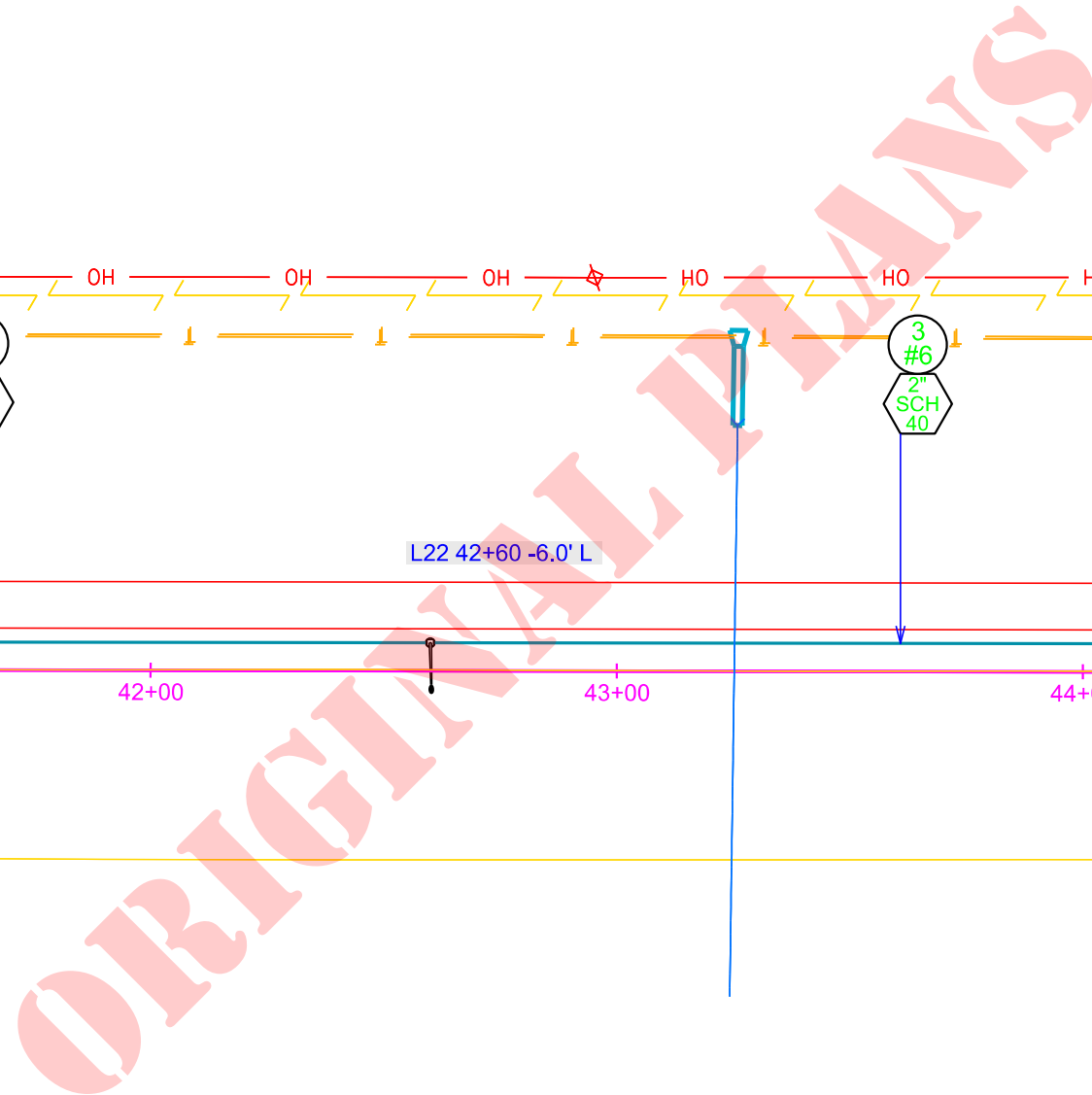
Plot Scale - 1:40

Plotted From - TRPR17199

File - U:\proj\mell06\034c.dgn



Plotted From - TRPR17199

Plotting Date: 04/14/2021

CONDUIT LAYOUT

US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L 14	L 31

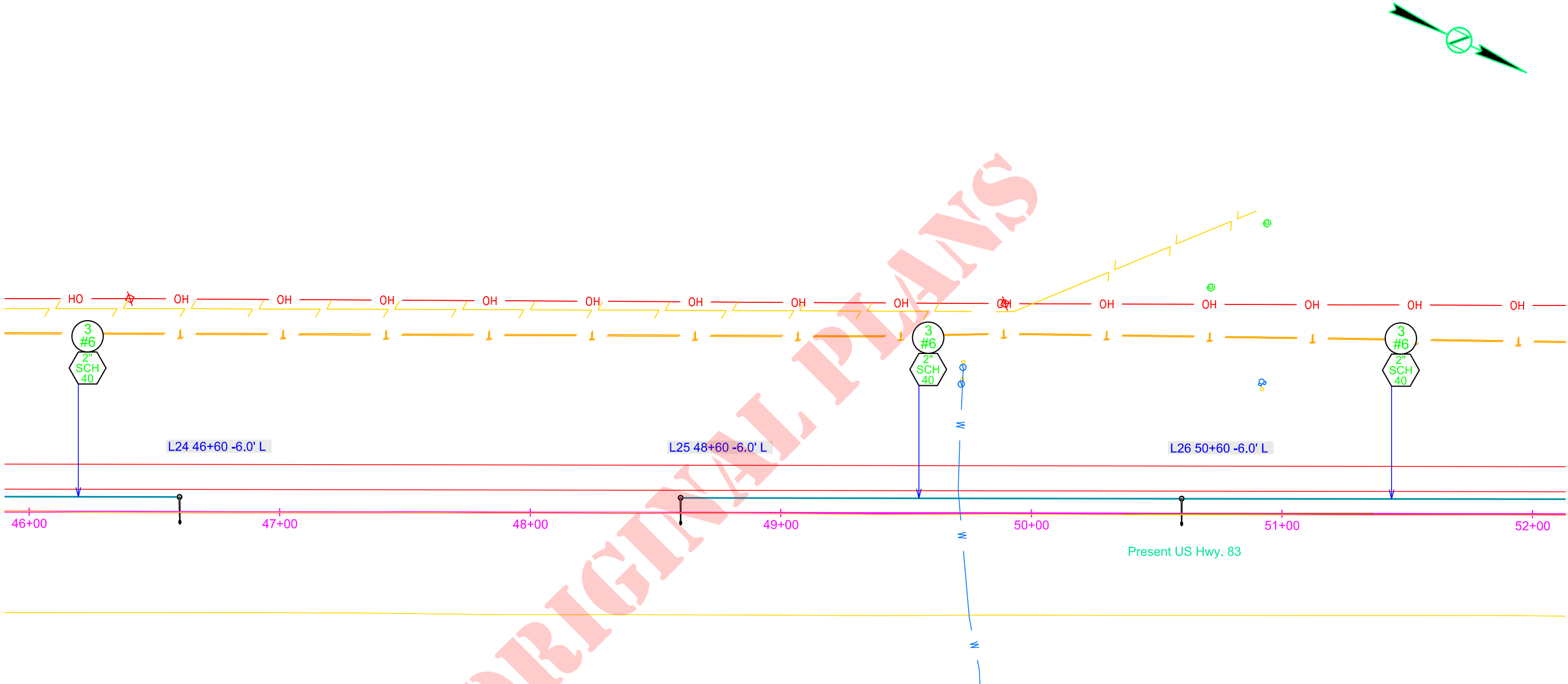
Plotting Date: 04/14/2021

Plot Scale - 1:40

Plotted From - TRPR17199


File - U:\trp\jml\0616\046c.dgn

ORIGINAL PLANS

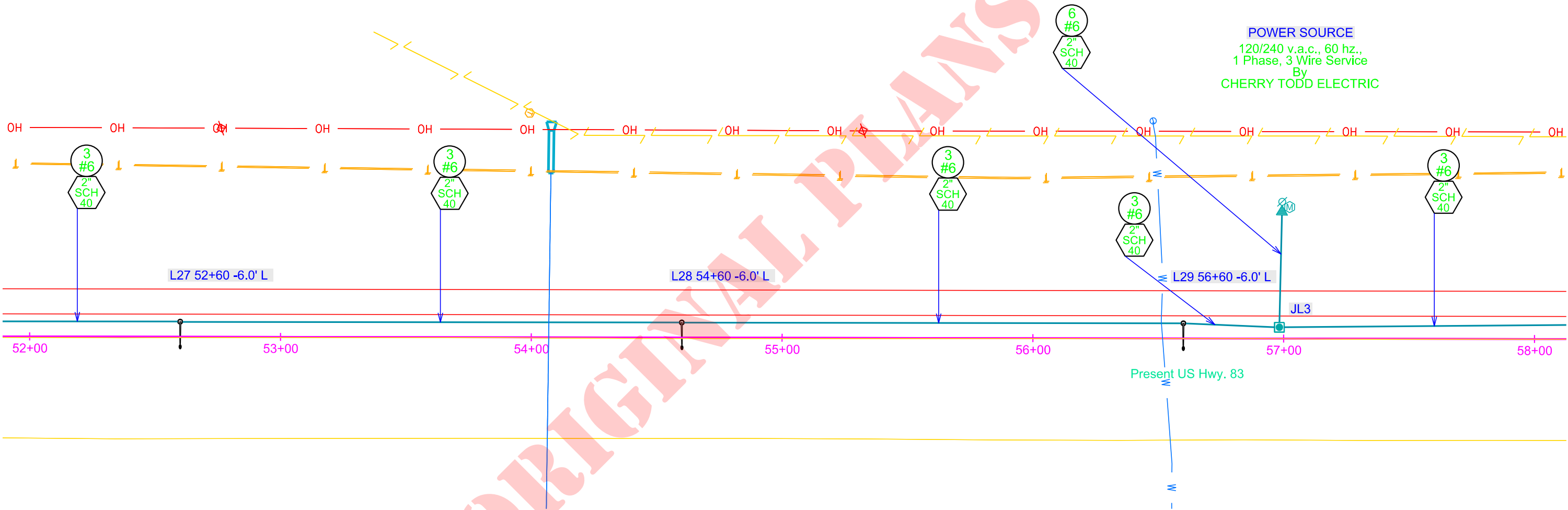
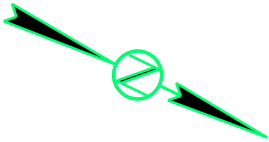


CONDUIT LAYOUT

US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L15	L31

Plotting Date: 04/14/2021



Plot Scale - 1:40

Plotted From - TRPR17199

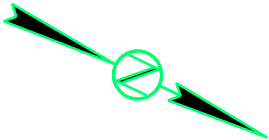
File - U:\trproj\mell0616\052c.dgn

CONDUIT LAYOUT

US HWY 83

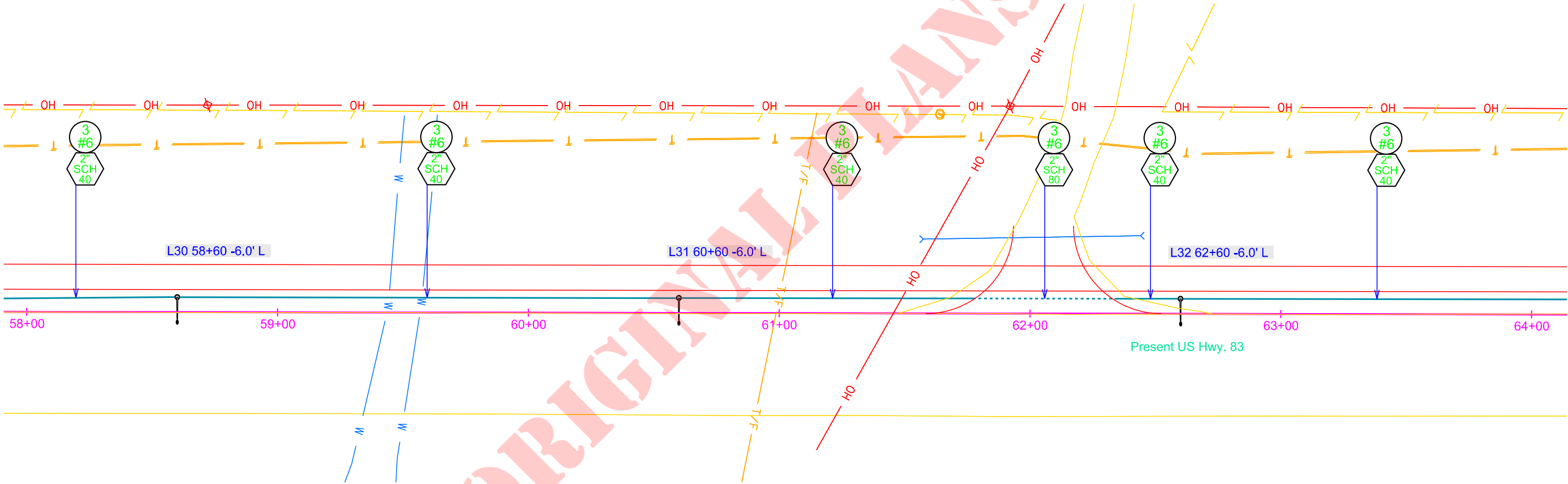
	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L16	L31

Plotting Date: 04/14/2021



Plot Scale - 1:40

Plotted From - TRPR17199



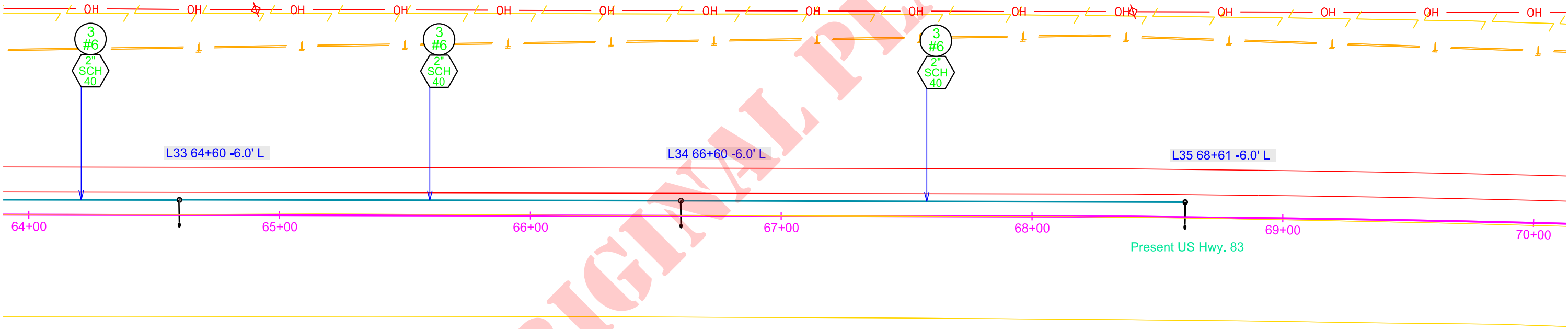
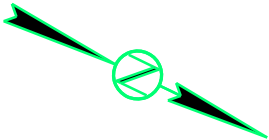
File - U:\trp\jml\0616\058c.dgn

CONDUIT LAYOUT

US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L17	L31

Plotting Date: 04/14/2021



Plot Scale - 1"=40'

Plotted From - TRPR17199

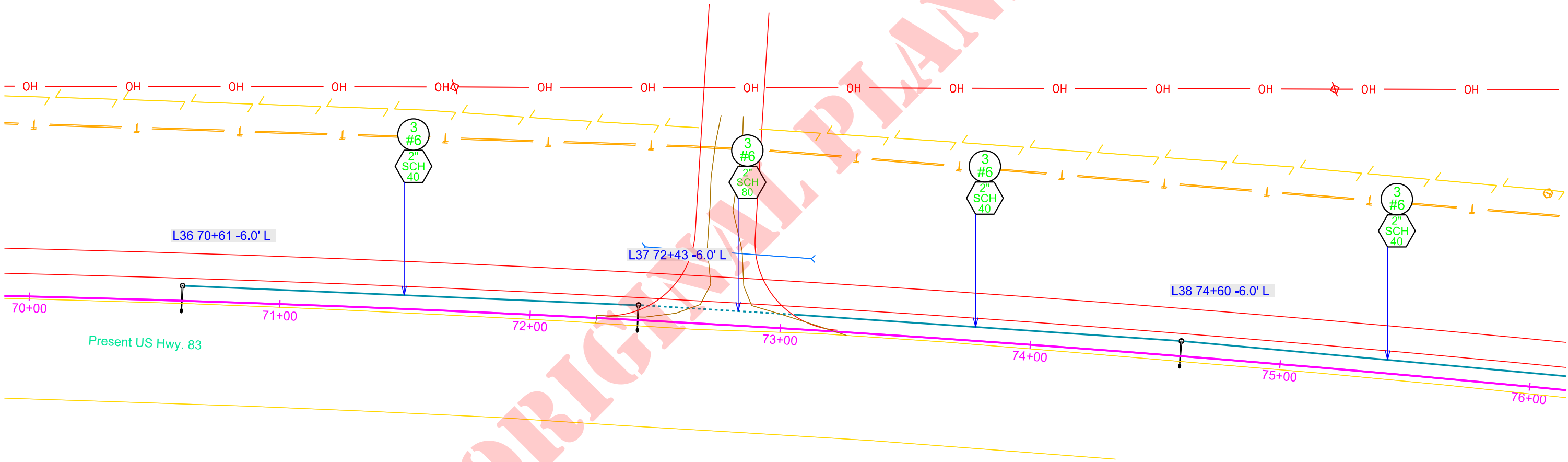
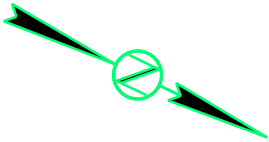
File - U:\tr\proj\mail\0616\064c.dgn

CONDUIT LAYOUT

US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L18	L31

Plotting Date: 04/14/2021

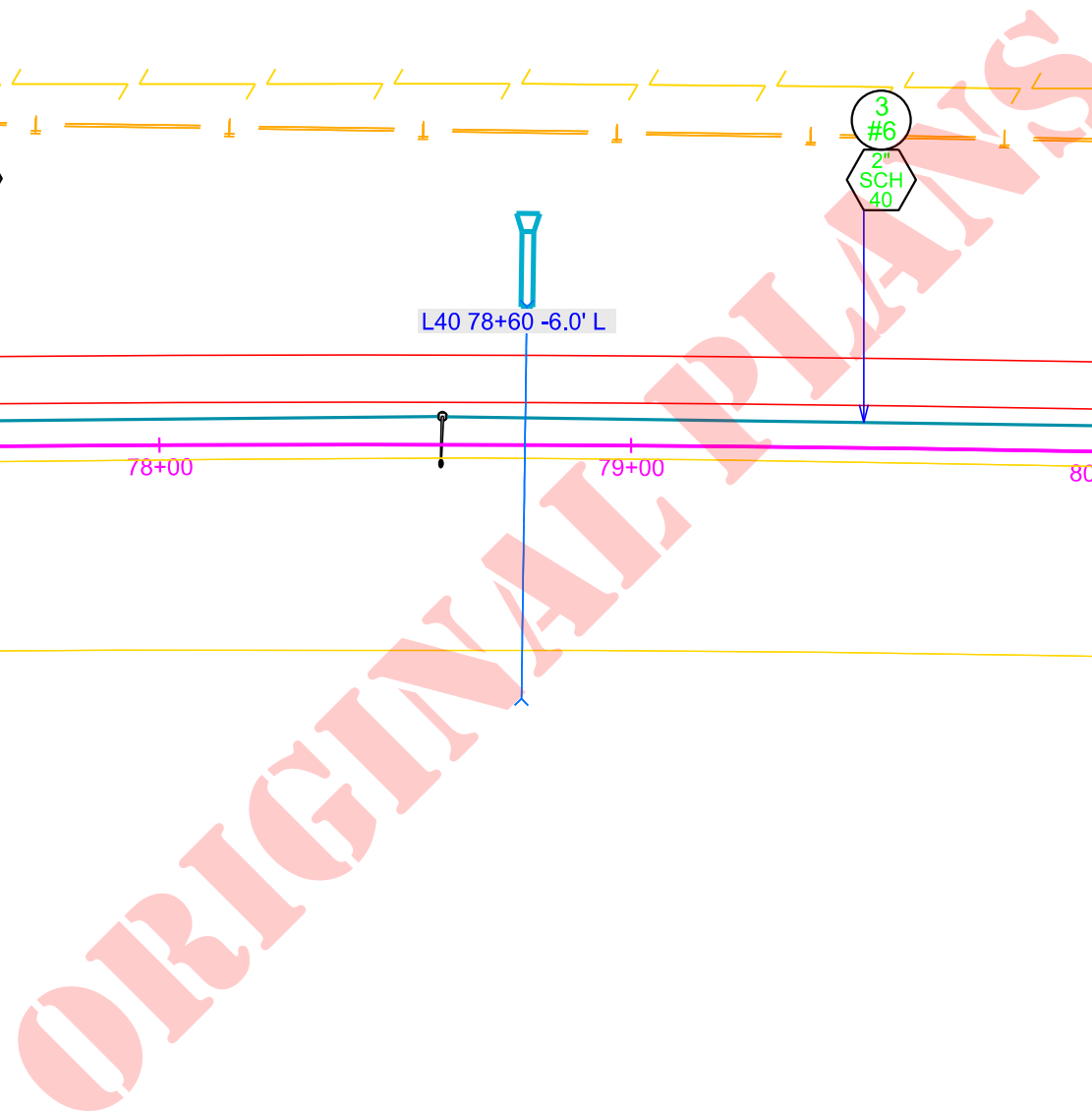


Plot Scale - 1:40

Plotted From - TRPR17199

File - U:\proj\mell06\070c.dgn

Plotted From - TRPR17199

Plotting Date: 04/14/2021

CONDUIT LAYOUT

US HWY 83

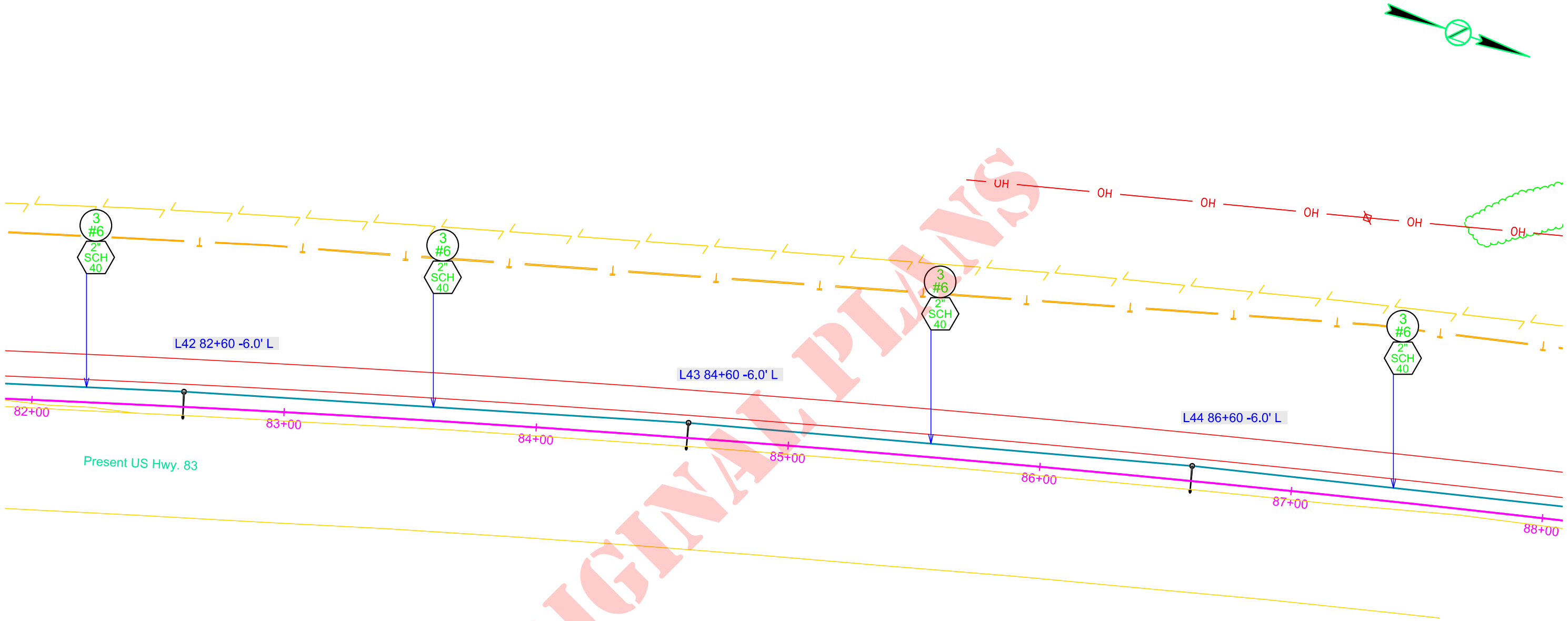
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-EM 0083(74)55	L20	L31

Plotting Date: 04/14/2021

Plot Scale - 1:40


Plotted From - TRPR17199

File - U:\trproj\mell0616\082c.dgn

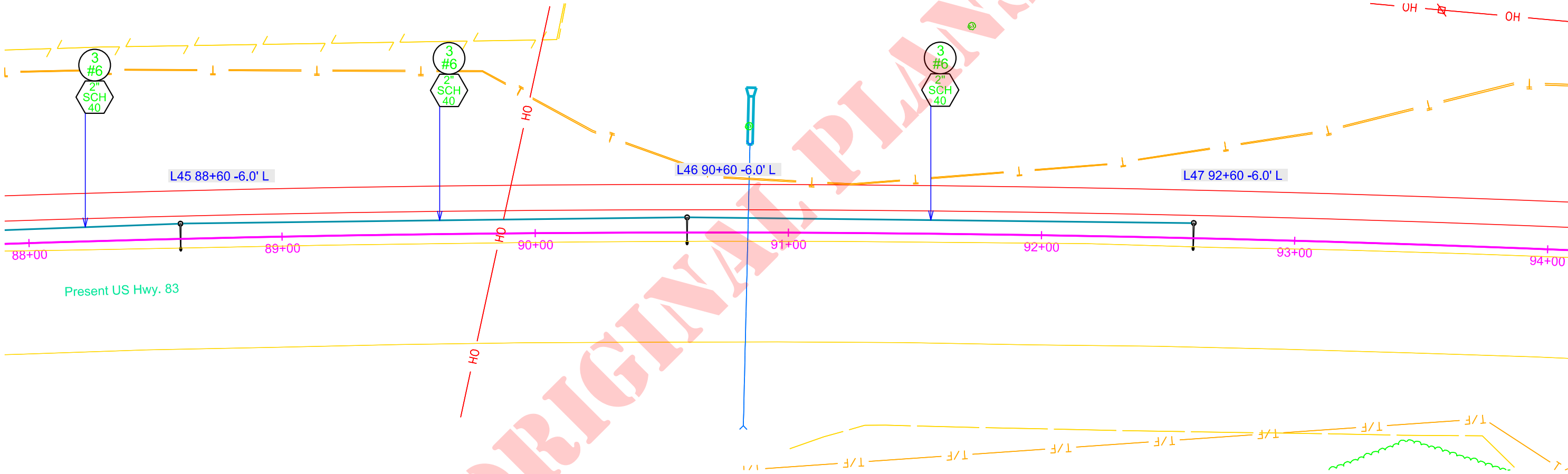
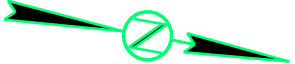


CONDUIT LAYOUT

US HWY 83

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L21	L31

Plotting Date: 04/14/2021




Plot Scale - 1:40

Plotted From - TRPR17199

File - U:\trproj\mell0616\0083c.dgn

CONDUIT LAYOUT

US HWY 83

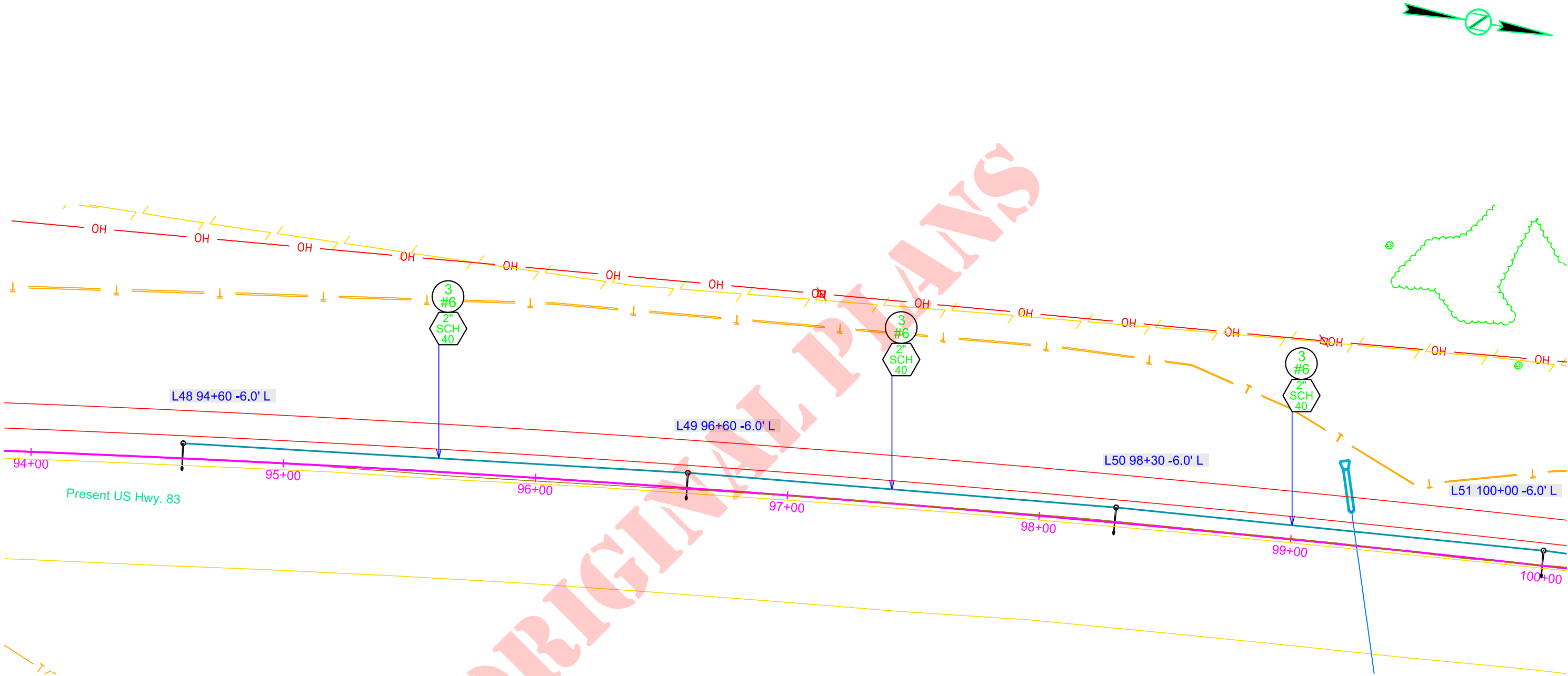
	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L22	L31

Plotting Date: 04/14/2021

Plot Scale - 1:40


Plotted From - TRPR17199

File - U:\trp\jml\0616\094c.dgn



CONDUIT LAYOUT

US HWY 83

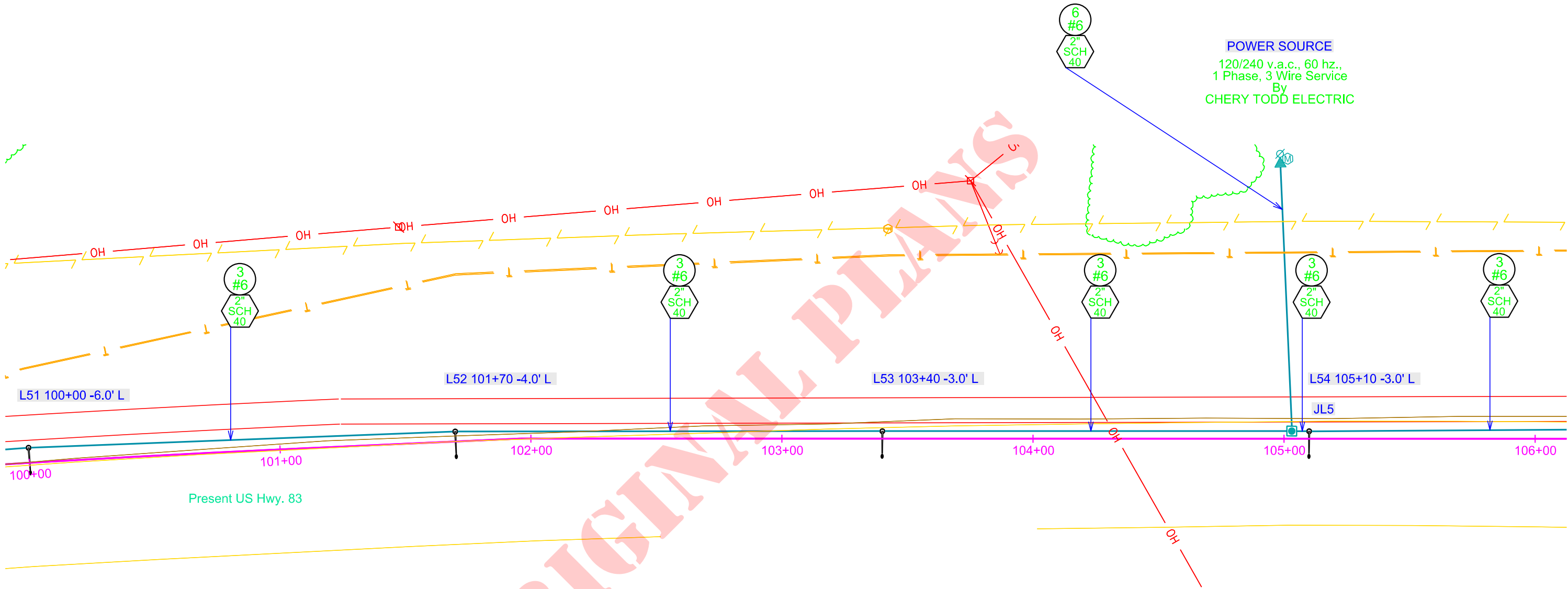
	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L23	L31

Plotting Date: 04/14/2021



Plot Scale - 1:40


Plotted From - TRPR17199



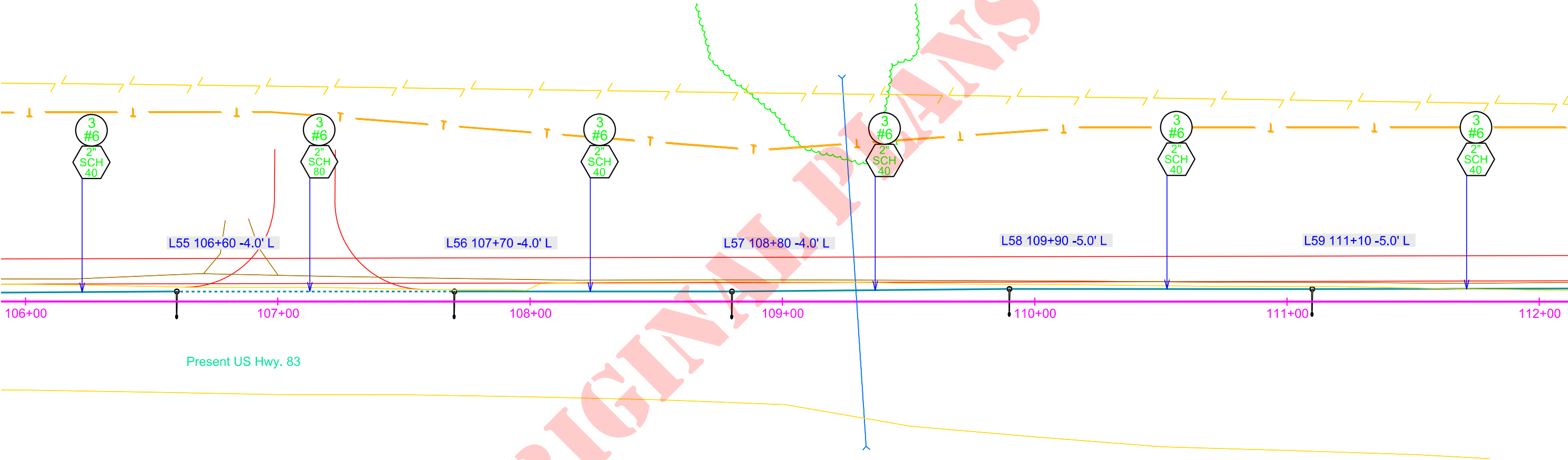
File - U:\trproj\mell0616\100c.dgn

CONDUIT LAYOUT

US HWY 83


	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L24	L31

Plotting Date: 04/14/2021



CONDUIT LAYOUT

US HWY 83

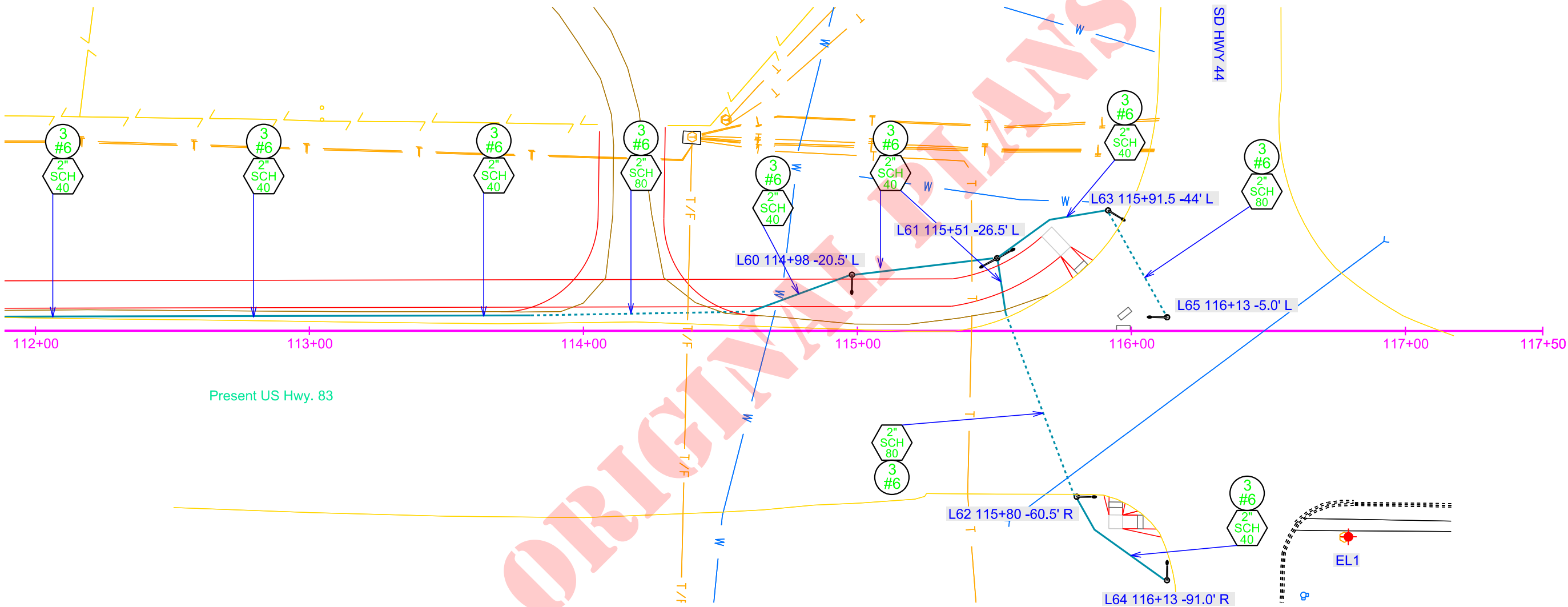
	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L25	L31

Plotting Date: 04/14/2021



Plot Scale - 1:40

Plotted From - TRPR17199



File - U:\proj\mal06\112c.dgn

WIRING DIAGRAM

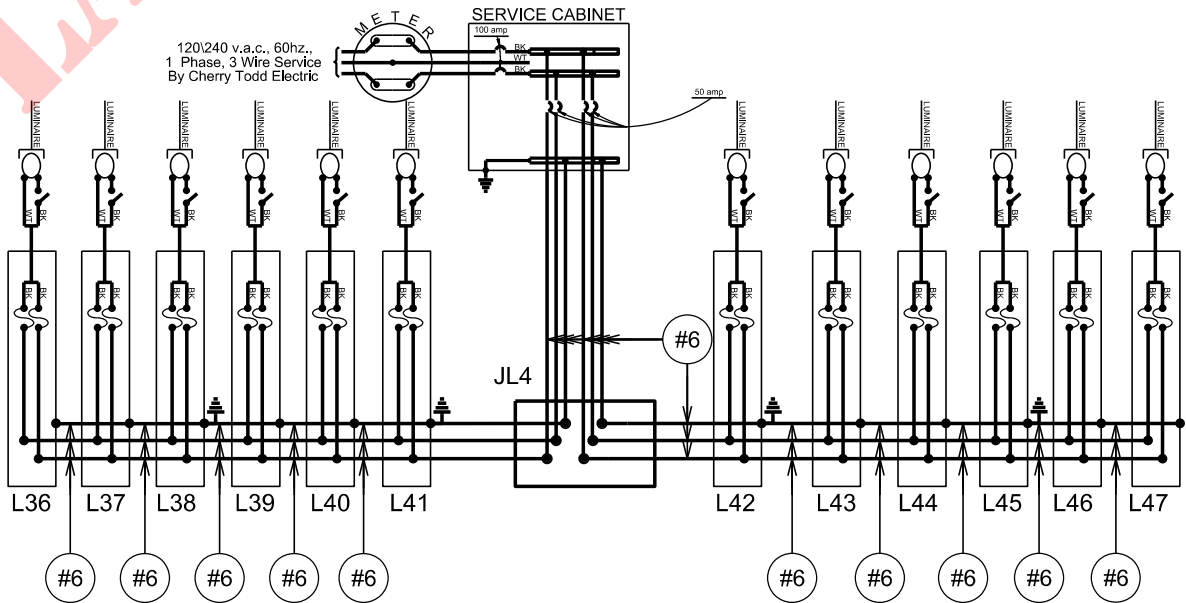
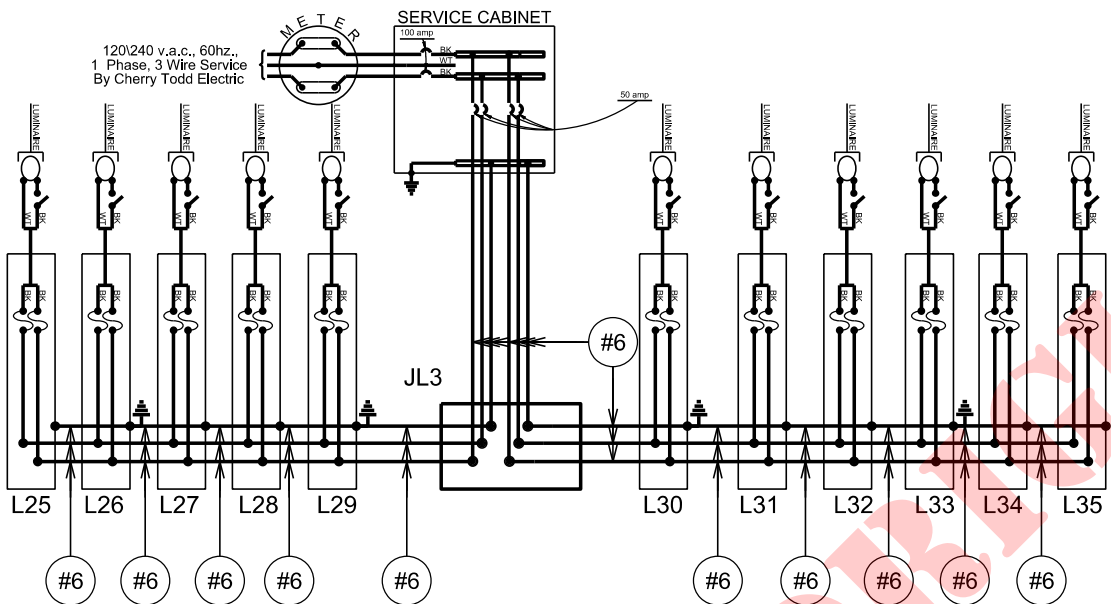
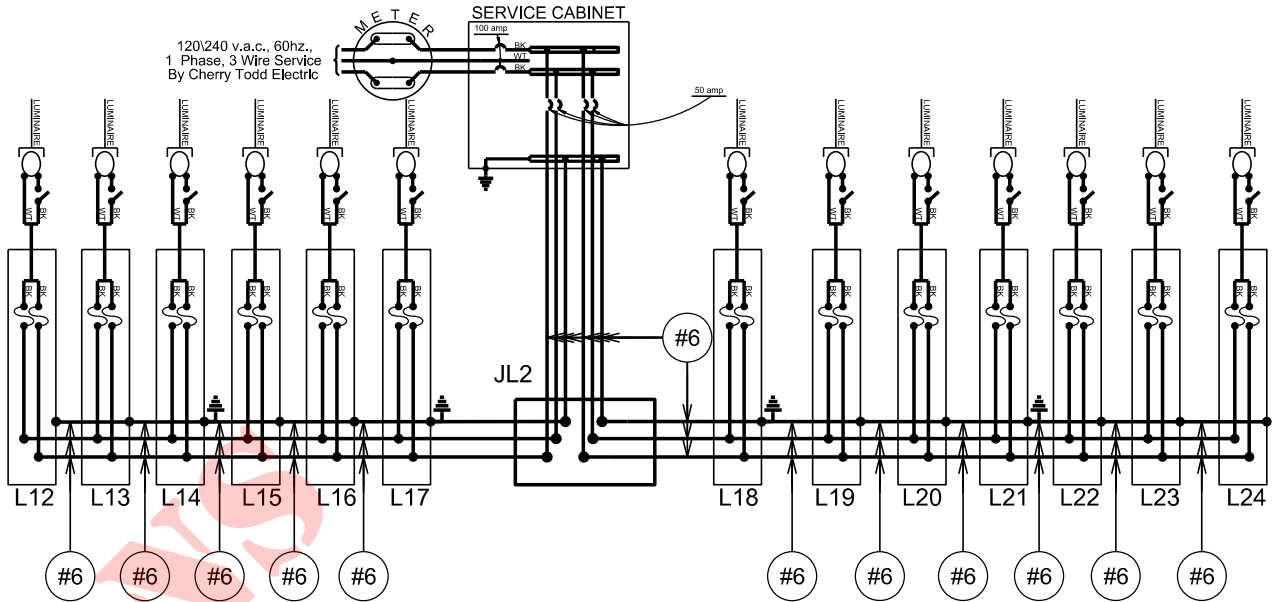
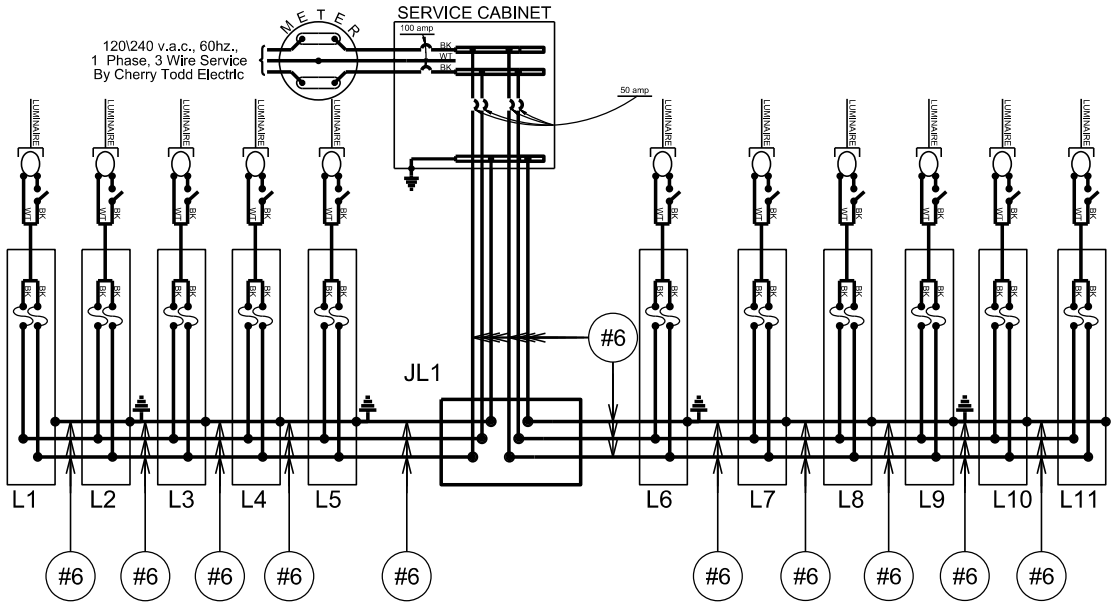
STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	NH-EM 0083(74)55	L26	L31



Plotting Date: 04/14/2021

Plot Scale - 1:40

Plotted From - TRPR17199

Plotted From -



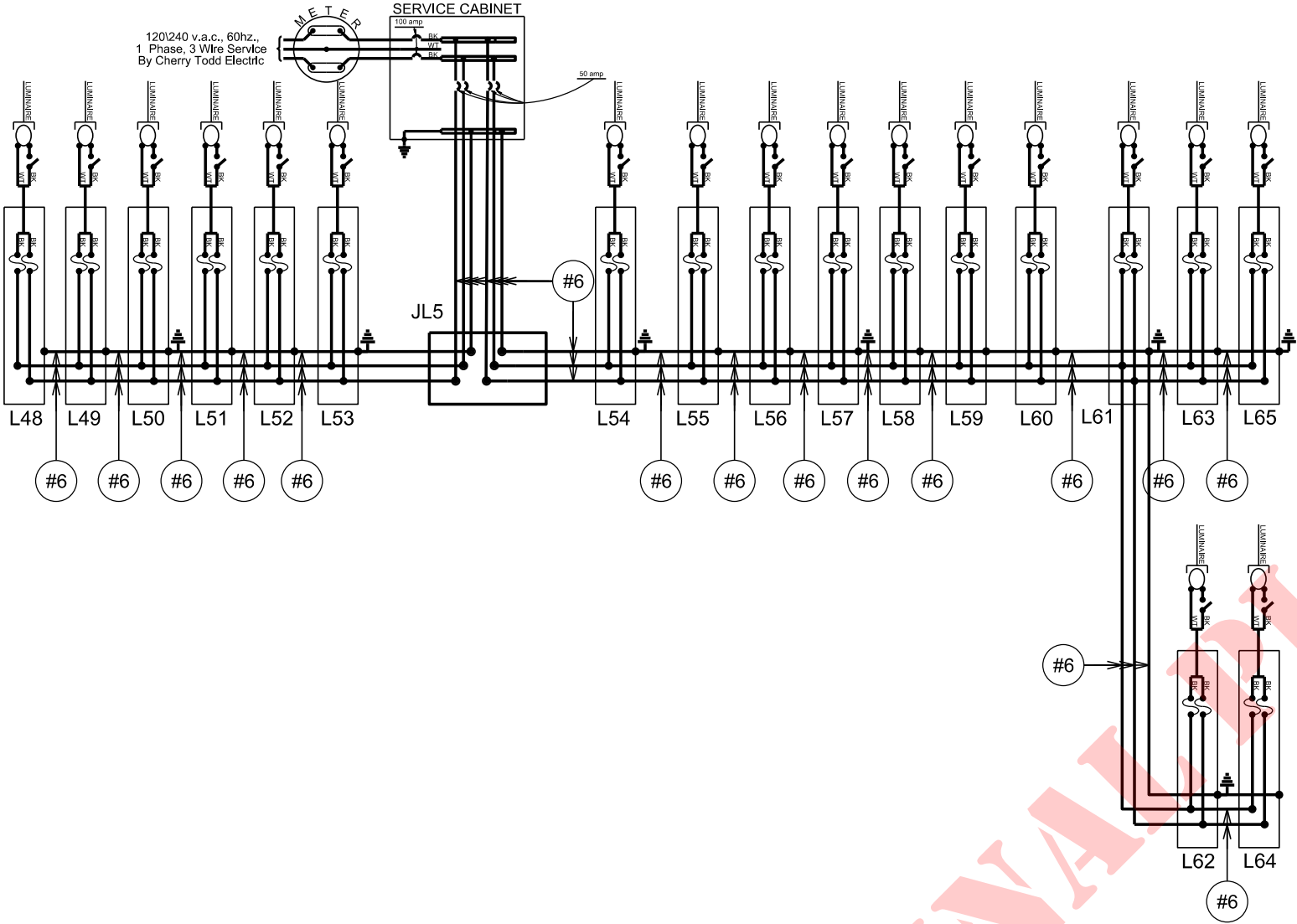
- LEGEND:
-  FUSE: 10 amp.
 -  LUMINAIRE: LED

NOTE:
All circuits will be bonded in accordance with the NATIONAL ELECTRICAL CODE.
Quantities for bonding conductors are not included in these plans.

