

December 6, 2024

ADDENDUM NO. 1

**RE: Item #6, December 11, 2024 Letting - CR 0294(74)114, PCN 080D, Brookings, Moody
County - Variable Speed Limit & ITS Device**

TO WHOM IT MAY CONCERN:

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

SPECIAL PROVISIONS: NO CHANGE

SDEBS BID PROPOSAL: *The electronic bid proposal for this contract has been revised to include the changes associated with this addendum. Bidders must log in to the SDEBS to retrieve and incorporate these changes into their bid.*

Bid Items were removed:

Bid Item 635E5405 "Electrical Service Cabinet with Secondary Disconnect"

PLANS: Please destroy sheets 2, 5, 6 and 9 and replace with the enclosed sheets, dated 12/6/24.

Sheet 2: Bid Item 635E5405 "Electrical Service Cabinet with Secondary Disconnect" was removed.

Sheet 5: STATE FURNISHED MATERIALS note was revised.

Sheet 6: MISCELLANEOUS, ELECTRICAL and INSTALL DYNAMIC MESSAGE SIGN (DMS) WITH POLE notes were revised.

Sheet 9: TABLE OF ELECTRICAL SERVICE CABINETS was revised. ELECTRICAL SERVICE CABINET WITH SECONDARY DISCONNENET note was removed.

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/cj

CC: Mark Peterson, Aberdeen Region Engineer
Matt Brey, Watertown Area Engineer

ESTIMATE OF QUANTITIES (Non-Section)

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	CR 0294(74)114	2	117

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BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
009E3250	Miscellaneous Staking	7.400	Mile
009E3301	Engineer Directed Surveying/Staking	40.0	Hour
009E3305	As-Built Survey	Lump Sum	LS
009E3450	Roadway Weather Information System	3	Each
110E0130	Remove Traffic Sign	8	Each
110E7802	Remove Fence for Reset	40	Ft
465E0100	Class A45 Concrete, Drilled Shaft	12.4	CuYd
465E0200	Drilled Shaft Excavation	12.4	CuYd
465E1062	62" Permanent Casing	21.0	Ft
480E0100	Reinforcing Steel	1,684	Lb
620E4100	Reset Fence	40	Ft
629E0110	High Tension 4 Cable Guardrail	290	Ft
629E0290	High Tension Cable Guardrail Anchor Assembly	2	Each
632E0012	1.5' Diameter Breakaway Support Concrete Footing	160.0	Ft
632E0014	1.75' Diameter Breakaway Support Concrete Footing	72.0	Ft
632E0016	2' Diameter Breakaway Support Concrete Footing	54.0	Ft
632E0056	2' Diameter Fixed Support Concrete Footing	70.0	Ft
632E1220	S5x10 Steel Post	590.7	Ft
632E1230	W6x15 Steel Post	173.8	Ft
632E1260	W8x31 Steel Post	111.9	Ft
632E1340	2.5"x2.5" Perforated Tube Post	136.0	Ft
632E2520	Type 2 Object Marker	2	Each
632E3115	Extruded Aluminum Sign, Nonremovable Copy Super/Very High Intensity	386.5	SqFt
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	402.0	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	72.0	SqFt
632E3610	Variable Speed Limit Sign	22	Each
634E0010	Flagging	40.0	Hour
634E0110	Traffic Control Signs	719.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0275	Type 3 Barricade	8	Each
634E0420	Type C Advance Warning Arrow Board	2	Each
635E2430	30' Hinged ITS Pole	5	Each
635E2540	Roadway Weather Information System Tower	3	Each
635E3800	Roadway Luminaire, LED	1	Each
635E4010	1 Section Vehicle Signal Head	20	Each
635E5025	2.5' Diameter Footing	8.0	Ft
635E5100	Controller Cabinet Footing	2	Each
635E5302	Type 2 Electrical Junction Box	95	Each
635E5400	Electrical Service Cabinet	7	Each
635E5461	Type 1 Communication Cabinet	10	Each
635E5540	Sawed-In Detector Loop	3	Each

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
635E5600	Surveillance Camera	8	Each
635E6200	Miscellaneous, Electrical	Lump Sum	LS
635E6210	Install Dynamic Message Sign with Pole	1	Each
635E8215	1.5" Rigid Conduit, Schedule 80	6,167	Ft
635E8230	3" Rigid Conduit, Schedule 80	1,400	Ft
635E8615	1.5" Conduit, SDR 13.5	43,137	Ft
635E8630	3" Conduit, SDR 13.5	3,395	Ft
635E9014	1/C #4 AWG Copper Wire	139,725	Ft
635E9016	1/C #6 AWG Copper Wire	1,491	Ft
635E9018	1/C #8 AWG Copper Wire	14,079	Ft
635E9024	1/C #14 AWG Copper Wire	16,661	Ft
635E9302	2/C #14 AWG IMSA Copper Cable, K1	701	Ft
635E9303	3/C #14 AWG IMSA Copper Cable, K1	10,662	Ft
635E9603	#14 AWG Copper Twisted Shielded Pair	24,480	Ft
635E9710	2/C #10 AWG Copper Pole and Bracket Cable	45	Ft
635E9862	Outdoor Rated Cat6 Cable	3,827	Ft
635E9900	Coaxial Cable	2,414	Ft
734E0010	Erosion Control	Lump Sum	LS
900E0045	Drop Arm Road Closure Gate	1	Each
900E5840	Permanent Vehicle Classification System	2	Each
900E5842	Permanent Vehicle Detection System	6	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. During construction, the Project Engineer will verify that the Contractor has met Environmental Commitment requirements. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: <<https://dot.sd.gov/media/documents/EnvironmentalProceduresManual.pdf>>