WIRING DIAGRAM

	STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
		NH-EM 0083(74)55	L27	L31

Plotting Date: 04/14/2021



- LEGEND:
- FUSE: 10 amp.
 - LUMINAIRE: LED

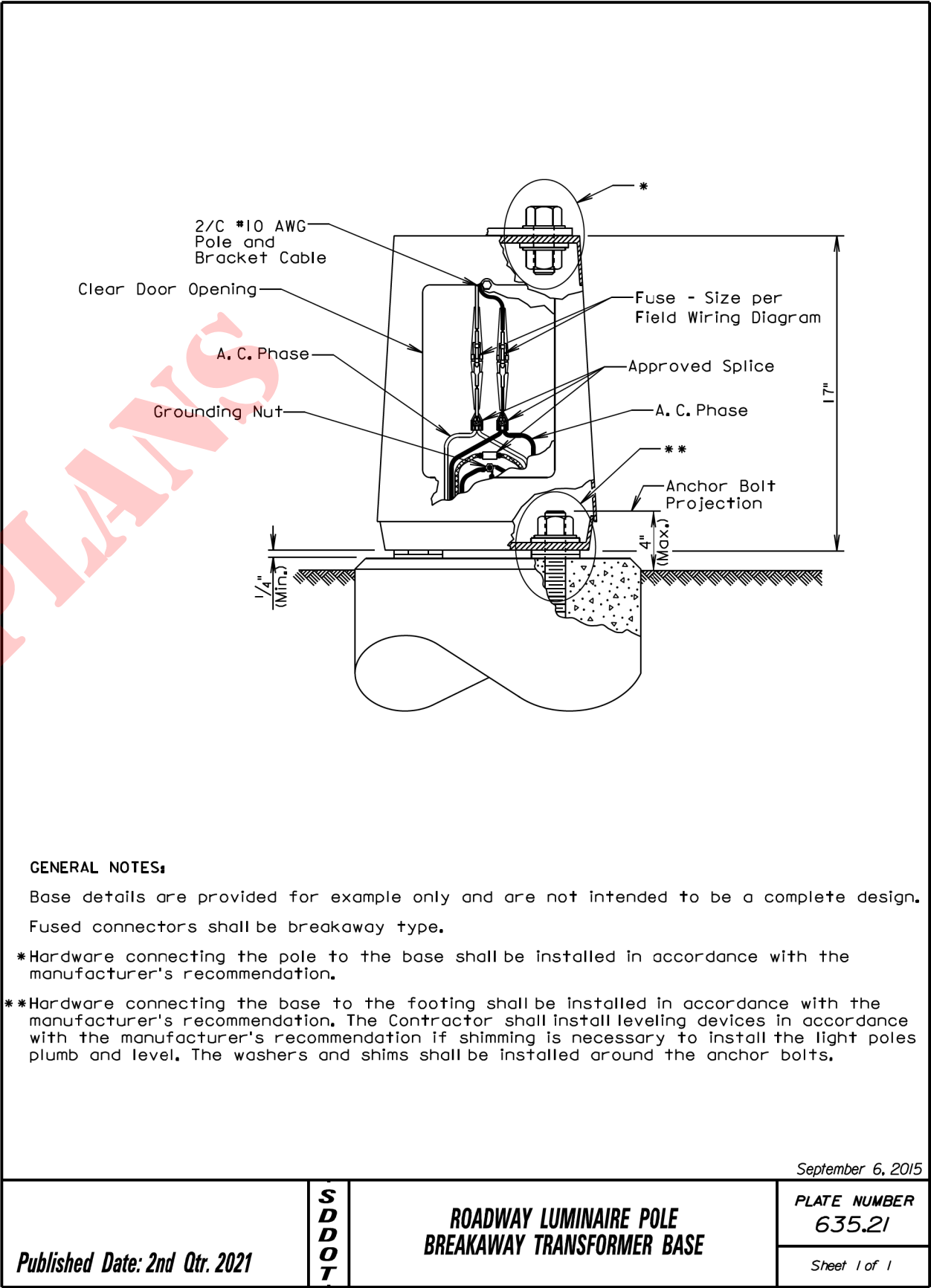
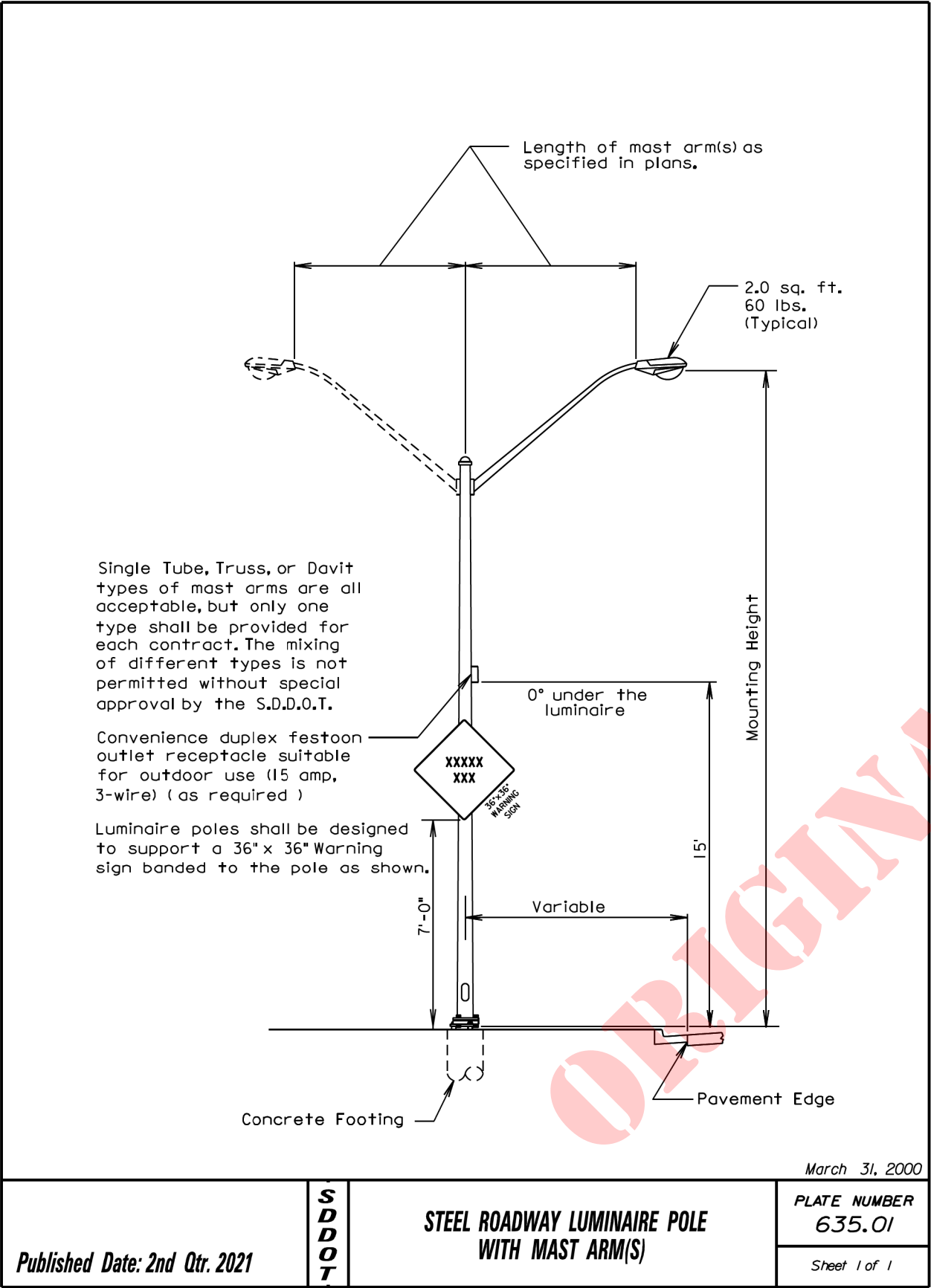
NOTE:
All circuits will be bonded in accordance
with the NATIONAL ELECTRICAL CODE.
Quantities for bonding conductors are not
included in these plans.

Plot Scale - 1:40

Plotted From - TRPR17199

Plot Scale - 1:200

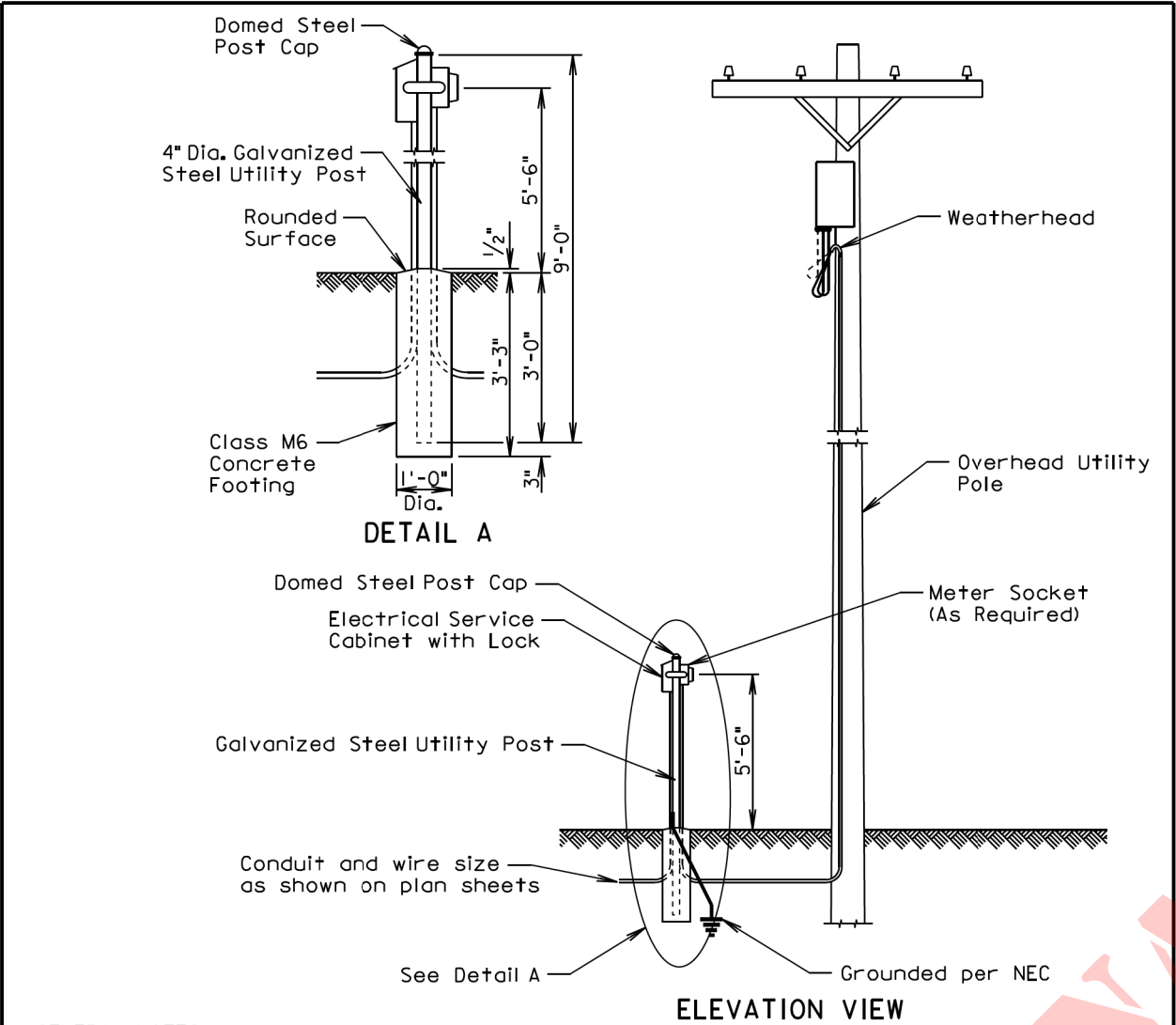
Plotted From - TRPR17199



File - ...\\nell06\\L6\\StdPlateSectionL.dgn

Plot Scale - 1:200

Plotted From - TRPR17199



GENERAL NOTES:

The service cabinet shall include an externally mounted 15A receptacle outlet. The receptacle shall be housed in a lockable NEMA 3R enclosure. The Contractor shall furnish a lock and keys to the Engineer as directed.

The concrete for the post footing shall be class M6 concrete.

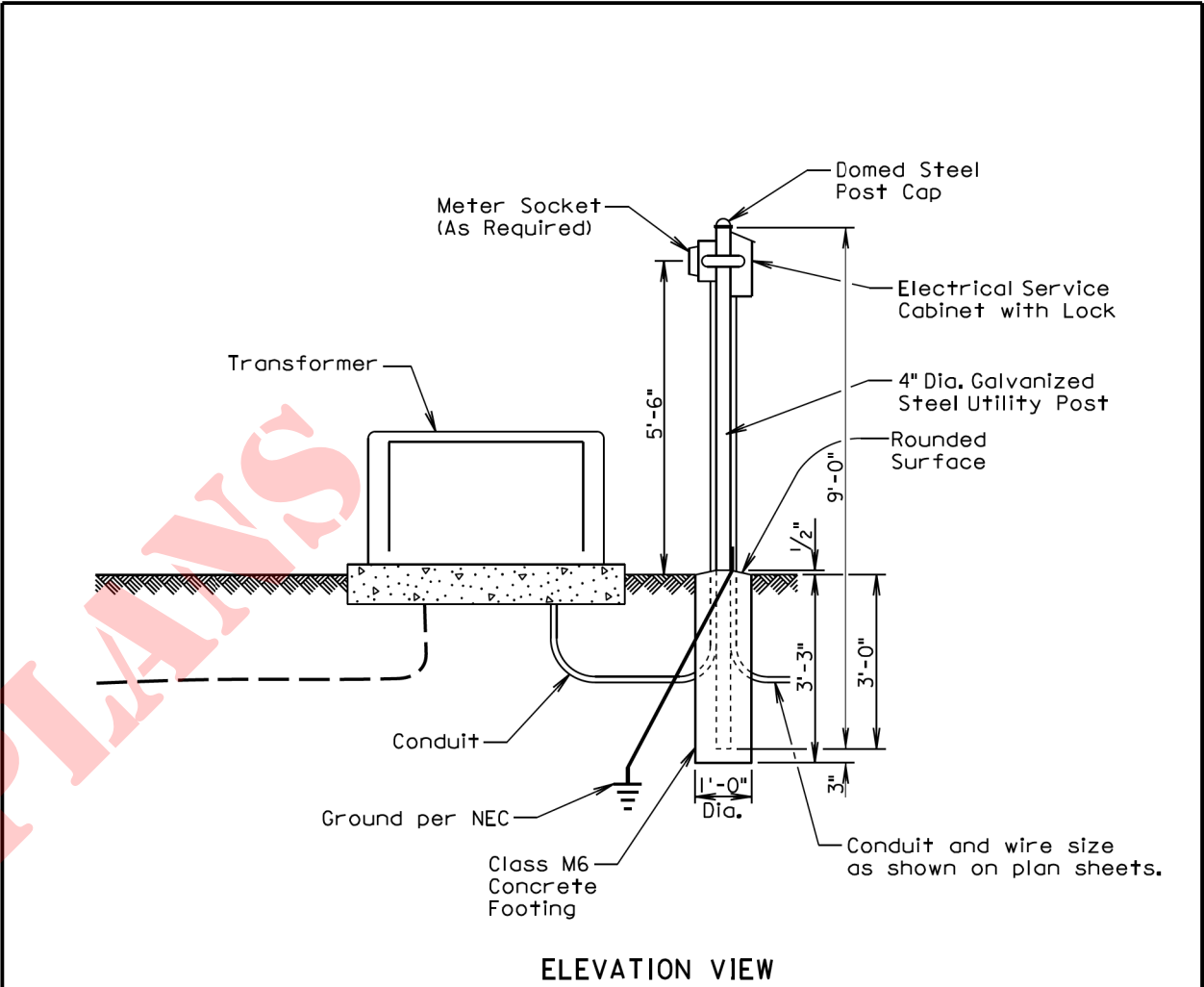
The 4" diameter galvanized steel utility post shall be 9' long and shall be in conformance with AASHTO Standard Specifications M181. The post shall be Type 1 and either Grade 1 or Grade 2. The domed steel post cap shall be in conformance with AASHTO Standard Specifications M181 and shall be Type 1.

The Contractor shall contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

All costs for furnishing and installing all materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, lockable enclosure with receptacle outlet, lock and keys, post, concrete footing, post cap, meter socket if required, conduit, and incidentals shall be incidental to the contract unit price per each for "Electrical Service Cabinet".

June 26, 2016

Published Date: 2nd Qtr. 2021	S D D O T	GALVANIZED STEEL UTILITY POST WITH OVERHEAD UTILITY POLE	PLATE NUMBER 635.35
			Sheet 1 of 1



GENERAL NOTES:

The service cabinet shall include an externally mounted 15A receptacle outlet. The receptacle shall be housed in a lockable NEMA 3R enclosure. The Contractor shall furnish a lock and keys to the Engineer as directed.

The concrete for the post footing shall be class M6 concrete.

The 4" diameter galvanized steel utility post shall be 9' long and shall be in conformance with AASHTO Standard Specifications M181. The post shall be Type 1 and either Grade 1 or Grade 2. The domed steel post cap shall be in conformance with AASHTO Standard Specifications M181 and shall be Type 1.

The Contractor shall contact and coordinate his/her work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary.

All costs for furnishing and installing all materials from the electrical service cabinet to the transformer including labor, equipment, hookup fees, all items within the cabinet, lockable enclosure with receptacle outlet, lock and keys, post, concrete footing, post cap, meter socket if required, conduit, and incidentals shall be incidental to the contract unit price per each for "Electrical Service Cabinet".

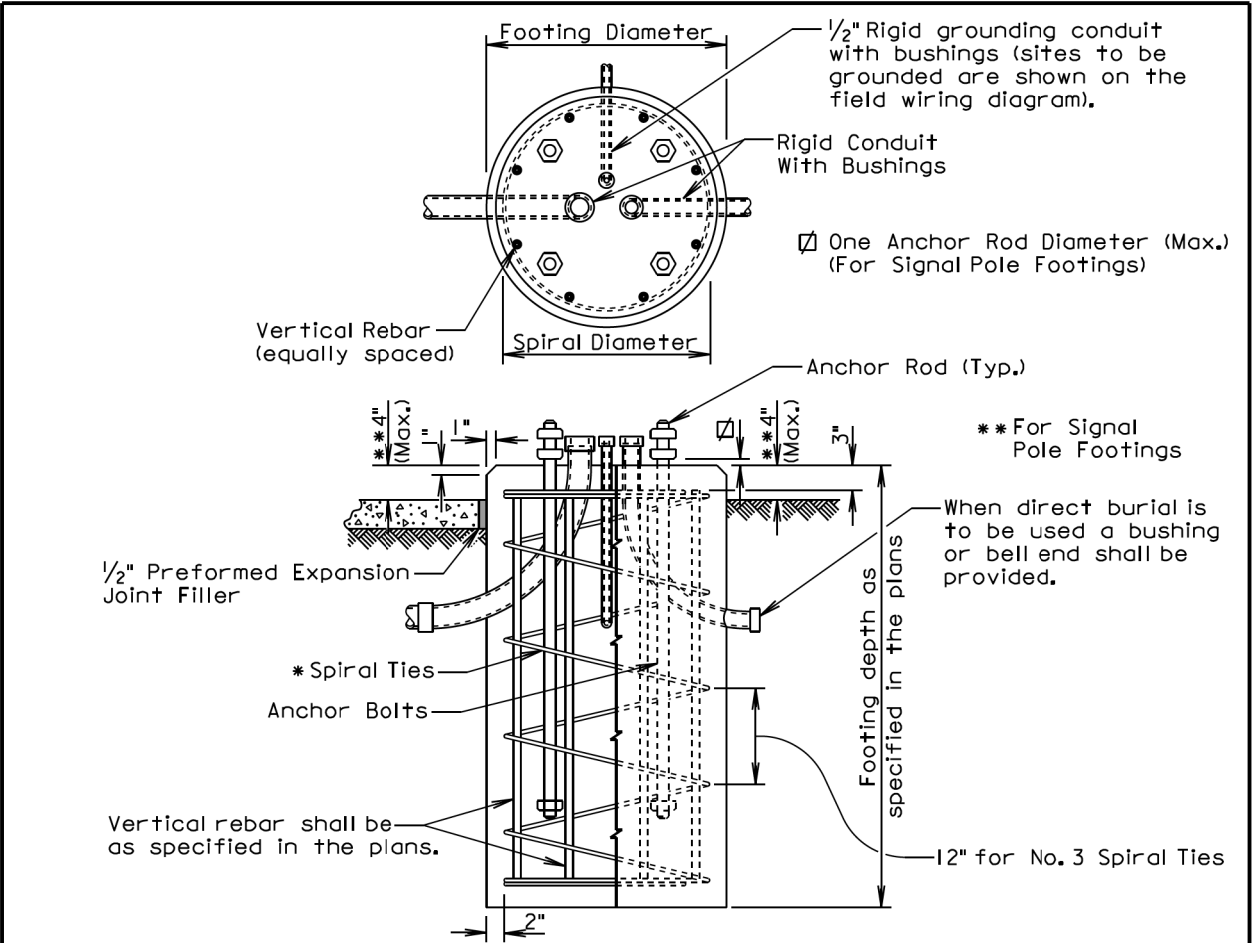
June 26, 2016

Published Date: 2nd Qtr. 2021	S D D O T	SERVICE FROM PAD MOUNTED TRANSFORMER WITH METER ON A GALVANIZED STEEL UTILITY POST	PLATE NUMBER 635.41
			Sheet 1 of 1

File - ...\\net006\\L6\\StdPlateSection\\L.dgn

Plot Scale - 1:200

Plotted From - TRPR17199

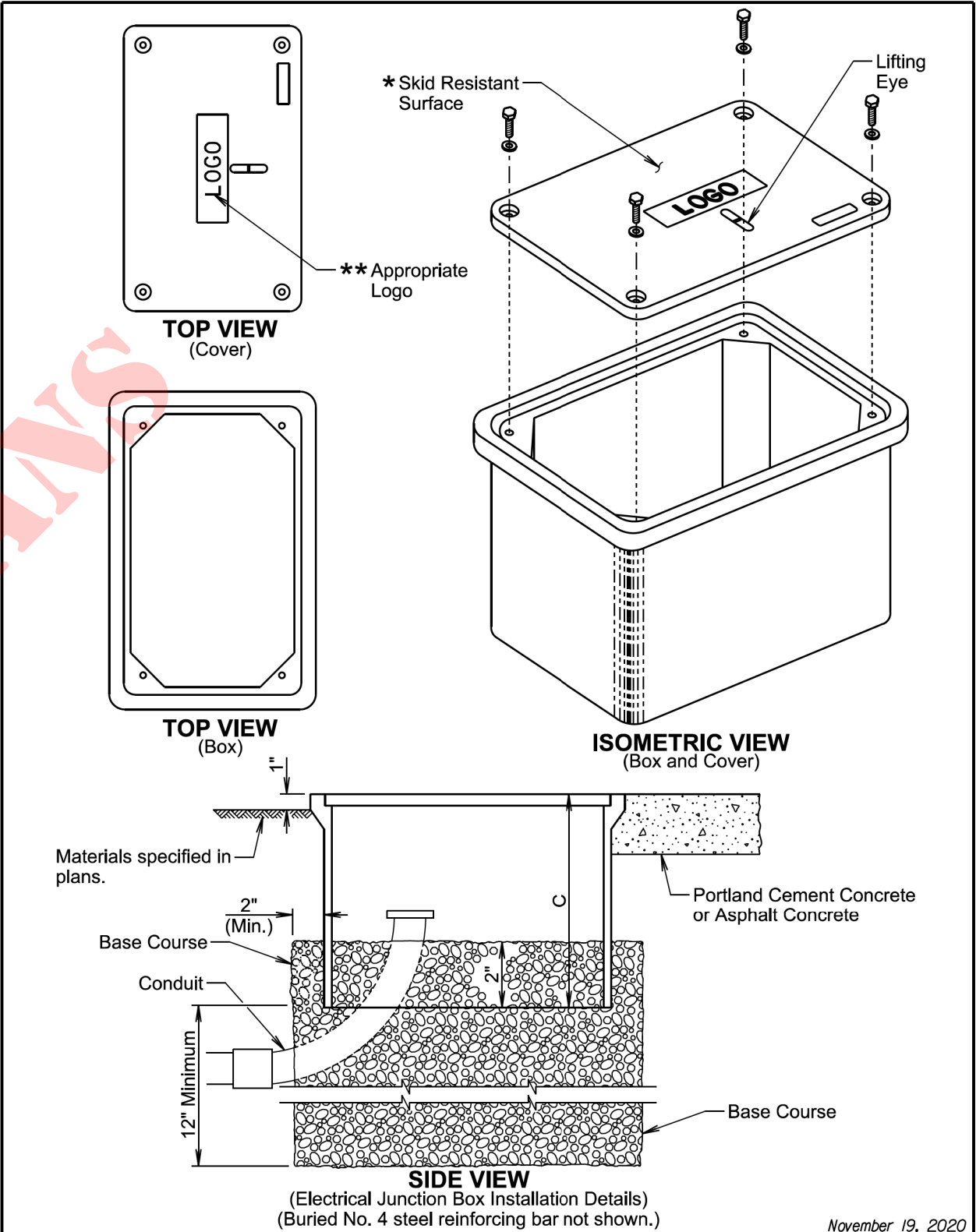


GENERAL NOTES:

- * Circular ties may be used in lieu of the spiral ties. The No. 3 ties shall be spaced 12 inches apart except for the top two which shall be spaced 6 inches apart. The ties shall be lapped 18 inches and the laps shall be staggered around the cage.
- Spiral ties shall have 1-1/2 extra turns at each end.
- See Section 985 of the Specifications for footing materials.
- Conduits and bushings may project 2 1/2 inches to 6 inches above footing for fixed base poles but shall not project above the slip plane or fracture plane for breakaway poles.
- Conduits shall be sealed water-tight during all phases of construction until poles are in place.
- The anchor rods shall fit inside the reinforcing steel cage. If the anchor rods designed by the Pole Manufacturer do not fit, contact the Office of Bridge Design for footing redesign. No additional payment will be made for the redesigned footing.
- Costs of conduit and conduit bushings shown on footing detail shall be incidental to the footing bid item(s).
- The pole shall not be installed until the concrete has attained design strength (4000 psi).
- The contour of the area surrounding the breakaway pole shall be flat, though not necessarily level for a distance of 5 feet in all directions. The Contractor may be required to provide finish grading at some breakaway pole locations.

June 26, 2015

Published Date: 2nd Qtr. 2021	S D D O T	POLE FOOTING	PLATE NUMBER 635.55
			Sheet 1 of 1



November 19, 2020

Published Date: 2nd Qtr. 2021	S D D O T	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 1 of 2

File - ...\\nell0616\\StdPlateSectionL.dgn

Plotting Date: 04/14/2021

ELECTRICAL JUNCTION BOX			
TYPE	DESCRIPTION	APPROXIMATE COVER SIZE	MINIMUM DEPTH (C)
1	Open Bottom with Gasket	11"x18"	18"
2	Open Bottom with Gasket	13"x24"	18"
3	Open Bottom with Gasket	17"x30"	18"
3A	Open Bottom with Gasket	24"x36"***	24"
4	Open Bottom with Gasket	30"x48"***	24"

GENERAL NOTES:

The cover will be gasketed with a minimum of two stainless steel bolts and washers.

The cover will have a lifting eye.

* The surface of the cover will have a minimum wet and dry coefficient of friction value of 0.5 as determined by ASTM F609.

** The cover of the junction box will have the appropriate logo in one inch size letters and will be recessed. When the junction box contains cables or wires for a traffic signal then the logo will be "Signal". When the junction box contains lighting conductors then the logo will be "Lighting".

*** Two piece covers will be used for Type 3A and Type 4 junction boxes.

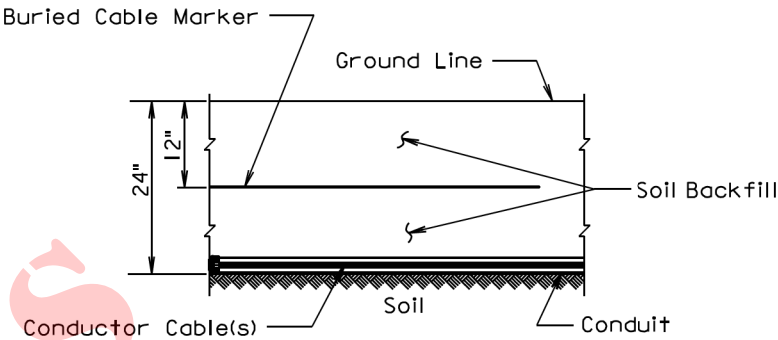
The electrical junction boxes will comply with the American National Standards Institute (ANSI)/Society of Cable Telecommunications Engineers (SCTE) 77 2007 Specification for Underground Enclosure Integrity. The loading requirement for all electrical junction boxes and covers will be Tier 22 of ANSI/SCTE 77 2007.

The electrical junction boxes will be UL listed.

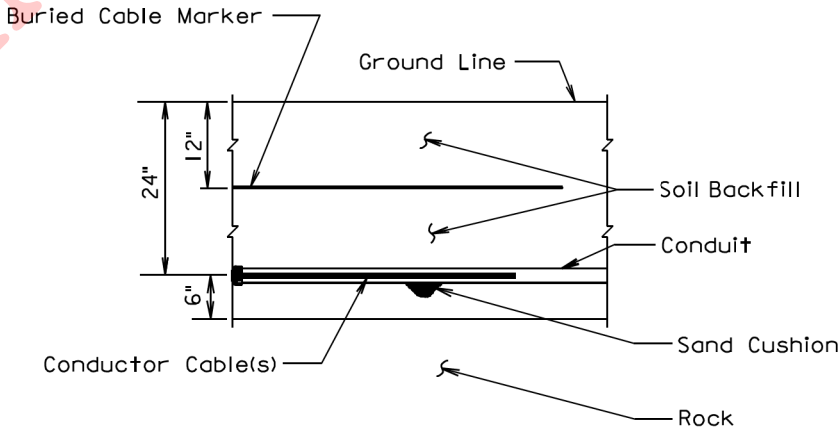
For junction boxes located outside of pavement, a No. 4 steel reinforcing bar with a minimum length of 18" will be buried adjacent to the long side of the junction box. All costs associated with furnishing and placing the steel reinforcing bar will be incidental to the contract unit price per each for "Type _ Electrical Junction Box".

November 19, 2020

Published Date: 2nd Qtr. 2021	S D D O T	ELECTRICAL JUNCTION BOXES TYPE 1 THROUGH TYPE 4	PLATE NUMBER 635.65
			Sheet 2 of 2



SECTION VIEW



SECTION VIEW

GENERAL NOTE:

The Buried Cable Marker shall be plastic, approximately 6" wide, and shall be capable of sustaining a minimum of a 350% tolerance of elongation without tearing. The Buried Cable Marker shall have a life expectancy approximately equal to that of the conductor(s) beneath it. A phrase indicating the presence of a buried electric circuit below shall be printed in a contrasting color on the cable marker. The Buried Cable Marker shall be subject to approval by the Engineer. All costs associated with furnishing and installing the Buried Cable Marker shall be incidental to the contract unit price per Foot for the bid item used for the electrical conductor.

March 31, 2000

Published Date: 2nd Qtr. 2021	S D D O T	CONDUIT INSTALLATION	PLATE NUMBER 635.76
			Sheet 1 of 1



Division of Planning & Engineering

Office of Road Design

700 East Broadway Avenue

Pierre, South Dakota 57501

O: 605.773.3433 | F: 605.773.2614

dot.sd.gov

8/23/2023

Jim Rentz
Builders Electric

RE: NH-EM 008(74)55, Mellette County, PCN 06L6
Fm Pony Street in Horse Creek N to White River
Shared Use Path Construction, Lighting

Submittals for Approval:

635E0050 Breakaway Base Luminaire Pole with Arm, 50' Mt Height

635E00115 Breakaway Base Luminaire Pole with Twin Arms, 15' Mt Height

635E3340 Roadway Luminaire, LED with Photoelectric Cell

The shop drawings for the items listed above have been received and reviewed by this office and are approved for use on the above project with the no exceptions.

While a reasonably accurate review has been made of all dimensions and of compliance with contract plans and specifications, any corrections or comments or omissions of corrections and comments on the shop plans do not relieve the Contractor of his responsibility of complying with the requirements of said contract plans and specifications including changes which have received prior approval by the Engineer.

Sincerely,

Ryley Rapp
Traffic Design Engineer

Attachment

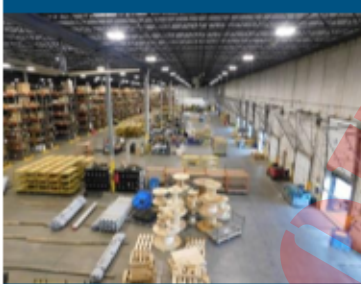
cc: Doug Sherman, Area Engineer
Brad Norrid, Area Engineering Supervisor
Ben Brown & Robert Schilling, Materials & Surfacing
Stacy Bartlett, Road Design Engineering Supervisor

Project Name: WHITE RIVER/ INTERSECTION
Company: BUILDERS ELECTRIC
Prepared for: TALIS
Notes: 382843449



Ask about our Service Solutions that can help save you time and money

- Stage and Storage
- Material, Conduit, and Fixture Carts
- Graybar Managed Inventory (VMI)
- Kitting
- On-Site Customer Prefabrication
- After-Hours Pickup
- Mobile Trailers
- Strut Cutting
- Wire Management



Jenni De Witt

Project Specialist

Jennifer.Dewitt@Graybar.com

SOUTH DAKOTA LOCATIONS:

Sioux Falls – 2810 N 1st Ave / 605-731-7900

Brookings – 3100 6th St / 605-692-4477



We are enclosing herewith 1 copies of cuts/drawings. Please complete section marked "To Be Completed By Customer" and return this form with approved cuts to the Sender noted below.

PLEASE NOTE THE APPROXIMATE LEAD TIMES INDICATED ABOVE. WE ASK THAT YOU ALLOW AT LEAST THAT AMOUNT OF TIME AFTER THE RETURN OF YOUR APPROVED CUTS. THIS SUBMITTAL REPRESENTS OUR INTERPRETATION OF THE PROJECTED PLANS AND SPECIFICATIONS AS THEY RELATE TO THE EQUIPMENT COVERED.

VOLTAGES ARE SHOWN FOR FLUORESCENT AND H.I.D. EQUIPMENT. IF VOLTAGE REQUIREMENTS ARE OTHER THAN INDICATED, THE SUBMITTAL SHOULD BE APPROVED AS NOTED, AND THE CORRECT VOLTAGE SHOWN. IF NO VOLTAGE IS SHOWN, IT IS OUR INTENT TO FURNISH 120 VOLT.

PLASTER FRAMES AND OTHER AUXILIARY EQUIPMENT SUCH AS STEMS, CHAIN HANGERS, SPECIAL FUSING, ETC., ARE NOT INCLUDED EXCEPT WHEN SPECIFICALLY INDICATED, OR WHEN FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT AS DESCRIBED BY CATALOG NUMBER.

SPECIAL FINISHES SHOULD BE NOTED, IF NOT SPECIFICALLY INDICATED. EVERY EFFORT HAS BEEN MADE TO SUBMIT THE CORRECT FIXTURE FOR THE CEILING REQUIRED. FINAL DETERMINATION IS THE RESPONSIBILITY OF THE CONTRACTOR.

WE ASSUME THE RESPONSIBILITY FOR FURNISHING MATERIAL ONLY AS SUBMITTED. ANY DEVIATION MUST BE NOTED ON THE COPIES RETURNED.

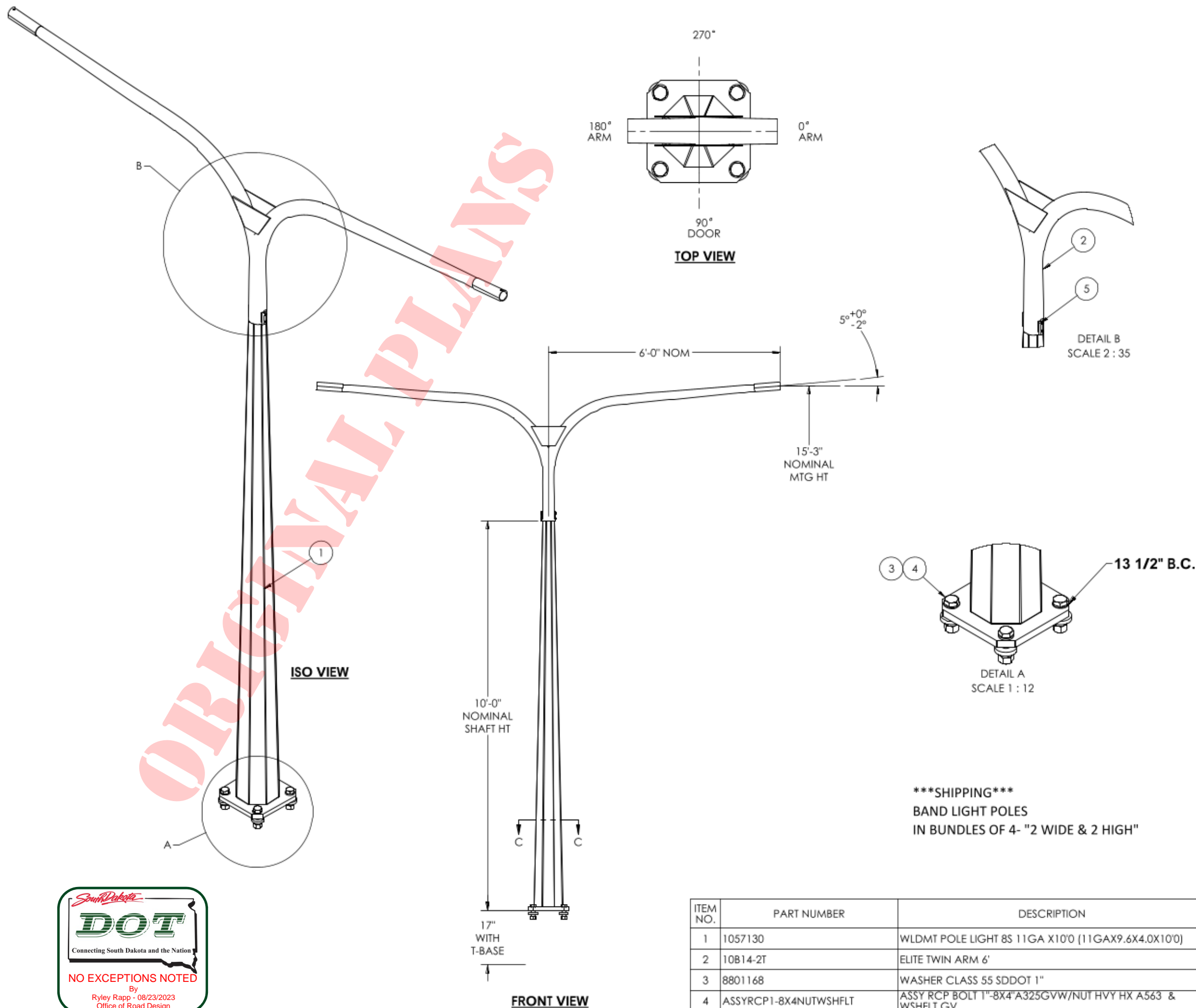
Sender: Jenni DeWitt – Jennifer.DeWitt@Graybar.com
Address: % Graybar Electric Company, Inc.
 2810 North First Avenue
 Sioux Falls, SD 57104



South Dakota
DOT
Connecting South Dakota and the Nation

NO EXCEPTIONS NOTED

By
Ryley Rapp - 08/23/2023
Office of Road Design



ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	1057130	WLDMT POLE LIGHT 8S 11GA X10'0 (11GAX9.6X4.0X10'0)	1		X
2	10B14-2T	ELITE TWIN ARM 6'	1		X
3	8801168	WASHER CLASS 55 SDDOT 1"	4		
4	ASSYRCP1-8X4NUTWSHFLT	ASSY RCP BOLT 1"-8X4"A325GVW/NUT HVY HX A563 & WSHFLT.GV	4		
5	SCRWJ1/2-13X1/2SS	SCRW STHXSKCPPT 1-2-13NC X 1-2 SS	4		

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

NOTE:

- DO NOT GROUT BETWEEN BASE PLATE & FOUNDATION. AIR MUST BE ALLOWED TO FLOW THRU TO PREVENT MOISTURE INSIDE POLE
- MATERIAL, FINISH & WORKMANSHIP PER SD/DOT

MATERIAL SPECIFICATIONS

POST: ASTM A572 GR 50
 BASE PLATE: ASTM A709 GR 36
 MAST ARM: N/A
 MOUNTING PLATE: N/A
 LUMINAIRE ARM: N/A
 HARDWARE FINISH: ASTM A153
 ANCHOR BOLTS: SIZE: 1"

DESIGN CRITERIA

AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.

WINDS: MPH
 FATIGUE CAT: N/A
 NATURAL WIND GUST: N/A
 VORTEX SHED: N/A
 GALLOPING: N/A
 TRUCK GUST: N/A

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.

WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNESS MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
 < 6MM (0.25 IN) MT
 ≥ 6MM (0.25 IN) UT
 A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
 FINISH COAT:
 COLOR:
 FEDERAL OR RAL SPEC.:
 WEIGHT W/GALV.: 195.16
 WEIGHT W/GALV. & PAINT:
 WEIGHT W/PAINT:
 SURFACE AREA: 9118.4
 GAL. OF PAINT:

MILLERBERND 622 6TH ST. SO.
 WINSTED, MN 55395

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG

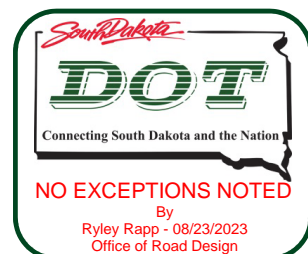
SALES ORDER NO.:	QTY:	STATE:	SHEET
207911	1	SD	1 OF 1

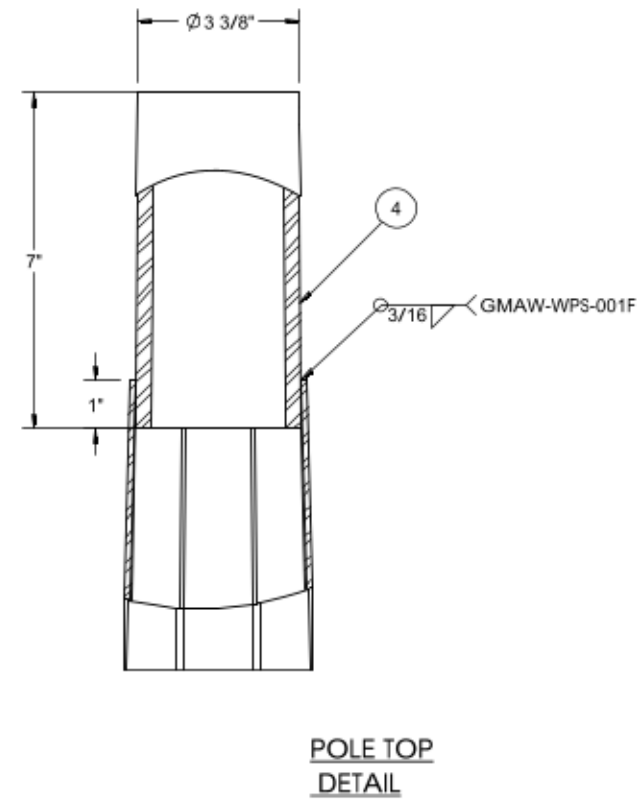
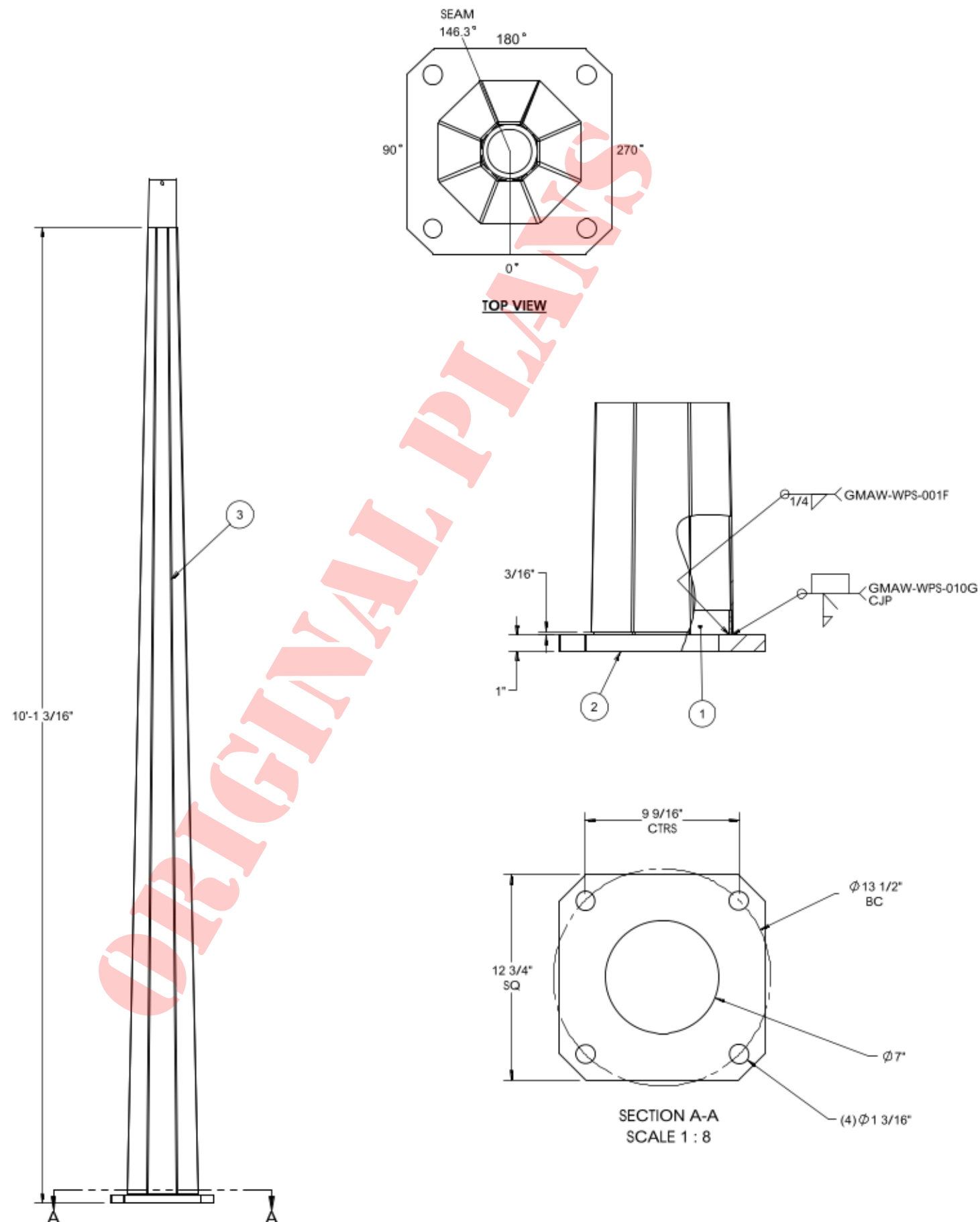
DESCRIPTION:
 SHIP POLE LIGHT 8S 11GAX10'0/15'3
 W/TWIN 6'0 ELITE ARM (10B SERIES)

EST. WEIGHT:	DRAWING NO:
189.2	8S-E6-153-2-SD

PROJECT NAME:
PO#4703685612 SD WHITE RIVER
ETB9-153-2-SD-DOT MELLETT CO.
NH-EM 0083(74)55 LIGHTING

PROJECT LOCATION:
 SD
 DWN BY: PHILL R
 DATE: 07-26-2023
 CHK BY: DATE:





ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	1032742	RING BACK-UP 8S 11GA X 7 15/16	1
2	1032743	BASE SQ 1 x 12 3/4"	1
3	1057131	SHAFT CHMFR 8S 11gaX9.6X4X10'-0	1
4	10A240	3"x7" ELITE POLE TOP TENON	1

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG



DWN: PAM F. DATE: 11-17-2021
CHK BY: DATE:

MATERIAL:
SEE BOM

WEIGHT: 122.4 - LBS
LBS.

SURFACE AREA: 5449.8
SQ IN

SCALE: 1:48

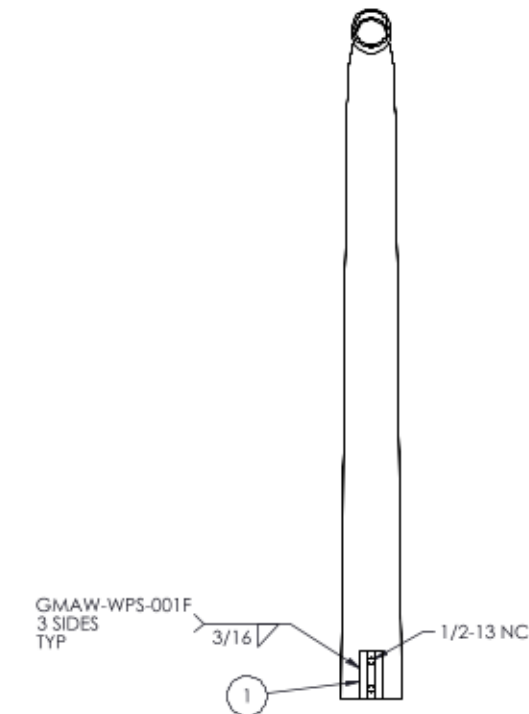
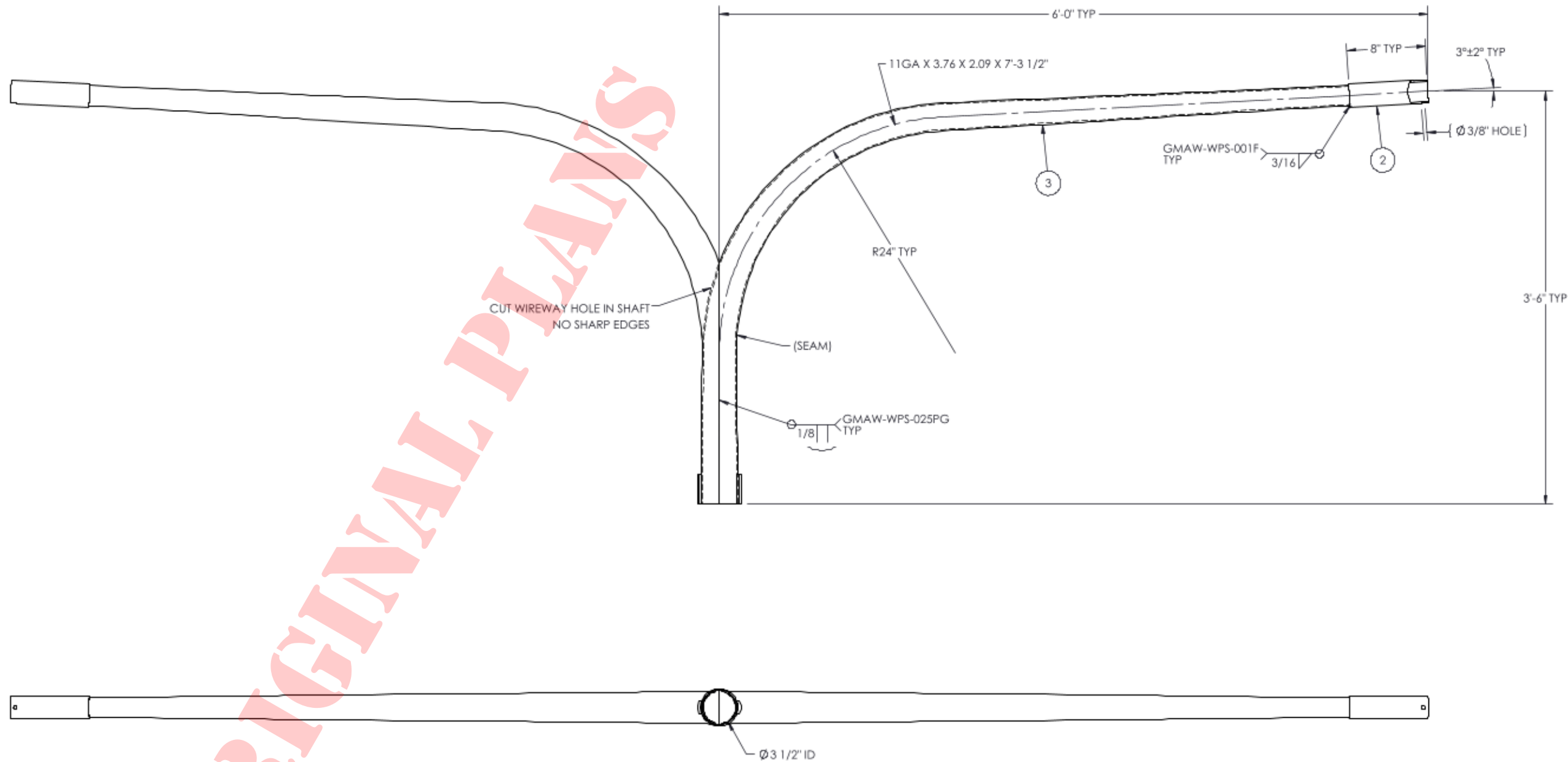
DRWG NO.: 1057130

SHEET 1 OF 1


B



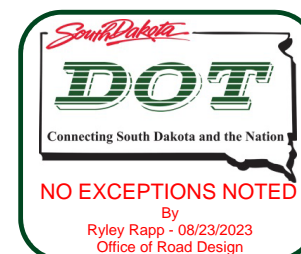
REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	CONVERTED USING CORRECT SHAFT DIAMETERS BASED ON FLAT	5/24/2023	MS
B	REMOVED 1067740 GUSSET	6/8/2023	MS

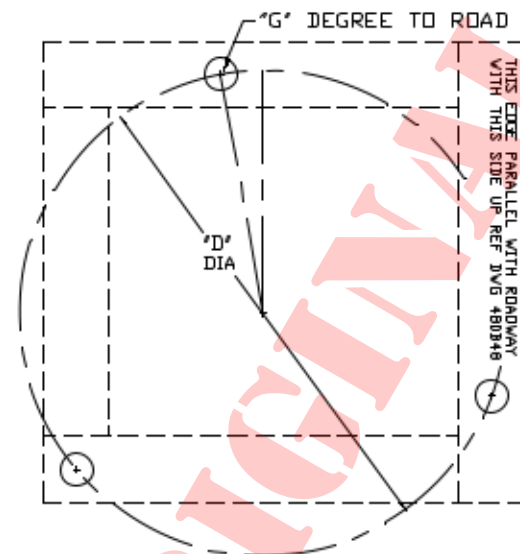
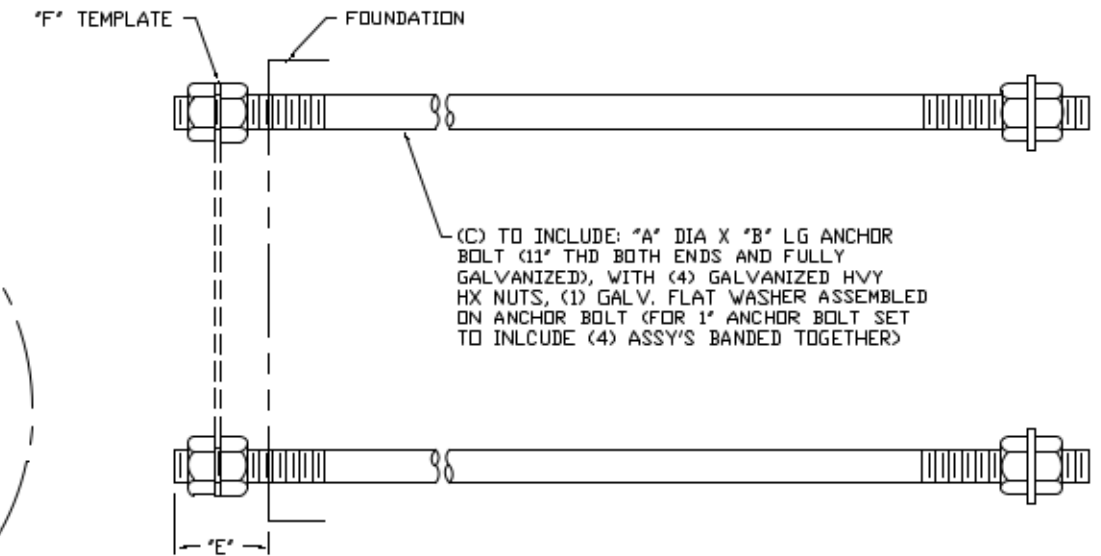
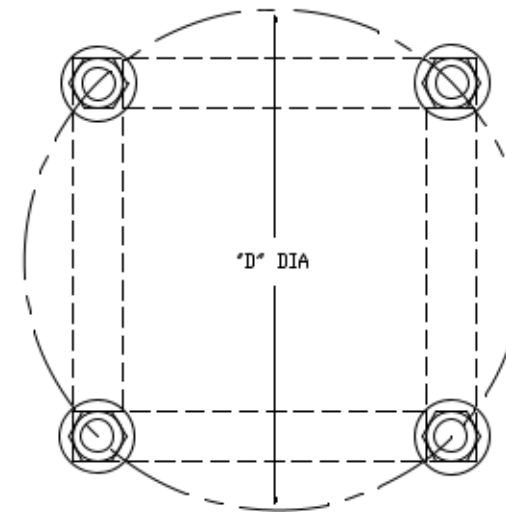
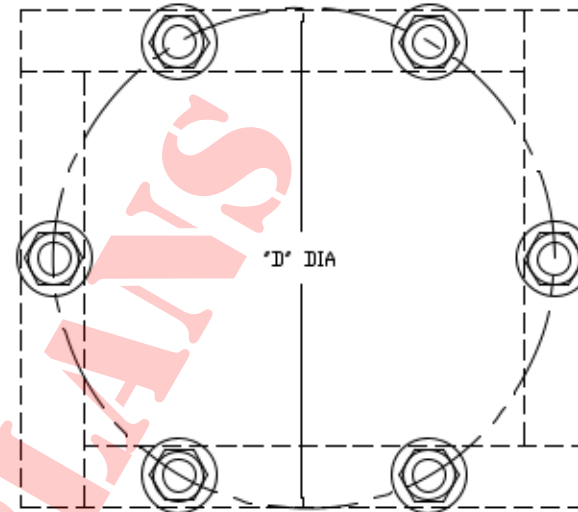
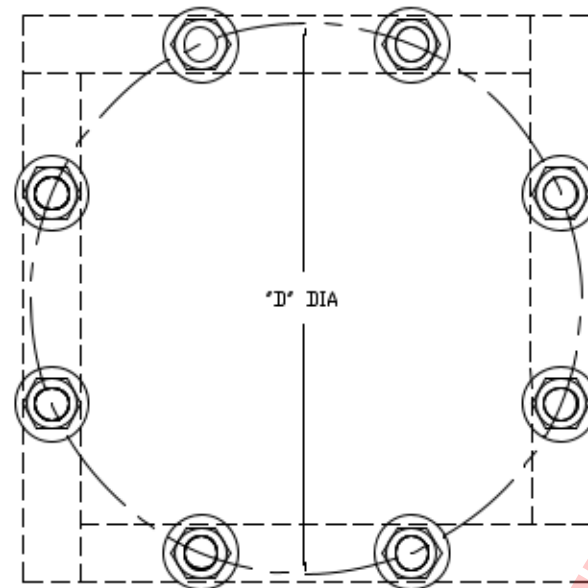


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	10A22	BLOCK-ELITE ARM	2
2	1031080	PIPE ARM 2" SCH 40 X 8" LG	2
3	1067738	SHAFT SCKT RD 11GAX3.76X2.09X7'-3 1/2	2

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG			 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395
DWN: MARK S.	DATE: 05-16-2023	DESCRIPTION:	
CHK BY:	DATE:	WLDMT ARM ELITE TWIN 6'0	
MATERIAL: SEE BOM			

WEIGHT: 59.13 LBS.	SURFACE AREA: 3287.07 SQ IN	SCALE: 1:12	DRWG NO.: 10B14-2T	SHEET 1 OF 1	B
--------------------------	-----------------------------------	----------------	---------------------------	-----------------	---





MMC#207911 PO#4703685612 SD WHITE RIVER
ETB9-153-2-SD-DOT MELLETT CO.
NH-EM 0083(74)55 LIGHTING

NOTE:

1. 1" TO 1 1/4" ANCHOR BOLT PER F1554 GRADE 55 INCLUDING SUPPLEMENTARY SPEC S4 (CHARPY @ + 40°) MATERIAL - 55,000 PSI MIN YIELD, 75,000 - 95,000 PSI TENSILE STRENGTH AND SUITABLE FOR WELDING
2. 1 1/2" TO 2" HIGH STRENGTH STEEL ANCHOR BOLT PER ASTM F1554 GRADE 105 MATERIAL INCLUDING SUPPLEMENTARY SPEC S4 (CHARPY @ + 40°) - QUENCHED AND TEMPERED COLD DRAWN STRESS-RELIEVED (SAE 4140) ROD WITH 105,000 PSI MIN YIELD AND 125,000 - 150,000 PSI TENSILE STRENGTH, 15% MIN ELONGATION AND 45% MIN REDUCTION OF AREA
3. ANCHOR BOLT & NUTS GALVANIZED PER ASTM F2329
4. THREAD TO BE CLASS 2A PER AMERICAN STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
5. ALL BOLTS ROLLED THREAD
6. NO WELDING IS ALLOWED ON ANCHOR BOLTS
7. GALVANIZED HEAVY HEX NUTS PER A194 GR 2H (.030 OVER SIZE)

460B1261-37		1-8	24"	(4) ASSY'S 460A204-12	15"	4"	460B131-20	—
460B1261-36		1 1/4-7	24"	(4) ASSY'S 460A204-11	13"	4"	460B137-7	—
460B1261-35		1-8	40"	(1) SET 460A204-1	13 1/2	4"	460B131-16	—
460B1261-34		1 1/4-7	50"	(4) ASSY'S 460A204-10	15 1/8	5"	460B137-35	—
460B1261-33		1 1/2-6	60"	(4) ASSY'S 460A204-3	15"	6 1/2	460B138-38	—
460B1261-32		1 1/2-6	60"	(4) ASSY'S 460A204-3	16"	6 1/2	460B138-5	—
460B1261-31		1 3/4-5	96"	(6) ASSY'S 460A204-9	22"	8"	460B136-49	—
460B1261-30		1 1/2-6	60"	(6) ASSY'S 460A204-3	21"	7"	460B136-16	—
460B1261-29		2-4 1/2	96"	(4) SET 460A204-4	24"	8"	460B139-17	—
460B1261-28		1-8	40"	(1) SET 460A204-1	15 1/8	4"	460B131-35	—
460B1261-27		1-8	30"	(4) ASSY'S 460A204-6	15"	4"	460B131-20	—
460B1261-26		1 1/4-7	36"	(4) ASSY'S 460A204-5	13 1/2	4 1/2	460B137-9	—
460B1261-25		2-4 1/2	96"	(4) ASSY'S 460A204-4	28"	8"	460B139-12	—
460B1261-24		1 1/2-6	60"	(6) ASSY'S 460A204-3	24"	6"	460B136-14	—
460B1261-23		1 1/4-7	48"	(6) ASSY'S 460A204-2	21"	5"	460B136-13	—
460B1261-22		1 1/2-6	60"	(4) ASSY'S 460A204-3	19"	6 1/2	460B138-20	—
460B1261-21		1 1/4-7	48"	(3) ASSY'S 460A204-7	18 1/2	4"	460B182	10"
460B1261-20		2-4 1/2	96"	(6) ASSY'S 460A204-4	21"	8"	460B136-7	—
460B1261-19		1 1/2-6	60"	(8) ASSY'S 460A204-3	28"	6 1/2	460B165-4	—
460B1261-18		1-8	40"	(1) SET 460A204-1	9 1/2	4"	460B131-3	—
460B1261-17		2-4 1/2	96"	(4) ASSY'S 460A204-4	25"	8"	460B139-6	—
460B1261-16		2-4 1/2	96"	(4) ASSY'S 460A204-4	26 1/2	8"	460B139-8	—
460B1261-15		2-4 1/2	96"	(4) ASSY'S 460A204-4	23"	8"	460B139-7	—
460B1261-14		1 1/2-6	60"	(6) ASSY'S 460A204-3	22"	6 1/2	460B136-1	—
460B1261-13		1 1/4-7	48"	(4) ASSY'S 460A204-2	13 1/2	4 1/2	460B137-9	—
460B1261-12		2-4 1/2	96"	(4) ASSY'S 460A204-4	22"	8"	460B139-5	—
460B1261-11		1-8	40"	(1) SET 460A204-1	11"	4"	460B131-8	—
460B1261-10		1-8	40"	(1) SET 460A204-1	15"	3"	460B131-20	—
460B1261-9		1 1/2-6	60"	(4) ASSY'S 460A204-3	22"	6 1/2	460B138-12	—
460B1261-8		1 1/2-6	60"	(4) ASSY'S 460A204-3	20"	6 1/2	460B138-11	—
460B1261-7		1 1/4-7	48"	(4) ASSY'S 460A204-2	17"	4"	460B137-12	—
460B1261-6		1 1/2-6	60"	(4) ASSY'S 460A204-3	17"	6 1/2	460B138-7	—
460B1261-5		1 1/2-6	60"	(4) ASSY'S 460A204-3	18"	6 1/2	460B138-8	—
460B1261-4		1 1/2-6	60"	(4) ASSY'S 460A204-3	14"	6 1/2	460B138-3	—
460B1261-3		1 1/4-7	48"	(4) ASSY'S 460A204-2	17"	4 1/2	460B137-12	—
460B1261-2		1-8	40"	(1) SET 460A204-1	12"	4"	460B131-11	—
460B1261-1	1	1-8	40"	(1) SET 460A204-1	15"	4"	460B131-20	—
PART NO	QTY (SET)	"A" THD SIZE	"B" BOLT LG	"C" QTY 460A204-	"D" BC	"E" BOLT PROJ	"F" TEMPLATE	"G" DEGREE TO ROAD

DWN: JASON D

DATE: 10/16/17

CHK:

SCALE: NTS

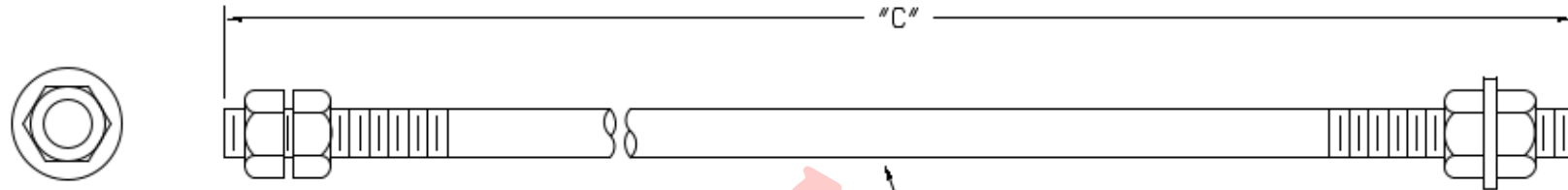
ANCHOR BOLT CLUSTER TABULATION (SD)
(ASTM F1554 MATERIAL) (FULLY GALVANIZED)

Millerbernd MANUFACTURING CO.
WINSTED, MN

460B1261



REV 2/23/221 ADDED -37 PJ
REV 1/28/21 ADDED -36 PJ
REV 9/3/20 ADDED -35 (RK)
REV 3/21/19 ADDED -34 (RK)
REV 1/18/19 ADDED -33 (RK)
REV 8/14/18 -30 'E' PROJ WAS 6 1/2" (RK)
REV 2/21/18 QTY TO JUST SAY SET & CHARPY TEST-JD
REV 1/17/18 ADDED -32-JD
REV 1/9/18 ADDED -31-JD
REV 11/30/17 UPDATED BARE NUTS TO GALVANIZED NUTS-JD



NOTE:

- 1" TO 1 1/4" ANCHOR BOLT PER F1554 GRADE 55 MATERIAL - 55,000 PSI MIN YEILD 75,000 - 95,000 PSI TENSILE STRENGTH (INCLUDING SUPPLEMENTARY SPEC S4(CHARPY @ +40*) AND SUITABLE FOR WELDING NUT MAT'L - ASTM A194 GR 2H FLATWASHER MAT'L - ASTM F436
- 1 1/2" TO 2" HIGH STRENGTH STEEL ANCHOR BOLT PER ASTM F1554 GRADE 105 MATERIAL (INCLUDING SUPPLEMENTARY SPEC S4(CHARPY @ +40*) QUENCHED AND TEMPERED COLD DRAWN STRESS-RELIEVED (SAE 4140) ROD WITH 105,000 PSI MIN YIELD AND 125,000 - 150,000 PSI TENSILE STRENGTH, 155 MIN ELONGATION AND 45% MIN REDUCTION OF AREA NUT MAT'L - ASTM A194 GR 2H FLATWASHER MAT'L - ASTM F436
- ANCHOR BOLT AND NUTS GALVANIZED PER ASTM F2329
- THREAD TO BE CLASS 2A PER AMERICAN STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
- ALL BOLTS ROLLED THREAD
- NO WELDING IS ALLOWED ON ANCHOR BOLTS
- GALVANIZED HEAVY HEX NUTS PER A194 GR 2H (.030 OVER SIZE)
- BOTH ENDS OF ANCHOR BOLT PERMANENTLY STAMPED WITH THE NAME OF THE MANUFACTURER (PER SUPP-S2) AND GRADE (PER SUPP-S3).

GRADE	IDENTIFICATION MARKING
36	MANUFACTURERS' ID/AB36
55	MANUFACTURERS' ID/AB55
105	MANUFACTURERS' ID/AB105
- BOTH ENDS OF ANCHOR BOLT PAINTED PER COLOR CODE

GRADE	COLOR CODE
36	(BLUE)
55	(YELLOW)
	(RED)

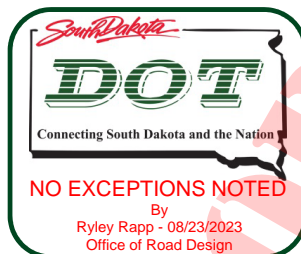
(A) ASSEMBLY TO INCLUDE: (1) "B" DIA X "C" LG ANCHOR BOLT (11" THD BOTH ENDS AND FULLY GALVANIZED), WITH (4) GALVANIZED HVY HX NUTS, (1) GALVANIZED FLATWASHER ASSEMBLED ON ANCHOR BOLT (QTY OF (4) ASSEMBLIES TO BE BANDED TOGETHER TO EQUAL (1) SET ONLY ON 1" ANCHOR BOLTS)

MMC#207911 PO#4703685612 SD WHITE RIVER

ETB9-153-2-SD-DOT MELLETTE CO.

NH-EM 0083(74)55 LIGHTING

460A204-12		1-8	24"
460A204-11		1 1/4-7	24"
460A204-10		1 1/4-7	50"
460A204-9		1 3/4-5	96"
460A204-8		2"-4 1/2	90"
460A204-7		1 1/4-7	48"
460A204-6		1"-8	30"
460A204-5		1 1/4-7	36"
460A204-4		2"-4 1/2	96"
460A204-3		1 1/2-6	60"
460A204-2		1 1/4-7	48"
460A204-1	4	1"-8	40"
PART NO	"A" QTY	"B" THD SIZE	"C" BOLT LG



8/29/22 ADDED -12 PJ
 1/28/24 ADDED -11 PJ
 3/21/23 ADDED -10 GHO
 2/22/18 CHARPY NOTE - J1
 1/31/18 ADDED -4 J1
 12/26/17 TO DIRECTED HOSED
 NOTES FROM 11/3/17-J1
 REV 10/2/17 BOLTS WERE GALV
 1 GHO ONLY GHO
 REV 4/21/17 ADDED CHARPY
 REV 1/25/17 ADDED NOTE B & 9
 REV 3-18-10 GHO, ONLY SPEC
 WAS ASTM A55
 REV 7-29-09 CHANGED
 FLATWASHER TYPE A TO F436
 REV 1-21-05 PRODUCT HANDLING

DWN: FLOYD F.

DATE: 1-28-02

CHK: WILL Q.

SCALE: NTS

ANCHOR BOLT ASSY

ASTM A1554 MATERIAL

Millerbernd MANUFACTURING CO.
 WINSTED, MN

460A204

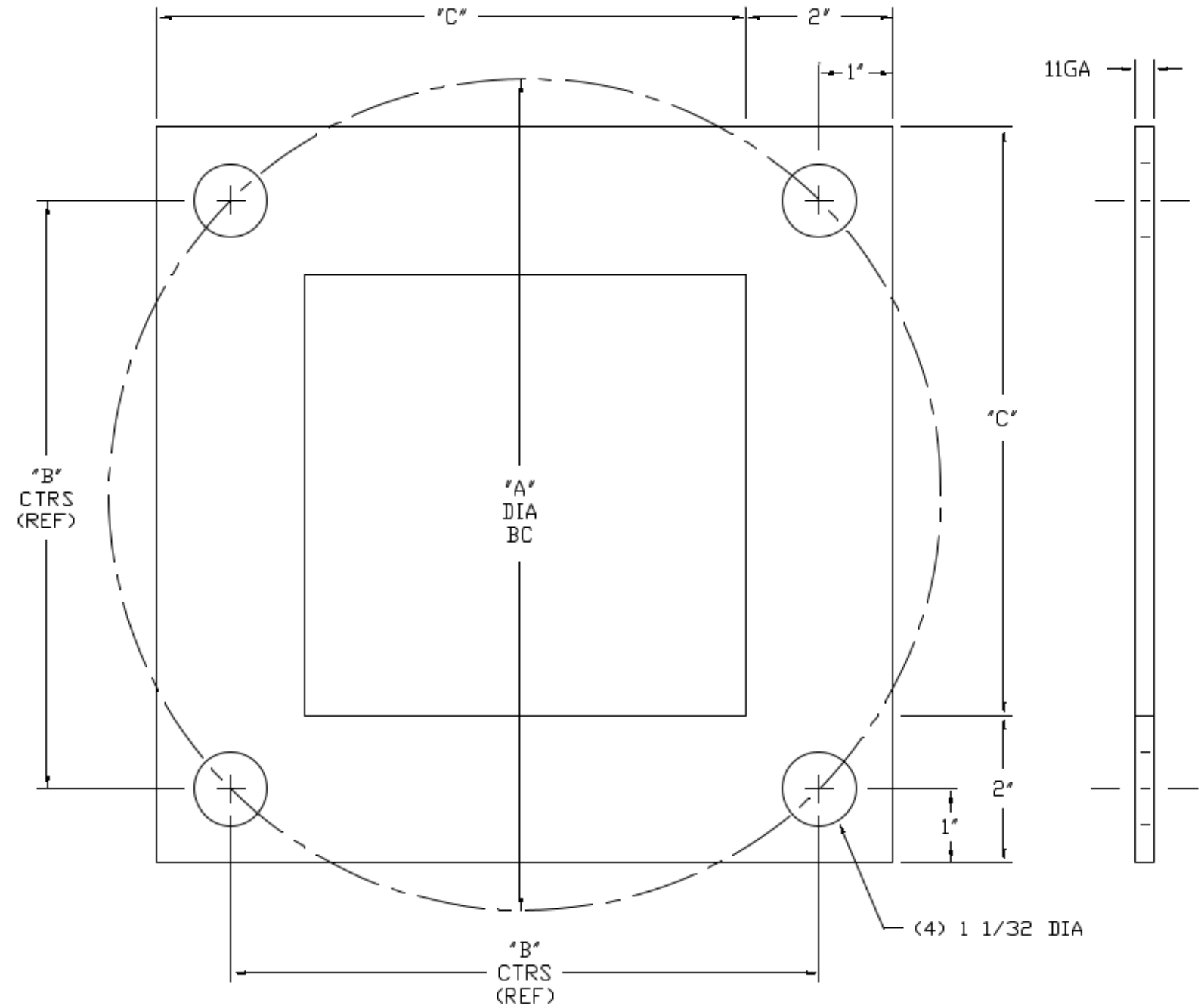
39	9 1/4	6 9/16	6 9/16
38	16 1/4	11 1/2	11 1/2
37	8"	5 9/16	5 5/8
36	17 1/4	12 3/16	12 5/32
35	15 1/8	10 11/16	10 21/32
34	13 1/16	9 1/4	9 7/32
33	8 1/8	5 3/4	5 23/32
32	10 7/16	7 3/8	7 11/32
31	11 3/8	8 1/16	8 1/32
30	22"	15 9/16	15 17/32
29	9"	6 3/8	6 11/32
28	8 1/8	5 3/4	5 23/32
27	17 1/2	12 3/8	12 11/32
26	9 3/16	6 1/2	6 15/32
25	15 1/2	11"	10 31/32
24	21 1/4	15"	14 31/32
23	18"	12 3/4	12 23/32
22	17"	12"	11 31/32
21	16"	11 5/16	11 9/32
20	15"	10 5/8	10 19/32
19	14 1/2	10 1/4	10 7/32
18	14"	9 7/8	9 27/32
17	13 3/4	9 3/4	9 23/32
16	13 1/2	9 9/16	9 17/32
15	13 7/16	9 1/2	9 15/32
14	13"	9 3/16	9 5/32
13	12 9/16	8 7/8	8 27/32
12	12 1/2	8 13/16	8 25/32
11	12"	8 1/2	8 15/32
10	11 1/2	8 1/8	8 3/32
9	11 5/16	8"	7 31/32
8	11"	7 3/4	7 23/32
7	10 5/8	7 1/2	7 15/32
6	10 1/2	7 7/16	7 13/32
5	10"	7 1/16	7 1/32
4	9 7/8	7"	6 31/32
3	9 1/2	6 3/4	6 23/32
2	8 1/2	6"	5 31/32
1	12 3/4	9"	8 31/32
DASH NO	"A" DIA BC	"B" CTRS	"C"

ALL PLANS

QTY: 1

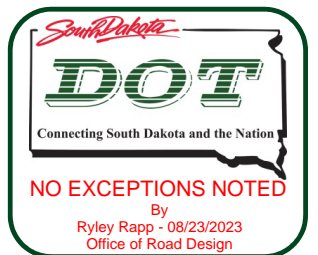
MMC#207911 PO#4703685612 SD WHITE RIVER
 ETB9-153-2-SD-DOT MELLETTTE CO.
 NH-EM 0083(74)55 LIGHTING

REV. REMOVED WELD 4-30-18 (PR)



NOTE:

1. MATERIAL- LOW CARBON 36,000 MIN YIELD (ASTM A36)
2. FINISH- BARE UNFINISHED



DWN: FLOYD F.	TEMPLATE (4) 1" BOLTS	
DATE: 8-1-95		
CHK: WADE L.	Millerbernd MANUFACTURING CO. WINSTED, MN	460B131
SCALE: NTS		

July 28, 2023

South Dakota DOT
Traffic Design Engineer
Office of Road Design
700 E Broadway Avenue
Pierre, SD 57501-2586

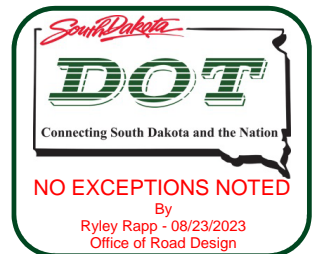
RE: MMC# 207911, PO#4703685612, SD WHITE RIVER, ETB9-153-2-SD-DOT
MELLETTTE CO., NH-EM 0083(74)55 LIGHTING
Lighting Poles

The following lighting and traffic signal standards used for this project meet or exceed the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", 2013. These standards also are in compliance with the 1994 version of the aforementioned AASHTO standard.

Respectfully,



Russell K. Teal PE





Date: Aug 3, 2023

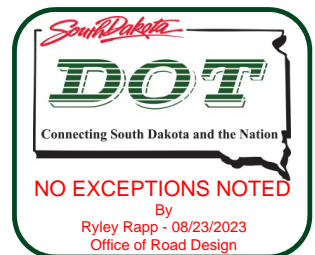
Core4 Technologies
8317 Pillsbury Avenue South
Bloomington MN 55420
Phone: (888) 551-9209
Fax: (952) 314-2144

Job Name
BUILDER'S ELECTRIC JOBS COMBINED
CORE4SD23-5043
SIOUX FALLS SD

Bid Date
Jul 18, 2023

Submittal Date
Aug 3, 2023

ORIGINAL PLANS





Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED

SDDOT L67 06L6

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE
ERL2 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure. Casting Integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
Paint:	Corrosion resistant polyester powder painted, minimum 2.0 mil thickness (RAL & custom colors available) Standard = Black, Dark Bronze Gray, White Optional = Coastal Finish
Weight:	24.0 lbs (10.9 kgs)

Optical System

Lumens:	16,000 - 32,000
Distribution:	Type II Narrow, Type II Wide, Type III, Type IV and Type II Enhanced Back light
Efficacy:	112-140 LPW
CCT:	2700K, 3000K, 4000K, 5000K
CRI (Min):	70 CRI

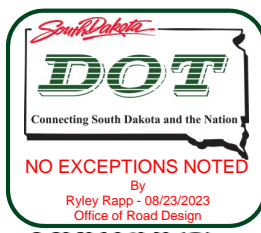
Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Lumen Maintenance

Projected Lxx per IES TM-21-11 at 25°C

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16	A5, B5, C5, D5, E5	L99	L99	L99
18	A5, B5, C5, D5, E5	L99	L98	L98
19	A5, B5, C5, D5, E5	L99	L98	L97
21	A5, B5, C5, D5, E5	L94	L87	L85
23	A5, B5, C5, D5, E5	L97	L96	L95
25	A5, B5, C5, D5, E5	L96	L95	L95
27	A5, B5, C5, D5, E5	L96	L94	L94
28	A5, B5, C5, D5, E5	L96	L94	L93
30, 31	A5, B5, C5, D5, E5	L95	L93	L92
32	A5, B5, C5, D5, E5	L94	L91	L90

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

Ratings

Operating Temp:	-40°C to 50°C *
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards
EMI:	Title 47 CFR Part 15 Class A
RoHS:	Complies with the material restrictions of RoHS

*ERL2 (32K Lumen 347-480V SKU) operates at -40°C to 45°C

Controls

Dimming:	Standard-0-10V <input checked="" type="checkbox"/> Optional-DALI (Option U) <input type="checkbox"/>
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

<input checked="" type="checkbox"/> 5 Year (Standard)	<input type="checkbox"/> 10 Year (Optional)
---	---

Not all product variations listed on this page are DLC qualified.
 Visit www.designlights.org/search to confirm qualifications.



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

Notes:

Type:**L67**

CORE4SD23-5043

EVOLVE
ERL2 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

Ordering Information

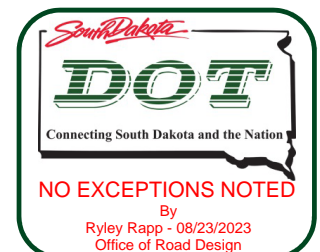
ERL2

PROD. ID	VOLTAGE	LUMENS (LM)	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16,000 lm	A5 = Type II Narrow	27 = 2700K ²	A = 7-Pin Receptacle	GRAY = Gray	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18,000 lm	B5 = Type II Wide	30 = 3000K ²	D = 7-Pin Receptacle with Shorting Cap	BLACK = Black	B = Tether
L = Local	1 = 120V	19 = 19,000 lm	C5 = Type III	40 = 4000K	E = 7-Pin Receptacle with non-Dimming Long Life PE ³	DKBZ = Dark Bronze	F = Fusing
2 = Double Module	2 = 208V	21 = 21,000 lm	D5 = Type IV ⁵	50 = 5000K	Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	3 = 240V	23 = 23,000 lm	E5 = Type II Enhanced Back Light				I = Optional IP66 Optical Enclosure
	4 = 277V	25 = 25,000 lm					L = Tool-Less Entry
	D = 347V	27 = 27,000 lm					R = Secondary 10kV/5kA SPD
	5 = 480V	28 = 28,000 lm					T = Secondary 20kV/10kA SPD ¹
		30 = 30,000 lm					U = DALI Programmable ^{6,7}
		31 = 31,000 lm					V1 = Field Adjustable Module ⁸
		32 = 32,000 lm					Y = Coastal Finish ⁹
							XXX = Special Options

- ¹ Not Available with Fusing
² Select 2700K or 3000K CCT for IIDA approved units
³ Nominal IES Type classing subject to typical variation, individual units may differ
⁴ Lead time varies, contact Factory
⁵ Per ANSI C136.10-2017
⁶ Compatible with LightGrid
⁷ Not available in 347V, 480V or 347-480V
⁸ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.
⁹ Not available with DALI "U" option
¹⁰ Forward throw distribution. Classifies as Type III for lumen codes 23-32. Review IES curve for application.

Suggested HID Replacement

 Approximately 21,500 -32,000 lumens to replace 400W HPS
 Cobra-head

 Note: actual replacement lumens may vary based upon mounting height, pole spacing,
 design criteria, etc.

Current

LED.com

 © 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change
 without notice. All values are design or typical values when measured under laboratory conditions.

 Page 14 of 20
 (Rev 06/28/23)
 OLP3187_R06

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

Notes:

Type:**L67**

CORE4SD23-5043

EVOLVE
ERL2 Cobra Head
 LED Roadway Lighting

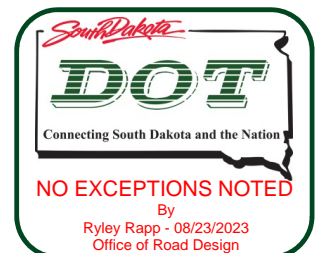
 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	TYPICAL INITIAL LUMENS			WATTAGE		BUG RATINGS		
		5000K/4000K	3000K	2700K	120V 277V	347V 480V	5000K/4000K	3000K	2700K
27	A5	27000	25900	25100	212		B4-U0-G4	B4-U0-G4	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
28	A5	28000	26800	26000	223		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B2-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
30	A5	30000	28800	27900	242		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
31	A5	31000	29700	28800	252		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
32	A5	32000	30700	29700	265		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4

For additional information on ERL2 IES files, please click one of the following links:

Non-Shielded

Shielded



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 16 of 20

(Rev 06/28/23)

OLP3187_R06



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

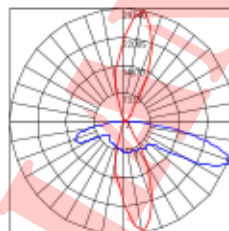
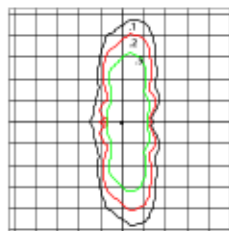
CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

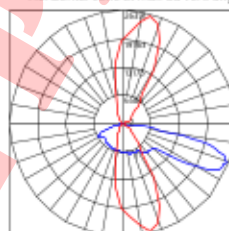
ERL2
Type II Narrow
32,000 Lumens
5000K
ERL2_32A550____.IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 80°
- Horizontal cone at max Cd vert. angle 65°

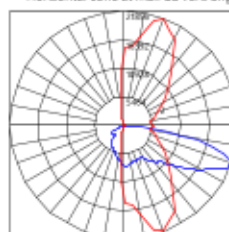
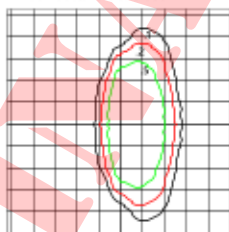
ERL2
Type II Wide
32,000 Lumens
5000K
ERL2_32B550____.IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

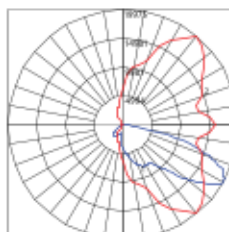
ERL2
Type III
32,000 Lumens
5000K
ERL2_32C550____.IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 70°
- Horizontal cone at max Cd vert. angle 70°

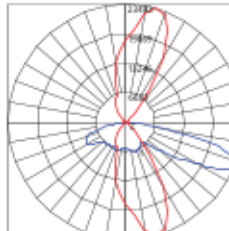
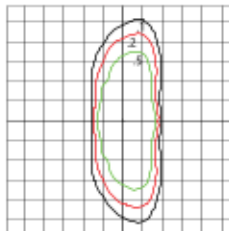
ERL2
Type III (FWT)
32,000 Lumens
5000K
ERL2_32D550____.IES
Forward Throw



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 50°
- Horizontal cone at max Cd vert. angle 55°

ERL2
Type II Medium
32,000 Lumens
5000K
ERL2_32E550____.IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°

ISO illuminate diagrams and polar plots are representative of the SKUs illustrated. Refer to IES files for SKU specific information.



NO EXCEPTIONS NOTED

By
Ryley Rapp - 08/23/2023
Office of Road Design

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027C540EGRAY

Notes:

Type:

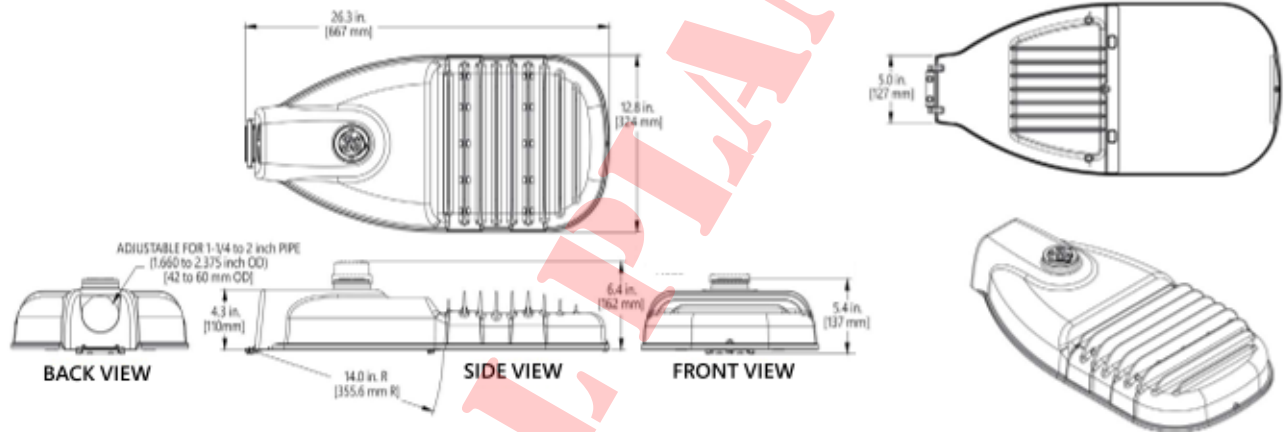
L67

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____
PROJECT NAME _____
DATE _____ TYPE _____
CATALOG NUMBER _____

**Mounting**

- Adjustable for 1.25 to 2 in. nominal mounting pipe (1.660 to 2.375 inch OD)
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight

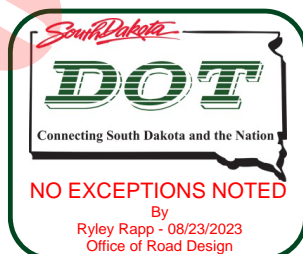
- 24.0 lbs (10.9 kgs)

Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237G	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238G	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239G	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Long Life PE 120-277V
93147530	PECHTL	Long Life PE 347-480V
73251	SCCL-PECTL	Shorting Cap

Network Lighting Controls

Current's LightGrid™ Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.

**Current**

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 18 of 20

(Rev 06/28/23)

OLP3187_R06

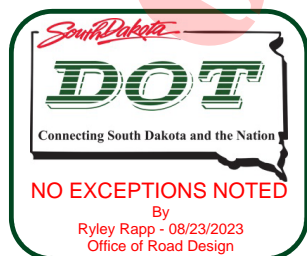


Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
WHITE RIVER SDDOT KNOCKDOWN

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY
Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting


 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure casting integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
	Corrosion resistant polyester powder paint, minimum ≥ 2.0 mil thickness
Paint:	(RAL & custom colors available) Standard = Black, Dark Bronze, Gray, White Optional = Coastal Finish
Weight:	24.0 lbs (10.9 kgs)

Optical System

Lumens:	16,000 - 30,000
Distribution:	Type II Narrow, II/III, III, V
Efficacy:	110-143 LPW
CCT:	2700K, 3000K, 4000K
CRI:	≥ 70

Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018

Lumen Maintenance

Projected Lxx per IES TM-21-11 at

LUMEN CODES	DISTRIBUTIONS	LXX(H0K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16, 18, 19, 21, 23	A3,B3,C3, D3,E3	L96	L94	L94
25, 27, 28	A3,B3,C3, D3,E3	L95	L93	L92
30	A3,B3,C3, D3,E3	L94	L91	L90

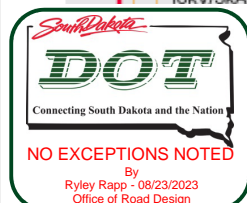
Ratings

Operating Temperature:	Lumen Output 16-28 (-40°C to 50°C)
	Lumen Output 30 (-40°C to 45°C)
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards

Controls

Dimming:	<input checked="" type="checkbox"/> Standard - 0-10V <input type="checkbox"/> Optional - DALI (Option U)
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

☒ 5 Year (Standard) ☐ 10 Year (Optional)


LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.
 Page 17 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

Ordering Information

ERL2

PROD. ID	VOLTAGE	LUMENS	DISTRIBUTION	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16000 lm	A3 = Type II Narrow ²	27 = 2700K ³	A = 7-Pin Receptacle	BLCK = Black	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18000 lm	B3 = Type II Wide	30 = 3000K ³	D = 7-Pin Receptacle with Shorting Cap	DKBZ = Dark Bronze	B = Tether
L = Local		19 = 19000 lm	C3 = Type III	40 = 4000K	E = 7 Pin Receptacle with Long Life non-Dimming PE Control ⁴	GRAY = Gray	F = Fusing
2 = Double Module	1 = 120V	21 = 21000 lm	D3 = Type IV		Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	2 = 208V	23 = 23000 lm	E3 = Type II Enhanced Back Light				I = Optional IP66 Optical
	3 = 240V	25 = 25000 lm					L = Tool-Less Entry
	4 = 277V	27 = 27000 lm					M1 = MagnaPak ⁵
	5 = 480V	28 = 28000 lm					R = Secondary 10kV/5kA SPD
	D = 347V	30 = 30000 lm					T = Secondary 20kV/10kA SPD ⁶
							U = DALI Programmable ⁵
							V1 = Field Adjustable Module ⁷
							Y = Coastal Finish ⁸
							XXX = Special Options

¹ Not Available with Fusing² Nominal IES Type classing subject to typical variation, individual units may differ³ Select 2700K or 3000K CCT for IDA approved units⁴ Lead time varies, Contact Factory⁵ Compatible with LightGrid⁶ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.⁷ Not available with DALI "U" option⁸ Option M1 provides for MagnaPak - 20 Fixtures per MagnaPak Container. Single Pack box is standard

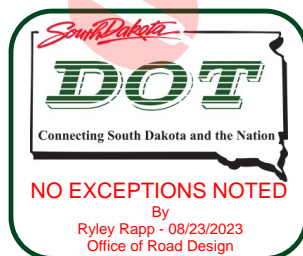
Suggested HID Replacement

- Approximately 21,000 - 30,000 lumens to replace 400W HPS Cobra-head

Note: actual replacement lumens may vary based upon mounting height, pole spacing, design criteria, etc.

PREVIOUS	OPTICAL PATTERN	LATEST	NEW OPTICAL PATTERN
A1, B1	Extra Narrow/Narrow Asymmetric	A3	Type II Narrow
C1, E1	Asymmetric Short/Medium	B3	Type II Wide
D1, G1	Asymmetric Forward/Extra Wide	C3	Type III
F1	Asymmetric Wide	D3	Type IV
N/A	N/A	E3	Type II Enhanced Back Light

The information above is designed to provide a guideline to select the correct luminaire for a roadway application. The best and most accurate way to ensure the proper design is by doing a lighting layout.



Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 18 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	LUMENS			WATTAGE		BUG RATINGS		
		4000K	3000K	2700K	277V	480V	4000K	3000K	2700K
16	A3	16000	15300	14900	120		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B2-U0-G3
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
18	A3	18000	17300	16700	140		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
19	A3	19000	18200	17700	149		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
21	A3	21000	20100	19500	174	177	B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G3	B3-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
23	A3	23000	22100	21400	194	196	B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
25	A3	25000	24000	23300	214		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
27	A3	27000	25900	25100	237		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
28	A3	28000	26900	26100	251		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
30	A3	30000	28800	27900	278		B4-U0-G4	B4-U0-G4	B3-U0-G3
	B3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4



NO EXCEPTIONS NOTED

 By
 Ryley Rapp - 08/23/2023
 Office of Road Design

For additional information on ERL2 IES files, please click one of the following links:

Non-Shielded

Shielded

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

 Page 19 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

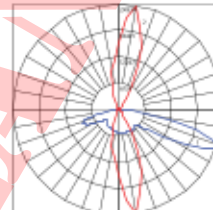
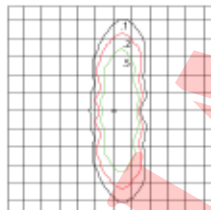
CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

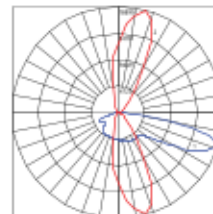
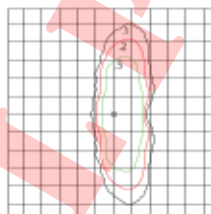
ERL2
Type II Narrow
23,000 Lumens
4000K
ERL2_23A340___IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 60°
- Horizontal cone at max Cd vert. angle 69°

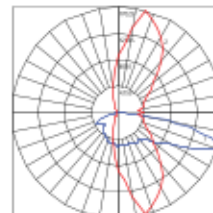
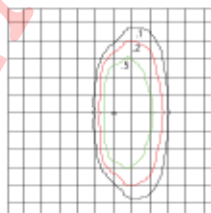
ERL2
Type II Wide
23,000 Lumens
4000K
ERL2_23B340___IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 72°

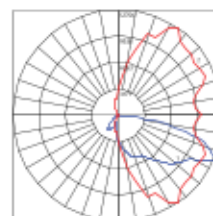
ERL2
Type III
23,000 Lumens
4000K
ERL2_23C340___IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 71°

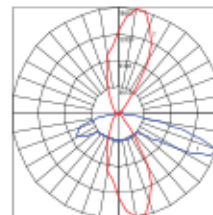
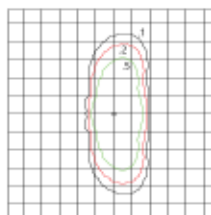
ERL2
Type IV
23,000 Lumens
4000K
ERL2_23D340___IES



- Mounting Height at 30'
- Initial Footcandle at Grade

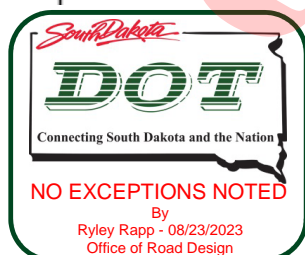
- Vertical plane at max Cd horiz. angle 55°
- Horizontal cone at max Cd vert. angle 65°

ERL2
Type IV
23,000 Lumens
4000K
ERL2_23E340___IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 69°



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 20 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY

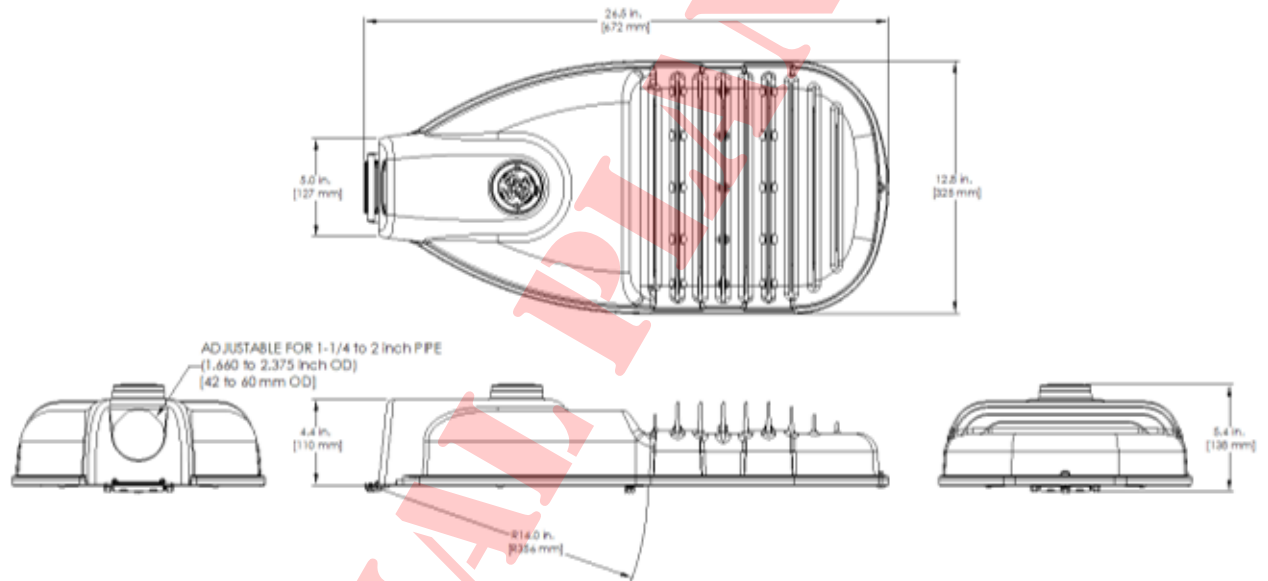
Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____


Mounting

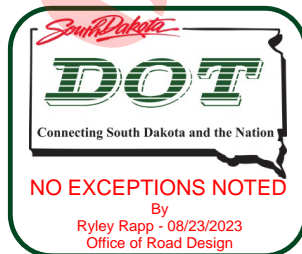
- Adjustable for 1.25 to 2 in. nominal mounting pipe
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight:

- 24.0 lbs (10.9 kgs)



Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Standard 120-277V

See pages 22 & 23 for more detailed information on ERL2 Shields.

Networked Lighting Control



Current's **LightGrid™** Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.



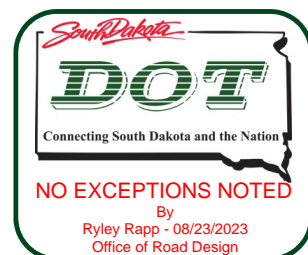
Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
WHITE RIVER DOT

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY
Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL1 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure casting integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
	Corrosion resistant powder paint, ≥ 2.0 mil thickness
Paint:	(RAL & custom colors available) Standard = Black, Dark Bronze, Gray, White Optional = Coastal Finish
Weight:	12.4 lbs (5.6kgs)

Optical System

Lumens:	2,000 - 10,000
Distribution:	Type II, III, IV and Type II Narrow, and Type II Enhanced Backlight
Efficacy:	110-143 LPW
CCT:	2700K, 3000K, 4000K
CRI:	≥ 70

Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	$\geq 90\%$ at rated watts
Total Harmonic Distortion:	$\leq 20\%$ at rated watts

Surge Protection*

Standard	Optional
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018

Lumen Maintenance

Projected Lxx per IES TM-21-11 at

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
02,03,04,05,06	A3,B3,C3,D3,E3	L96	L95	L94
07,08,09	A3,B3,C3,D3,E3	L95	L91	L89
10	A3,B3,C3,D3,E3	L89	L80	L76

Ratings

Operating Temperature:	-40°C to 50°C
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards

Controls

Dimming:	Standard - 0-10V <input checked="" type="checkbox"/> Optional - DALI (Option U) <input type="checkbox"/>
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

<input checked="" type="checkbox"/> 5 Year (Standard)	<input type="checkbox"/> 10 Year (Optional)
---	---

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

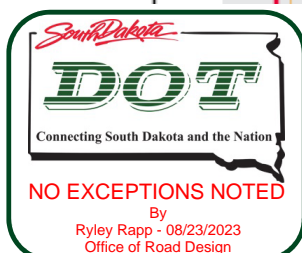
LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 7 of 23

(Rev 06/28/23)

OLP3128_R09



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY
Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

Ordering Information

ERL1

PROD. ID	VOLTAGE	LUMENS	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	02 = 2000 lm ²	A3 = Type II Narrow	27 = 2700K ⁴	A = 7-Pin Receptacle	BLCK = Black	A = 4 Bolt Slipfitter ⁵
R = Roadway	H = 347-480V ¹	03 = 3000 lm	B3 = Type II Wide	30 = 3000K ⁴	D = 7-Pin Receptacle with Shorting Cap	DKBZ = Dark Bronze	B = Tether
L = Local		04 = 4000 lm	C3 = Type III	40 = 4000K	E = 7 Pin Receptacle with Long Life non-Dimming PE Control	GRAY = Gray	F = Fusing
1 = Single Module	1 = 120V	05 = 5000 lm	D3 = Type IV		Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	2 = 208V	06 = 6000 lm	E3 = Type II Enhanced Back Light				I = Optional IP66 Optical
	3 = 240V	07 = 7000 lm					L = Tool-Less Entry
	4 = 277V	08 = 8000 lm					R = Secondary 10kV/5kA SPD
	D = 347V	09 = 9000 lm					T = Secondary 20kV/10kA SPD
	5 = 480V	10 = 10000 lm					U = DALI Programmable ^{6,7}
							V1 = Field Adjustable Module ^{8,11}
							X = Single Pack ⁹
							Y = Coastal Finish ⁹
							XXX = Special Options

¹ Not Available with Fusing² 02 lumen level voltage options 1, 2, 3, and 8 only³ Nominal IES Type classing subject to typical variation, individual units may differ⁴ Select 2700K or 3000K CCT for IES approved units⁵ Lead time varies, Contact Factory⁶ Compatible with LightGrid⁷ Not available in 347V, 480V or 347-480V for Lumen Output Levels 07-10⁸ Option provides single pack box per fixture. Standard packaging = 23 units per MagnaPak Container⁹ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.¹⁰ Not available with DALI "U" option¹¹ Not compatible with 02 Lumen Code

Suggested HID Replacement

- 4,000 - 5,000 lumens to replace 100W HPS Cobra-head
- 7,000 - 8,000 lumens to replace 150W HPS Cobra-head
- 8,500 - 11,500 lumens to replace 100W HPS Cobra-head

Note: actual replacement lumens may vary based upon mounting height, pole spacing, design criteria, etc.



PREVIOUS	OPTICAL PATTERN	LATEST	NEW OPTICAL PATTERN
A1, B1	Extra Narrow/Narrow Asymmetric	A3	Type II Narrow
C1, E1	Asymmetric Short/Medium	B3	Type II Wide
D1, G1	Asymmetric Forward/Extra Wide	C3	Type III
F1	Asymmetric Wide	D3	Type IV
N/A	N/A	E3	Type II Enhanced Back Light

The information above is designed to provide a guideline to select the correct luminaire for a roadway application. The best and most accurate way to ensure the proper design is by doing a lighting layout.



Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 8 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	LUMENS			WATTAGE		BUG RATINGS		
		4000K	3000K	2700K	277V	480V	4000K	3000K	2700K
02	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	2000	1900	1900	14	N/A	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B0-U0-G1	B0-U0-G1	B0-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
03	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	3000	2900	2800	22	26	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
04	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	4000	3900	3800	31	34	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
05	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	5000	4900	4700	39	43	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
06	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	C3	6000	5800	5700	47	52	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
07	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	C3	7000	6800	6600		58	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
08	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	C3	8000	7800	7600		71	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
09	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	C3	9000	8800	8500		84	B2-U0-G2	B2-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
							B2-U0-G2	B2-U0-G2	B2-U0-G2



Current

For additional information on ERL1 IES files, please click one of the following links:

Non-Shielded

Shielded

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 9 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL1003C340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

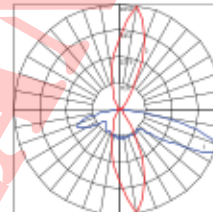
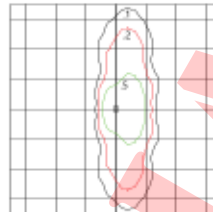
PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

ERL1
Type II Narrow

5,000 Lumens
4000K
ERL1_05A340_...

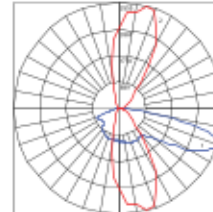


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 60°
- Horizontal cone at max Cd vert. angle 67°

ERL1
Type II Wide

5,000 Lumens
4000K
ERL1_05B340_...IES

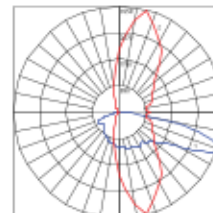
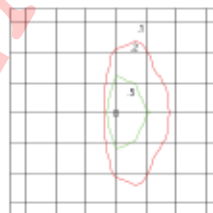


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 69°

ERL1
Type III

5,000 Lumens
4000K
ERL1_05C340_...IES

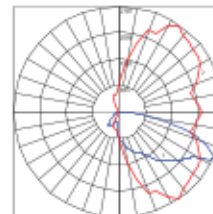
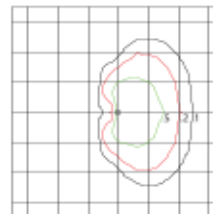


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

ERL1
Type IV

5,000 Lumens
4000K
ERL1_05D340_...IES

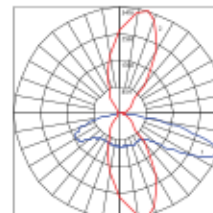
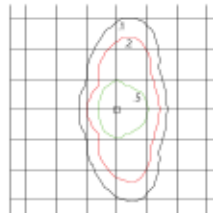


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 55°
- Horizontal cone at max Cd vert. angle 64°

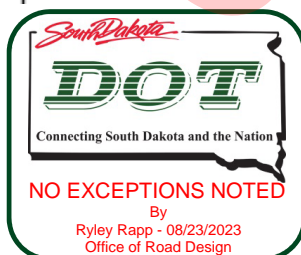
ERL1
Type II Enhanced Back Light

5,000 Lumens
4000K
ERL1_05E340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 10 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

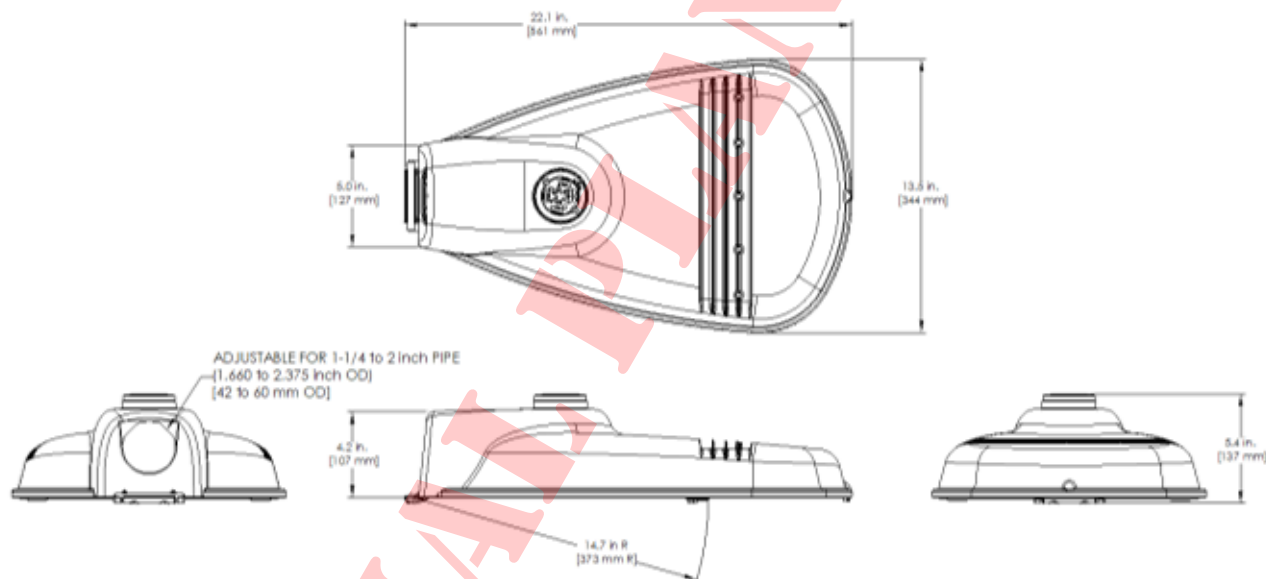
ERL1 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____



Mounting

- Adjustable for 1.25 to 2 in. nominal mounting pipe
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.5 sq ft max (0.046 sq m)

Weight

- 12.4 lbs (5.6 kgs)

Accessories

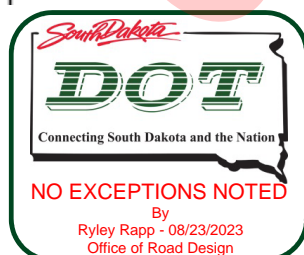
SAP NUMBER	PART NUMBER	DESCRIPTION
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PECOTL	Standard 120-277V
XXXXXX	PECHTL	Standard 347-480V
73251	SCCL-PECTL	Shorting Cap

See pages 22 & 23 for more detailed information on ERL1 Shields.

Networked Lighting Control



Current's **LightGrid™** Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.


Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

 Page 11 of 23
 (Rev 06/28/23)
 OLP3128_R09



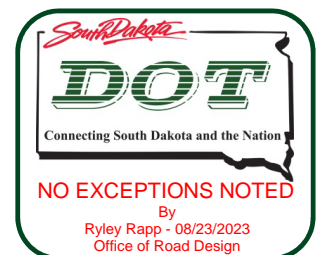
Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
PHASE 2 CROSSROADS

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY
Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head LED Roadway Lighting



CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing: Aluminum die cast enclosure. Casting Integral heat sink for maximum heat transfer

Lens: Impact resistant tempered glass

Paint: Corrosion resistant polyester powder painted, minimum 2.0 mil thickness
 (RAL & custom colors available)
 Standard = Black, Dark Bronze Gray, White
 Optional = Coastal Finish

Weight: 24.0 lbs (10.9 kgs)

Lumen Maintenance

Projected Lxx per IES TM-21-11 at 25°C

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16	A5, B5, C5, D5, E5	L99	L99	L99
18	A5, B5, C5, D5, E5	L99	L98	L98
19	A5, B5, C5, D5, E5	L99	L98	L97
21	A5, B5, C5, D5, E5	L94	L87	L85
23	A5, B5, C5, D5, E5	L97	L96	L95
25	A5, B5, C5, D5, E5	L96	L95	L95
27	A5, B5, C5, D5, E5	L96	L94	L94
28	A5, B5, C5, D5, E5	L96	L94	L93
30, 31	A5, B5, C5, D5, E5	L95	L93	L92
32	A5, B5, C5, D5, E5	L94	L91	L90

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

Optical System

Lumens: 16,000 - 32,000

Distribution: Type II Narrow, Type II Wide, Type III, Type IV and Type II Enhanced Back light

Efficacy: 112-140 LPW

CCT: 2700K, 3000K, 4000K, 5000K

CRI (Min): 70 CRI

Ratings

Operating Temp: -40°C to 50°C *

Vibration: 3G per ANSI C136.31-2018

LM-79: Testing in accordance with IES Standards

EMI: Title 47 CFR Part 15 Class A

RoHS: Complies with the material restrictions of RoHS

*ERL2 (32K Lumen 347-480V SKU) operates at -40°C to 45°C

Electrical

Input Voltage: 120-277V or 347-480V

Input Frequency: 50/60Hz

Power Factor: ≥ 90% at rated watts

Total Harmonic Distortion: ≤ 20% at rated watts

Surge Protection*

STANDARD

OPTIONAL

☒ 10kV/5kA

☐ Secondary 10kV/5kA (R Option) or
☐ Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018

Controls

Dimming: Standard-0-10V ☒
 Optional-DALI (Option U) ☐
Sensors: Photo Electric Sensors (PE) available
 LightGrid Compatible

Warranty

☒ 5 Year (Standard) ☐ 10 Year (Optional)

Not all product variations listed on this page are DLC qualified.
 Visit www.designlights.org/search to confirm qualifications.


Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 13 of 20
 (Rev 06/28/23)
 OLP3187_R06

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

Ordering Information

ERL2

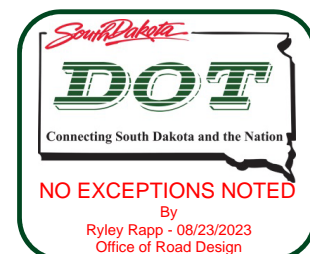
PROD. ID	VOLTAGE	LUMENS (LM)	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16,000 lm	A5 = Type II Narrow	27 = 2700K ²	A = 7-Pin Receptacle	GRAY = Gray	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18,000 lm	B5 = Type II Wide	30 = 3000K ²	D = 7-Pin Receptacle with Shorting Cap	BLACK = Black	B = Tether
L = Local	1 = 120V	19 = 19,000 lm	C5 = Type III	40 = 4000K	E = 7-Pin Receptacle with non-Dimming Long Life PE ⁵	DKBZ = Dark Bronze	F = Fusing
2 = Double Module	2 = 208V	21 = 21,000 lm	D5 = Type IV ⁶	50 = 5000K	Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	3 = 240V	23 = 23,000 lm	E5 = Type II Enhanced Back Light				I = Optional IP66 Optical Enclosure
	4 = 277V	25 = 25,000 lm					L = Tool-Less Entry
	D = 347V	27 = 27,000 lm					R = Secondary 10kV/5kA SPD
	5 = 480V	28 = 28,000 lm					T = Secondary 20kV/10kA SPD ¹
		30 = 30,000 lm					U = DALI Programmable ^{6,7}
		31 = 31,000 lm					V1 = Field Adjustable Module ⁸
		32 = 32,000 lm					Y = Coastal Finish ⁹
							XXX = Special Options

¹ Not Available with Fusing² Select 2700K or 3000K CCT for IIDA approved units³ Nominal IES Type classing subject to typical variation, individual units may differ⁴ Lead time varies, contact Factory⁵ Per ANSI C136.10-2017⁶ Compatible with LightGrid⁷ Not available in 347V, 480V or 347-480V⁸ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.⁹ Not available with DALI "U" option¹⁰ Forward throw distribution. Classifies as Type III for lumen codes 23-32. Review IES curve for application.

Suggested HID Replacement

Approximately 21,500 -32,000 lumens to replace 400W HPS
 Cobra-head

Note: actual replacement lumens may vary based upon mounting height, pole spacing,
 design criteria, etc.



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 14 of 20

(Rev 06/28/23)

OLP3187_R06

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

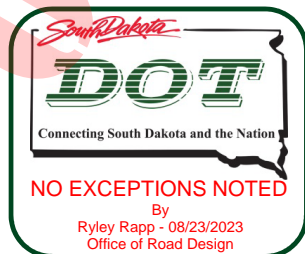
CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	TYPICAL INITIAL LUMENS			WATTAGE		BUG RATINGS		
		5000K/4000K	3000K	2700K	120V 277V	347V 480V	5000K/4000K	3000K	2700K
15	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B2-U0-G2
	C5	15000	15300	14200		114	B2-U0-G3	B2-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G2
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
18	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	18000	17200	16000		130	B2-U0-G3	B2-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
19	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	19000	18200	16800		140	B3-U0-G3	B3-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
21	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	21000	20100	18600		160	B3-U0-G3	B3-U0-G3	B3-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
23	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	23000	22000	21300		177	B3-U0-G4	B3-U0-G4	B3-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
25	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	25000	24000	23200		191	B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B2-U0-G4	B2-U0-G4	B2-U0-G3
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4

For additional information on ERL2 IES files, please click one of the following links:

Non-Shielded

Shielded



Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2016C540EGRAY

Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

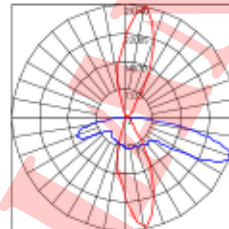
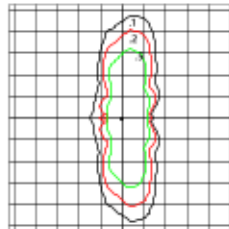
PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

ERL2
Type II Narrow

32,000 Lumens
5000K
ERL2_32A550____.IES

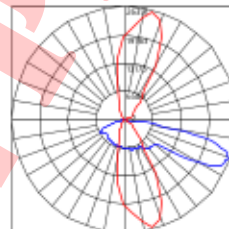
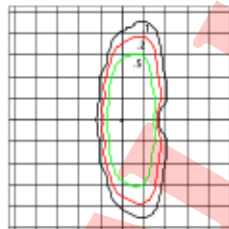


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 80°
- Horizontal cone at max Cd vert. angle 65°

ERL2
Type II Wide

32,000 Lumens
5000K
ERL2_32B550____.IES

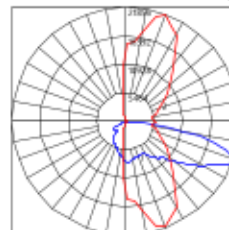
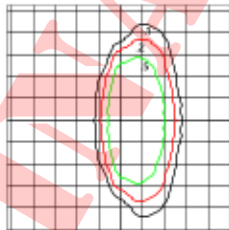


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

ERL2
Type III

32,000 Lumens
5000K
ERL2_32C550____.IES

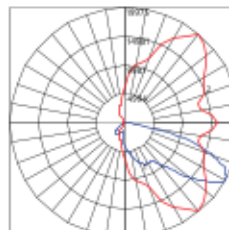


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 70°
- Horizontal cone at max Cd vert. angle 70°

ERL2
Type III (FWT)

32,000 Lumens
5000K
ERL2_32D550____.IES
Forward Throw

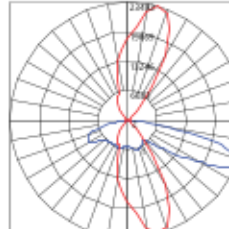
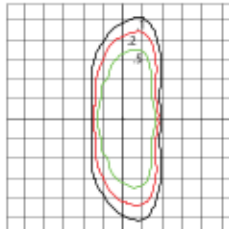


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 50°
- Horizontal cone at max Cd vert. angle 55°

ERL2
Type II Medium

32,000 Lumens
5000K
ERL2_32E550____.IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°

ISO illuminate diagrams and polar plots are representative of the SKUs illustrated. Refer to IES files for SKU specific information.



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 17 of 20

(Rev 06/28/23)

OLP3187_R06

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

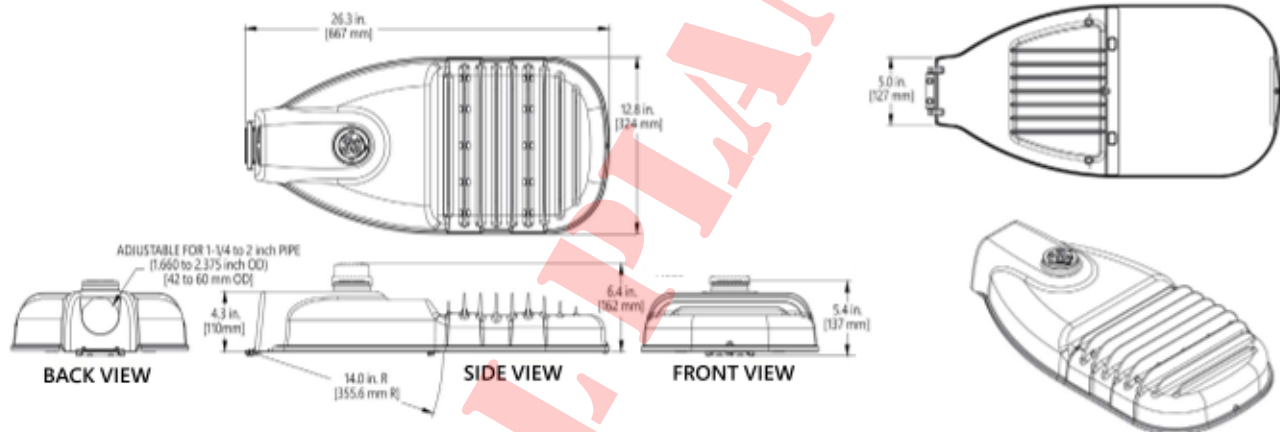
ERL2 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____



Mounting

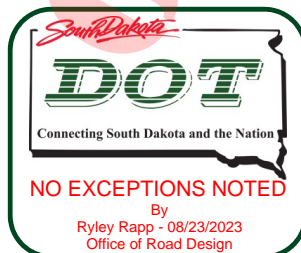
- Adjustable for 1.25 to 2 in. nominal mounting pipe (1.660 to 2.375 inch OD)
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight

- 24.0 lbs (10.9 kgs)



Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237G	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238G	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239G	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Long Life PE 120-277V
93147530	PECHTL	Long Life PE 347-480V
73251	SCCL-PECTL	Shorting Cap

Network Lighting Controls



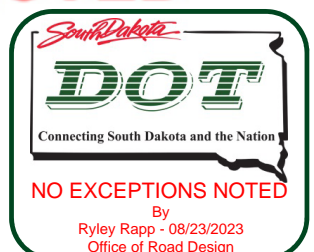
Current's LightGrid™ Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.

BREAKAWAY TRANSFORMER BASES

THE BREAKAWAY TRANSFORMER BASE/LIGHT POLE
IS YOUR GUIDE **PATH** FOR HIGHWAY **SAFETY**
MOTORISTS SAFETY IS OUR **# 1** GOAL



FOR HIGHWAY LIGHTING VISIBILITY AND
DIRECTION, CAST ALUMINUM **AASHTO APPROVED**
TRANSFORMER BASES ARE RECOGNIZED
BY MOTORISTS WITHOUT COMPARISON.

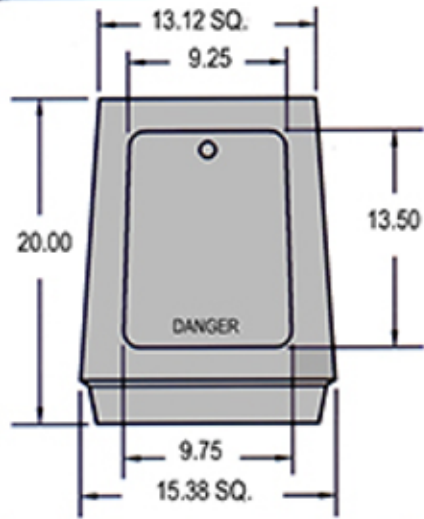


AKRON FOUNDRY COMPANY

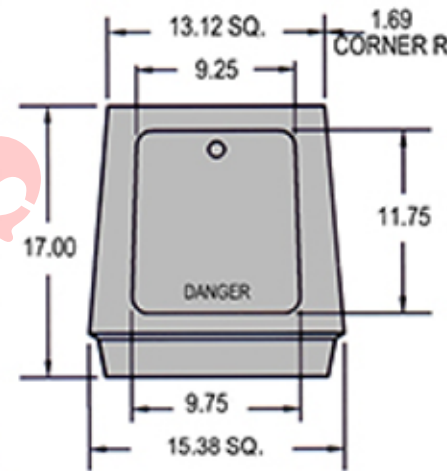
(330) 745-3101

FAX(330) 745-7999

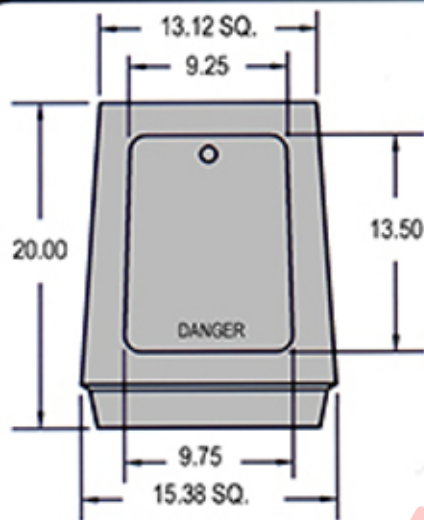
E-MAIL: AFC@AkronFoundry.com

**TB1-20**

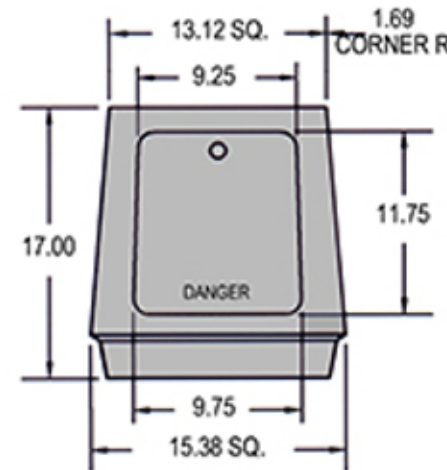
This base features 11" to 13" top bolt circle and 13" to 15" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB1-17**

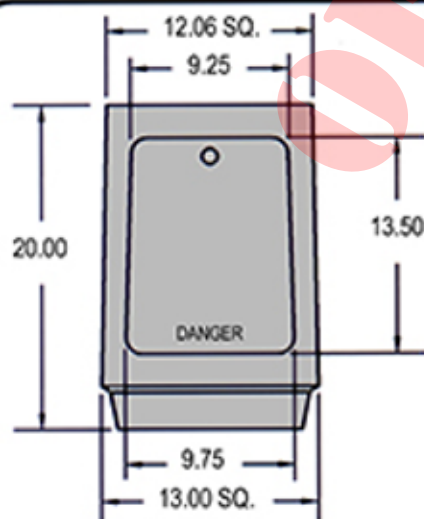
This base features 10 1/2" to 13 1/2" top bolt circle and 13" to 15" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB1-20 MODIFIED**

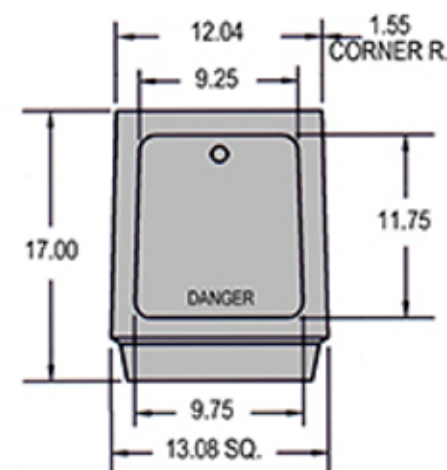
This base features 11" to 13" top bolt circle and 10 1/2" to 12 15/16" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB1-17 MODIFIED**

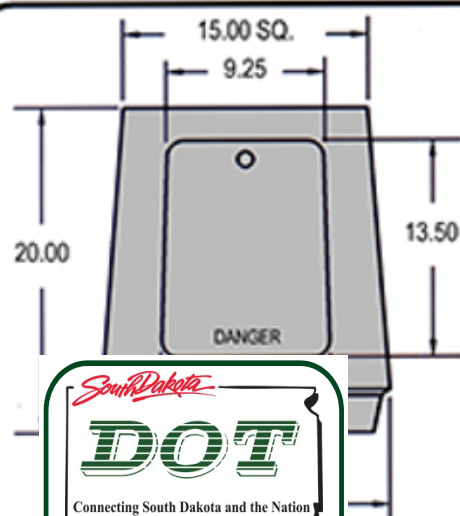
This base features 10 1/2" to 13 1/2" top bolt circle and 10 1/2" to 12 15/16" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB2-20**

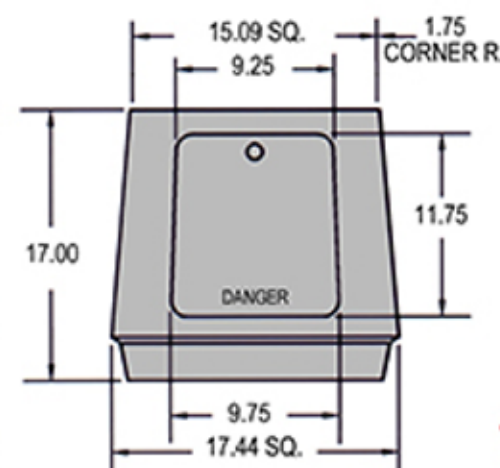
This base features 10" to 12" top bolt circle and 10" to 12" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB2-17**

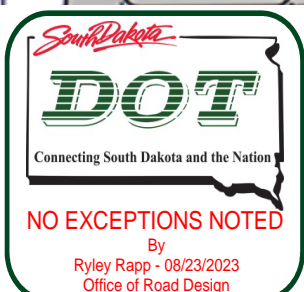
This base features 10" to 12" top bolt circle and 10" to 12" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB3-20**

This base features 13" to 15 1/8" top bolt circle and 15" to 17 1/4" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB3-17**

This base features 13" to 15 1/8" top bolt circle and 15" to 17 1/4" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED

FOR HINGED DOOR OPTION, ADD SUFFIX "-H" TO ANY OF THE PART NUMBERS, "-P" FOR PLASTIC DOOR
 CONTACT DISTRIBUTOR FOR REQUIRED STEEL WASHERS.

ORDERING INFORMATION

PART NUMBER	TOP BOLT CIRCLE	BOTTOM BOLT CIRCLE	BASE HEIGHT	BASES PER SKID	AASHTO APPROVAL
TB1-20	11" - 13"	13" - 15"	20"	27	1975
TB1-20 MODIFIED	11" - 13"	10 1/2" - 12 15/16"	20"	27	1975
TB2-20	10" - 12"	10" - 12"	20"	27	1975
TB3-20	13" - 15 1/8"	15" - 17 1/4"	20"	18	1975
TB1-17	10 1/2" - 13 1/2"	13" - 15"	17"	36	1985
TB1-17 MODIFIED	10 1/2" - 13 1/2"	10 1/2" - 12 15/16"	17"	36	1985
TB2-17	10" - 12"	10" - 12"	17"	36	1985
TB3-17	13" - 15 1/8"	15" - 17 1/4"	17"	24	1985
TB4-20 (HEAVY DUTY)	15" - 18" (PUNCH-OUT)	18" - 22"	20"	8	NONE
TB4-24 (HEAVY DUTY)	15" - 18" (PUNCH-OUT)	18" - 22"	24"	8	NONE
TB5-9	14 1/2" - 15"	14 1/2" - 16 1/4"	9"	54	1985
TB6-9	10 1/2" - 12"	10" - 12 3/4"	9"	54	1985
TB7-9	16"	15" - 18 5/8"	9"	36	PENDING
TB8-9	16" - 18"	16" - 21"	9"	36	PENDING

DOORS: WHEN ORDERING HINGED DOOR ADD SUFFIX "H" TO THE PART NUMBER / ADD "P" FOR PLASTIC DOOR

WASHERS: 1018-1020 STEEL, ZINC MECHANICAL DEPOSIT PER ASTM 0695-85, CLASS 50

PART NUMBER	SIZE	WEIGHT EACH	PACKAGE WEIGHT
AF-W3	2 1/2" DIA. O.D. X 1 1/16" I.D. X 3/8" THICK	.40 lbs. EACH	108 pcs./carton 48.0 lbs.
AF-W1	2 3/4" DIA. O.D. X 1 1/16" I.D. X 1/2" THICK	.69 lbs. EACH	54 pcs./carton 38.2 lbs.
AF-W2	2 3/4" DIA. O.D. X 1 5/16" I.D. X 1/2" THICK	.61 lbs. EACH	54 pcs./carton 38.2 lbs.
AF-W4	2 3/4" X 4 1/4" X 5/8" THICK RECTANGULAR (FOR 1 1/16 OR 1 5/16 ID.)	1.80 lbs. EACH	24 pcs./carton 33.5 lbs.



MANUFACTURED IN THE U.S.A. BY:



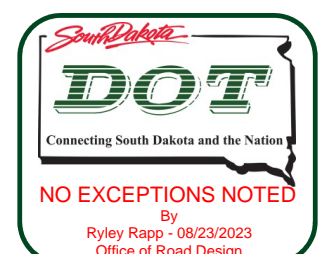
AKRON FOUNDRY COMPANY

2728 WINGATE AVENUE

AKRON, OHIO 44314

PHONE: 330-745-3101 FAX: 330-745-7999

E-MAIL: AFC@AkronFoundry.com



Project Name: WHITE RIVER / GUS STOP
 Company: BUILDERS ELECTRIC
 Prepared for: TALIS
 Notes: 382843418



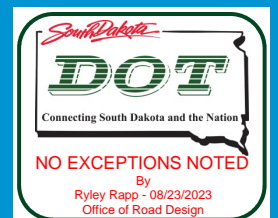
Ask about our Service Solutions that can help save you time and money

- Stage and Storage
- Kitting
- Mobile Trailers
- Material, Conduit, and Fixture Carts
- On-Site Customer Prefabrication
- Strut Cutting
- Graybar Managed Inventory (VMI)
- After-Hours Pickup
- Wire Management



Jenni De Witt
 Project Specialist
Jennifer.Dewitt@Graybar.com

SOUTH DAKOTA LOCATIONS:
 Sioux Falls – 2810 N 1st Ave / 605-731-7900
 Brookings – 3100 6th St / 605-692-4477



We are enclosing herewith 1 copies of cuts/drawings. Please complete section marked "To Be Completed By Customer" and return this form with approved cuts to the Sender noted below.

PLEASE NOTE THE APPROXIMATE LEAD TIMES INDICATED ABOVE. WE ASK THAT YOU ALLOW AT LEAST THAT AMOUNT OF TIME AFTER THE RETURN OF YOUR APPROVED CUTS. THIS SUBMITTAL REPRESENTS OUR INTERPRETATION OF THE PROJECTED PLANS AND SPECIFICATIONS AS THEY RELATE TO THE EQUIPMENT COVERED.


VOLTAGES ARE SHOWN FOR FLUORESCENT AND H.I.D. EQUIPMENT. IF VOLTAGE REQUIREMENTS ARE OTHER THAN INDICATED, THE SUBMITTAL SHOULD BE APPROVED AS NOTED, AND THE CORRECT VOLTAGE SHOWN. IF NO VOLTAGE IS SHOWN, IT IS OUR INTENT TO FURNISH 120 VOLT.

PLASTER FRAMES AND OTHER AUXILIARY EQUIPMENT SUCH AS STEMS, CHAIN HANGERS, SPECIAL FUSING, ETC., ARE NOT INCLUDED EXCEPT WHEN SPECIFICALLY INDICATED, OR WHEN FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT AS DESCRIBED BY CATALOG NUMBER.

SPECIAL FINISHES SHOULD BE NOTED, IF NOT SPECIFICALLY INDICATED. EVERY EFFORT HAS BEEN MADE TO SUBMIT THE CORRECT FIXTURE FOR THE CEILING REQUIRED. FINAL DETERMINATION IS THE RESPONSIBILITY OF THE CONTRACTOR.

WE ASSUME THE RESPONSIBILITY FOR FURNISHING MATERIAL ONLY AS SUBMITTED. ANY DEVIATION MUST BE NOTED ON THE COPIES RETURNED.

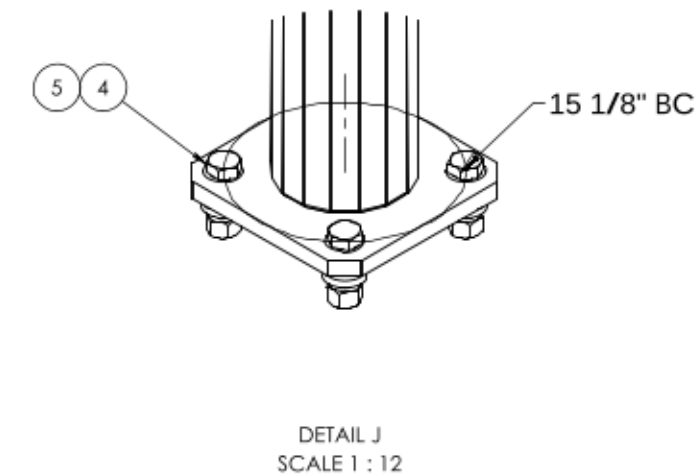
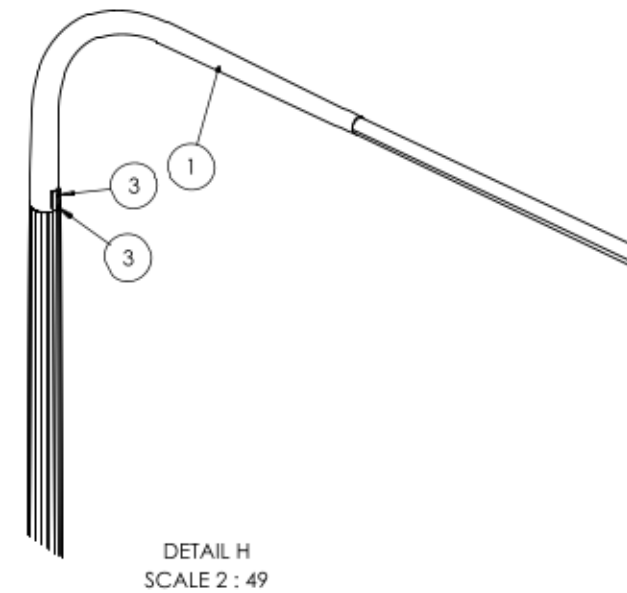
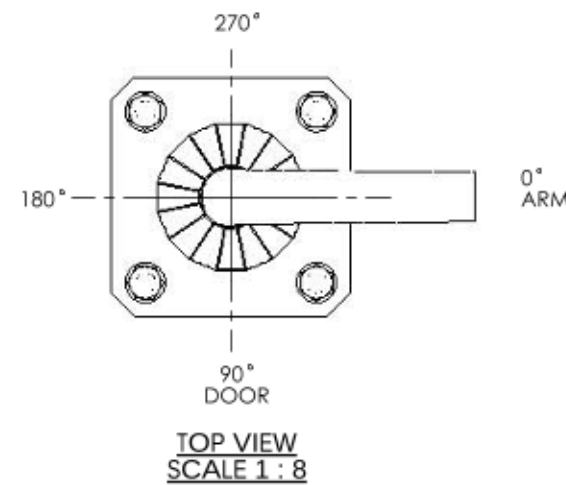
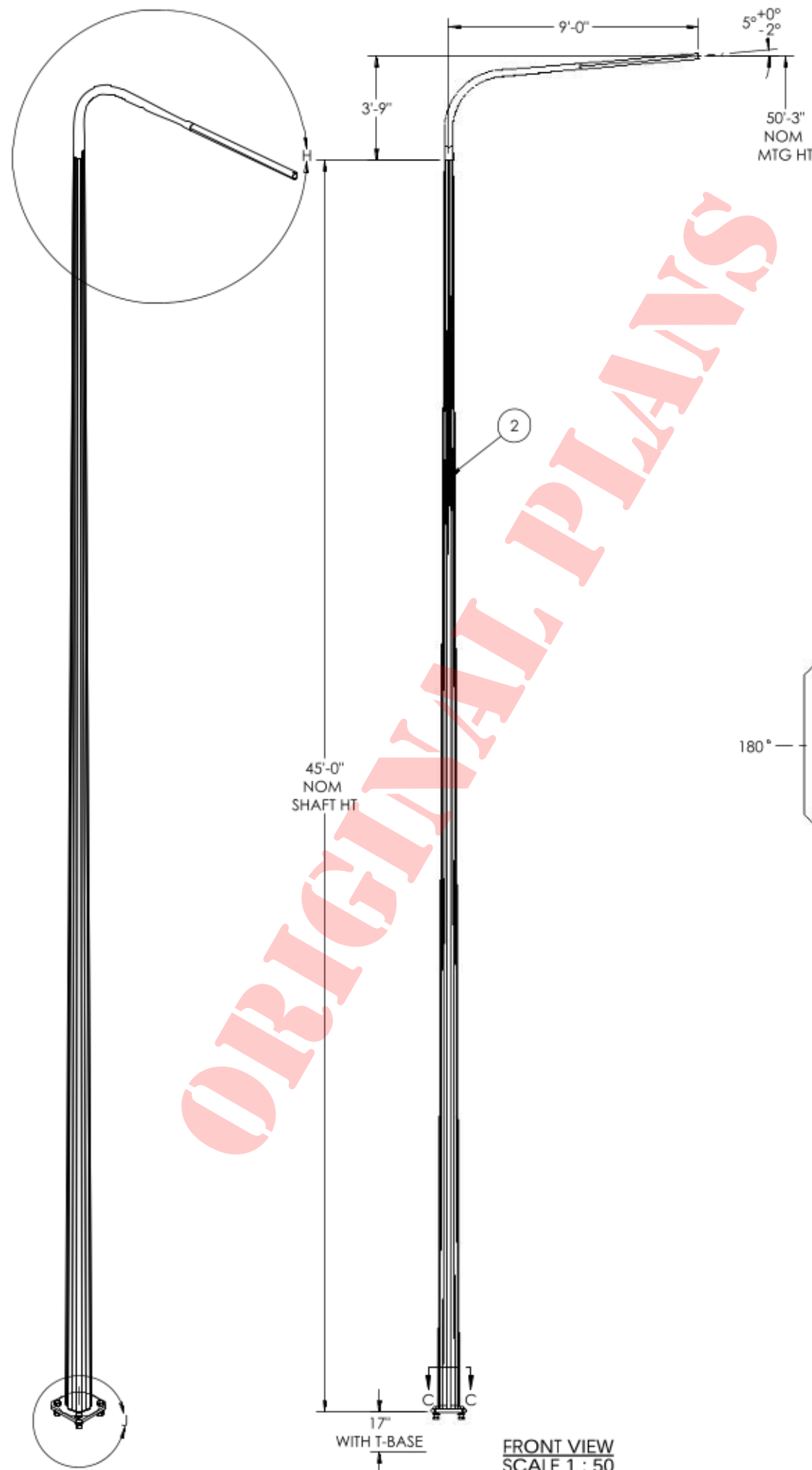
Sender: Jenni DeWitt – Jennifer.DeWitt@Graybar.com
Address: % Graybar Electric Company, Inc.
2810 North First Avenue
Sioux Falls, SD 57104



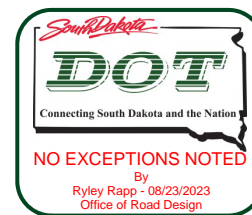
South Dakota
DOT
Connecting South Dakota and the Nation

NO EXCEPTIONS NOTED

By
Ryley Rapp - 08/23/2023
Office of Road Design



SHIPPING
BAND LIGHT POLES
IN BUNDLES OF 4- "2 WIDE & 2 HIGH"



FRONT VIEW
SCALE 1 : 50

REVISIONS			
REV.	DESCRIPTION	DATE	DRFT

MATERIAL SPECIFICATIONS

POST: ASTM A1011 GR 50
BASE PLATE: ASTM A709 GR 36
MAST ARM: N/A
MOUNTING PLATE: N/A
LUMINAIRE ARM: ASTM A1011 GR50
HARDWARE FINISH: ASTM A153
ANCHOR BOLTS: SIZE: 1 1/4"

DESIGN CRITERIA

AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS ON HIGHWAY SIGNS, LUMINAIRES & TRAFFIC SIGNALS.

WINDS: MPH VORTEX SHED: N/A
FATIGUE CAT: GALLOPING: N/A
NATURAL WIND GUST: N/A TRUCK GUST: N/A

WELD SPECIFICATION

THE POST AND MAST ARM TO BE A TAPERED TUBE FABRICATION WITH ONE SUBMERGED ARC LONGITUDINAL SEAM WELD WITH 100% PENETRATION 6" FROM BASE PLATE AND 60% FOR REMAINDER. GAS METAL ARC WELDING PROCESS WITH 60% PENETRATION MAY BE USED FOR REMAINDER OF WELDED FABRICATION.

WELD TESTING: 100% OF ALL WELDS VISUAL TESTED (VT), 100% OF ALL COMPLETE JOINT PENETRATION (CJP) WELDS ULTRASONIC TESTED (UT) BASED ON THE THINNESS MATING MATERIAL: (PER AASHTO 2013 5.15.5-WELD INSP) THICKNESS.
< 6MM (0.25 IN) MT
≥ 6MM (0.25 IN) UT
A RANDOM 30% OF ALL FILLET WELDS AND PARTIAL JOINT PENETRATION (PJP) LONGITUDINAL SEAM WELDS MAGNETIC PARTICLE TESTED (MT).

FINISH SPECIFICATION

GALV. OR PRIME COAT: HOT DIP GALV PER ASTM A123
FINISH COAT: TBASE = BARE CAST FINISH
COLOR:
FEDERAL OR RAL SPEC.:
WEIGHT W/GALV.: 521.798
WEIGHT W/GALV.&PAINT:
WEIGHT W/PAINT:
SURFACE AREA: 25470.7
GAL. OF PAINT:



THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG

SALES ORDER NO.:	QTY:	STATE:	SHEET
207908	2	SD	1 OF 1

DESCRIPTION:
SHIP POLE LIGHT 16S 11GAX45'0/50'3
W/9'0 ELITE ARM (10B SERIES)

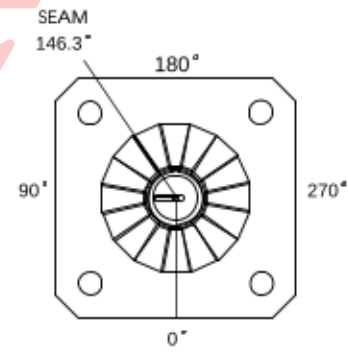
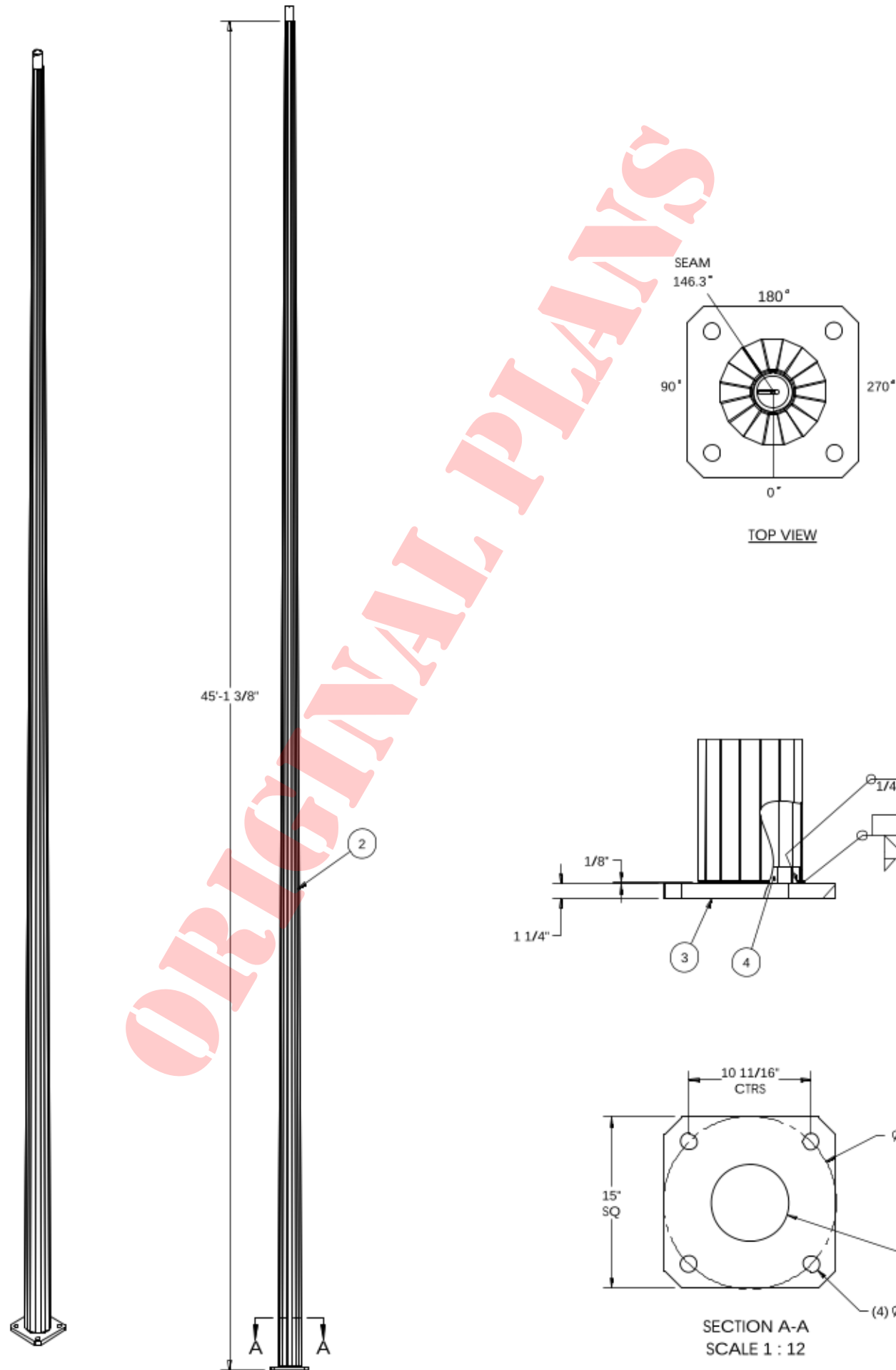
EST. WEIGHT:	DRAWING NO:
506.6	16-EA9-503-SD

PROJECT NAME:
PO#4703686213 SD DOT WHITE
RIVER KNOCKDOWN

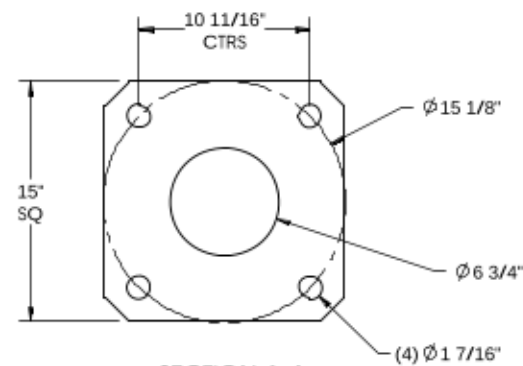
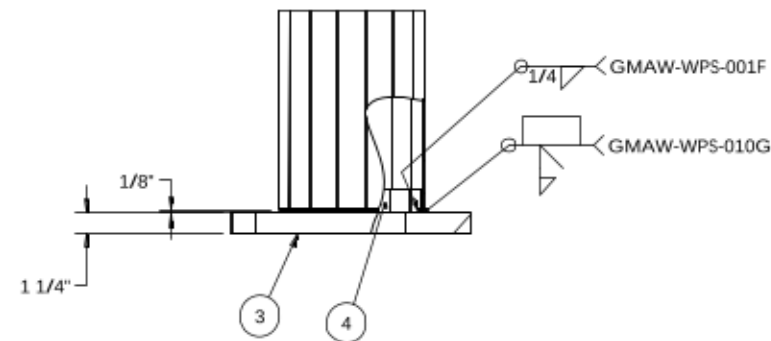
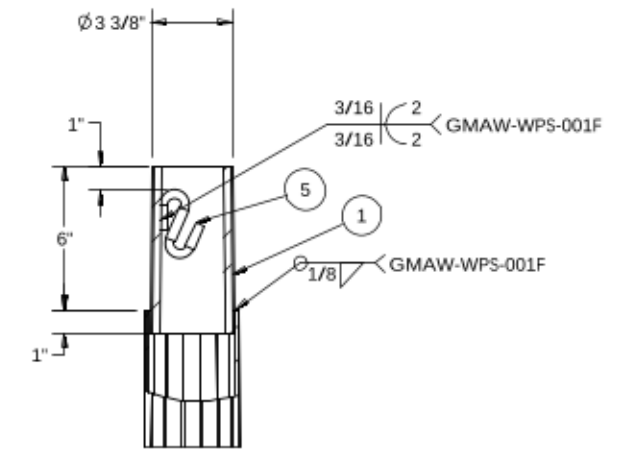
PROJECT LOCATION:	
SOUTH DAKOTA	
DWN BY: PHILL R	DATE: 07-28-2023
CHK BY:	DATE:

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	10B14-5	ELITE SINGLE ARM 9'	1		X
2	1024824	WLDMT POLE LIGHT 16S 11GA X45'0 (11GAX9.37X4.0X45'0)	1		X
3	SCRWJ1/2-13X1/2SS	SCRW STHXSKCPPT 1-2-13NC X 1-2 SS	2		
4	ASSYRCP1-1-4-7X4-1-2NUTWSHFLT	ASSY RCP BOLT 1 1/4X4 1/2B A325GV W/NUT HVY HX A563 & WSHFLT GV	4		
5	8801380	WASHER CLASS 55 SDDOT 1 1/4	4		


REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED WPS	8/3/2020	RK
B	added shook	1/20/2022	pjf

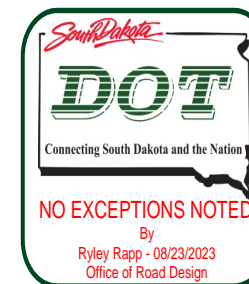


TOP VIEW

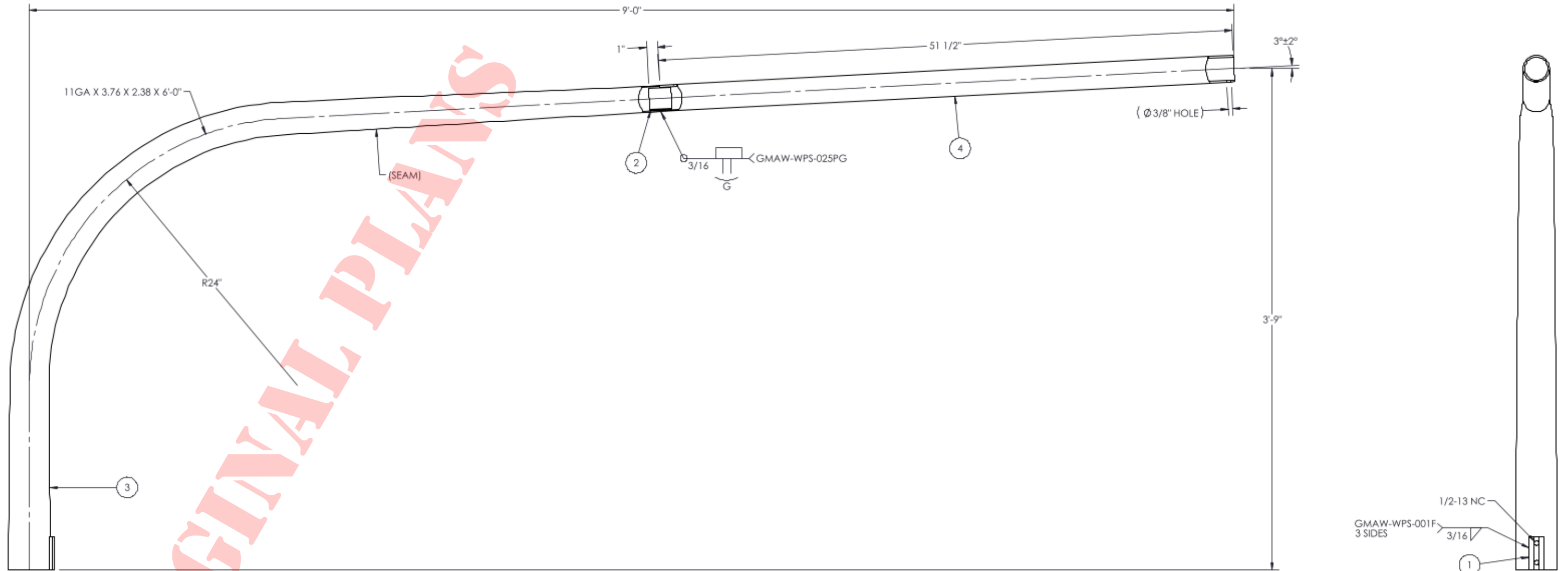
SECTION A-A
SCALE 1 : 12POLE TOP
DETAIL

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	10A240	3"x7" ELITE POLE TOP TENON	1
2	1011438	SHAFT CHMFR 16S 11gaX9.37X4X45'-0	1
3	1011234	BASE SQ 1.25 x 15"	1
4	1011447	RING BACK-UP 16S 11GA X 9 3/16	1
5	9900051	S-HOOK (REF 500A158-1)	1

THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG			 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395	
DWN:	JASON D	DATE:		
CHK BY:		DATE:	DESCRIPTION:	
MATERIAL:			WLDMT POLE LIGHT 16S 11GA X45'0	
SEE BOM				
WEIGHT:	SURFACE AREA:	SCALE:	DRWG NO.:	SHEET
446.4 - LBS LBS.	22866.1 SQ IN	1:48	1024824	1 OF 1



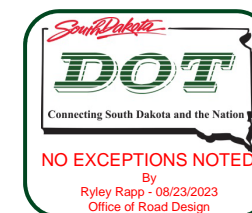
REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	CONVERTED USING CORRECT SHAFT DIAMETERS BASED ON FLAT	5/24/2023	MS



SHAFT MUST BE CUT TO FINISHED SIZE

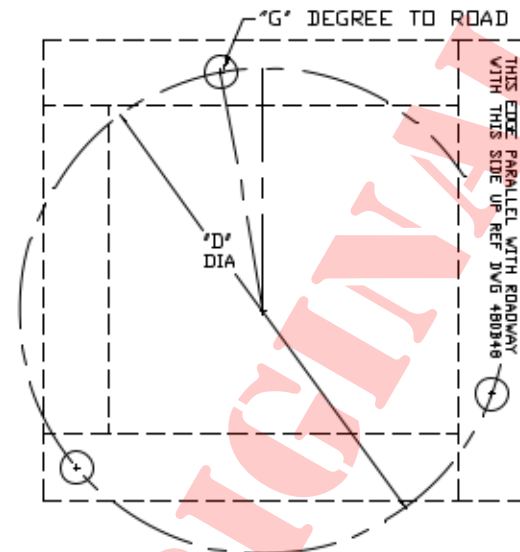
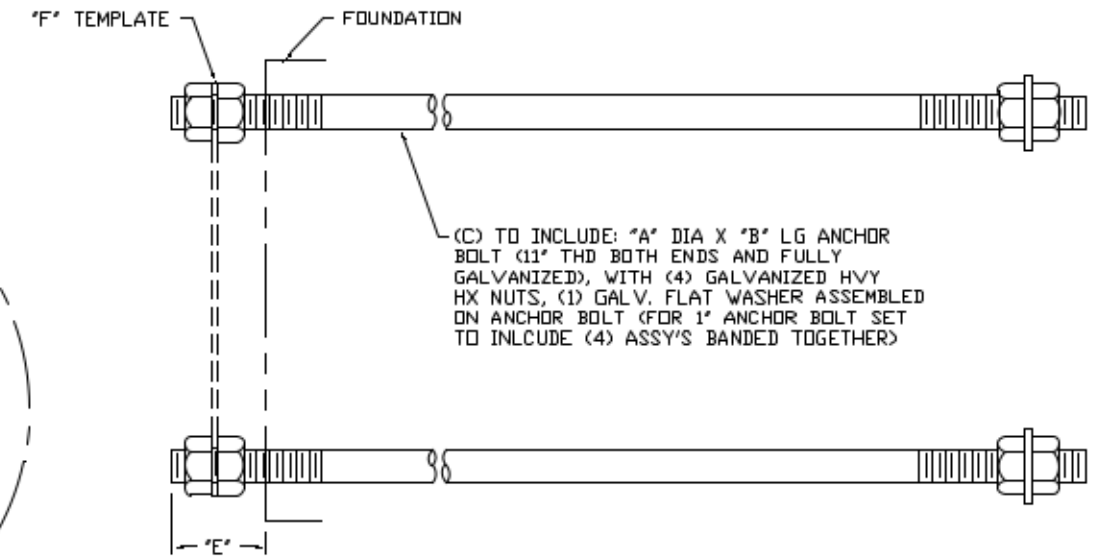
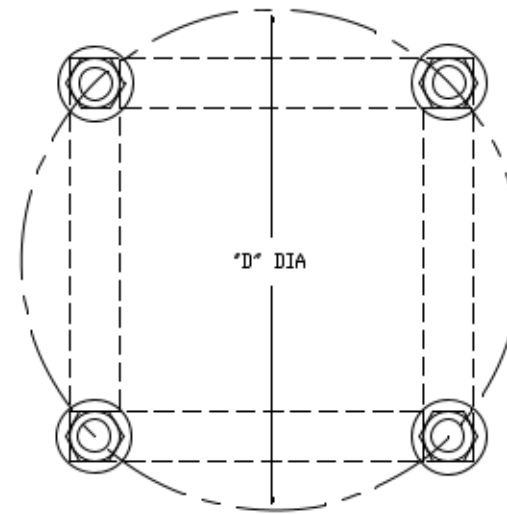
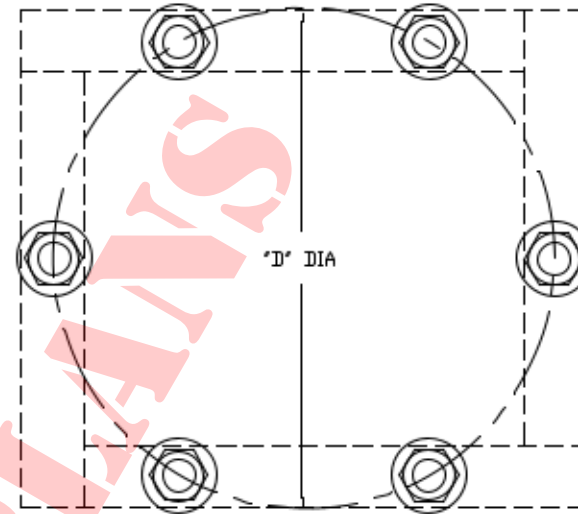
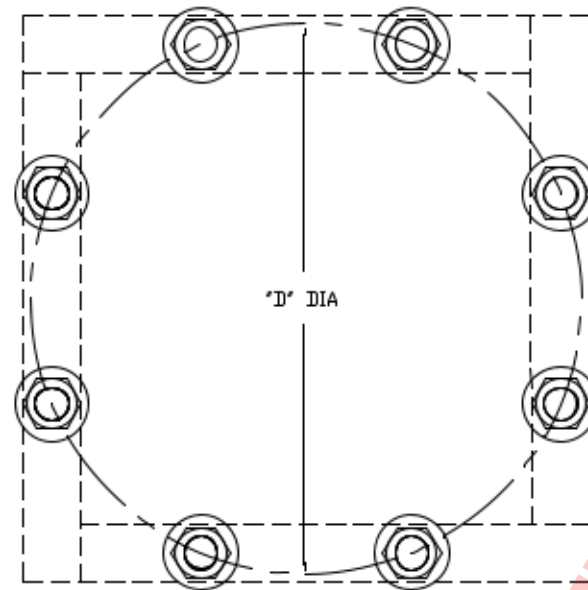


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	10A22	BLOCK-ELITE ARM	1
2	1022714	TUBE 2\"ODX1/8\"TKX2\"LG	1
3	1067738	SHAFT SCKT RD 11GAX3.76X2.09X7'-3 1/2	1
4	1067741	PIPE 2\" (2 3/8 OD)X 51 1/2 W/ HOLE	1



THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG		
DWN: MARK S.	DATE: 05-16-2023	
CHK BY:	DATE:	
MATERIAL: SEE BOM		
WEIGHT: 44.80 LBS.	SURFACE AREA: 2362.72 SQ IN	SCALE: 1:9

 MILLERBERND	622 6TH ST. SO. WINSTED, MN 55395	
	DESCRIPTION: WLDMT ARM ELITE 9'0	
DRWG NO.: 10B14-5	SHEET 1 OF 1	B



MMC#207908 PO#4703686213 SD DOT WHITE
RIVER KNOCKDOWN

NOTE:

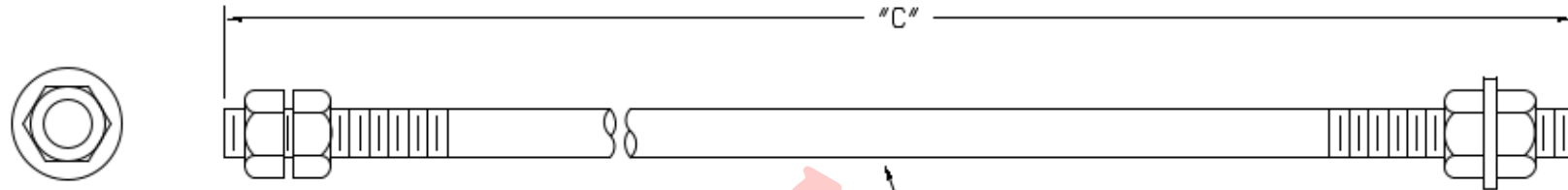
1. 1" TO 1 1/4" ANCHOR BOLT PER F1554 GRADE 55 INCLUDING SUPPLEMENTARY SPEC S4 (CHARPY @ + 40") MATERIAL - 55,000 PSI MIN YIELD, 75,000 - 95,000 PSI TENSILE STRENGTH AND SUITABLE FOR WELDING
2. 1 1/2" TO 2" HIGH STRENGTH STEEL ANCHOR BOLT PER ASTM F1554 GRADE 105 MATERIAL INCLUDING SUPPLEMENTARY SPEC S4 (CHARPY @ + 40") - QUENCHED AND TEMPERED COLD DRAWN STRESS-RELIEVED (SAE 4140) ROD WITH 105,000 PSI MIN YIELD AND 125,000 - 150,000 PSI TENSILE STRENGTH, 15% MIN ELONGATION AND 45% MIN REDUCTION OF AREA
3. ANCHOR BOLT & NUTS GALVANIZED PER ASTM F2329
4. THREAD TO BE CLASS 2A PER AMERICAN STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
5. ALL BOLTS ROLLED THREAD
6. NO WELDING IS ALLOWED ON ANCHOR BOLTS
7. GALVANIZED HEAVY HEX NUTS PER A194 GR 2H (.030 OVER SIZE)

460B1261-37		1-8	24'	(4) ASSY'S 460A204-12	15'	4"	460B131-20	---
460B1261-36		1 1/4-7	24'	(4) ASSY'S 460A204-11	13'	4"	460B137-7	---
460B1261-35		1-8	40"	(1) SET 460A204-1	13 1/2	4"	460B131-16	---
460B1261-34		1 1/4-7	50"	(4) ASSY'S 460A204-10	15 1/8	5'	460B137-35	---
460B1261-33		1 1/2-6	60"	(4) ASSY'S 460A204-3	15'	6 1/2	460B138-38	---
460B1261-32		1 1/2-6	60"	(4) ASSY'S 460A204-3	16'	6 1/2	460B138-5	---
460B1261-31		1 3/4-5	96"	(6) ASSY'S 460A204-9	22'	8"	460B136-49	---
460B1261-30		1 1/2-6	60"	(6) ASSY'S 460A204-3	21"	7"	460B136-16	---
460B1261-29		2-4 1/2	96"	(4) SET 460A204-4	24"	8"	460B139-17	---
460B1261-28		1-8	40"	(1) SET 460A204-1	15 1/8	4"	460B131-35	---
460B1261-27		1-8	30"	(4) ASSY'S 460A204-6	15"	4"	460B131-20	---
460B1261-26		1 1/4-7	36"	(4) ASSY'S 460A204-5	13 1/2	4 1/2	460B137-9	---
460B1261-25		2-4 1/2	96"	(4) ASSY'S 460A204-4	28"	8"	460B139-12	---
460B1261-24		1 1/2-6	60"	(6) ASSY'S 460A204-3	24"	6"	460B136-14	---
460B1261-23		1 1/4-7	48"	(6) ASSY'S 460A204-2	21"	5"	460B136-13	---
460B1261-22		1 1/2-6	60"	(4) ASSY'S 460A204-3	19"	6 1/2	460B138-20	---
460B1261-21		1 1/4-7	48"	(3) ASSY'S 460A204-7	18 1/2	4"	460B182	10"
460B1261-20		2-4 1/2	96"	(6) ASSY'S 460A204-4	21"	8"	460B136-7	---
460B1261-19		1 1/2-6	60"	(8) ASSY'S 460A204-3	28"	6 1/2	460B165-4	---
460B1261-18		1-8	40"	(1) SET 460A204-1	9 1/2	4"	460B131-3	---
460B1261-17		2-4 1/2	96"	(4) ASSY'S 460A204-4	25"	8"	460B139-6	---
460B1261-16		2-4 1/2	96"	(4) ASSY'S 460A204-4	26 1/2	8"	460B139-8	---
460B1261-15		2-4 1/2	96"	(4) ASSY'S 460A204-4	23"	8"	460B139-7	---
460B1261-14		1 1/2-6	60"	(6) ASSY'S 460A204-3	22"	6 1/2	460B136-1	---
460B1261-13		1 1/4-7	48"	(4) ASSY'S 460A204-2	13 1/2	4 1/2	460B137-9	---
460B1261-12		2-4 1/2	96"	(4) ASSY'S 460A204-4	22"	8"	460B139-5	---
460B1261-11		1-8	40"	(1) SET 460A204-1	11"	4"	460B131-8	---
460B1261-10		1-8	40"	(1) SET 460A204-1	15"	3"	460B131-20	---
460B1261-9		1 1/2-6	60"	(4) ASSY'S 460A204-3	22"	6 1/2	460B138-12	---
460B1261-8		1 1/2-6	60"	(4) ASSY'S 460A204-3	20"	6 1/2	460B138-11	---
460B1261-7	2	1 1/4-7	48"	(4) ASSY'S 460A204-2	17"	4"	460B137-12	---
460B1261-6		1 1/2-6	60"	(4) ASSY'S 460A204-3	17"	6 1/2	460B138-7	---
460B1261-5		1 1/2-6	60"	(4) ASSY'S 460A204-3	18"	6 1/2	460B138-8	---
460B1261-4		1 1/2-6	60"	(4) ASSY'S 460A204-3	14"	6 1/2	460B138-3	---
460B1261-3		1 1/4-7	48"	(4) ASSY'S 460A204-2	17"	4 1/2	460B137-12	---
460B1261-2		1-8	40"	(1) SET 460A204-1	12"	4"	460B131-11	---
460B1261-1		1-8	40"	(1) SET 460A204-1	15"	4"	460B131-20	---
PART NO	QTY (SET)	"A" THD SIZE	"B" BOLT LG	"C" QTY 460A204-	"D" BC	"E" BOLT PROJ	"F" TEMPLATE	"G" DEGREE TO ROAD

REV 2/23/221 ADDED -37 PJ
 REV 1/28/21 ADDED -36 PJ
 REV 9/3/20 ADDED -35 (RK)
 REV 3/21/19 ADDED-34 (RK)
 REV 1/18/19 ADDED-33 (RK)
 REV 8/14/18 -30 "E" PROJ WAS 6 1/2" (RK)
 REV 2/21/18 QTY TO JUST SAY SET & CHARPY TEST-JD
 REV 1/17/18 ADDED -32-JD
 REV 1/9/18 ADDED -31-JD
 REV 11/30/17 UPDATED BARE NUTS TO GALVANIZED NUTS-JD



DWN: JASON D	ANCHOR BOLT CLUSTER TABULATION (SD)		
DATE: 10/16/17	(ASTM F1554 MATERIAL) < FULLY GALVANIZED >		
CHK:	Millerbernd MANUFACTURING CO. WINSTED, MN		
SCALE: NTS			
		460B1261	



NOTE:

1. 1" TO 1 1/4" ANCHOR BOLT PER F1554 GRADE 55 MATERIAL - 55,000 PSI MIN YEILD 75,000 - 95,000 PSI TENSILE STRENGTH (INCLUDING SUPPLEMENTARY SPEC S4(CHARPY @ +40°) AND SUITABLE FOR WELDING NUT MAT'L - ASTM A194 GR 2H FLATWASHER MAT'L - ASTM F436
2. 1 1/2" TO 2" HIGH STRENGTH STEEL ANCHOR BOLT PER ASTM F1554 GRADE 105 MATERIAL (INCLUDING SUPPLEMENTARY SPEC S4(CHARPY @ +40°) QUENCHED AND TEMPERED COLD DRAWN STRESS-RELIEVED (SAE 4140) ROD WITH 105,000 PSI MIN YIELD AND 125,000 - 150,000 PSI TENSILE STRENGTH, 155 MIN ELONGATION AND 45% MIN REDUCTION OF AREA NUT MAT'L - ASTM A194 GR 2H FLATWASHER MAT'L - ASTM F436
3. ANCHOR BOLT AND NUTS GALVANIZED PER ASTM F2329
4. THREAD TO BE CLASS 2A PER AMERICAN STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
5. ALL BOLTS ROLLED THREAD
6. NO WELDING IS ALLOWED ON ANCHOR BOLTS
7. GALVANIZED HEAVY HEX NUTS PER A194 GR 2H (.030 OVER SIZE)
8. BOTH ENDS OF ANCHOR BOLT PERMANENTLY STAMPED WITH THE NAME OF THE MANUFACTURER (PER SUPP-S2) AND GRADE (PER SUPP-S3).

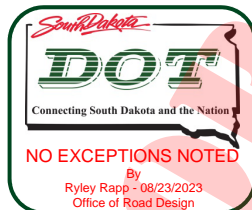
GRADE	IDENTIFICATION MARKING
36	MANUFACTURERS' ID/AB36
55	MANUFACTURERS' ID/AB55
105	MANUFACTURERS' ID/AB105
9. BOTH ENDS OF ANCHOR BOLT PAINTED PER COLOR CODE

GRADE	COLOR CODE
36	(BLUE)
55	(YELLOW)
105	(RED)

(A) ASSEMBLY TO INCLUDE: (1) "B" DIA X "C" LG ANCHOR BOLT (11" THD BOTH ENDS AND FULLY GALVANIZED), WITH (4) GALVANIZED HVY HX NUTS, (1) GALVANIZED FLATWASHER ASSEMBLED ON ANCHOR BOLT (QTY OF (4) ASSEMBLIES TO BE BANDED TOGETHER TO EQUAL (1) SET ONLY ON 1" ANCHOR BOLTS)

MMC#207908 PO#4703686213 SD DOT WHITE
RIVER KNOCKDOWN

460A204-12		1-8	24"
460A204-11		1 1/4-7	24"
460A204-10		1 1/4-7	50"
460A204-9		1 3/4-5	96"
460A204-8		2"-4 1/2	90"
460A204-7		1 1/4-7	48"
460A204-6		1"-8	30"
460A204-5		1 1/4-7	36"
460A204-4		2"-4 1/2	96"
460A204-3		1 1/2-6	60"
460A204-2	8	1 1/4-7	48"
460A204-1		1"-8	40"
PART NO	"A" QTY	"B" THD SIZE	"C" BOLT LG



8/28/22 ADDED -12 PJ
1/28/24 ADDED -11 PJ
3/21/23 ADDED -10 GHO
2/22/18 CHARPY NOTE - J1
1/3/18 ADDED -4 J1
12/26/17 TO DIRECTED HOBBED
NOTES FROM 11/3/17-J1
REV 11/2/17 BOLTS WERE GALV
1 GHO ONLY GHO
REV 4/21/17 ADDED CHARPY
REV 1/22/17 ADDED NOTE B & 9
REV 3-18-10 GHO, ONLY SPEC
WAS ASTM A55
REV 7-29-09 CHANGED
FLATWASHER TYPE A TO F436
REV 1-21-09 PRODUCT HANDING

DWN: FLOYD F.
DATE: 1-28-02
CHK: WILL Q.
SCALE: NTS

ANCHOR BOLT ASSY
ASTM A1554 MATERIAL

Millerbernd MANUFACTURING CO.
WINSTED, MN

460A204

QTY: 2

1. MATERIAL- LOW CARBON 36,000 PSI
MIN YIELD (ASTM A36)
2. FINISH- BARE UNFINISHED



TEMPLATE (4) 1 1/4 BOLTS

Millerbernd

MANUFACTURING CO.
WINSTED, MN

460B137

REV. REMOVED WELD 4-30-18 (PR)

July 28, 2023

South Dakota DOT
Traffic Design Engineer
Office of Road Design
700 E Broadway Avenue
Pierre, SD 57501-2586

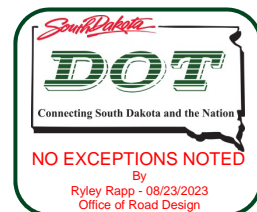
RE: MMC# 207908, PO#4703686213, SD DOT WHITE RIVER KNOCKDOWN
Lighting Poles

The following lighting and traffic signal standards used for this project meet or exceed the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", 2013. These standards also are in compliance with the 1994 version of the aforementioned AASHTO standard.

Respectfully,



Russell K. Teal PE





Date: Aug 3, 2023

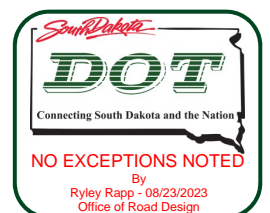
Core4 Technologies
8317 Pillsbury Avenue South
Bloomington MN 55420
Phone: (888) 551-9209
Fax: (952) 314-2144

Job Name
BUILDER'S ELECTRIC JOBS COMBINED
CORE4SD23-5043
SIOUX FALLS SD

Bid Date
Jul 18, 2023

Submittal Date
Aug 3, 2023

ORIGINAL PLANS





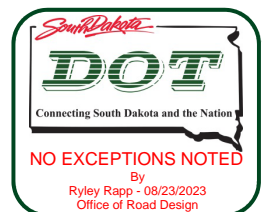
Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
SDDOT L67 06L6

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing: Aluminum die cast enclosure. Casting Integral heat sink for maximum heat transfer

Lens: Impact resistant tempered glass

Paint: Corrosion resistant polyester powder painted, minimum 2.0 mil thickness (RAL & custom colors available)
 Standard = Black, Dark Bronze Gray, White
 Optional = Coastal Finish

Weight: 24.0 lbs (10.9 kgs)

Lumen Maintenance

Projected Lxx per IES TM-21-11 at 25°C

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16	A5, B5, C5, D5, E5	L99	L99	L99
18	A5, B5, C5, D5, E5	L99	L98	L98
19	A5, B5, C5, D5, E5	L99	L98	L97
21	A5, B5, C5, D5, E5	L94	L87	L85
23	A5, B5, C5, D5, E5	L97	L96	L95
25	A5, B5, C5, D5, E5	L96	L95	L95
27	A5, B5, C5, D5, E5	L96	L94	L94
28	A5, B5, C5, D5, E5	L96	L94	L93
30, 31	A5, B5, C5, D5, E5	L95	L93	L92
32	A5, B5, C5, D5, E5	L94	L91	L90

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

Optical System

Lumens: 16,000 - 32,000

Distribution: Type II Narrow, Type II Wide, Type III, Type IV and Type II Enhanced Back light

Efficacy: 112-140 LPW

CCT: 2700K, 3000K, 4000K, 5000K

CRI (Min): 70 CRI

Ratings

Operating Temp: -40°C to 50°C *

Vibration: 3G per ANSI C136.31-2018

LM-79: Testing in accordance with IES Standards

EMI: Title 47 CFR Part 15 Class A

RoHS: Complies with the material restrictions of RoHS

*ERL2 (32K Lumen 347-480V SKU) operates at -40°C to 45°C

Electrical

Input Voltage: 120-277V or 347-480V

Input Frequency: 50/60Hz

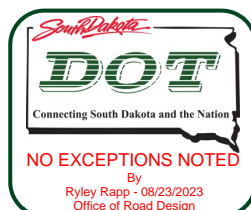
Power Factor: ≥ 90% at rated watts

Total Harmonic Distortion: ≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018


Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Not all product variations listed on this page are DLC qualified.
 Visit www.designlights.org/search to confirm qualifications.

**Controls**

Dimming: Standard-0-10V ☒
 Optional-DALI (Option U) ☐

Sensors: Photo Electric Sensors (PE) available
 LightGrid Compatible

Warranty

☒ 5 Year (Standard) ☐ 10 Year (Optional)

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

Ordering Information

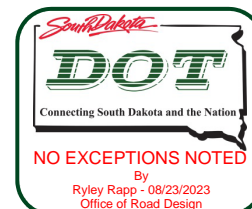
ERL2

PROD. ID	VOLTAGE	LUMENS (LM)	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16,000 lm	A5 = Type II Narrow	27 = 2700K ²	A = 7-Pin Receptacle	GRAY = Gray	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18,000 lm	B5 = Type II Wide	30 = 3000K ²	D = 7-Pin Receptacle with Shorting Cap	BLACK = Black	B = Tether
L = Local	1 = 120V	19 = 19,000 lm	C5 = Type III	40 = 4000K	E = 7-Pin Receptacle with non-Dimming Long Life PE ³	DKBZ = Dark Bronze	F = Fusing
2 = Double Module	2 = 208V	21 = 21,000 lm	D5 = Type IV ⁶	50 = 5000K	Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	3 = 240V	23 = 23,000 lm	E5 = Type II Enhanced Back Light				I = Optional IP66 Optical Enclosure
	4 = 277V	25 = 25,000 lm					L = Tool-Less Entry
	D = 347V	27 = 27,000 lm					R = Secondary 10kV/5kA SPD
	5 = 480V	28 = 28,000 lm					T = Secondary 20kV/10kA SPD ¹
		30 = 30,000 lm					U = DALI Programmable ^{6,7}
		31 = 31,000 lm					V1 = Field Adjustable Module ⁹
		32 = 32,000 lm					Y = Coastal Finish ⁸
							XXX = Special Options

¹ Not Available with Fusing² Select 2700K or 3000K CCT for IIDA approved units³ Nominal IES Type classing subject to typical variation, individual units may differ⁴ Lead time varies, contact Factory⁵ Per ANSI C136.10-2017⁶ Compatible with LightGrid⁷ Not available in 347V, 480V or 347-480V⁸ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.⁹ Not available with DALI "U" option¹⁰ Forward throw distribution. Classifies as Type III for lumen codes 23-32. Review IES curve for application.

Suggested HID Replacement

 Approximately 21,500 -32,000 lumens to replace 400W HPS
 Cobra-head

 Note: actual replacement lumens may vary based upon mounting height, pole spacing,
 design criteria, etc.


Current

LED.com

 © 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change
 without notice. All values are design or typical values when measured under laboratory conditions.

Page 14 of 20

(Rev 06/28/23)

OLP3187_R06

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

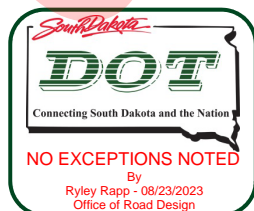
CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	TYPICAL INITIAL LUMENS			WATTAGE		BUG RATINGS		
		5000K/4000K	3000K	2700K	120V 277V	347V 480V	5000K/4000K	3000K	2700K
27	A5	27000	25900	25100	212		B4-U0-G4	B4-U0-G4	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
28	A5	28000	26800	26000	223		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B2-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
30	A5	30000	28800	27900	242		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
31	A5	31000	29700	28800	252		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
32	A5	32000	30700	29700	265		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4

For additional information on ERL2 IES files, please click one of the following links:

Non-Shielded

Shielded





Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

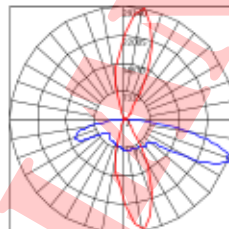
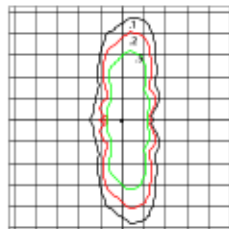
CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

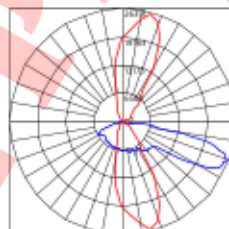
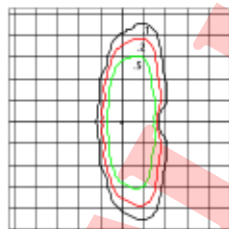
ERL2
Type II Narrow
32,000 Lumens
5000K
ERL2_32A550____IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 80°
- Horizontal cone at max Cd vert. angle 65°

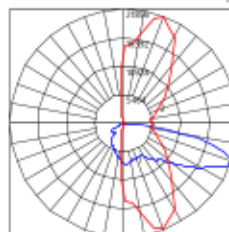
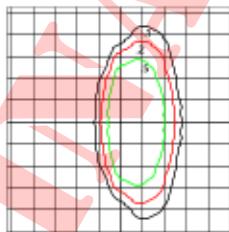
ERL2
Type II Wide
32,000 Lumens
5000K
ERL2_32B550____IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

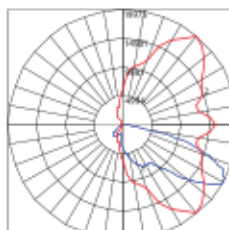
ERL2
Type III
32,000 Lumens
5000K
ERL2_32C550____IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 70°
- Horizontal cone at max Cd vert. angle 70°

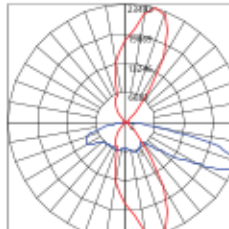
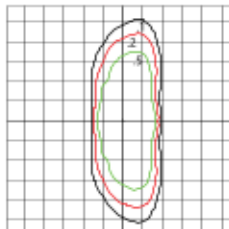
ERL2
Type III (FWT)
32,000 Lumens
5000K
ERL2_32D550____IES
Forward Throw



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 50°
- Horizontal cone at max Cd vert. angle 55°

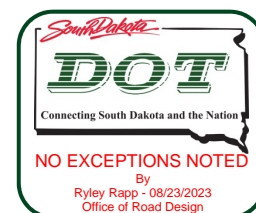
ERL2
Type II Medium
32,000 Lumens
5000K
ERL2_32E550____IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°

ISO illuminate diagrams and polar plots are representative of the SKUs illustrated. Refer to IES files for SKU specific information.



Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027C540EGRAY

Notes:

Type:

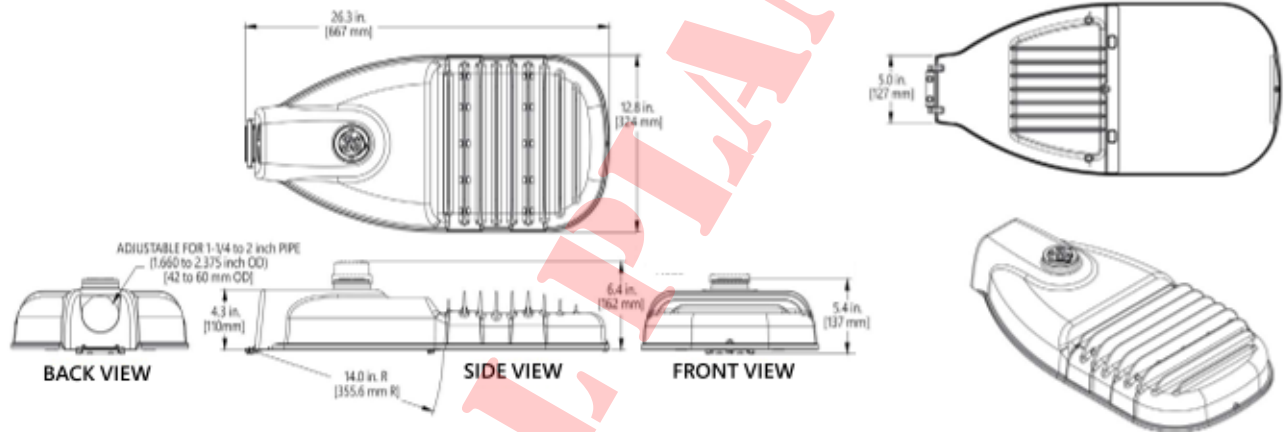
L67

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____
PROJECT NAME _____
DATE _____ TYPE _____
CATALOG NUMBER _____



Mounting

- Adjustable for 1.25 to 2 in. nominal mounting pipe (1.660 to 2.375 inch OD)
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight

- 24.0 lbs (10.9 kgs)

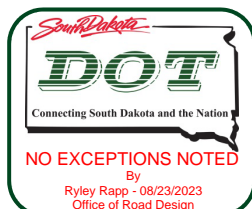
Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237G	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238G	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239G	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Long Life PE 120-277V
93147530	PECHTL	Long Life PE 347-480V
73251	SCCL-PECTL	Shorting Cap

Network Lighting Controls



Current's LightGrid™ Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 18 of 20

(Rev 06/28/23)

OLP3187_R06



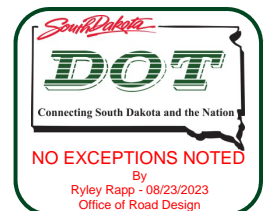
Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
WHITE RIVER SDDOT KNOCKDOWN

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY
Type:**Notes:**

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head LED Roadway Lighting



CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure casting integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
	Corrosion resistant polyester powder paint, minimum ≥ 2.0 mil thickness
Paint:	(RAL & custom colors available) Standard = Black, Dark Bronze, Gray, White Optional = Coastal Finish
Weight:	24.0 lbs (10.9 kgs)

Optical System

Lumens:	16,000 - 30,000
Distribution:	Type II Narrow, II/III, III, V
Efficacy:	110-143 LPW
CCT:	2700K, 3000K, 4000K
CRI:	≥ 70

Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018

Lumen Maintenance

Projected Lxx per IES TM-21-11 at

LUMEN CODES	DISTRIBUTIONS	LXX(H0K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16, 18, 19, 21, 23	A3,B3,C3, D3,E3	L96	L94	L94
25, 27, 28	A3,B3,C3, D3,E3	L95	L93	L92
30	A3,B3,C3, D3,E3	L94	L91	L90

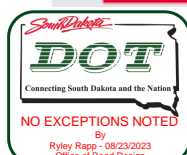
Ratings

Operating Temperature:	Lumen Output 16-28 (-40°C to 50°C) Lumen Output 30 (-40°C to 45°C)
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards

Controls

Dimming:	<input checked="" type="checkbox"/> Standard - 0-10V <input type="checkbox"/> Optional - DALI (Option U)
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

☒ 5 Year (Standard)
 ☐ 10 Year (Optional)

 NO EXCEPTIONS NOTED
 By
 Riley Rapp - 08/23/2023
 Office of Road Design


LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.
 Page 17 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY
Notes:**Type:**

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

Ordering Information

ERL2

PROD. ID	VOLTAGE	LUMENS	DISTRIBUTION	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16000 lm	A3 = Type II Narrow ²	27 = 2700K ³	A = 7-Pin Receptacle	BLCK = Black	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18000 lm	B3 = Type II Wide	30 = 3000K ³	D = 7-Pin Receptacle with Shorting Cap	DKBZ = Dark Bronze	B = Tether
L = Local		19 = 19000 lm	C3 = Type III	40 = 4000K	E = 7 Pin Receptacle with Long Life non-Dimming PE Control ⁴	GRAY = Gray	F = Fusing
2 = Double Module	1 = 120V	21 = 21000 lm	D3 = Type IV		Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	2 = 208V	23 = 23000 lm	E3 = Type II Enhanced Back Light				I = Optional IP66 Optical
	3 = 240V	25 = 25000 lm					L = Tool-Less Entry
	4 = 277V	27 = 27000 lm					M1 = MagnaPak ⁵
	5 = 480V	28 = 28000 lm					R = Secondary 10kV/5kA SPD
	D = 347V	30 = 30000 lm					T = Secondary 20kV/10kA SPD ⁶
							U = DALI Programmable ⁵
							V1 = Field Adjustable Module ⁷
							Y = Coastal Finish ⁸
							XXX = Special Options

¹ Not Available with Fusing² Nominal IES Type classing subject to typical variation, individual units may differ³ Select 2700K or 3000K CCT for IDA approved units⁴ Lead time varies, Contact Factory⁵ Compatible with LightGrid⁶ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.⁷ Not available with DALI "U" option⁸ Option M1 provides for MagnaPak - 20 Fixtures per MagnaPak Container. Single Pack box is standard

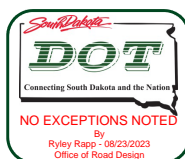
Suggested HID Replacement

- Approximately 21,000 - 30,000 lumens lumens to replace 400W HPS Cobra-head

Note: actual replacement lumens may vary based upon mounting height, pole spacing, design criteria, etc.

PREVIOUS	OPTICAL PATTERN	LATEST	NEW OPTICAL PATTERN
A1, B1	Extra Narrow/Narrow Asymmetric	A3	Type II Narrow
C1, E1	Asymmetric Short/Medium	B3	Type II Wide
D1, G1	Asymmetric Forward/Extra Wide	C3	Type III
F1	Asymmetric Wide	D3	Type IV
N/A	N/A	E3	Type II Enhanced Back Light

The information above is designed to provide a guideline to select the correct luminaire for a roadway application. The best and most accurate way to ensure the proper design is by doing a lighting layout.



Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 18 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY
Type:

CORE4SD23-5043

Notes:

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting

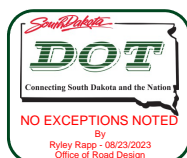
CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	LUMENS			WATTAGE		BUG RATINGS		
		4000K	3000K	2700K	277V	480V	4000K	3000K	2700K
16	A3	16000	15300	14900	120		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B2-U0-G3
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
18	A3	18000	17300	16700	140		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
19	A3	19000	18200	17700	149		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
21	A3	21000	20100	19500	174	177	B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G3	B3-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
23	A3	23000	22100	21400	194	196	B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
25	A3	25000	24000	23300	214		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
27	A3	27000	25900	25100	237		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
28	A3	28000	26900	26100	251		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
30	A3	30000	28800	27900	278		B4-U0-G4	B4-U0-G4	B3-U0-G3
	B3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4



For additional information on ERL2 IES files, please click one of the following links:

Non-Shielded

Shielded

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

 Page 19 of 23
 (Rev 06/28/23)
 OLP3128_R09



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

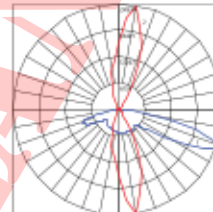
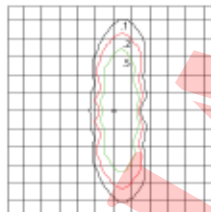
PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

ERL2 Type II Narrow

23,000 Lumens
4000K
ERL2_23A340___IES

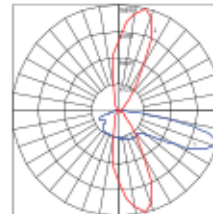
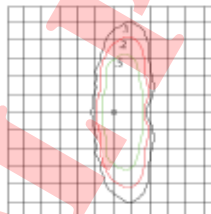


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 60°
- Horizontal cone at max Cd vert. angle 69°

ERL2 Type II Wide

23,000 Lumens
4000K
ERL2_23B340___IES

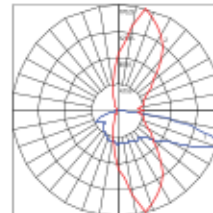
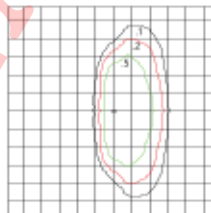


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 72°

ERL2 Type III

23,000 Lumens
4000K
ERL2_23C340___IES

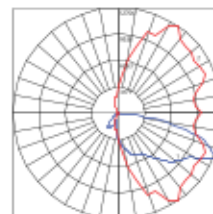


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 71°

ERL2 Type IV

23,000 Lumens
4000K
ERL2_23D340___IES

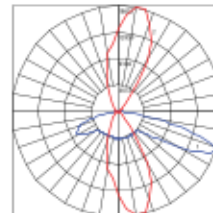
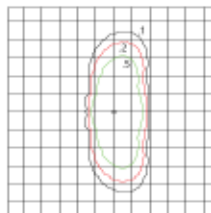


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 55°
- Horizontal cone at max Cd vert. angle 65°

ERL2 Type IV

23,000 Lumens
4000K
ERL2_23E340___IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 69°



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 20 of 23
(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

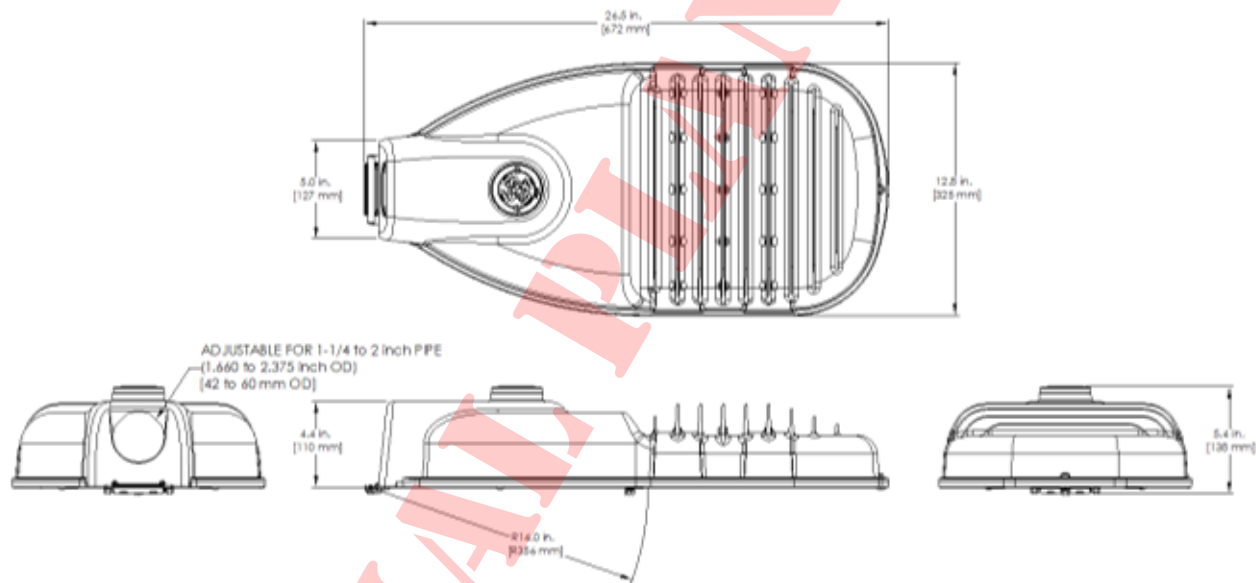
ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____



Mounting

- Adjustable for 1.25 to 2 in. nominal mounting pipe
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight:

- 24.0 lbs (10.9 kgs)

Accessories

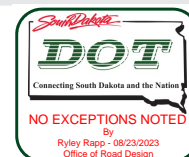
SAP NUMBER	PART NUMBER	DESCRIPTION
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Standard 120-277V

See pages 22 & 23 for more detailed information on ERL2 Shields.

Networked Lighting Control



Current's **LightGrid™** Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 21 of 23
(Rev 06/28/23)
OLP3128_R09



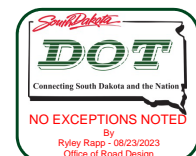
Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
WHITE RIVER DOT

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY
Type:**Notes:**

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL1 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure casting integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
	Corrosion resistant powder paint, ≥ 2.0 mil thickness
Paint:	(RAL & custom colors available) Standard = Black, Dark Bronze, Gray, White Optional = Coastal Finish
Weight:	12.4 lbs (5.6kgs)

Optical System

Lumens:	2,000 - 10,000
Distribution:	Type II, III, IV and Type II Narrow, and Type II Enhanced Backlight
Efficacy:	110-143 LPW
CCT:	2700K, 3000K, 4000K
CRI:	≥70

Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

Surge Protection*

Standard	Optional
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018

Lumen Maintenance

Projected Lxx per IES TM-21-11 at

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
02,03,04,05,06	A3,B3,C3,D3,E3	L96	L95	L94
07,08,09	A3,B3,C3,D3,E3	L95	L91	L89
10	A3,B3,C3,D3,E3	L89	L80	L76

Ratings

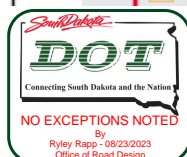
Operating Temperature:	-40°C to 50°C
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards

Controls

Dimming:	Standard - 0-10V <input checked="" type="checkbox"/> Optional - DALI (Option U) <input type="checkbox"/>
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

<input checked="" type="checkbox"/> 5 Year (Standard)	<input type="checkbox"/> 10 Year (Optional)
---	---


 NO EXCEPTIONS NOTED
 By
 Ryley Rapp - 08/23/2023
 Office of Road Design


LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.


 Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

 Page 7 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY
Type:**Notes:**

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

Ordering Information

ERL1

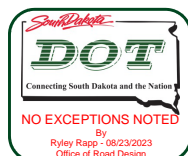
PROD. ID	VOLTAGE	LUMENS	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	02 = 2000 lm ²	A3 = Type II Narrow	27 = 2700K ⁴	A = 7-Pin Receptacle	BLCK = Black	A = 4 Bolt Slipfitter ⁵
R = Roadway	H = 347-480V ¹	03 = 3000 lm	B3 = Type II Wide	30 = 3000K ⁴	D = 7-Pin Receptacle with Shorting Cap	DKBZ = Dark Bronze	B = Tether
L = Local		04 = 4000 lm	C3 = Type III	40 = 4000K	E = 7 Pin Receptacle with Long Life non-Dimming PE Control	GRAY = Gray	F = Fusing
1 = Single Module	1 = 120V	05 = 5000 lm	D3 = Type IV		Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	2 = 208V	06 = 6000 lm	E3 = Type II Enhanced Back Light				I = Optional IP66 Optical
	3 = 240V	07 = 7000 lm					L = Tool-Less Entry
	4 = 277V	08 = 8000 lm					R = Secondary 10kV/5kA SPD
	D = 347V	09 = 9000 lm					T = Secondary 20kV/10kA SPD
	5 = 480V	10 = 10000 lm					U = DALI Programmable ^{6,7}
							V1 = Field Adjustable Module ^{8,11}
							X = Single Pack ⁹
							Y = Coastal Finish ⁹
							XXX = Special Options

¹ Not Available with Fusing² 02 lumen level voltage options 1, 2, 3, and 8 only³ Nominal IES Type classing subject to typical variation, individual units may differ⁴ Select 2700K or 3000K CCT for IES approved units⁵ Lead time varies, Contact Factory⁶ Compatible with LightGrid⁷ Not available in 347V, 480V or 347-480V for Lumen Output Levels 07-10⁸ Option provides single pack box per fixture. Standard packaging = 23 units per MagnaPak Container⁹ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.¹⁰ Not available with DALI "U" option¹¹ Not compatible with 02 Lumen Code

Suggested HID Replacement

- 4,000 - 5,000 lumens to replace 100W HPS Cobra-head
- 7,000 - 8,000 lumens to replace 150W HPS Cobra-head
- 8,500 - 11,500 lumens to replace 100W HPS Cobra-head

Note: actual replacement lumens may vary based upon mounting height, pole spacing, design criteria, etc.



PREVIOUS	OPTICAL PATTERN	LATEST	NEW OPTICAL PATTERN
A1, B1	Extra Narrow/Narrow Asymmetric	A3	Type II Narrow
C1, E1	Asymmetric Short/Medium	B3	Type II Wide
D1, G1	Asymmetric Forward/Extra Wide	C3	Type III
F1	Asymmetric Wide	D3	Type IV
N/A	N/A	E3	Type II Enhanced Back Light

The information above is designed to provide a guideline to select the correct luminaire for a roadway application. The best and most accurate way to ensure the proper design is by doing a lighting layout.



Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 8 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL1003C340EGRAY

Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
LED Roadway Lighting

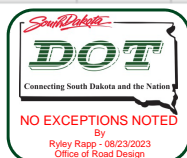
CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	LUMENS			WATTAGE		BUG RATINGS		
		4000K	3000K	2700K	277V	480V	4000K	3000K	2700K
02	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	2000	1900	1900	14	N/A	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B0-U0-G1	B0-U0-G1	B0-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
03	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	3000	2900	2800	22	26	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
04	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	4000	3900	3800	31	34	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
05	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	5000	4900	4700	39	43	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
06	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	C3	6000	5800	5700	47	52	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
07	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	C3	7000	6800	6600		58	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
08	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	C3	8000	7800	7600		71	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
09	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	C3	9000	8800	8500		84	B2-U0-G2	B2-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2



For additional information on ERL1 IES files, please click one of the following links:

Non-Shielded

Shielded

Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 9 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL1003C340EGRAY

Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
LED Roadway Lighting

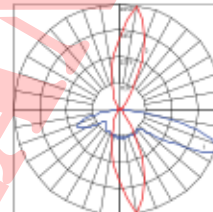
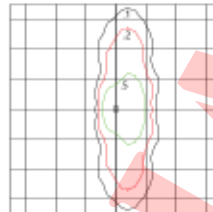
CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

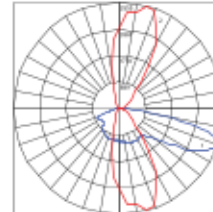
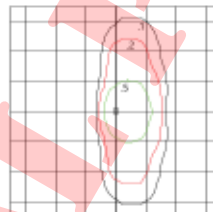
ERL1
Type II Narrow
5,000 Lumens
4000K
ERL1_05A340_...



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 60°
- Horizontal cone at max Cd vert. angle 67°

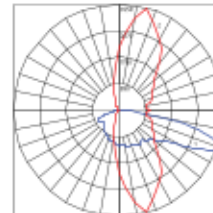
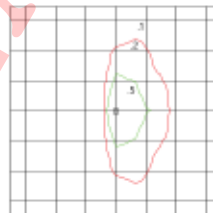
ERL1
Type II Wide
5,000 Lumens
4000K
ERL1_05B340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 69°

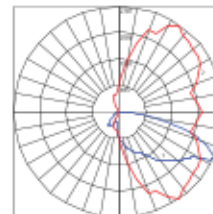
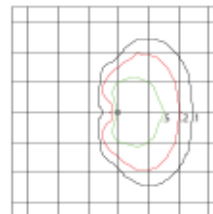
ERL1
Type III
5,000 Lumens
4000K
ERL1_05C340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

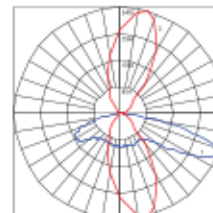
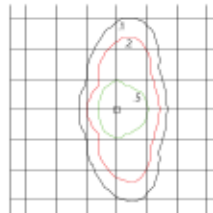
ERL1
Type IV
5,000 Lumens
4000K
ERL1_05D340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 55°
- Horizontal cone at max Cd vert. angle 64°

ERL1
Type II Enhanced Back Light
5,000 Lumens
4000K
ERL1_05E340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 10 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL1003C340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

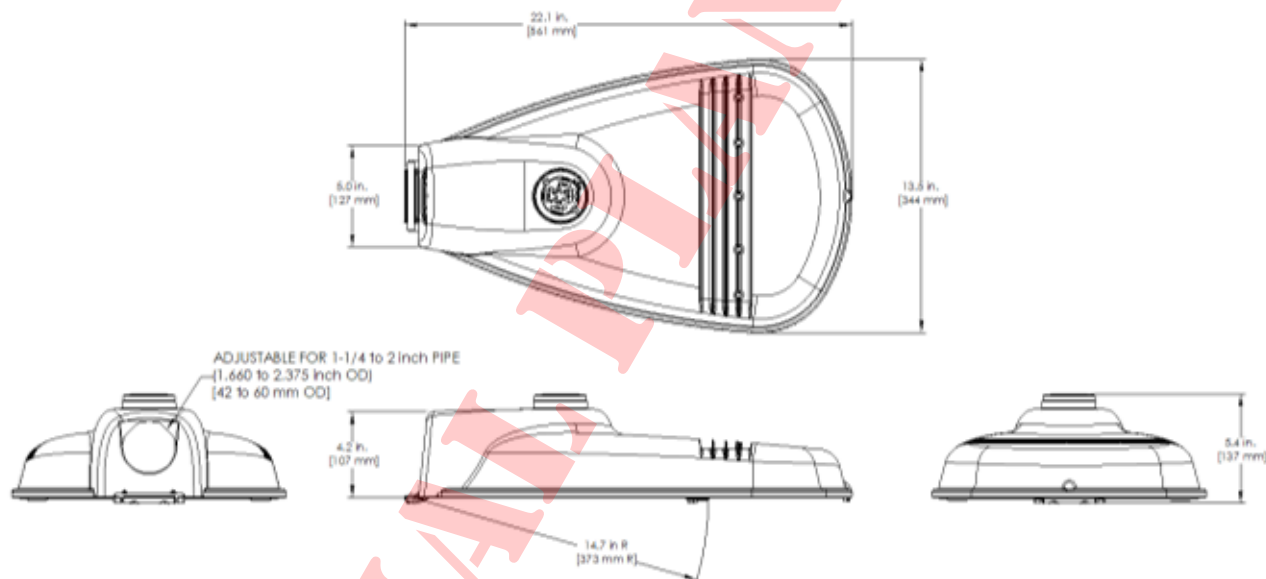
ERL1 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____



Mounting

- Adjustable for 1.25 to 2 in. nominal mounting pipe
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.5 sq ft max (0.046 sq m)

Weight

- 12.4 lbs (5.6 kgs)

Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PECOTL	Standard 120-277V
XXXXXX	PECHTL	Standard 347-480V
73251	SCCL-PECTL	Shorting Cap

See pages 22 & 23 for more detailed information on ERL1 Shields.

Networked Lighting Control



Current's **LightGrid™** Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 11 of 23
(Rev 06/28/23)
OLP3128_R09



Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
PHASE 2 CROSSROADS

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY
Type:**Notes:**

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head LED Roadway Lighting



CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure. Casting Integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
Paint:	Corrosion resistant polyester powder painted, minimum 2.0 mil thickness (RAL & custom colors available) Standard = Black, Dark Bronze Gray, White Optional = Coastal Finish
Weight:	24.0 lbs (10.9 kgs)

Lumen Maintenance

Projected Lxx per IES TM-21-11 at 25°C

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16	A5, B5, C5, D5, E5	L99	L99	L99
18	A5, B5, C5, D5, E5	L99	L98	L98
19	A5, B5, C5, D5, E5	L99	L98	L97
21	A5, B5, C5, D5, E5	L94	L87	L85
23	A5, B5, C5, D5, E5	L97	L96	L95
25	A5, B5, C5, D5, E5	L96	L95	L95
27	A5, B5, C5, D5, E5	L96	L94	L94
28	A5, B5, C5, D5, E5	L96	L94	L93
30, 31	A5, B5, C5, D5, E5	L95	L93	L92
32	A5, B5, C5, D5, E5	L94	L91	L90

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

Optical System

Lumens:	16,000 - 32,000
Distribution:	Type II Narrow, Type II Wide, Type III, Type IV and Type II Enhanced Back light
Efficacy:	112-140 LPW
CCT:	2700K, 3000K, 4000K, 5000K
CRI (Min):	70 CRI

Ratings

Operating Temp:	-40°C to 50°C *
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards
EMI:	Title 47 CFR Part 15 Class A
RoHS:	Complies with the material restrictions of RoHS

*ERL2 (32K Lumen 347-480V SKU) operates at -40°C to 45°C

Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018



NO EXCEPTIONS NOTED
 By
 Riley Rapp - 08/23/2023
 Office of Road Design

Controls

Dimming:	Standard-0-10V <input checked="" type="checkbox"/> Optional-DALI (Option U) <input type="checkbox"/>
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

<input checked="" type="checkbox"/> 5 Year (Standard)	<input type="checkbox"/> 10 Year (Optional)
---	---

Not all product variations listed on this page are DLC qualified.
 Visit www.designlights.org/search to confirm qualifications.



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 13 of 20
 (Rev 06/28/23)
 OLP3187_R06

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY
Notes:**Type:**

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

Ordering Information

ERL2

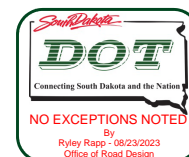
PROD. ID	VOLTAGE	LUMENS (LM)	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16,000 lm	A5 = Type II Narrow	27 = 2700K ²	A = 7-Pin Receptacle	GRAY = Gray	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18,000 lm	B5 = Type II Wide	30 = 3000K ²	D = 7-Pin Receptacle with Shorting Cap	BLACK = Black	B = Tether
L = Local	1 = 120V	19 = 19,000 lm	C5 = Type III	40 = 4000K	E = 7-Pin Receptacle with non-Dimming Long Life PE ⁵	DKBZ = Dark Bronze	F = Fusing
2 = Double Module	2 = 208V	21 = 21,000 lm	D5 = Type IV ⁶	50 = 5000K	Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	3 = 240V	23 = 23,000 lm	E5 = Type II Enhanced Back Light				I = Optional IP66 Optical Enclosure
	4 = 277V	25 = 25,000 lm					L = Tool-Less Entry
	D = 347V	27 = 27,000 lm					R = Secondary 10kV/5kA SPD
	5 = 480V	28 = 28,000 lm					T = Secondary 20kV/10kA SPD ¹
		30 = 30,000 lm					U = DALI Programmable ^{6,7}
		31 = 31,000 lm					V1 = Field Adjustable Module ⁸
		32 = 32,000 lm					Y = Coastal Finish ⁹
							XXX = Special Options

¹ Not Available with Fusing² Select 2700K or 3000K CCT for IIDA approved units³ Nominal IES Type classing subject to typical variation, individual units may differ⁴ Lead time varies, contact Factory⁵ Per ANSI C136.10-2017⁶ Compatible with LightGrid⁷ Not available in 347V, 480V or 347-480V⁸ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.⁹ Not available with DALI "U" option¹⁰ Forward throw distribution. Classifies as Type III for lumen codes 23-32. Review IES curve for application.

Suggested HID Replacement

Approximately 21,500 -32,000 lumens to replace 400W HPS
 Cobra-head

Note: actual replacement lumens may vary based upon mounting height, pole spacing,
 design criteria, etc.



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 14 of 20

(Rev 06/28/23)

OLP3187_R06

Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

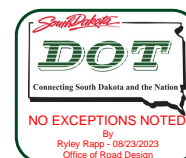
PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	TYPICAL INITIAL LUMENS			WATTAGE		BUG RATINGS		
		5000K/4000K	3000K	2700K	120V 277V	347V 480V	5000K/4000K	3000K	2700K
15	A5	15000	15300	14200	114		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B2-U0-G2
	C5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G2
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
18	A5	18000	17200	16000	130		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G3	B2-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
19	A5	19000	18200	16800	140		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G3	B3-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
21	A5	21000	20100	18600	160		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
23	A5	23000	22000	21300	177		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
25	A5	25000	24000	23200	191		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B2-U0-G4	B2-U0-G4	B2-U0-G3
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4

For additional information on ERL2 IES files, please click one of the following links:

[Non-Shielded](#)
[Shielded](#)




Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2016C540EGRAY

Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

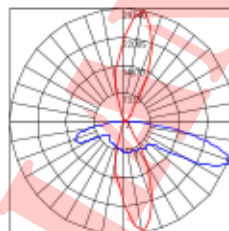
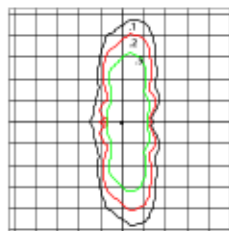
PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

ERL2 Type II Narrow

32,000 Lumens
5000K
ERL2_32A550____IES

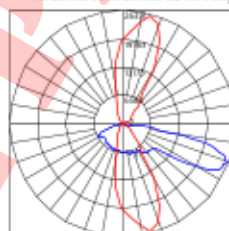
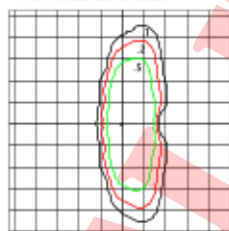


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 80°
- Horizontal cone at max Cd vert. angle 65°

ERL2 Type II Wide

32,000 Lumens
5000K
ERL2_32B550____IES

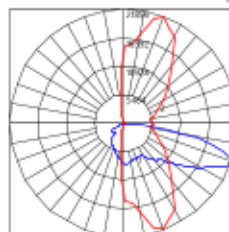
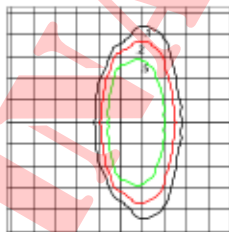


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

ERL2 Type III

32,000 Lumens
5000K
ERL2_32C550____IES

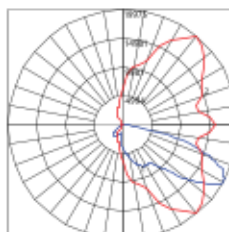


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 70°
- Horizontal cone at max Cd vert. angle 70°

ERL2 Type III (FWT)

32,000 Lumens
5000K
ERL2_32D550____IES
Forward Throw

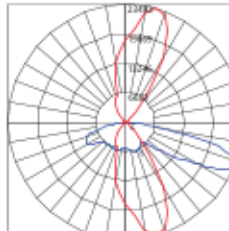
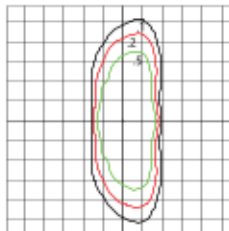


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 50°
- Horizontal cone at max Cd vert. angle 55°

ERL2 Type II Medium

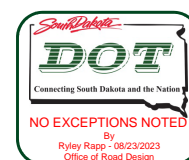
32,000 Lumens
5000K
ERL2_32E550____IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°

ISO illuminate diagrams and polar plots are representative of the SKUs illustrated. Refer to IES files for SKU specific information.



Submitted by Core4 Technologies



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

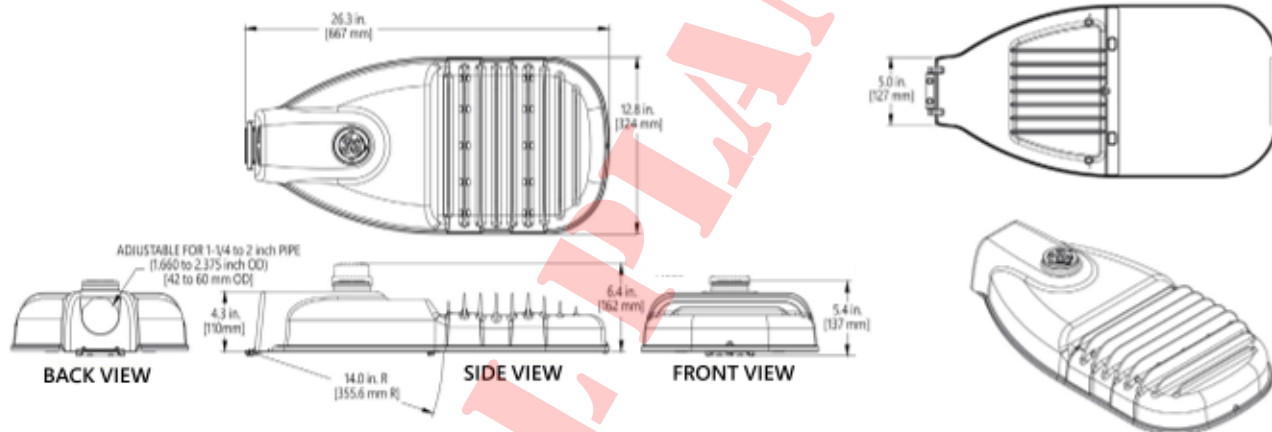
ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____



Mounting

- Adjustable for 1.25 to 2 in. nominal mounting pipe (1.660 to 2.375 inch OD)
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight

- 24.0 lbs (10.9 kgs)

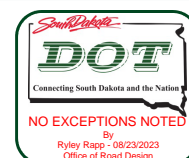
Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237G	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238G	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239G	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Long Life PE 120-277V
93147530	PECHTL	Long Life PE 347-480V
73251	SCCL-PECTL	Shorting Cap

Network Lighting Controls



Current's LightGrid™ Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.



BREAKAWAY TRANSFORMER BASES

THE BREAKAWAY TRANSFORMER BASE/LIGHT POLE
IS YOUR GUIDE **PATH** FOR HIGHWAY **SAFETY**
MOTORISTS SAFETY IS OUR **# 1** GOAL



FOR HIGHWAY LIGHTING VISIBILITY AND
DIRECTION, CAST ALUMINUM **AASHTO APPROVED**
TRANSFORMER BASES ARE RECOGNIZED
BY MOTORISTS WITHOUT COMPARISON.

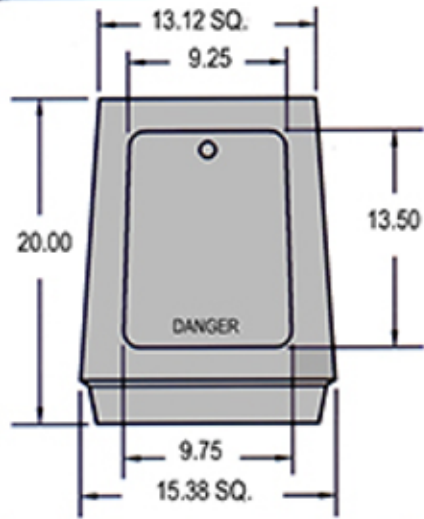


AKRON FOUNDRY COMPANY

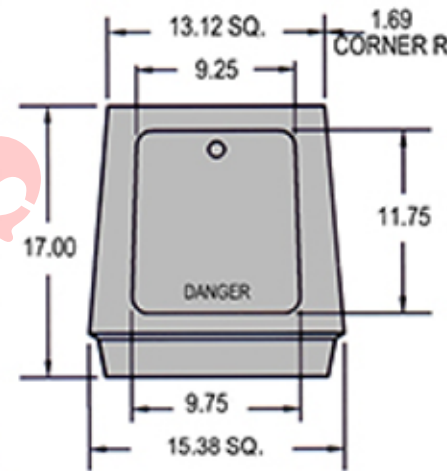
(330) 745-3101

FAX(330) 745-7999

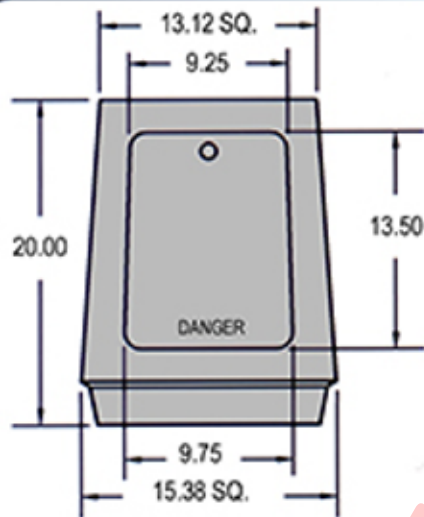
E-MAIL: AFC@AkronFoundry.com

**TB1-20**

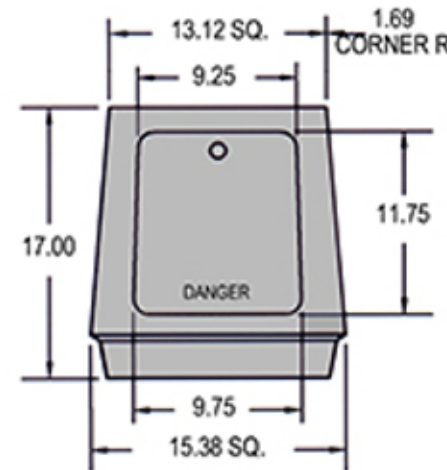
This base features 11" to 13" top bolt circle and 13" to 15" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB1-17**

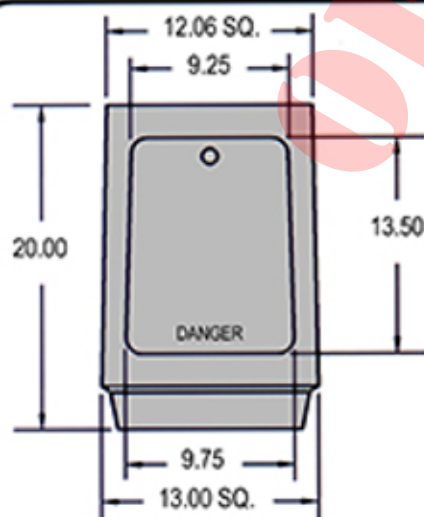
This base features 10 1/2" to 13 1/2" top bolt circle and 13" to 15" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB1-20 MODIFIED**

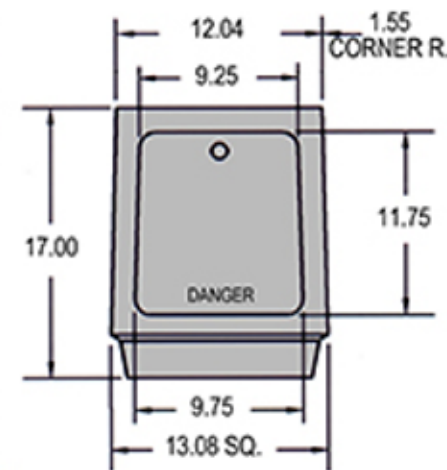
This base features 11" to 13" top bolt circle and 10 1/2" to 12 15/16" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB1-17 MODIFIED**

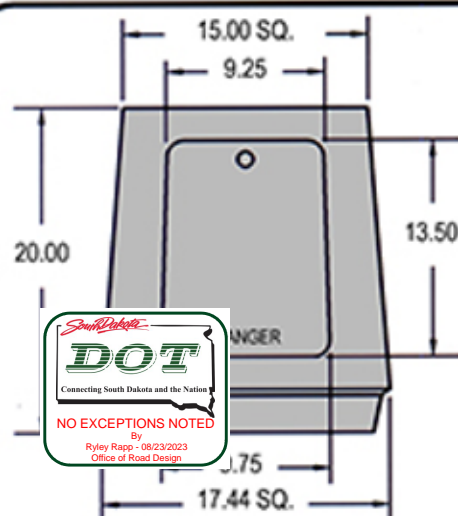
This base features 10 1/2" to 13 1/2" top bolt circle and 10 1/2" to 12 15/16" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB2-20**

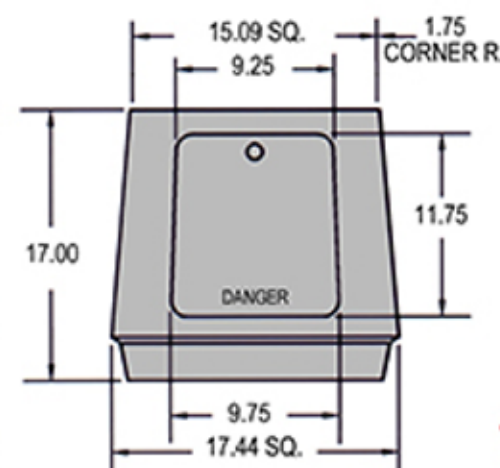
This base features 10" to 12" top bolt circle and 10" to 12" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB2-17**

This base features 10" to 12" top bolt circle and 10" to 12" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB3-20**

This base features 13" to 15 1/8" top bolt circle and 15" to 17 1/4" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB3-17**

This base features 13" to 15 1/8" top bolt circle and 15" to 17 1/4" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED

- WHEN ORDERING HINGED DOOR OPTION, ADD SUFFIX "-H" TO ANY OF THE PART NUMBERS, "-P" FOR PLASTIC DOOR
- CONSULT AUTHORIZED DISTRIBUTOR FOR REQUIRED STEEL WASHERS.

ORDERING INFORMATION

PART NUMBER	TOP BOLT CIRCLE	BOTTOM BOLT CIRCLE	BASE HEIGHT	BASES PER SKID	AASHTO APPROVAL
TB1-20	11" - 13"	13" - 15"	20"	27	1975
TB1-20 MODIFIED	11" - 13"	10 1/2" - 12 15/16"	20"	27	1975
TB2-20	10" - 12"	10" - 12"	20"	27	1975
TB3-20	13" - 15 1/8"	15" - 17 1/4"	20"	18	1975
TB1-17	10 1/2" - 13 1/2"	13" - 15"	17"	36	1985
TB1-17 MODIFIED	10 1/2" - 13 1/2"	10 1/2" - 12 15/16"	17"	36	1985
TB2-17	10" - 12"	10" - 12"	17"	36	1985
TB3-17	13" - 15 1/8"	15" - 17 1/4"	17"	24	1985
TB4-20 (HEAVY DUTY)	15" - 18" (PUNCH-OUT)	18" - 22"	20"	8	NONE
TB4-24 (HEAVY DUTY)	15" - 18" (PUNCH-OUT)	18" - 22"	24"	8	NONE
TB5-9	14 1/2" - 15"	14 1/2" - 16 1/4"	9"	54	1985
TB6-9	10 1/2" - 12"	10" - 12 3/4"	9"	54	1985
TB7-9	16"	15" - 18 5/8"	9"	36	PENDING
TB8-9	16" - 18"	16" - 21"	9"	36	PENDING

DOORS: WHEN ORDERING HINGED DOOR ADD SUFFIX "H" TO THE PART NUMBER / ADD "P" FOR PLASTIC DOOR

WASHERS: 1018-1020 STEEL, ZINC MECHANICAL DEPOSIT PER ASTM 0695-85, CLASS 50

PART NUMBER	SIZE	WEIGHT EACH	PACKAGE WEIGHT
AF-W3	2 1/2" DIA. O.D. X 1 1/16" I.D. X 3/8" THICK	.40 lbs. EACH	108 pcs./carton 48.0 lbs.
AF-W1	2 3/4" DIA. O.D. X 1 1/16" I.D. X 1/2" THICK	.69 lbs. EACH	54 pcs./carton 38.2 lbs.
AF-W2	2 3/4" DIA. O.D. X 1 5/16" I.D. X 1/2" THICK	.61 lbs. EACH	54 pcs./carton 38.2 lbs.
AF-W4	2 3/4" X 4 1/4" X 5/8" THICK RECTANGULAR (FOR 1 1/16 OR 1 5/16 ID.)	1.80 lbs. EACH	24 pcs./carton 33.5 lbs.



MANUFACTURED IN THE U.S.A. BY:

AKRON FOUNDRY COMPANY

2728 WINGATE AVENUE

AKRON, OHIO 44314

PHONE: 330-745-3101 FAX: 330-745-7999

E-MAIL: AFC@AkronFoundry.com

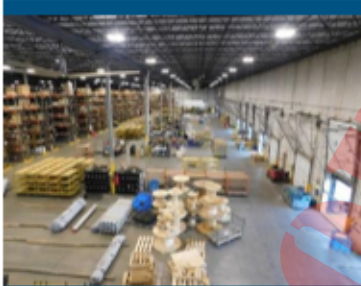


Project Name: WHITE RIVER/ POLE REPLACEMENT
Company: BUILDERS ELECTRIC
Prepared for: TALIS
Notes: 382843453



Ask about our Service Solutions that can help save you time and money

- Stage and Storage
- Material, Conduit, and Fixture Carts
- Graybar Managed Inventory (VMI)
- Kitting
- On-Site Customer Prefabrication
- After-Hours Pickup
- Mobile Trailers
- Strut Cutting
- Wire Management



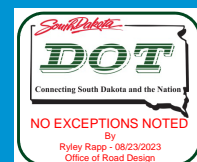
Jenni De Witt
Project Specialist

Jennifer.Dewitt@Graybar.com

SOUTH DAKOTA LOCATIONS:

Sioux Falls – 2810 N 1st Ave / 605-731-7900

Brookings – 3100 6th St / 605-692-4477



We are enclosing herewith 1 copies of cuts/drawings. Please complete section marked "To Be Completed By Customer" and return this form with approved cuts to the Sender noted below.

PLEASE NOTE THE APPROXIMATE LEAD TIMES INDICATED ABOVE. WE ASK THAT YOU ALLOW AT LEAST THAT AMOUNT OF TIME AFTER THE RETURN OF YOUR APPROVED CUTS. THIS SUBMITTAL REPRESENTS OUR INTERPRETATION OF THE PROJECTED PLANS AND SPECIFICATIONS AS THEY RELATE TO THE EQUIPMENT COVERED.

VOLTAGES ARE SHOWN FOR FLUORESCENT AND H.I.D. EQUIPMENT. IF VOLTAGE REQUIREMENTS ARE OTHER THAN INDICATED, THE SUBMITTAL SHOULD BE APPROVED AS NOTED, AND THE CORRECT VOLTAGE SHOWN. IF NO VOLTAGE IS SHOWN, IT IS OUR INTENT TO FURNISH 120 VOLT.

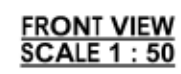
PLASTER FRAMES AND OTHER AUXILIARY EQUIPMENT SUCH AS STEMS, CHAIN HANGERS, SPECIAL FUSING, ETC., ARE NOT INCLUDED EXCEPT WHEN SPECIFICALLY INDICATED, OR WHEN FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT AS DESCRIBED BY CATALOG NUMBER.

SPECIAL FINISHES SHOULD BE NOTED, IF NOT SPECIFICALLY INDICATED. EVERY EFFORT HAS BEEN MADE TO SUBMIT THE CORRECT FIXTURE FOR THE CEILING REQUIRED. FINAL DETERMINATION IS THE RESPONSIBILITY OF THE CONTRACTOR.

WE ASSUME THE RESPONSIBILITY FOR FURNISHING MATERIAL ONLY AS SUBMITTED. ANY DEVIATION MUST BE NOTED ON THE COPIES RETURNED.

Sender: Jenni DeWitt – Jennifer.DeWitt@Graybar.com
% Graybar Electric Company, Inc.
Address: 2810 North First Avenue
Sioux Falls, SD 57104

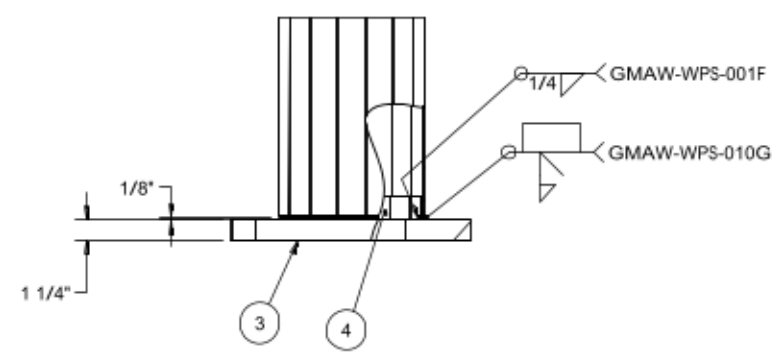
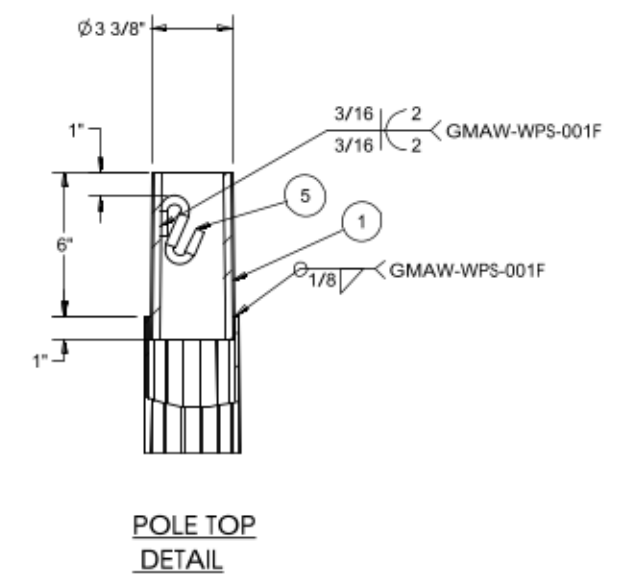
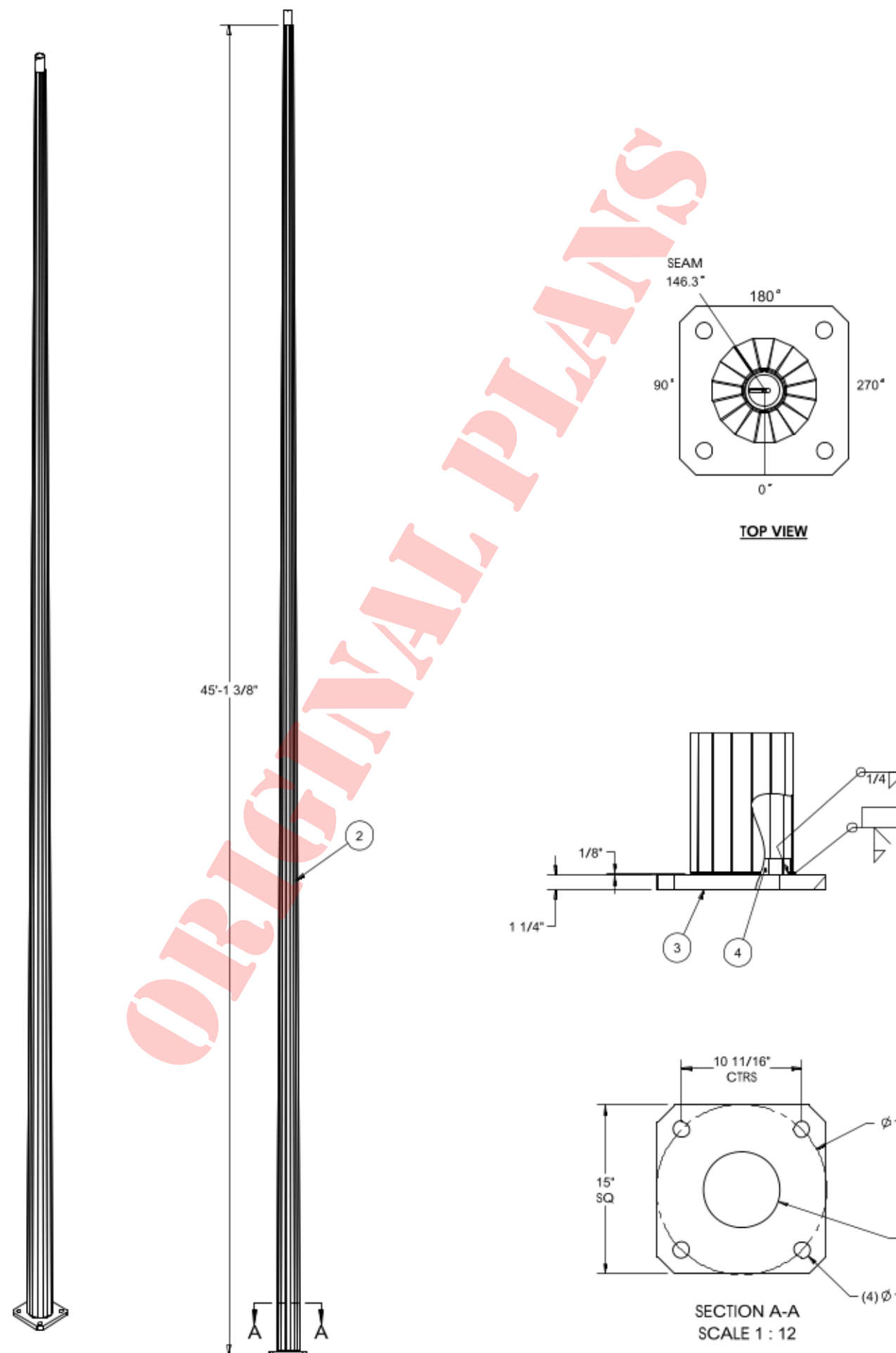





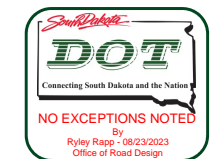
CHK BY:	DATE:
---------	-------

ITEM NO.	PART NUMBER	DESCRIPTION	QTY PER	ASSY	FINISH
1	10B14-5	ELITE SINGLE ARM 9'	1		X
2	1024824	WLDMT POLE LIGHT 16S 11GA X45'0 (11GA X9.37X4.0X45'0)	1		X
3	SCRWJ1/2-13X1/2SS	SCRW STHXSKCPPT 1-2-13NC X 1-2 SS	2		
4	ASSYRCP1-1-4-7X4-1-2NUTWSHFLT	ASSY RCP BOLT 1 1/4X4 1/2B A325GV W/NUT HVY HX A563 & WSHFLT GV	4		
5	8801380	WASHER CLASS 55 SDDOT 1 1/4	4		

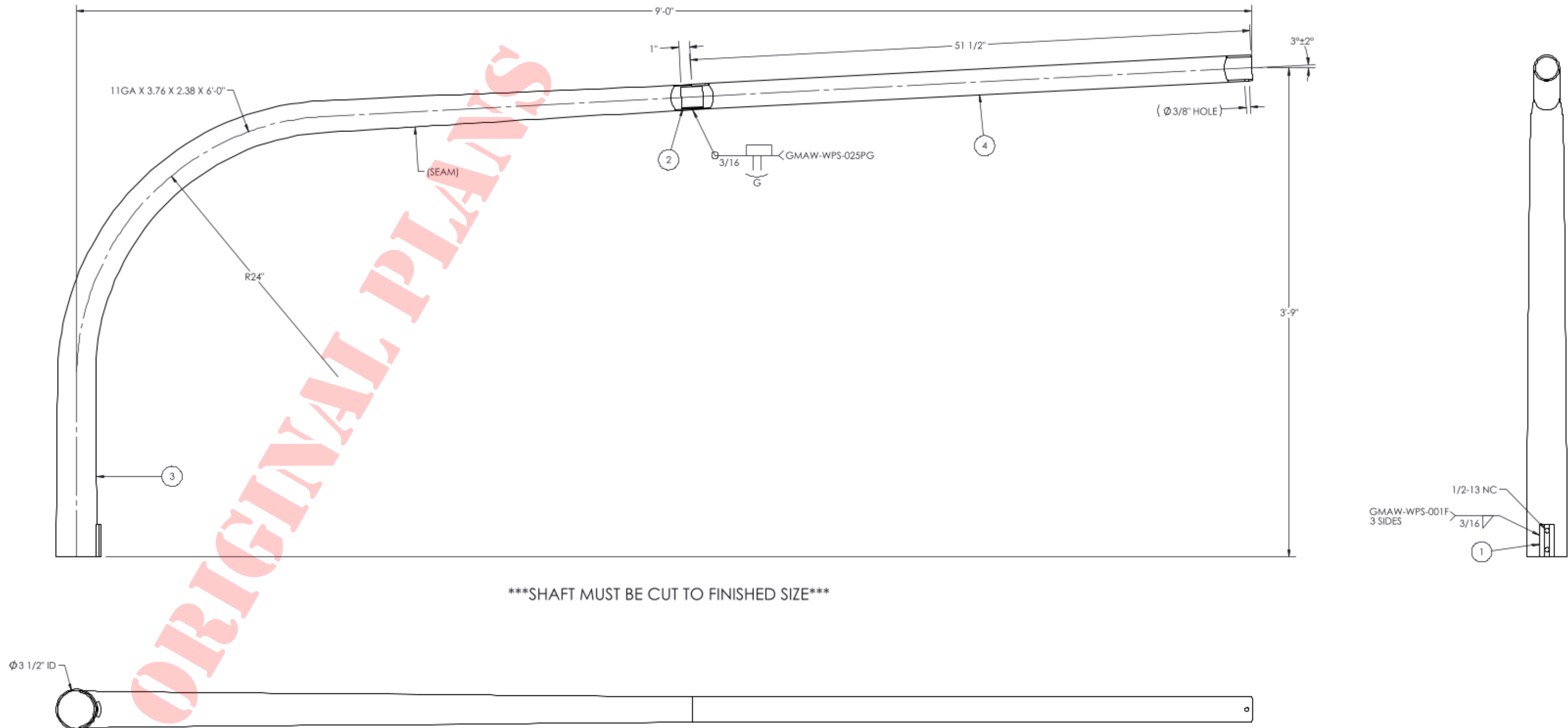
REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	UPDATED WPS	8/3/2020	RK
B	added shook	1/20/2022	pjf



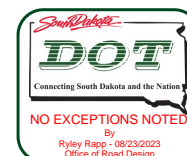
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	10A240	3"x7" ELITE POLE TOP TENON	1
2	1011438	SHAFT CHMFR 16S 11gaX9.37X4X45'-0	1
3	1011234	BASE SQ 1.25 x 15"	1
4	1011447	RING BACK-UP 16S 11GA X 9 3/16	1
5	9900051	S-HOOK (REF 500A158-1)	1
THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG		<div><div><div>MILLERBERND</div><div>622 6TH ST. SO. WINSTED, MN 55395</div></div></div>	
DWN: JASON D		DATE: 12/13/17	
CHK BY:		DATE:	
MATERIAL:		DESCRIPTION:	
SEE BOM		WLDMT POLE LIGHT 16S 11GA X45'0	
WEIGHT: 446.4 - LBS LBS.	SURFACE AREA: 22866.1 SQ IN	SCALE: 1:48	DRWG NO.: 1024824
			SHEET 1 OF 1
			B




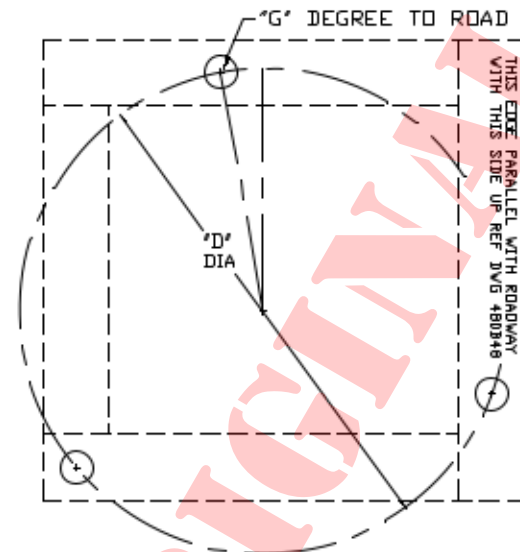
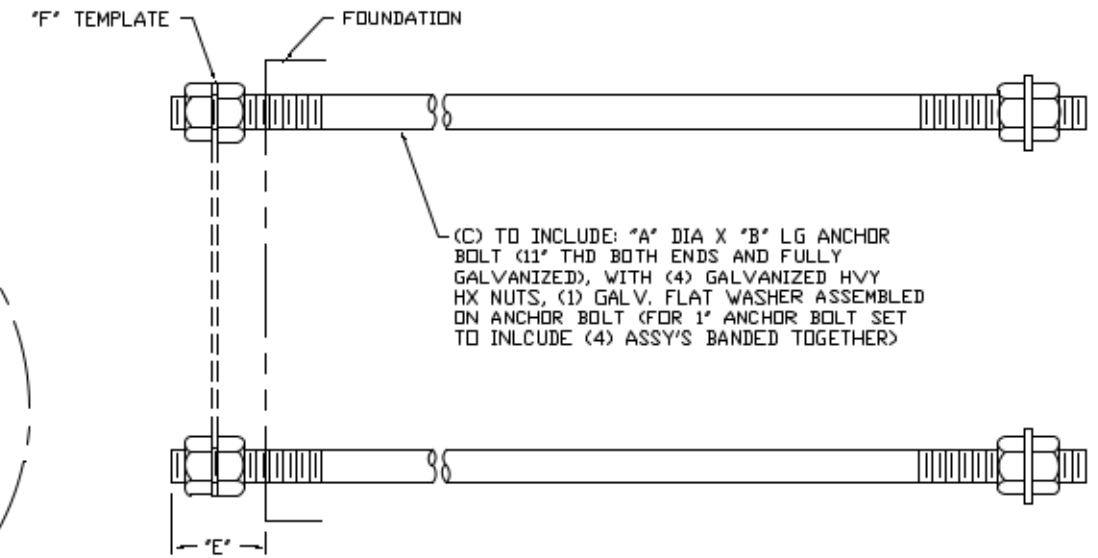
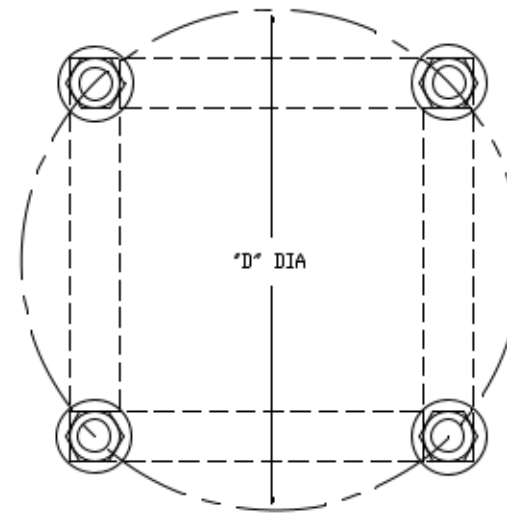
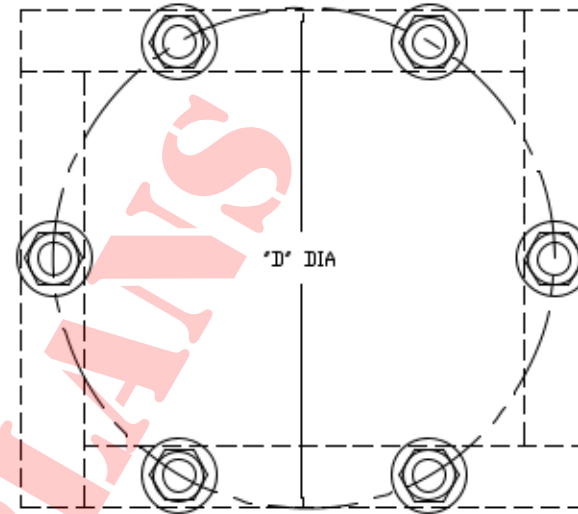
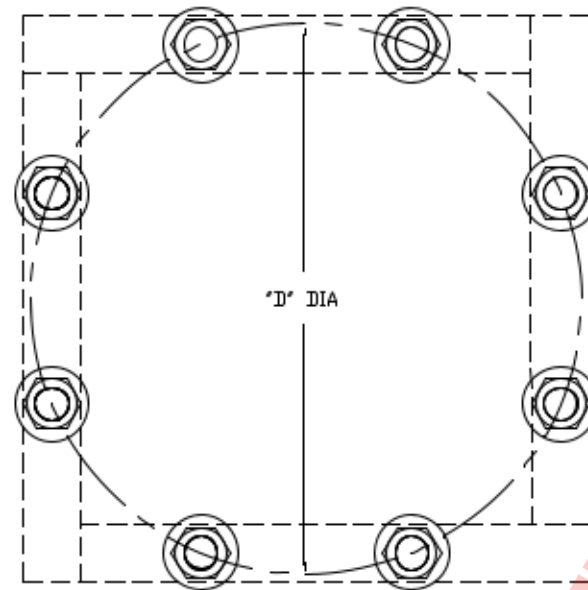
REVISIONS			
REV.	DESCRIPTION	DATE	DRFT
A	CONVERTED USING CORRECT SHAFT DIAMETERS BASED ON FLAT	5/24/2023	MS



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	10A22	BLOCK-ELITE ARM	1
2	1022714	TUBE 2"ODX1/8"TKX2"LG	1
3	1067738	SHAFT SCKT RD 11GAX3.76X2.09X7'-3 1/2	1
4	1067741	PIPE 2" (2 3/8 OD)X 51 1/2 W/ HOLE	1



THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION AND IS THE PROPERTY OF MILLERBERND MFG AND MAY NOT BE COPIED, REPRODUCED OR DISCLOSED IN ANY MANNER WITHOUT THE EXPRESS WRITTEN CONSENT FROM MILLERBERND MFG			 MILLERBERND 622 6TH ST. SO. WINSTED, MN 55395	
DWN: MARK S.	DATE: 05-16-2023	DESCRIPTION:	WLDMT ARM ELITE 9'0	
CHK BY:	DATE:	MATERIAL: SEE BOM		
WEIGHT: 44.80 LBS.	SURFACE AREA: 2362.72 SQ IN	SCALE: 1:9	DRWG NO.: 10B14-5	SHEET 1 OF 1 B



MMC#207908 PO#4703686213 SD DOT WHITE
RIVER KNOCKDOWN

NOTE:

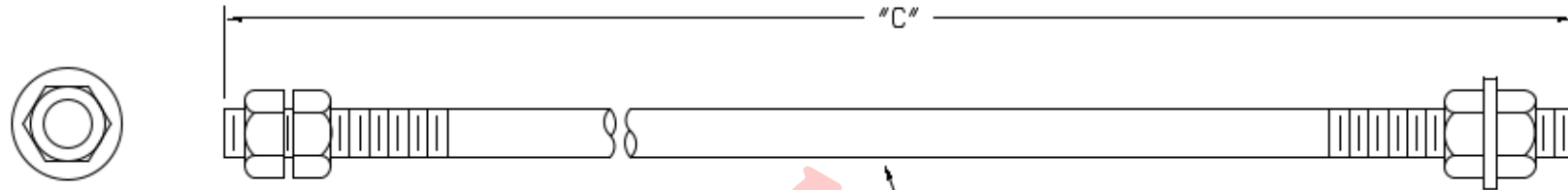
1. 1" TO 1 1/4" ANCHOR BOLT PER F1554 GRADE 55 INCLUDING SUPPLEMENTARY SPEC S4 (CHARPY @ + 40°) MATERIAL - 55,000 PSI MIN YIELD, 75,000 - 95,000 PSI TENSILE STRENGTH AND SUITABLE FOR WELDING
2. 1 1/2" TO 2" HIGH STRENGTH STEEL ANCHOR BOLT PER ASTM F1554 GRADE 105 MATERIAL INCLUDING SUPPLEMENTARY SPEC S4 (CHARPY @ + 40°) - QUENCHED AND TEMPERED COLD DRAWN STRESS-RELIEVED (SAE 4140) ROD WITH 105,000 PSI MIN YIELD AND 125,000 - 150,000 PSI TENSILE STRENGTH, 15% MIN ELONGATION AND 45% MIN REDUCTION OF AREA
3. ANCHOR BOLT & NUTS GALVANIZED PER ASTM F2329
4. THREAD TO BE CLASS 2A PER AMERICAN STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
5. ALL BOLTS ROLLED THREAD
6. NO WELDING IS ALLOWED ON ANCHOR BOLTS
7. GALVANIZED HEAVY HEX NUTS PER A194 GR 2H (.030 OVER SIZE)

REV 2/23/221 ADDED -37 PJ
REV 1/28/21 ADDED -36 PJ
REV 9/3/20 ADDED -35 (RK)
REV 3/21/19 ADDED -34 (RK)
REV 1/18/19 ADDED -33 (RK)
REV 8/14/18 -30 "E" PROJ WAS 6 1/2" (RK)
REV 2/21/18 QTY TO JUST SAY SET & CHARPY TEST-JD
REV 1/17/18 ADDED -32-JD
REV 1/9/18 ADDED -31-JD
REV 11/30/17 UPDATED BARE NUTS TO GALVANIZED NUTS-JD



460B1261-37		1-8	24"	(4) ASSY'S 460A204-12	15'	4"	460B131-20	---
460B1261-36		1 1/4-7	24"	(4) ASSY'S 460A204-11	13'	4"	460B137-7	---
460B1261-35		1-8	40"	(1) SET 460A204-1	13 1/2	4"	460B131-16	---
460B1261-34		1 1/4-7	50"	(4) ASSY'S 460A204-10	15 1/8	5"	460B137-35	---
460B1261-33		1 1/2-6	60"	(4) ASSY'S 460A204-3	15'	6 1/2	460B138-38	---
460B1261-32		1 1/2-6	60"	(4) ASSY'S 460A204-3	16'	6 1/2	460B138-5	---
460B1261-31		1 3/4-5	96"	(6) ASSY'S 460A204-9	22'	8"	460B136-49	---
460B1261-30		1 1/2-6	60"	(6) ASSY'S 460A204-3	21'	7"	460B136-16	---
460B1261-29		2-4 1/2	96"	(4) SET 460A204-4	24'	8"	460B139-17	---
460B1261-28		1-8	40"	(1) SET 460A204-1	15 1/8	4"	460B131-35	---
460B1261-27		1-8	30"	(4) ASSY'S 460A204-6	15'	4"	460B131-20	---
460B1261-26		1 1/4-7	36"	(4) ASSY'S 460A204-5	13 1/2	4 1/2	460B137-9	---
460B1261-25		2-4 1/2	96"	(4) ASSY'S 460A204-4	28"	8"	460B139-12	---
460B1261-24		1 1/2-6	60"	(6) ASSY'S 460A204-3	24"	6"	460B136-14	---
460B1261-23		1 1/4-7	48"	(6) ASSY'S 460A204-2	21"	5"	460B136-13	---
460B1261-22		1 1/2-6	60"	(4) ASSY'S 460A204-3	19"	6 1/2	460B138-20	---
460B1261-21		1 1/4-7	48"	(3) ASSY'S 460A204-7	18 1/2	4"	460B182	10"
460B1261-20		2-4 1/2	96"	(6) ASSY'S 460A204-4	21"	8"	460B136-7	---
460B1261-19		1 1/2-6	60"	(8) ASSY'S 460A204-3	28"	6 1/2	460B165-4	---
460B1261-18		1-8	40"	(1) SET 460A204-1	9 1/2	4"	460B131-3	---
460B1261-17		2-4 1/2	96"	(4) ASSY'S 460A204-4	25"	8"	460B139-6	---
460B1261-16		2-4 1/2	96"	(4) ASSY'S 460A204-4	26 1/2	8"	460B139-8	---
460B1261-15		2-4 1/2	96"	(4) ASSY'S 460A204-4	23"	8"	460B139-7	---
460B1261-14		1 1/2-6	60"	(6) ASSY'S 460A204-3	22"	6 1/2	460B136-1	---
460B1261-13		1 1/4-7	48"	(4) ASSY'S 460A204-2	13 1/2	4 1/2	460B137-9	---
460B1261-12		2-4 1/2	96"	(4) ASSY'S 460A204-4	22"	8"	460B139-5	---
460B1261-11		1-8	40"	(1) SET 460A204-1	11"	4"	460B131-8	---
460B1261-10		1-8	40"	(1) SET 460A204-1	15"	3"	460B131-20	---
460B1261-9		1 1/2-6	60"	(4) ASSY'S 460A204-3	22"	6 1/2	460B138-12	---
460B1261-8		1 1/2-6	60"	(4) ASSY'S 460A204-3	20"	6 1/2	460B138-11	---
460B1261-7	2	1 1/4-7	48"	(4) ASSY'S 460A204-2	17"	4"	460B137-12	---
460B1261-6		1 1/2-6	60"	(4) ASSY'S 460A204-3	17"	6 1/2	460B138-7	---
460B1261-5		1 1/2-6	60"	(4) ASSY'S 460A204-3	18"	6 1/2	460B138-8	---
460B1261-4		1 1/2-6	60"	(4) ASSY'S 460A204-3	14"	6 1/2	460B138-3	---
460B1261-3		1 1/4-7	48"	(4) ASSY'S 460A204-2	17"	4 1/2	460B137-12	---
460B1261-2		1-8	40"	(1) SET 460A204-1	12"	4"	460B131-11	---
460B1261-1		1-8	40"	(1) SET 460A204-1	15"	4"	460B131-20	---
PART NO	QTY (SET)	"A" THD SIZE	"B" BOLT LG	"C" QTY 460A204-	"D" BC	"E" BOLT PROJ	"F" TEMPLATE	"G" DEGREE TO ROAD

DWN: JASON D	ANCHOR BOLT CLUSTER TABULATION (SD)	
DATE: 10/16/17	(ASTM F1554 MATERIAL) < FULLY GALVANIZED >	
CHK:	Millerbernd MANUFACTURING CO. WINSTED, MN	
SCALE: NTS		
		460B1261



NOTE:

1. 1" TO 1 1/4" ANCHOR BOLT PER F1554 GRADE 55 MATERIAL - 55,000 PSI MIN YEILD 75,000 - 95,000 PSI TENSILE STRENGTH (INCLUDING SUPPLEMENTARY SPEC S4(CHARPY @ +40*) AND SUITABLE FOR WELDING NUT MAT'L - ASTM A194 GR 2H FLATWASHER MAT'L - ASTM F436
2. 1 1/2" TO 2" HIGH STRENGTH STEEL ANCHOR BOLT PER ASTM F1554 GRADE 105 MATERIAL (INCLUDING SUPPLEMENTARY SPEC S4(CHARPY @ +40*) QUENCHED AND TEMPERED COLD DRAWN STRESS-RELIEVED (SAE 4140) ROD WITH 105,000 PSI MIN YIELD AND 125,000 - 150,000 PSI TENSILE STRENGTH, 155 MIN ELONGATION AND 45% MIN REDUCTION OF AREA NUT MAT'L - ASTM A194 GR 2H FLATWASHER MAT'L - ASTM F436
3. ANCHOR BOLT AND NUTS GALVANIZED PER ASTM F2329
4. THREAD TO BE CLASS 2A PER AMERICAN STD. B 1.1 .030 OVER SIZE AFTER GALVANIZING
5. ALL BOLTS ROLLED THREAD
6. NO WELDING IS ALLOWED ON ANCHOR BOLTS
7. GALVANIZED HEAVY HEX NUTS PER A194 GR 2H (.030 OVER SIZE)
8. BOTH ENDS OF ANCHOR BOLT PERMANENTLY STAMPED WITH THE NAME OF THE MANUFACTURER (PER SUPP-S2) AND GRADE (PER SUPP-S3).

GRADE	IDENTIFICATION MARKING
36	MANUFACTURERS' ID/AB36
55	MANUFACTURERS' ID/AB55
105	MANUFACTURERS' ID/AB105
9. BOTH ENDS OF ANCHOR BOLT PAINTED PER COLOR CODE

GRADE	COLOR CODE
36	(BLUE)
55	(YELLOW)
105	(RED)

(A) ASSEMBLY TO INCLUDE: (1) "B" DIA X "C" LG ANCHOR BOLT (11" THD BOTH ENDS AND FULLY GALVANIZED), WITH (4) GALVANIZED HVY HX NUTS, (1) GALVANIZED FLATWASHER ASSEMBLED ON ANCHOR BOLT (QTY OF (4) ASSEMBLIES TO BE BANDED TOGETHER TO EQUAL (1) SET ONLY ON 1" ANCHOR BOLTS)

MMC#207908 PO#4703686213 SD DOT WHITE
RIVER KNOCKDOWN

460A204-12		1-8	24"
460A204-11		1 1/4-7	24"
460A204-10		1 1/4-7	50"
460A204-9		1 3/4-5	96"
460A204-8		2"-4 1/2	90"
460A204-7		1 1/4-7	48"
460A204-6		1"-8	30"
460A204-5		1 1/4-7	36"
460A204-4		2"-4 1/2	96"
460A204-3		1 1/2-6	60"
460A204-2	8	1 1/4-7	48"
460A204-1		1"-8	40"
PART NO	"A" QTY	"B" THD SIZE	"C" BOLT LG



8/29/22 ADDED -12 PJ
1/28/24 ADDED -11 PJ
3/21/23 ADDED -10 GHO
2/22/18 CHARNY NOTE - JI
1/31/18 ADDED -4 JI
12/26/17 TO DIRECTED HOBBED
NOTES FROM 11/3/17-JI
REV 10/2/17 BOLTS WERE GALV
1 GHO ONLY GHO
REV 4/21/17 ADDED SHARPLY
REV 1/22/17 ADDED NOTE B & 9
REV 3-18-10 GHO, ONLY SPEC
WAS ASTM A55
REV 7-29-09 CHANGED
FLATWASHER TYPE A TO F436
REV 1-21-09 PRODUCT HANDLING

DWN: FLOYD F.
DATE: 1-28-02
CHK: WILL Q.
SCALE: NTS

ANCHOR BOLT ASSY
ASTM A1554 MATERIAL

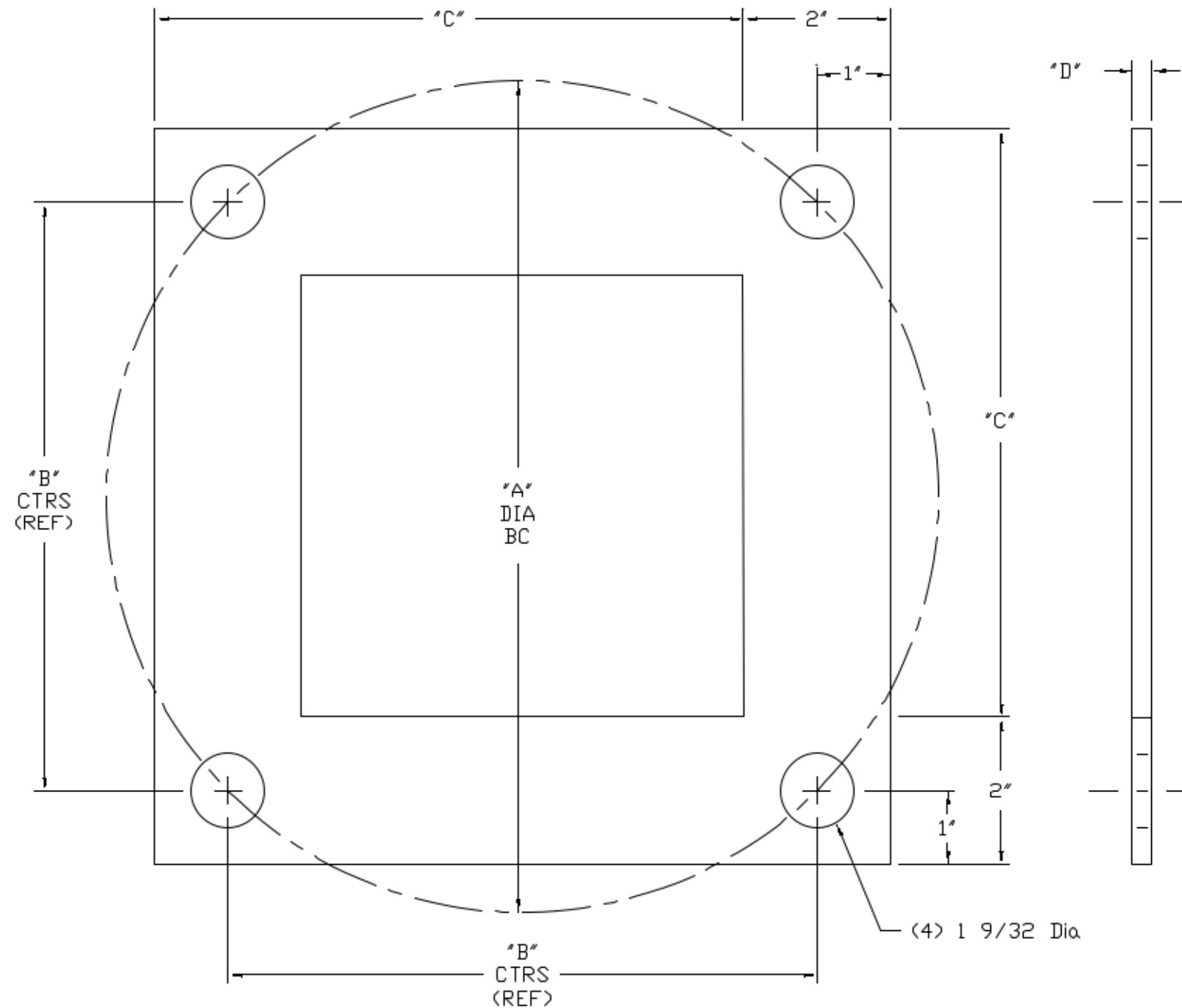
Millerbernd MANUFACTURING CO.
WINSTED, MN

460A204

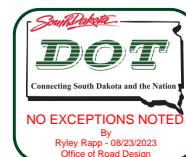
ADDITIONAL DASH NUMBERS ON SEPARATE INDIVIDUAL DRAWINGS

29	16"	11 5/16	11 9/32	1/4
28	15"	10 5/8	10 19/32	1/4
27	11 1/2	8 1/8	8 3/32	11GA
26	18 1/2	13 3/32	13 1/16	11GA
25	26"	18 3/8	18 11/32	11GA
24	15 1/2	11"	10 31/32	11GA
23	24"	17"	16 31/32	11GA
22	16"	11 5/16	11 9/32	11GA
21	14 1/2	10 1/4	10 7/32	11GA
20	28 1/2	20 1/8	20 1/16	3/8
19	17 1/4	12 3/16	12 5/32	3/8
18	17 1/4	12 3/16	12 5/32	1/4
17	15	10 5/8	10 19/32	3/8
16	15	10 5/8	10 19/32	1/4
15	12 1/2	8 13/16	8 25/32	11GA
14	12 1/4	8 11/16	8 21/32	11GA
13	18	12 3/4	12 23/32	11GA
12	17	12	11 31/32	11GA
11	15	10 5/8	10 19/32	11GA
10	14	9 7/8	9 27/32	11GA
9	13 1/2	9 9/16	9 17/32	11GA
8	13 1/4	9 3/8	9 11/32	11GA
7	13	9 3/16	9 5/32	11GA
6	12 9/16	8 7/8	8 27/32	11GA
5	12	8 1/2	8 15/32	11GA
4	11 3/16	7 7/8	7 27/32	11GA
3	11	7 3/4	7 23/32	11GA
2	10 7/8	7 11/16	7 21/32	11GA
1	9 7/8	7	6 31/32	11GA
DASH NO	"A" DIA BC	"B" CTRS	"C"	"D"

QTY: 2



MMC#207908 PO#4703686213 SD DOT WHITE
RIVER KNOCKDOWN



NOTE:

1. MATERIAL- LOW CARBON 36,000 PSI
MIN YIELD (ASTM A36)
2. FINISH- BARE UNFINISHED

DWN: WADE L.
DATE: 3-21-96
CHK:
SCALE: NTS

TEMPLATE (4) 1 1/4 BOLTS

Millerbernd MANUFACTURING CO.
WINSTED, MN

460B137

July 28, 2023

South Dakota DOT
Traffic Design Engineer
Office of Road Design
700 E Broadway Avenue
Pierre, SD 57501-2586

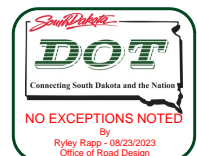
RE: MMC# 207908, PO#4703686213, SD DOT WHITE RIVER KNOCKDOWN
Lighting Poles

The following lighting and traffic signal standards used for this project meet or exceed the AASHTO "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals", 2013. These standards also are in compliance with the 1994 version of the aforementioned AASHTO standard.

Respectfully,



Russell K. Teal PE





Date: Aug 3, 2023

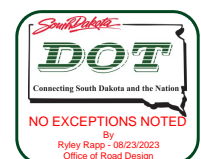
Core4 Technologies
8317 Pillsbury Avenue South
Bloomington MN 55420
Phone: (888) 551-9209
Fax: (952) 314-2144

Job Name
BUILDER'S ELECTRIC JOBS COMBINED
CORE4SD23-5043
SIOUX FALLS SD

Bid Date
Jul 18, 2023

Submittal Date
Aug 3, 2023

ORIGINAL PLANS





Date: Aug 3, 2023

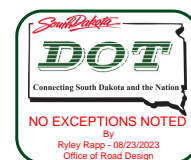
Job Name: BUILDER'S ELECTRIC JOBS COMBINED

SDDOT L67 06L6

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE
ERL2 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing: Aluminum die cast enclosure. Casting Integral heat sink for maximum heat transfer

Lens: Impact resistant tempered glass

Paint: Corrosion resistant polyester powder painted, minimum 2.0 mil thickness
 (RAL & custom colors available)
 Standard = Black, Dark Bronze Gray, White
 Optional = Coastal Finish

Weight: 24.0 lbs (10.9 kgs)

Lumen Maintenance

Projected Lxx per IES TM-21-11 at 25°C

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16	A5, B5, C5, D5, E5	L99	L99	L99
18	A5, B5, C5, D5, E5	L99	L98	L98
19	A5, B5, C5, D5, E5	L99	L98	L97
21	A5, B5, C5, D5, E5	L94	L87	L85
23	A5, B5, C5, D5, E5	L97	L96	L95
25	A5, B5, C5, D5, E5	L96	L95	L95
27	A5, B5, C5, D5, E5	L96	L94	L94
28	A5, B5, C5, D5, E5	L96	L94	L93
30, 31	A5, B5, C5, D5, E5	L95	L93	L92
32	A5, B5, C5, D5, E5	L94	L91	L90

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

Optical System

Lumens: 16,000 - 32,000

Distribution: Type II Narrow, Type II Wide, Type III, Type IV and Type II Enhanced Back light

Efficacy: 112-140 LPW

CCT: 2700K, 3000K, 4000K, 5000K

CRI (Min): 70 CRI

Ratings

Operating Temp: -40°C to 50°C *

Vibration: 3G per ANSI C136.31-2018

LM-79: Testing in accordance with IES Standards

EMI: Title 47 CFR Part 15 Class A

RoHS: Complies with the material restrictions of RoHS

*ERL2 (32K Lumen 347-480V SKU) operates at -40°C to 45°C

Electrical

Input Voltage: 120-277V or 347-480V

Input Frequency: 50/60Hz

Power Factor: ≥ 90% at rated watts

Total Harmonic Distortion: ≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018

**Controls**

Dimming: Standard-0-10V ☒
 Optional-DALI (Option U) ☐

Sensors: Photo Electric Sensors (PE) available
 LightGrid Compatible

Warranty

☒ 5 Year (Standard) ☐ 10 Year (Optional)

Not all product variations listed on this page are DLC qualified.
 Visit www.designlights.org/search to confirm qualifications.

**Current**

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 13 of 20
 (Rev 06/28/23)
 OLP3187_R06

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

Notes:

Type:**L67**

CORE4SD23-5043

EVOLVE
ERL2 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

Ordering Information

ERL2

PROD. ID	VOLTAGE	LUMENS (LM)	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16,000 lm	A5 = Type II Narrow	27 = 2700K ²	A = 7-Pin Receptacle	GRAY = Gray	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18,000 lm	B5 = Type II Wide	30 = 3000K ²	D = 7-Pin Receptacle with Shorting Cap	BLACK = Black	B = Tether
L = Local	1 = 120V	19 = 19,000 lm	C5 = Type III	40 = 4000K	E = 7-Pin Receptacle with non-Dimming Long Life PE ³	DKBZ = Dark Bronze	F = Fusing
2 = Double Module	2 = 208V	21 = 21,000 lm	D5 = Type IV ⁵	50 = 5000K	Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	3 = 240V	23 = 23,000 lm	E5 = Type II Enhanced Back Light				I = Optional IP66 Optical Enclosure
	4 = 277V	25 = 25,000 lm					L = Tool-Less Entry
	D = 347V	27 = 27,000 lm					R = Secondary 10kV/5kA SPD
	5 = 480V	28 = 28,000 lm					T = Secondary 20kV/10kA SPD ¹
		30 = 30,000 lm					U = DALI Programmable ^{6,7}
		31 = 31,000 lm					V1 = Field Adjustable Module ⁸
		32 = 32,000 lm					Y = Coastal Finish ⁹
							XXX = Special Options

¹ Not Available with Fusing² Select 2700K or 3000K CCT for IIDA approved units³ Nominal IES Type classing subject to typical variation, individual units may differ⁴ Lead time varies, contact Factory⁵ Per ANSI C136.10-2017⁶ Compatible with LightGrid⁷ Not available in 347V, 480V or 347-480V⁸ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.⁹ Not available with DALI "U" option¹⁰ Forward throw distribution. Classifies as Type III for lumen codes 23-32. Review IES curve for application.

Suggested HID Replacement

 Approximately 21,500 -32,000 lumens to replace 400W HPS
 Cobra-head

 Note: actual replacement lumens may vary based upon mounting height, pole spacing,
 design criteria, etc.


Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE

 ERL2 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

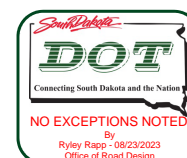
CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	TYPICAL INITIAL LUMENS			WATTAGE		BUG RATINGS		
		5000K/4000K	3000K	2700K	120V 277V	347V 480V	5000K/4000K	3000K	2700K
27	A5	27000	25900	25100	212		B4-U0-G4	B4-U0-G4	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
28	A5	28000	26800	26000	223		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G3	B3-U0-G3
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B2-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
30	A5	30000	28800	27900	242		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
31	A5	31000	29700	28800	252		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4
32	A5	32000	30700	29700	265		B4-U0-G4	B4-U0-G4	B4-U0-G4
	B5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B3-U0-G4	B3-U0-G4	B3-U0-G4
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4

For additional information on ERL2 IES files, please click one of the following links:

Non-Shielded

Shielded





Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027C540EGRAY

Notes:

Type:

L67

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

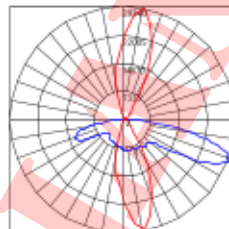
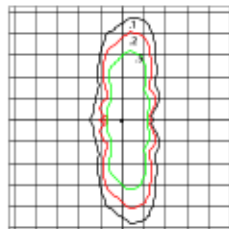
PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

ERL2
Type II Narrow

32,000 Lumens
5000K
ERL2_32A550____.IES

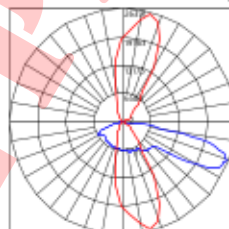
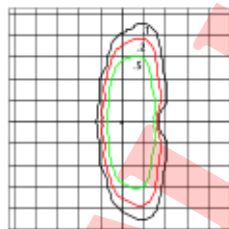


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 80°
- Horizontal cone at max Cd vert. angle 65°

ERL2
Type II Wide

32,000 Lumens
5000K
ERL2_32B550____.IES

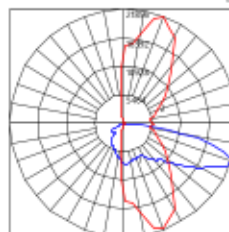
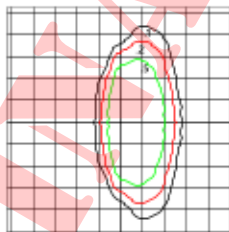


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

ERL2
Type III

32,000 Lumens
5000K
ERL2_32C550____.IES

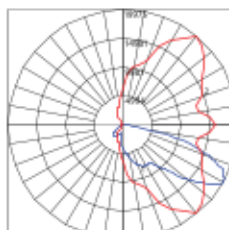


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 70°
- Horizontal cone at max Cd vert. angle 70°

ERL2
Type III (FWT)

32,000 Lumens
5000K
ERL2_32D550____.IES
Forward Throw

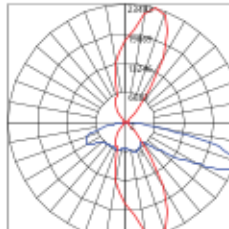
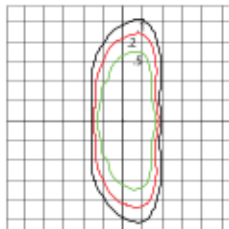


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 50°
- Horizontal cone at max Cd vert. angle 55°

ERL2
Type II Medium

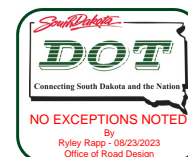
32,000 Lumens
5000K
ERL2_32E550____.IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°

ISO illuminate diagrams and polar plots are representative of the SKUs illustrated. Refer to IES files for SKU specific information.



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027C540EGRAY

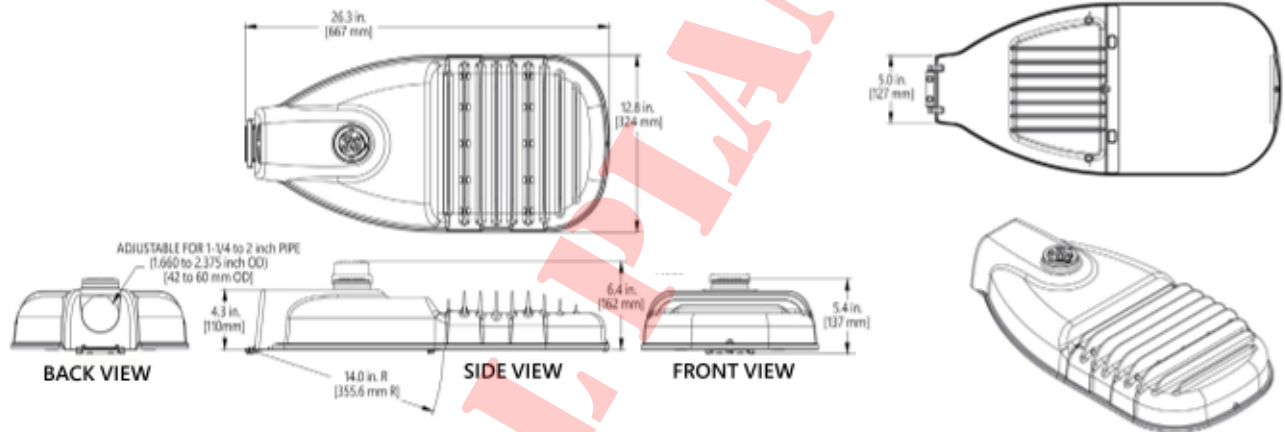
Notes:

Type:

L67

CORE4SD23-5043

EVOLVE
ERL2 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____
**Mounting**

- Adjustable for 1.25 to 2 in. nominal mounting pipe (1.660 to 2.375 inch OD)
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight

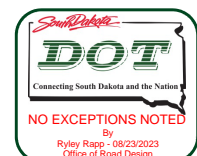
- 24.0 lbs (10.9 kgs)

Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237G	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238G	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239G	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Long Life PE 120-277V
93147530	PECHTL	Long Life PE 347-480V
73251	SCCL-PECTL	Shorting Cap

Network Lighting Controls

Current's LightGrid™ Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.

**Current**

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 18 of 20

(Rev 06/28/23)

OLP3187_R06



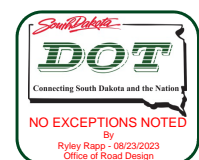
Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
WHITE RIVER SDDOT KNOCKDOWN

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY
Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head LED Roadway Lighting



CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure casting integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
	Corrosion resistant polyester powder paint, minimum ≥ 2.0 mil thickness
Paint:	(RAL & custom colors available) Standard = Black, Dark Bronze, Gray, White Optional = Coastal Finish
Weight:	24.0 lbs (10.9 kgs)

Optical System

Lumens:	16,000 - 30,000
Distribution:	Type II Narrow, II/III, III, V
Efficacy:	110-143 LPW
CCT:	2700K, 3000K, 4000K
CRI:	≥ 70

Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	≥ 90% at rated watts
Total Harmonic Distortion:	≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018

Lumen Maintenance

Projected Lxx per IES TM-21-11 at

LUMEN CODES	DISTRIBUTIONS	LXX(H0K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16, 18, 19, 21, 23	A3,B3,C3, D3,E3	L96	L94	L94
25, 27, 28	A3,B3,C3, D3,E3	L95	L93	L92
30	A3,B3,C3, D3,E3	L94	L91	L90

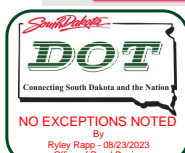
Ratings

Operating Temperature:	Lumen Output 16-28 (-40°C to 50°C) Lumen Output 30 (-40°C to 45°C)
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards

Controls

Dimming:	<input checked="" type="checkbox"/> Standard - 0-10V <input type="checkbox"/> Optional - DALI (Option U)
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

☒ 5 Year (Standard)
 ☐ 10 Year (Optional)

Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.
 Page 17 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

Ordering Information

ERL2

PROD. ID	VOLTAGE	LUMENS	DISTRIBUTION	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16000 lm	A3 = Type II Narrow ²	27 = 2700K ³	A = 7-Pin Receptacle	BLCK = Black	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18000 lm	B3 = Type II Wide	30 = 3000K ³	D = 7-Pin Receptacle with Shorting Cap	DKBZ = Dark Bronze	B = Tether
L = Local		19 = 19000 lm	C3 = Type III	40 = 4000K	E = 7 Pin Receptacle with Long Life non-Dimming PE Control ⁴	GRAY = Gray	F = Fusing
2 = Double Module	1 = 120V	21 = 21000 lm	D3 = Type IV		Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	2 = 208V	23 = 23000 lm	E3 = Type II Enhanced Back Light				I = Optional IP66 Optical
	3 = 240V	25 = 25000 lm					L = Tool-Less Entry
	4 = 277V	27 = 27000 lm					M1 = MagnaPak ⁵
	5 = 480V	28 = 28000 lm					R = Secondary 10kV/5kA SPD
	D = 347V	30 = 30000 lm					T = Secondary 20kV/10kA SPD ⁶
							U = DALI Programmable ⁵
							V1 = Field Adjustable Module ⁷
							Y = Coastal Finish ⁸
							XXX = Special Options

¹ Not Available with Fusing² Nominal IES Type classing subject to typical variation, individual units may differ³ Select 2700K or 3000K CCT for IDA approved units⁴ Lead time varies, Contact Factory⁵ Compatible with LightGrid⁶ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.⁷ Not available with DALI "U" option⁸ Option M1 provides for MagnaPak - 20 Fixtures per MagnaPak Container. Single Pack box is standard

Suggested HID Replacement

- Approximately 21,000 - 30,000 lumens to replace 400W HPS Cobra-head

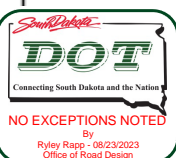
Note: actual replacement lumens may vary based upon mounting height, pole spacing, design criteria, etc.

PREVIOUS	OPTICAL PATTERN	LATEST	NEW OPTICAL PATTERN
A1, B1	Extra Narrow/Narrow Asymmetric	A3	Type II Narrow
C1, E1	Asymmetric Short/Medium	B3	Type II Wide
D1, G1	Asymmetric Forward/Extra Wide	C3	Type III
F1	Asymmetric Wide	D3	Type IV
N/A	N/A	E3	Type II Enhanced Back Light

The information above is designed to provide a guideline to select the correct luminaire for a roadway application. The best and most accurate way to ensure the proper design is by doing a lighting layout.



Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 18 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting

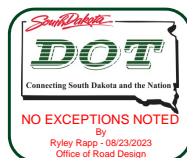
CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	LUMENS			WATTAGE		BUG RATINGS		
		4000K	3000K	2700K	277V	480V	4000K	3000K	2700K
16	A3	16000	15300	14900	120		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B2-U0-G3
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
18	A3	18000	17300	16700	140		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
19	A3	19000	18200	17700	149		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G3	B2-U0-G3	B2-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
21	A3	21000	20100	19500	174	177	B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G3	B3-U0-G3
	D3						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
23	A3	23000	22100	21400	194	196	B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B3-U0-G3	B3-U0-G3	B3-U0-G3
25	A3	25000	24000	23300	214		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
27	A3	27000	25900	25100	237		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
28	A3	28000	26900	26100	251		B3-U0-G3	B3-U0-G3	B3-U0-G3
	B3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4
30	A3	30000	28800	27900	278		B4-U0-G4	B4-U0-G4	B3-U0-G3
	B3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	C3						B3-U0-G4	B3-U0-G4	B3-U0-G4
	D3						B2-U0-G4	B2-U0-G4	B2-U0-G4
	E3						B4-U0-G4	B4-U0-G4	B4-U0-G4



For additional information on ERL2 IES files, please click one of the following links:

Non-Shielded

Shielded



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

 Page 19 of 23
 (Rev 06/28/23)
 OLP3128_R09



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

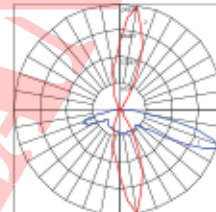
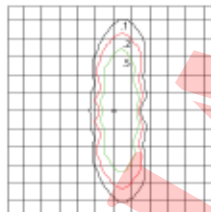
PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

ERL2
Type II Narrow

23,000 Lumens
4000K
ERL2_23A340___IES

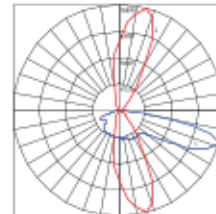
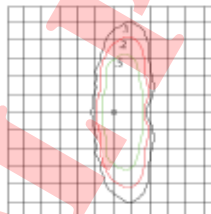


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 80°
- Horizontal cone at max Cd vert. angle 69°

ERL2
Type II Wide

23,000 Lumens
4000K
ERL2_23B340___IES

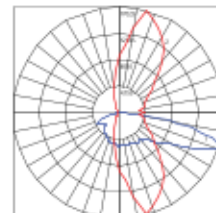
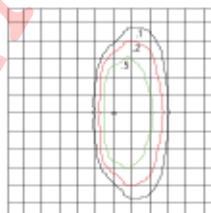


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 72°

ERL2
Type III

23,000 Lumens
4000K
ERL2_23C340___IES

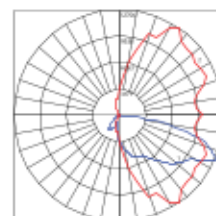


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 71°

ERL2
Type IV

23,000 Lumens
4000K
ERL2_23D340___IES

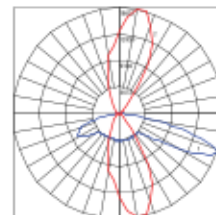
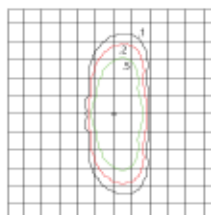


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 55°
- Horizontal cone at max Cd vert. angle 65°

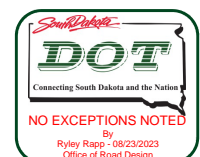
ERL2
Type IV

23,000 Lumens
4000K
ERL2_23E340___IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 69°



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2027E340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

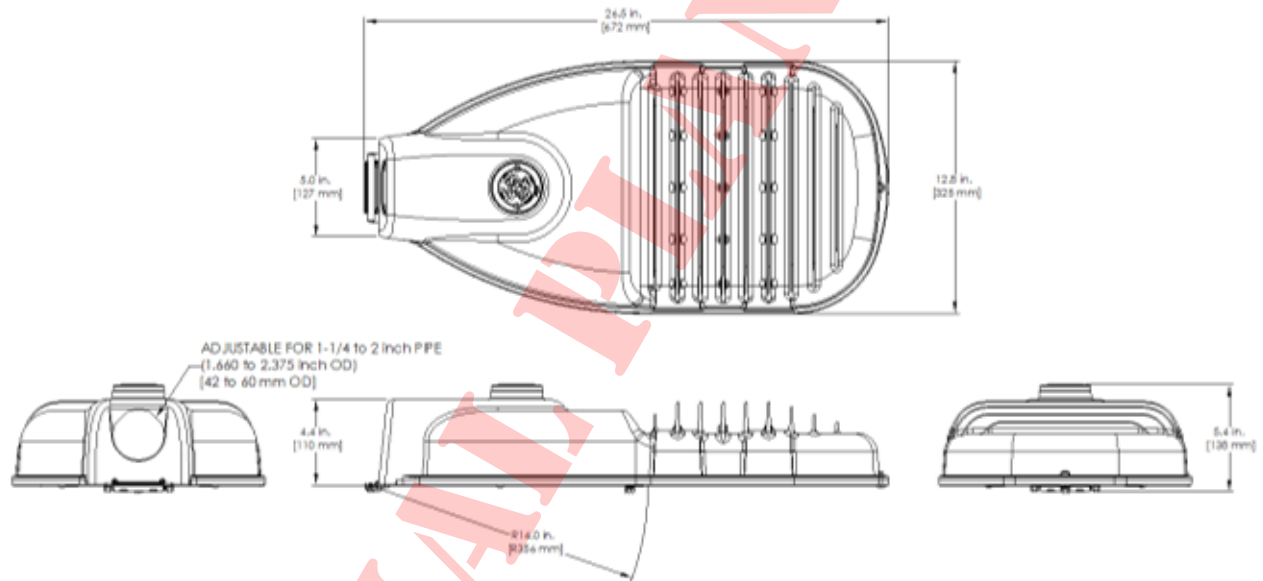
LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____



Mounting

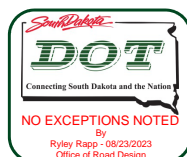
- Adjustable for 1.25 to 2 in. nominal mounting pipe
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight:

- 24.0 lbs (10.9 kgs)



Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Standard 120-277V

See pages 22 & 23 for more detailed information on ERL2 Shields.

Networked Lighting Control



Current's **LightGrid™** Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.



Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
WHITE RIVER DOT

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY
Type:

Notes:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL1 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing:	Aluminum die cast enclosure casting integral heat sink for maximum heat transfer
Lens:	Impact resistant tempered glass
	Corrosion resistant powder paint, ≥ 2.0 mil thickness
Paint:	(RAL & custom colors available) Standard = Black, Dark Bronze, Gray, White Optional = Coastal Finish
Weight:	12.4 lbs (5.6kgs)

Optical System

Lumens:	2,000 - 10,000
Distribution:	Type II, III, IV and Type II Narrow, and Type II Enhanced Backlight
Efficacy:	110-143 LPW
CCT:	2700K, 3000K, 4000K
CRI:	≥ 70

Electrical

Input Voltage:	120-277V or 347-480V
Input Frequency:	50/60Hz
Power Factor:	$\geq 90\%$ at rated watts
Total Harmonic Distortion:	$\leq 20\%$ at rated watts

Surge Protection*

Standard	Optional
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018

Lumen Maintenance

Projected Lxx per IES TM-21-11 at

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
02,03,04,05,06	A3,B3,C3,D3,E3	L96	L95	L94
07,08,09	A3,B3,C3,D3,E3	L95	L91	L89
10	A3,B3,C3,D3,E3	L89	L80	L76

Ratings

Operating Temperature:	-40°C to 50°C
Vibration:	3G per ANSI C136.31-2018
LM-79:	Testing in accordance with IES Standards

Controls

Dimming:	Standard - 0-10V <input checked="" type="checkbox"/> Optional - DALI (Option U) <input type="checkbox"/>
Sensors:	Photo Electric Sensors (PE) available LightGrid Compatible

Warranty

<input checked="" type="checkbox"/> 5 Year (Standard)	<input type="checkbox"/> 10 Year (Optional)
---	---

Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

Curre

.ED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

 Page 7 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

Ordering Information

ERL1

PROD. ID	VOLTAGE	LUMENS	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	02 = 2000 lm ²	A3 = Type II Narrow	27 = 2700K ⁴	A = 7-Pin Receptacle	BLCK = Black	A = 4 Bolt Slipfitter ⁵
R = Roadway	H = 347-480V ¹	03 = 3000 lm	B3 = Type II Wide	30 = 3000K ⁴	D = 7-Pin Receptacle with Shorting Cap	DKBZ = Dark Bronze	B = Tether
L = Local		04 = 4000 lm	C3 = Type III	40 = 4000K	E = 7 Pin Receptacle with Long Life non-Dimming PE Control	GRAY = Gray	F = Fusing
1 = Single Module	1 = 120V	05 = 5000 lm	D3 = Type IV		Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	2 = 208V	06 = 6000 lm	E3 = Type II Enhanced Back Light				I = Optional IP66 Optical
	3 = 240V	07 = 7000 lm					L = Tool-Less Entry
	4 = 277V	08 = 8000 lm					R = Secondary 10kV/5kA SPD
	D = 347V	09 = 9000 lm					T = Secondary 20kV/10kA SPD
	5 = 480V	10 = 10000 lm					U = DALI Programmable ^{6,7}
							V1 = Field Adjustable Module ^{8,11}
							X = Single Pack ⁸
							Y = Coastal Finish ⁹
							XXX = Special Options

¹ Not Available with Fusing² 02 lumen level voltage options 1, 2, 3, and 8 only³ Nominal IES Type classing subject to typical variation, individual units may differ⁴ Select 2700K or 3000K CCT for IES approved units⁵ Lead time varies, Contact Factory⁶ Compatible with LightGrid⁷ Not available in 347V, 480V or 347-480V for Lumen Output Levels 07-10⁸ Option provides single pack box per fixture. Standard packaging = 23 units per MagnaPak Container⁹ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.¹⁰ Not available with DALI "U" option¹¹ Not compatible with 02 Lumen Code

Suggested HID Replacement

- 4,000 - 5,000 lumens to replace 100W HPS Cobra-head
- 7,000 - 8,000 lumens to replace 150W HPS Cobra-head
- 8,500 - 11,500 lumens to replace 100W HPS Cobra-head

Note: actual replacement lumens may vary based upon mounting height, pole spacing.



PREVIOUS	OPTICAL PATTERN	LATEST	NEW OPTICAL PATTERN
A1, B1	Extra Narrow/Narrow Asymmetric	A3	Type II Narrow
C1, E1	Asymmetric Short/Medium	B3	Type II Wide
D1, G1	Asymmetric Forward/Extra Wide	C3	Type III
F1	Asymmetric Wide	D3	Type IV
N/A	N/A	E3	Type II Enhanced Back Light

The information above is designed to provide a guideline to select the correct luminaire for a roadway application. The best and most accurate way to ensure the proper design is by doing a lighting layout.



Not all product variations listed on this page are DLC qualified. Visit www.designlights.org/search to confirm qualifications.

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 8 of 23
 (Rev 06/28/23)
 OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	LUMENS			WATTAGE		BUG RATINGS		
		4000K	3000K	2700K	277V	480V	4000K	3000K	2700K
02	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	2000	1900	1900	14	N/A	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B0-U0-G1	B0-U0-G1	B0-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
03	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	3000	2900	2800	22	26	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
04	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	4000	3900	3800	31	34	B1-U0-G1	B1-U0-G1	B1-U0-G1
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
05	A3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	B3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	C3	5000	4900	4700	39	43	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G1	B1-U0-G1	B1-U0-G1
	E3						B1-U0-G1	B1-U0-G1	B1-U0-G1
06	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	C3	6000	5800	5700	47	52	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
07	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	C3	7000	6800	6600		58	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
08	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	C3	8000	7800	7600		71	B1-U0-G2	B1-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2
09	A3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	B3						B2-U0-G2	B2-U0-G2	B2-U0-G2
	C3	9000	8800	8500		84	B2-U0-G2	B2-U0-G2	B1-U0-G2
	D3						B1-U0-G2	B1-U0-G2	B1-U0-G2
	E3						B2-U0-G2	B2-U0-G2	B2-U0-G2



For additional information on ERL1 IES files, please click one of the following links:

Non-Shielded

Shielded

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 9 of 23

(Rev 06/28/23)

OLP3128_R09



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL1003C340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL1 Cobra Head
LED Roadway Lighting

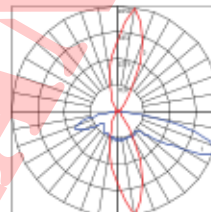
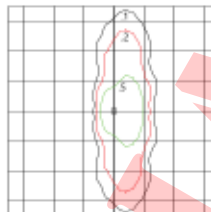
CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

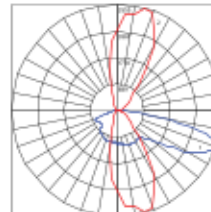
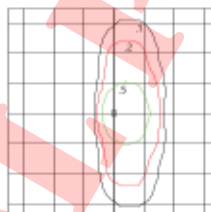
ERL1
Type II Narrow
5,000 Lumens
4000K
ERL1_05A340_...



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 60°
- Horizontal cone at max Cd vert. angle 67°

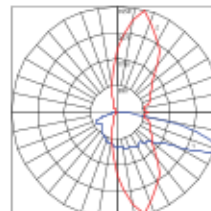
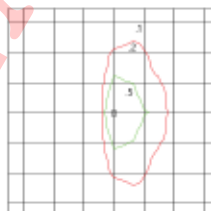
ERL1
Type II Wide
5,000 Lumens
4000K
ERL1_05B340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 69°

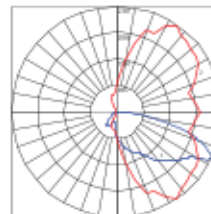
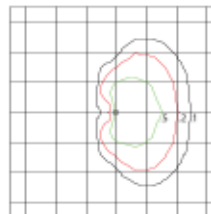
ERL1
Type III
5,000 Lumens
4000K
ERL1_05C340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

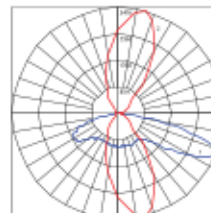
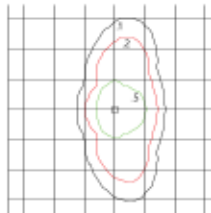
ERL1
Type IV
5,000 Lumens
4000K
ERL1_05D340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 55°
- Horizontal cone at max Cd vert. angle 64°

ERL1
Type II Enhanced Back Light
5,000 Lumens
4000K
ERL1_05E340_...IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 10 of 23

(Rev 06/28/23)

OLP3128_R09

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL1003C340EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

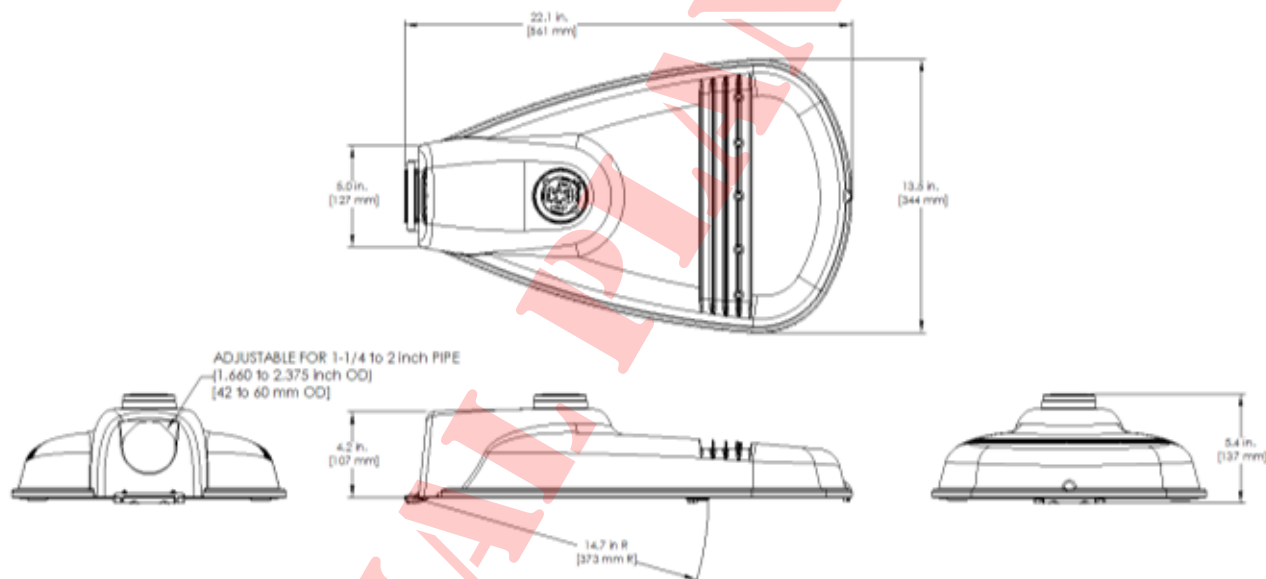
ERL1 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____



Mounting

- Adjustable for 1.25 to 2 in. nominal mounting pipe
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.5 sq ft max (0.046 sq m)

Weight

- 12.4 lbs (5.6 kgs)

Accessories

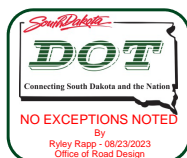
SAP NUMBER	PART NUMBER	DESCRIPTION
93029237	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PECOTL	Standard 120-277V
XXXXXX	PECHTL	Standard 347-480V
73251	SCCL-PECTL	Shorting Cap

See pages 22 & 23 for more detailed information on ERL1 Shields.

Networked Lighting Control



Current's **LightGrid™** Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.


Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

 Page 11 of 23
 (Rev 06/28/23)
 OLP3128_R09



Date: Aug 3, 2023

Job Name: BUILDER'S ELECTRIC JOBS COMBINED
PHASE 2 CROSSROADS

Bid Date: Jul 18, 2023

Submittal Date: Aug 3, 2023

ORIGINAL PLANS



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
 LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

The Evolve® LED Roadway ERL2 Luminaire is optimized utilizing advanced LED reflective optical system for local, collector and major roadways. The modern design incorporates the heat sink directly into the unit for heat transfer to prolong LED life.

Construction

Housing: Aluminum die cast enclosure. Casting Integral heat sink for maximum heat transfer

Lens: Impact resistant tempered glass

Paint: Corrosion resistant polyester powder painted, minimum 2.0 mil thickness (RAL & custom colors available)
 Standard = Black, Dark Bronze Gray, White
 Optional = Coastal Finish

Weight: 24.0 lbs (10.9 kgs)

Optical System

Lumens: 16,000 - 32,000

Distribution: Type II Narrow, Type II Wide, Type III, Type IV and Type II Enhanced Back light

Efficacy: 112-140 LPW

CCT: 2700K, 3000K, 4000K, 5000K

CRI (Min): 70 CRI

Electrical

Input Voltage: 120-277V or 347-480V

Input Frequency: 50/60Hz

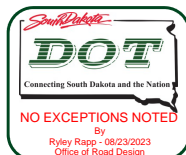
Power Factor: ≥ 90% at rated watts

Total Harmonic Distortion: ≤ 20% at rated watts

Surge Protection*

STANDARD	OPTIONAL
<input checked="" type="checkbox"/> 10kV/5kA	<input type="checkbox"/> Secondary 10kV/5kA (R Option) or <input type="checkbox"/> Secondary 20kV/10kA (T Option)

*Per ANSI C136.2-2018



Lumen Maintenance

Projected Lxx per IES TM-21-11 at 25°C

LUMEN CODES	DISTRIBUTIONS	LXX(10K) @ HOURS		
		25,000 HR	50,000 HR	60,000 HR
16	A5, B5, C5, D5, E5	L99	L99	L99
18	A5, B5, C5, D5, E5	L99	L98	L98
19	A5, B5, C5, D5, E5	L99	L98	L97
21	A5, B5, C5, D5, E5	L94	L87	L85
23	A5, B5, C5, D5, E5	L97	L96	L95
25	A5, B5, C5, D5, E5	L96	L95	L95
27	A5, B5, C5, D5, E5	L96	L94	L94
28	A5, B5, C5, D5, E5	L96	L94	L93
30, 31	A5, B5, C5, D5, E5	L95	L93	L92
32	A5, B5, C5, D5, E5	L94	L91	L90

Note: Projected Lxx based on LM80 (≥ 10,000 hour testing). Accepted industry tolerances apply to initial luminous flux and lumen maintenance measurements.

Ratings

Operating Temp: -40°C to 50°C *

Vibration: 3G per ANSI C136.31-2018

LM-79: Testing in accordance with IES Standards

EMI: Title 47 CFR Part 15 Class A

RoHS: Complies with the material restrictions of RoHS

*ERL2 (32K Lumen 347-480V SKU) operates at -40°C to 45°C

Controls

Dimming: Standard-0-10V ☒
 Optional-DALI (Option U) ☐

Sensors: Photo Electric Sensors (PE) available
 LightGrid Compatible

Warranty

☒ 5 Year (Standard) ☐ 10 Year (Optional)

Not all product variations listed on this page are DLC qualified.
 Visit www.designlights.org/search to confirm qualifications.


Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 13 of 20
 (Rev 06/28/23)
 OLP3187_R06

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head

LED Roadway Lighting

 CUSTOMER NAME _____
 PROJECT NAME _____
 DATE _____ TYPE _____
 CATALOG NUMBER _____

Ordering Information

ERL2

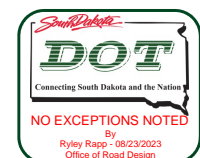
PROD. ID	VOLTAGE	LUMENS (LM)	DISTRIBUTION ¹	CCT	CONTROLS PER ANSI C136.41	COLOR	OPTIONS
E = Evolve	0 = 120-277V ¹	16 = 16,000 lm	A5 = Type II Narrow	27 = 2700K ²	A = 7-Pin Receptacle	GRAY = Gray	A = 4 Bolt Slipfitter ⁴
R = Roadway	H = 347-480V ¹	18 = 18,000 lm	B5 = Type II Wide	30 = 3000K ²	D = 7-Pin Receptacle with Shorting Cap	BLACK = Black	B = Tether
L = Local	1 = 120V	19 = 19,000 lm	C5 = Type III	40 = 4000K	E = 7-Pin Receptacle with non-Dimming Long Life PE ³	DKBZ = Dark Bronze	F = Fusing
2 = Double Module	2 = 208V	21 = 21,000 lm	D5 = Type IV ⁵	50 = 5000K	Note: 0-10V control standard unless DALI Option "U" requested	WHITE = White	G = Internal Bubble Level
	3 = 240V	23 = 23,000 lm	E5 = Type II Enhanced Back Light				I = Optional IP66 Optical Enclosure
	4 = 277V	25 = 25,000 lm					L = Tool-Less Entry
	D = 347V	27 = 27,000 lm					R = Secondary 10kV/5kA SPD
	5 = 480V	28 = 28,000 lm					T = Secondary 20kV/10kA SPD ¹
		30 = 30,000 lm					U = DALI Programmable ^{6,7}
		31 = 31,000 lm					V1 = Field Adjustable Module ⁹
		32 = 32,000 lm					Y = Coastal Finish ⁸
							XXX = Special Options

- ¹ Not Available with Fusing
² Select 2700K or 3000K CCT for IIDA approved units
³ Nominal IES Type classing subject to typical variation, individual units may differ
⁴ Lead time varies, contact Factory
⁵ Per ANSI C136.10-2017
⁶ Compatible with LightGrid
⁷ Not available in 347V, 480V or 347-480V
⁸ Recommended for installations within 750 feet from coast. Lead time varies, check with factory.
⁹ Not available with DALI "U" option
¹⁰ Forward throw distribution. Classifies as Type III for lumen codes 23-32. Review IES curve for application.

Suggested HID Replacement

Approximately 21,500 -32,000 lumens to replace 400W HPS Cobra-head

Note: actual replacement lumens may vary based upon mounting height, pole spacing, design criteria, etc.



LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 14 of 20
 (Rev 06/28/23)
 OLP3187_R06

Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

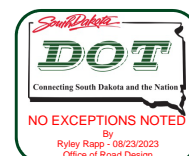
CATALOG NUMBER _____

LUMEN OUTPUT	DIST.	TYPICAL INITIAL LUMENS			WATTAGE		BUG RATINGS		
		5000K/4000K	3000K	2700K	120V 277V	347V 480V	5000K/4000K	3000K	2700K
15	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B2-U0-G2
	C5	15000	15300	14200		114	B2-U0-G3	B2-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G2
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
18	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	18000	17200	16000		130	B3-U0-G3	B2-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
19	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	19000	18200	16800		140	B3-U0-G3	B3-U0-G3	B2-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
21	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	21000	20100	18600		160	B3-U0-G3	B3-U0-G3	B3-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
23	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	23000	22000	21300		177	B3-U0-G4	B3-U0-G4	B3-U0-G3
	D5						B2-U0-G3	B2-U0-G3	B2-U0-G3
	E5						B3-U0-G3	B3-U0-G3	B3-U0-G3
25	A5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	B5						B3-U0-G3	B3-U0-G3	B3-U0-G3
	C5	25000	24000	23200		191	B3-U0-G4	B3-U0-G4	B3-U0-G4
	D5						B2-U0-G4	B2-U0-G4	B2-U0-G3
	E5						B4-U0-G4	B4-U0-G4	B4-U0-G4

For additional information on ERL2 IES files, please click one of the following links:

Non-Shielded

Shielded



Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 15 of 20

(Rev 06/28/23)

OLP3187_R06



Job Name:
BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

ERL2 Cobra Head
LED Roadway Lighting

CUSTOMER NAME _____

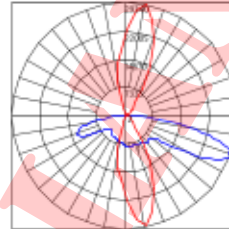
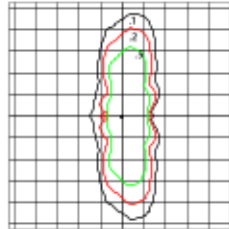
PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____

ERL2
Type II Narrow

32,000 Lumens
5000K
ERL2_32A550____.IES

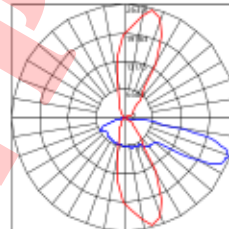
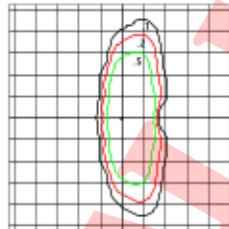


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 80°
- Horizontal cone at max Cd vert. angle 65°

ERL2
Type II Wide

32,000 Lumens
5000K
ERL2_32B550____.IES

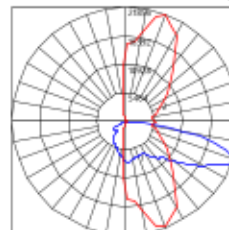
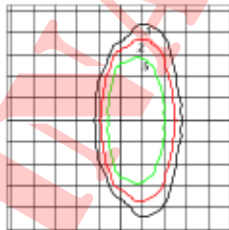


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 70°

ERL2
Type III

32,000 Lumens
5000K
ERL2_32C550____.IES

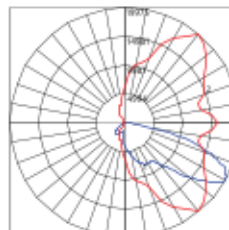


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 70°
- Horizontal cone at max Cd vert. angle 70°

ERL2
Type III (FWT)

32,000 Lumens
5000K
ERL2_32D550____.IES
Forward Throw

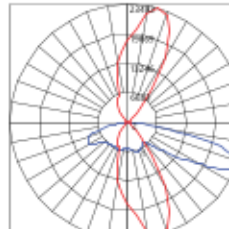
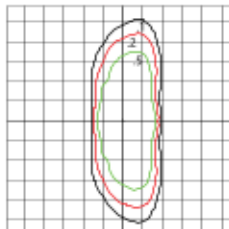


- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 50°
- Horizontal cone at max Cd vert. angle 55°

ERL2
Type II Medium

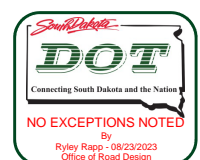
32,000 Lumens
5000K
ERL2_32E550____.IES



- Mounting Height at 30'
- Initial Footcandle at Grade

- Vertical plane at max Cd horiz. angle 75°
- Horizontal cone at max Cd vert. angle 67°

ISO illuminate diagrams and polar plots are representative of the SKUs illustrated. Refer to IES files for SKU specific information.



Submitted by Core4 Technologies


Job Name:
 BUILDER'S ELECTRIC JOBS COMBINED

Catalog Number:
 ERL2016C540EGRAY

Notes:

Type:

CORE4SD23-5043

EVOLVE

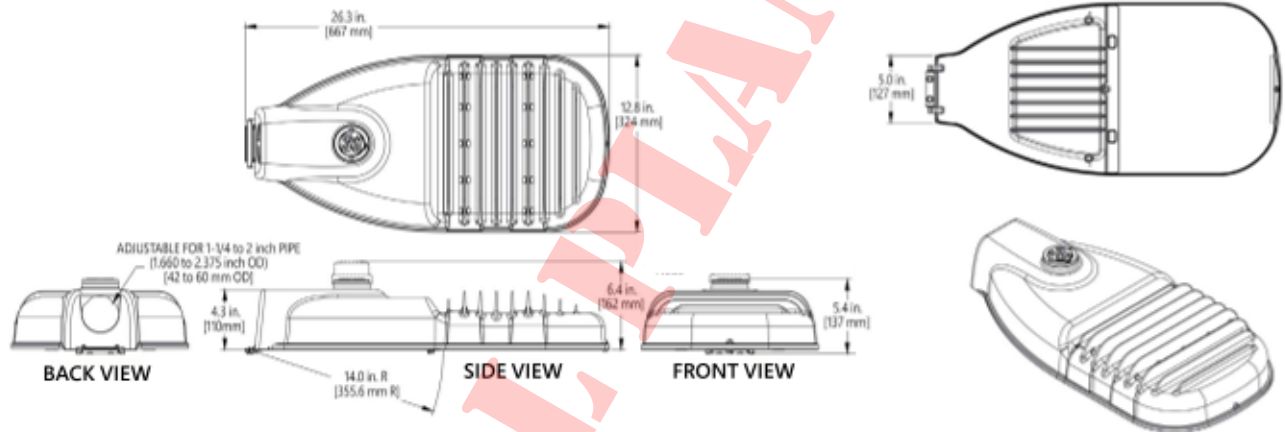
ERL2 Cobra Head
 LED Roadway Lighting

CUSTOMER NAME _____

PROJECT NAME _____

DATE _____ TYPE _____

CATALOG NUMBER _____



Mounting

- Adjustable for 1.25 to 2 in. nominal mounting pipe (1.660 to 2.375 inch OD)
- Integral diecast mounting pipe stop
- Slipfitter with +/- 5 degrees of leveling adjustment

Effective Projected Area

- 0.57 sq ft max (0.053 sq m)

Weight

- 24.0 lbs (10.9 kgs)

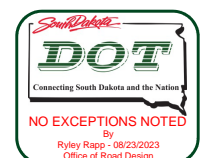
Accessories

SAP NUMBER	PART NUMBER	DESCRIPTION
93029237G	PED-MV-LED-7	ANSI C136.41 Dimming PE, 120-277V
93029238G	PED-347-LED-7	ANSI C136.41 Dimming PE, 347V
93029239G	PED-480-LED-7	ANSI C136.41 Dimming PE, 480V
28299	PEC0TL	Long Life PE 120-277V
93147530	PECHTL	Long Life PE 347-480V
73251	SCCL-PECTL	Shorting Cap

Network Lighting Controls



Current's LightGrid™ Outdoor Lighting Control System is designed for Street and Roadway Applications. It enables remote monitoring, control, and asset management of a single fixture or a group of fixtures through a web enabled Central Management System.


Current

LED.com

© 2023 Current Lighting Solutions, LLC. All rights reserved. Information and specifications subject to change without notice. All values are design or typical values when measured under laboratory conditions.

Page 18 of 20

(Rev 06/28/23)

OLP3187_R06

BREAKAWAY TRANSFORMER BASES

THE BREAKAWAY TRANSFORMER BASE/LIGHT POLE
IS YOUR GUIDE **PATH** FOR HIGHWAY **SAFETY**
MOTORISTS SAFETY IS OUR **# 1** GOAL



FOR HIGHWAY LIGHTING VISIBILITY AND
DIRECTION, CAST ALUMINUM **AASHTO APPROVED**
TRANSFORMER BASES ARE RECOGNIZED
BY MOTORISTS WITHOUT COMPARISON.

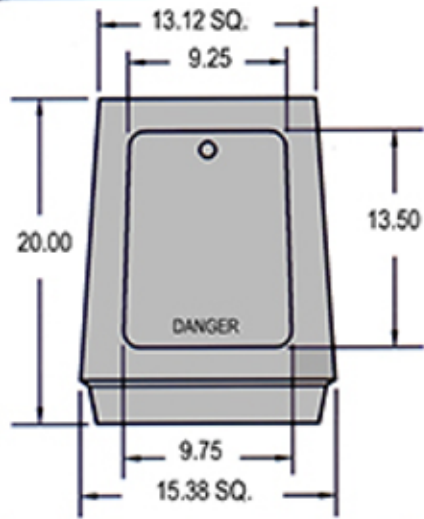


AKRON FOUNDRY COMPANY

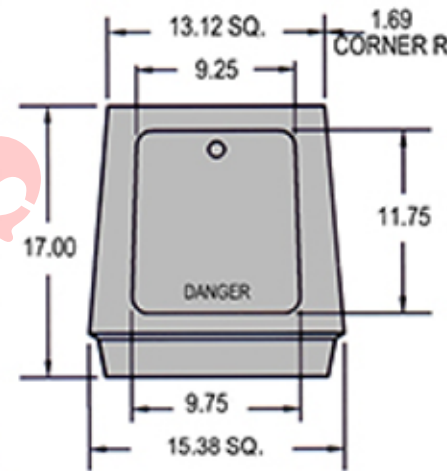
(330) 745-3101

FAX(330) 745-7999

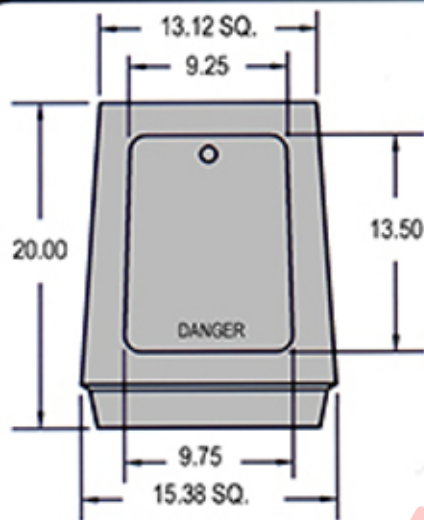
E-MAIL: AFC@AkronFoundry.com

**TB1-20**

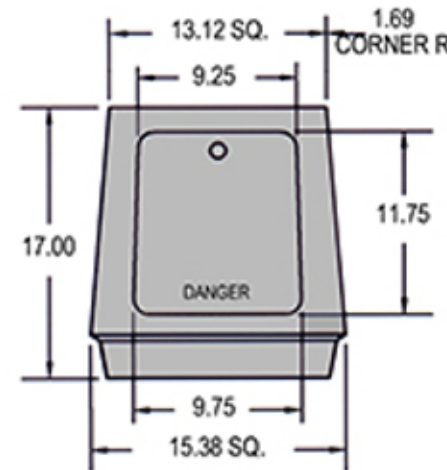
This base features 11" to 13" top bolt circle and 13" to 15" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB1-17**

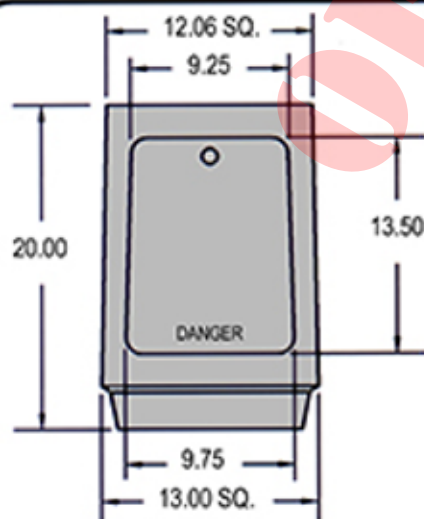
This base features 10 1/2" to 13 1/2" top bolt circle and 13" to 15" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB1-20 MODIFIED**

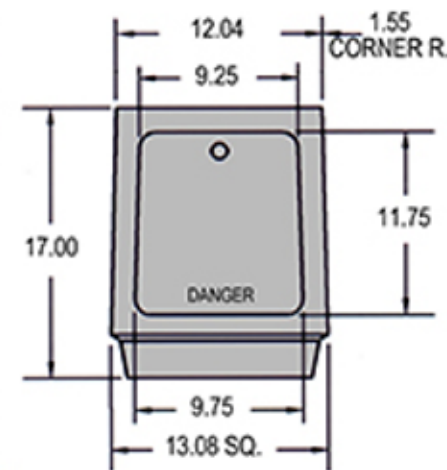
This base features 11" to 13" top bolt circle and 10 1/2" to 12 15/16" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB1-17 MODIFIED**

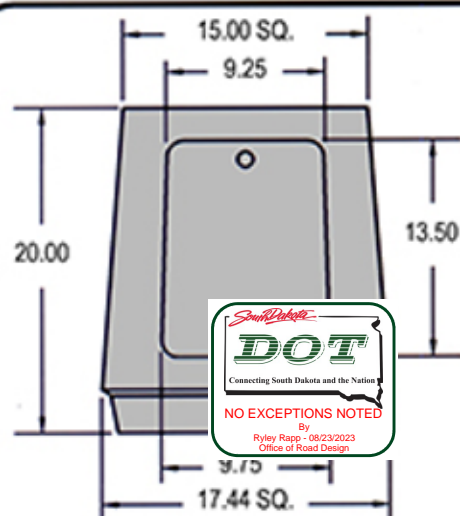
This base features 10 1/2" to 13 1/2" top bolt circle and 10 1/2" to 12 15/16" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB2-20**

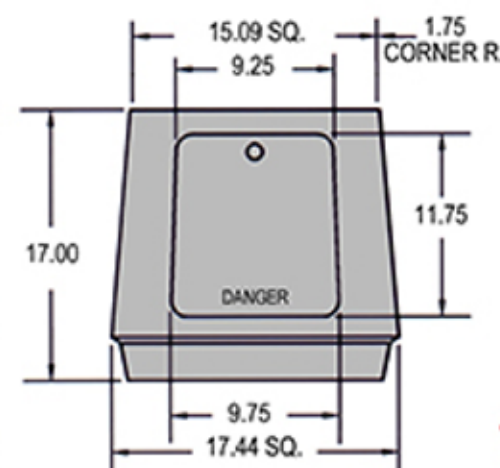
This base features 10" to 12" top bolt circle and 10" to 12" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB2-17**

This base features 10" to 12" top bolt circle and 10" to 12" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED**TB3-20**

This base features 13" to 15 1/8" top bolt circle and 15" to 17 1/4" bottom bolt circle. Stands 20" in height. Base can be ordered with hinged door option or with plastic access door.

1975 AASHTO APPROVED**TB3-17**

This base features 13" to 15 1/8" top bolt circle and 15" to 17 1/4" bottom bolt circle. Stands 17" in height. Base can be ordered with hinged door option or with plastic access door.

1985 AASHTO APPROVED

- WHEN ORDERING HINGED DOOR OPTION, ADD SUFFIX "-H" TO ANY OF THE PART NUMBERS, "-P" FOR PLASTIC DOOR
- CONSULT AUTHORIZED DISTRIBUTOR FOR REQUIRED STEEL WASHERS.

ORDERING INFORMATION

PART NUMBER	TOP BOLT CIRCLE	BOTTOM BOLT CIRCLE	BASE HEIGHT	BASES PER SKID	AASHTO APPROVAL
TB1-20	11" - 13"	13" - 15"	20"	27	1975
TB1-20 MODIFIED	11" - 13"	10 1/2" - 12 15/16"	20"	27	1975
TB2-20	10" - 12"	10" - 12"	20"	27	1975
TB3-20	13" - 15 1/8"	15" - 17 1/4"	20"	18	1975
TB1-17	10 1/2" - 13 1/2"	13" - 15"	17"	36	1985
TB1-17 MODIFIED	10 1/2" - 13 1/2"	10 1/2" - 12 15/16"	17"	36	1985
TB2-17	10" - 12"	10" - 12"	17"	36	1985
TB3-17	13" - 15 1/8"	15" - 17 1/4"	17"	24	1985
TB4-20 (HEAVY DUTY)	15" - 18" (PUNCH-OUT)	18" - 22"	20"	8	NONE
TB4-24 (HEAVY DUTY)	15" - 18" (PUNCH-OUT)	18" - 22"	24"	8	NONE
TB5-9	14 1/2" - 15"	14 1/2" - 16 1/4"	9"	54	1985
TB6-9	10 1/2" - 12"	10" - 12 3/4"	9"	54	1985
TB7-9	16"	15" - 18 5/8"	9"	36	PENDING
TB8-9	16" - 18"	16" - 21"	9"	36	PENDING

DOORS: WHEN ORDERING HINGED DOOR ADD SUFFIX "H" TO THE PART NUMBER / ADD "P" FOR PLASTIC DOOR

WASHERS: 1018-1020 STEEL, ZINC MECHANICAL DEPOSIT PER ASTM 0695-85, CLASS 50

PART NUMBER	SIZE	WEIGHT EACH	PACKAGE WEIGHT
AF-W3	2 1/2" DIA. O.D. X 1 1/16" I.D. X 3/8" THICK	.40 lbs. EACH	108 pcs./carton 48.0 lbs.
AF-W1	2 3/4" DIA. O.D. X 1 1/16" I.D. X 1/2" THICK	.69 lbs. EACH	54 pcs./carton 38.2 lbs.
AF-W2	2 3/4" DIA. O.D. X 1 5/16" I.D. X 1/2" THICK	.61 lbs. EACH	54 pcs./carton 38.2 lbs.
AF-W4	2 3/4" X 4 1/4" X 5/8" THICK RECTANGULAR (FOR 1 1/16 OR 1 5/16 ID.)	1.80 lbs. EACH	24 pcs./carton 33.5 lbs.



MANUFACTURED IN THE U.S.A. BY:



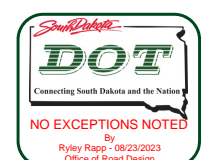
AKRON FOUNDRY COMPANY

2728 WINGATE AVENUE

AKRON, OHIO 44314

PHONE: 330-745-3101 FAX: 330-745-7999

E-MAIL: AFC@AkronFoundry.com





Division of Planning & Engineering

Office of Road Design

700 East Broadway Avenue

Pierre, South Dakota 57501

O: 605.773.3433 | F: 605.773.2614

dot.sd.gov

7/24/2023

Jim Rentz
Builders Electric

RE: NH-EM 008.(74)55, Mellette County, PCN 06L6
Fm Pony Street in Horse Creek N to White River
Shared Use Path Construction, Lighting

Submittals for Approval:
635E5980 Rectangular Rapid Flashing Beacon

The shop drawings for the items listed above have been received and reviewed by this office and are approved for use on the above project with the no exceptions.

While a reasonably accurate review has been made of all dimensions and of compliance with contract plans and specifications, any corrections or comments or omissions of corrections and comments on the shop plans do not relieve the Contractor of his responsibility of complying with the requirements of said contract plans and specifications including changes which have received prior approval by the Engineer.

Sincerely,

Ryley Rapp
Traffic Design Engineer

Attachment

cc: Doug Sherman, Area Engineer
Brad Norrid, Area Engineering Supervisor
Ben Brown & Robert Schilling, Materials & Surfacing
Stacy Bartlett, Road Design Engineering Supervisor



2915 11th Ave SW PO Box 1000 Spencer, IA 51301
Phone (712) 262-1521

Catalog Cuts Submittal

Date: 7/11/2023

Attn:	Talis Johnson
To:	Builder's Electric 47174 258th St Sioux Falls, SD 57107
Project Name:	Ped Crossing White River, SD

Customer PO# 1413-02

GTC SO# 9150

We are pleased to submit the following data sheets for your approval.

Please return one set of approved drawings to tammy@generaltraffic.com.

COMMENTS:

If corrective action is required on any of the equipment, please let us know immediately.
If transmittal is unclear, or if you have any questions, please don't hesitate to contact me.

Sincerely,
Tammy O'Brien
712-730-1710 (Cell)
tammy@generaltraffic.com



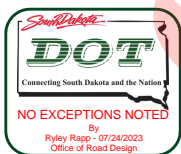


AC-POWERED FLASHER SYSTEM CABINETS

RTC Manufacturing constructs flasher system cabinets to house AC-powered control panels. The sturdy, all-aluminum cabinet construction allows for long, dependable service life. Special order options such as no ventilation, lock types, sizing choices, and a wide range of control panels allows for customized cabinets to meet your specifications. Sleek design and excellent features — exactly what you should expect from the industry leaders at RTC.



* 1 Cabinet unpainted



Helping Kids Get To School Since 1987

RTC-Traffic.com | contact our team at Info@RTC-Traffic.com for more information | TOLL-FREE 800.782.8721 FAX 817.274.3610

RTC Manufacturing, Inc., 1016 Enterprise Place, Arlington, Texas 76001 | ©2020 RTC Manufacturing, Inc. All Rights Reserved.

19146/1/19



AC-POWERED FLASHER SYSTEM CABINETS



APPLICATIONS

- School zone flasher systems
- Pedestrian crossing systems
- Fire station warning systems
- Oil-gas systems
- Supplemental traffic applications

FEATURES

- Slam locking system with number 2 APL lock
- Screened cross ventilation openings (standard) and non-vented topic
- Various control panels depending on application



Sturdy .125" 5052 aluminum-sheet cabinet with a Number 2 APL lock.

SPECIFICATIONS

- Nominal 14"H x 16"W x 10"D
- .125" 5052 aluminum sheet construction
- Number 2 APL lock
- Screen-weep openings (one at the right front and one at the left rear of cabinet floor)
- Ground lug square opening at the bottom right floor
- Piano-door hinge with center rod welded at top and bottom
- Three stainless steel carriage bolts used for door-to-body connection. Five rivets used for hinge-to-door connection.
- Back opening designed for Pelco 4.5" hardware; may be ordered with optional band-type bracket
- Silicon sealant top and bottom inside edges per TXDOT specifications





Leader in APS Solutions

*Polara is the
trusted industry
leader in Accessible
Pedestrian Signals.*

Connectivity | Accessibility | Durability



* 2 black pushbuttons



iNX

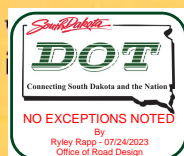


iNX[®] Next Generation of Crosswalk Accessibility

Designed for Rectangular Rapid
Flashing Beacons (RRFB) & other
approved Flashing Pedestrian
Crosswalk Systems.

WIRELESS PROGRAMMING

Industry-leading Bluetooth[®]
accessibility and control for
Android™ devices.



Call your dealer for
more information or
visit--

POLARA.COM





iNX

Fully Integrated System in One Button



iNX ONE BUTTON SYSTEM

- **NEW** No control boards needed — Just connect cables
- **NEW** Low power — Works in battery/solar applications
- **NEW** Button-to-button Bluetooth sync — No radios needed
- **NEW** Modular speaker design with front and rear sound
- **NEW** Bluetooth® 5 — More speed, range and app capabilities

Black



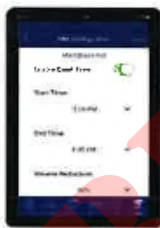
iNX shown on RRFB



FHWA & MUTCD COMPLIANT

March 20, 2018 FHWA/MUTCD Interim Approval 21
Accessible Pedestrian Features:

- Locator tone
- No vibrotactile or percussion indications
- If speech message used, "Yellow Lights are Flashing" is played twice



WIRELESS PROGRAMMING

- Industry-leading wireless accessibility and control (iOS, Android)
- Full wireless programming — Volumes, messages, time of day



PEDESTRIAN APP ENABLED

- **NEW** Works with PedApp® — Polara's exclusive pedestrian smartphone application
- **NEW** Agency controlled pedestrian smartphone ADA intersection crossing supplement

PedApp® is a registered trademark owned by Polara Enterprises, LLC. The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Polara is under license. iOS is a registered trademark owned by Cisco Systems, Inc. Licensed to Apple Inc. Android is a trademark owned by Google LLC.



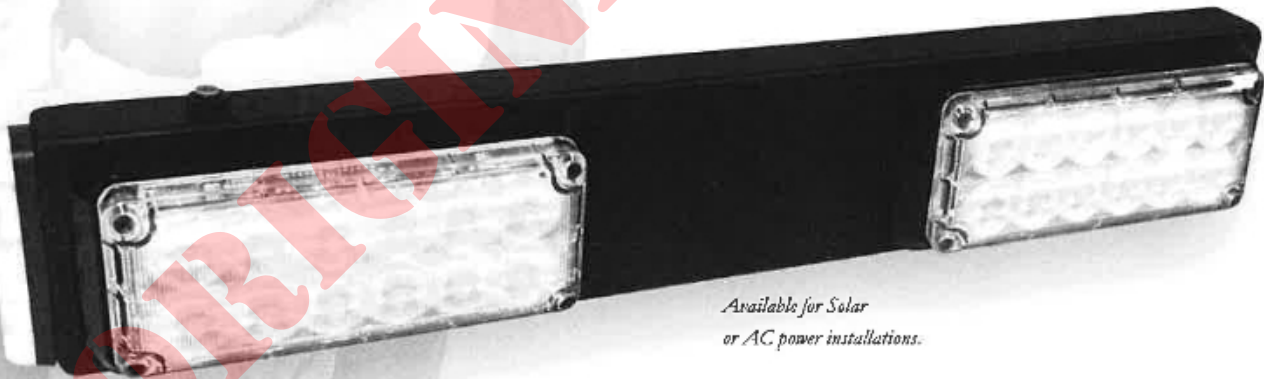
APS Connectivity, Accessibility and Confidence with Independent Lab Testing:
NEMA TS2 | Temperature | Humidity | Mechanical-Shock-Vibration | Transient Surge



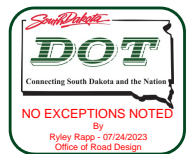
RECTANGULAR RAPID FLASH BEACON

High-Visibility Alternative to Traditional Circular Beacon

Our RRFB provides high visibility to motorists approaching pedestrian crosswalks. The rectangular rapid flash beacon meets all current specifications of the Manual on Uniform Traffic Control Devices (MUTCD) requirements, including automatic dimming to reduce brilliance and the approved flash pattern (WW+S). The RRFB features a high-visibility pedestrian confirmation light, a black or yellow powder-coated aluminum enclosure, and has multiple time switch and communication options.



*Available for Solar
or AC power installations.*



Pedestrian Safety Since 1987

RTC-Traffic.com | contact our team at Info@RTC-Traffic.com for more information | TOLL-FREE 800.782.8721 FAX 817.274.3610

RTC Manufacturing, Inc., 1016 Enterprise Place, Arlington, Texas 76001 | ©2019 RTC Manufacturing, Inc. All Rights Reserved.

19143/0019



RECTANGULAR RAPID FLASH BEACON

High-Visibility Alternative to Traditional Circular Beacon



COMMON FEATURES

- Meets all current MUTCD requirements and FHWA requirements
- Available for 120VAC or 12VDC power input
- Provides high visibility to motorists
- 3"H x 7"W or larger Super-LED lens, low current - high output
- 1.5"W X 3"H confirmation LED lens (0, 1, or 2 optional)
- Pedestrian confirmation light can be mounted on left or right side of enclosure
- 4"H x 23"W x 1.5"D enclosure size
- Black or yellow powder-coated aluminum enclosure
- MUTCD approved flash pattern (WW+S)
- Power-saving dimming capabilities standard
- Directional lenses meet Dark Sky Initiative
- Compatible with the AP22 time switch
- Dimming controlled from inside RRFB enclosure

COMPLIANCE

- Meets photometry standard for the IA-21 and J595 Class 1 Certification

COMMUNICATION OPTIONS

- M2M
- 2-Way radio (mobile and central system)
- Ethernet (IP) direct to time switch
- Ethernet (IP) to 2-way radio

ORDERING OPTIONS

- Single or back to back RRFBs
- A/C or D/C power A/C
- Black or yellow housing
- Zero, one, or two confirmation lights
- Mounting Options: single or back-to-back mounting for 4.5" u-bolt, horizontal banding for mast arms or vertical banding for large poles

503661A / 503661D (C) (CC) SPECIFIC FEATURES

- Great for RRFB swap outs and upgrades
 - Use with new or existing pedestrian crossing system cabinets
- Built-in dimming and flash pattern
- Solid output

503662D (C) (CC) SPECIFIC FEATURES

- Great for flexibility and customization
 - Programmable dimming levels and flash patterns
- DFC controlled (sold separately)
 - Steady output



RTC-Traffic.com | contact our team at Info@RTC-Traffic.com for more information | TOLL-FREE 800.782.8721

RTC Manufacturing, Inc., 1016 Enterprise Place, Arlington, Texas 76001 | ©2019 RTC Manufacturing, Inc. All Rights Reserved.





POLES AND BASES

Pedestal Bases

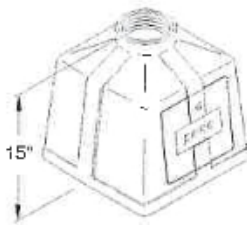
①



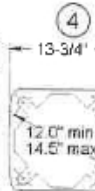
ITEM	DESCRIPTION	WEIGHT	PART NO.
------	-------------	--------	----------

SQUARE BASE ASSEMBLY:

- | | | | |
|---|---|-----------|----------|
| ① | Aluminum | 22.5 lbs. | PB-5335* |
| ② | ANCHOR BOLT SET OF 4, 3/4"-10
(Includes 4 each: Bolts, Washers and Nuts) | | PB-5306 |



ITEM 1 & 2 OPTIONS	
DOOR	
Alum, Plastic, or Blank Plastic	
SETSCREWS IN COLLAR:	
(1) 3/8" Hex Hd Bolt	
(3) 3/8" Scc Hd Setscrews	
GROUNDING LUG	
PAINT	



Square Base

④ POLE, Spun Alum:

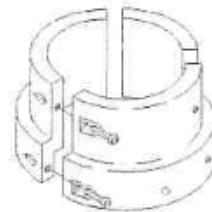
- | | | |
|---|-----------|-------------------|
| 13-3/4" POE, Sch 40, 4 1/2" OD x .237" Wall | 3.8 lb/ft | PB-5100* 12' pole |
| Collar, for Sq Alum Base | | PB-5325* |

Notes:

1. AASHTO Certified Square Aluminum Base: All Aluminum square bases above are available with AASHTO Certifications and FHWA approval. Please specify by adding the Certification Part No. C-1001 in addition to the base part number.
2. All assemblies are supplied standard with stainless fasteners.

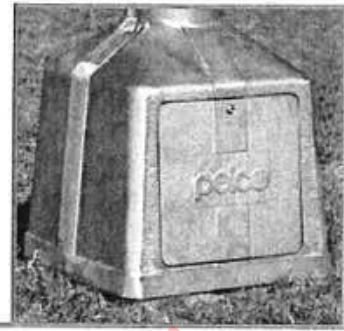


④



Pole & Arm Caps

Pelco offers pole and arm caps in various sizes in both aluminum and steel. Caps for 4-1/2" OD posts are available in aluminum and ABS plastic.



Pole Cap, Acorn Type, Alum, 3" OD Pole

PB-5403 - ☐ Coating
PNC=Process No Color
P__=Paint



Pole Cap, Acorn Type, Alum, 3-1/2" OD Pole

PB-5407 - ☐ Coating
PNC=Process No Color
P__=Paint

Pole Cap, Acorn Type, Alum, 4-1/2" OD Pole

PB-5401 - ☐ Coating
PNC=Process No Color
P__=Paint

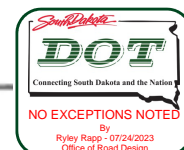


Pole Cap, Dome Type, Alum, 4-1/2" OD Pole

PB-5402 - ☐ Coating
PNC=Process No Color
P__=Paint

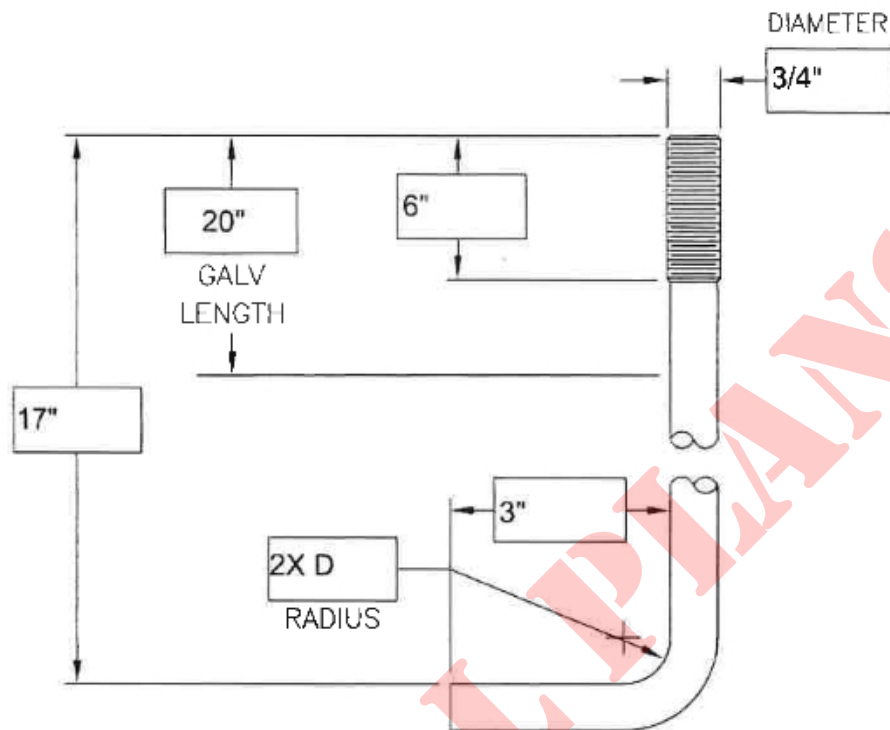
← unpainted

Note: 1. All assemblies are supplied standard with stainless fasteners.
2. See Reference Section for available paint colors.



POLES & BASES





SPECIFICATIONS: ASTM F1554-18 GR55 &/or
AASHTO M314-95 GR55
(QUENCHED & TEMPERED ALLOY)

ROUND BAR: CARBON EQUIVALENT-.45% MAX.
YIELD STRENGTH-55 KSI MIN
TENSILE STRENGTH-75 TO 95 KSI
ELONGATION-8"-18% MIN.
REDUCTION AREA- 30% MIN. (1/2" TO 2")
REDUCTION AREA- 22% MIN. (>2" TO 2 1/2")
REDUCTION AREA- 20% MIN. (>2 1/2" TO 3")

GALVANIZE: ASTM-A153, CLASS C

NUTS: ASTM A563-GR DH, ANSI B18.2.2

THREADS: UNIFIED NATIONAL COARSE
ANSI B1.1 CLASS 2A
THREADS ARE ROLLED OR CUT.

WASHERS: ASTM F-436



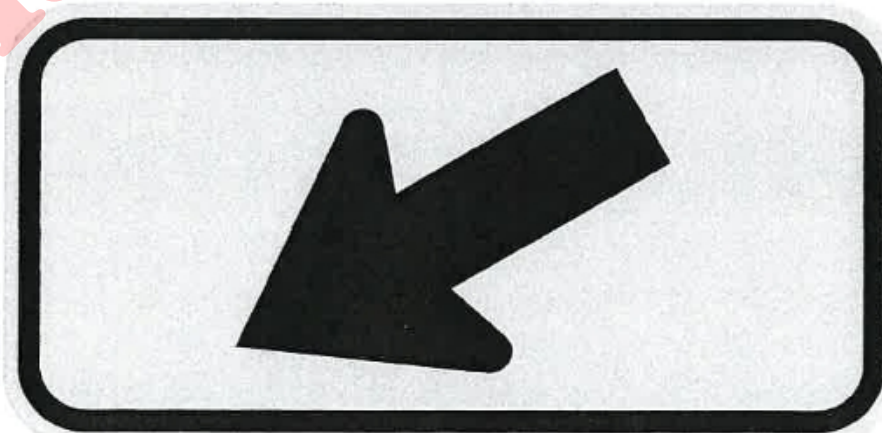
				BENT ANCHOR BOLT GR 55		
REVISION:		A		P.O. COMPANY:		DRAWN BY: JEP
DATE:				P.O. NUMBER:		CHECKED BY: AJS
CONTRACTOR:						
				J. H. Botts LLC		DWG. NO.
				253 E. BRUCE		JOLIET, IL 60432
A	FOR RELEASE					
REV #	DESCRIPTION	DATE	BY			
REVISIONS						

1 of 1

P/N JH Botts 17" J Bolt



W11-2-36"x36"
FYG (6)
HIP
.080



24x12
W16-7PL (3)
W16-7PR (3)

FYG
HIP
.080





PH: 405-340-3434
FAX: 405-340-3435
Edmond, OK 73013
www.pelcoinc.com

This drawing is for reference only. It is the property of Pelco and is not to be used in whole or in part without Pelco's written permission.

ASSEMBLY SHEET

REF:

TITLE:

Sign Clamp, Double, 4" (4-1/2" OD) Pipe,
Set of 2, Alum

PART NO.:

* SH-0203-4

PART NO
SH-0203-4-PXX

Pole Size

Process No Color=PNC
Paint=PXX

Qty: 4



OPTIONS
Paint

ITEM	PART NUMBER	DESCRIPTION	QTY
1	FS-2031-SS	Bolt, Hex Hd, 5/16"-18 x 3/4", Type 304 Stainless	4
2	FS-4201-SS	Lock Washer, Split, 5/16", Type 304 Stainless	4
3	FS-4105-SS	Washer, Flat, 5/16", .343" ID x .687" OD x .051/.080" Thk, Type 304 Stainless	4
4	FS-1003-SS	Nut, Hex 3/8"-16, Type 304 Stainless	4
5	FS-4205-SS	Lock Washer, Split, 3/8", Type 304 Stainless	4
6	SH-2004-M1	Sign Clamp, U-Bolt, 4" (4-1/2" OD) Pipe, Set of 2, Alum	4
7	FS-4100-SS	Washer, Flat, 3/8", .406 ID X .875" OD x .050" Thk, Type 304 Stainless	4
8	FS-2080-SS	Bolt, Hex Hd Tap, 3/8"-16 x 4-1/2", Type 304 Stainless	4

CBI	11/14/2014	JLH	11/14/2014	JDC	11/14/2014	RKV	11/14/2014	REV	DATE	REV	DATE	SHEET 1 OF 1
DRAWN	DATE	CHECKED	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	

PelcoVertical.dwg 12/16/2013

Brackets

SIGN MOUNTING BRACKETS

Catalog Number	Description	Weight	
		Lbs	Kg

1-BOLT STRAIGHT LEG BRACKET (.075" THICK) - Package Quantity 50

US-8121-00 Stainless Steel with SS Bolt, Washer and Fiber Washer 7.3 3.3

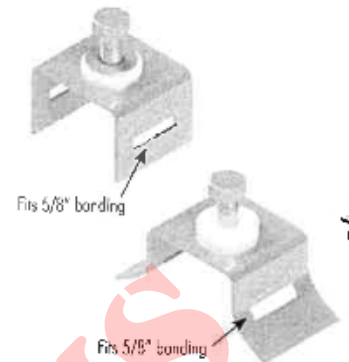
US-8120-04 Stainless Steel without Bolt or Washer

US-8120-11 Zinc Plated Steel with Carbon Bolt, Washer and Fiber Washer 7.6 3.5

* 1-BOLT FLARED LEG BRACKET (.075" THICK) - Package Quantity 50

US-8120-21 Stainless Steel with SS Bolt and Washer 7.6 3.5

US-8120-31 Zinc Plated Steel with Carbon Bolt, Washer and Fiber Washer 7.4 3.4



* Qty. 8

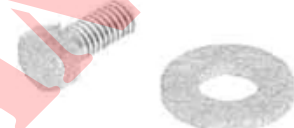
BOLTS, WASHERS for BRACKETS - 50 Per Box

Catalog Number	Description	

US-8120-02 Bolts Stainless Steel for Stainless Brackets (5/16" - 18 x 3/4" Long Hex Head)

US-8121-80 Bolts Zinc Plated Steel for Carbon Steel Brackets (5/16" - 18 x 3/4" Long Hex Head)

US-8120-03 Fiber Washers



MOUNTING PLATES - Per Each - Secure with band and buckles.

Strapping holds this extruded aluminum mounting plate to utility poles.

Catalog Number	Description	Weight Lbs/Ea

US-8125-10 Light Duty, 1-1/2" x 4-3/4" w/ 5/8"-11 x 2" Plated Bolt 0.57

US-8125-12 Heavy Duty, 1-1/2" x 5-1/4" w/ 5/8"-11 x 2" Plated Bolt 0.78

US-8125-11 Heavy Duty, 1-1/2" x 5-1/4" w/ 5/8"-11 x 3" Plated Bolt 0.84

US-8125-13 Heavy Duty, 1-1/2" x 5-1/4" w/ 3/4"-11 x 3" Plated Bolt 1.22



USA BOLT / CLAMP - Per Each

Extruded aluminum fittings with zinc plated bolt, nut and washer. To be used with USA Band for mounting pole hardware.

Catalog Number	Description	Weight Lbs/Ea

US-8500 Bolt/Clamp for use with 3/4" USA BAND band (US-8122-06). Includes plated nut, bolt 3/8" - 16 x 16" and washer. 0.43

US-8504 Bolt/Clamp for use with 1-1/4" USA BAND band (US-8124-62). Includes plated nut, bolt 5/8" - 11 x 8" and washer. 1.48