For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Engineer at 605-773-3180 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

Once construction is complete, the Project Engineer will review all environmental commitments for the project and document their completion.

COMMITMENT C: WATER SOURCE

The Contractor will not withdraw water with equipment previously used outside the State of South Dakota or previously used in aquatic invasive species (AIS) positive waters within South Dakota without prior approval from the SDDOT Environmental Office. To prevent and control the introduction and spread of invasive species into the project vicinity, all equipment will be power washed with hot water (≥140 °F) and completely dried for a minimum of 7 days prior to subsequent use. South Dakota administrative rule 41:10:04:02 forbids the possession and transport of AIS; therefore, all attached dirt, mud, debris and vegetation must be removed and all compartments and tanks capable of holding standing water must be drained. This includes, but is not limited to, all equipment, pumps, lines, hoses and holding tanks.

The Contractor will not withdraw water directly from streams of the James, Big Sioux, and Vermillion watersheds without prior approval from the SDDOT Environmental Office.

Action Taken/Required:

The Contractor will obtain the necessary permits from the regulatory agencies such as the South Dakota Department of Agriculture and Natural Resources (DANR) and the United States Army Corps of Engineers (USACE) prior to water extraction activities.

Additional information and mapping of water sources impacted by Aquatic Invasive Species in South Dakota can be accessed at: <<https://sdeastwanted.sd.gov/maps/default.aspx>>

<[South Dakota Administrative Rule 41:10:04 Aquatic Invasive Species: https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04](https://sdlegislature.gov/rules/DisplayRule.aspx?Rule=41:10:04)>

COMMITMENT D: WATER QUALITY STANDARDS

COMMITMENT D1: SURFACE WATER QUALITY

Medary Creek and Six Mile Creek are classified as warm water, marginal fisheries with a total suspended solids standard of less than 150 mg/L 30-day average, less than 263 mg/L daily maximum.

The Big Sioux River and the Interstate Urban Fishing Pond are classified as a warm water semi-permanent fisheries with a total suspended solids standard of less than 90 mg/L 30-day average, less than 158 mg/L daily maximum.

This project may be in the vicinity of multiple streams and wetlands. These waters are considered waters of the state and are protected under Administrative Rules of South Dakota (ARSD) Chapter 74:51. Special construction measures may have to be taken to ensure that this water body is not impacted.

Fertilizing

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

The all-natural slow release fertilizer will be as shown below or an approved equal:

Product	Manufacturer
Sustane	Sustane Corporate Headquarters Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com
Perfect Blend	Perfect Blend, LLC Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com
Nature Safe	Nature Safe Fertilizers Irving, TX Phone: 1-605-759-5622 www.naturesafe.com

Permanent Seeding

The areas to be seeded consist of all newly graded areas within the project limits except for the top of roadways, temporary easements under cultivation,

Type G Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Switchgrass	Dacotah, Forestburg, Nebraska 28, Pathfinder, Summer, Sunburst, Trailblazer	3
Indiangrass	Holt, Tomahawk, Chief, Nebraska 54	3
Big Bluestem	Bison, Bonilla, Champ, Sunnyview, Rountree, Bonanza	3
Oats or Spring Wheat: April through May; Winter Wheat: August through November		10
Total:		26

Mulching (Grass Hay or Straw)

Grass Hay or Straw Mulch can be used for temporary erosion control on areas determined by the Engineer during construction.

If the Contractor uses a no-till drill, mulch may be applied prior to seeding and the mulch can then be punched into the soil by the no-till drill. If the Contractor uses this process, the no-till drill seeding will be completed immediately following the mulch application and the mulch will be punched into the soil at a 3-inch depth.

SUPPLYING AS-BUILT PLANS

The Contractor will supply as-built plans, in MicroStation (.dgn) format, to the Engineer and a copy will be sent to the Region Traffic Engineer and to the SDDOT ITS Program Manager. The CADD file will accurately locate the conduit and devices within 0.5 foot in the x,y direction and note changes in depth greater than 3 feet. The as-built plans may include conduit layouts, wiring diagrams, or other drawings depicting the changes from the original plans. As-built plans will be completed within 3 months of installation of last devices and conduits.

All costs to provide as-built plans will be incidental to the contract lump sum price for "As-Built Survey".

SHOP DRAWING AND CATALOG CUTS SUBMITTALS

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

PDF submittals will be sent to the following email addresses:

JLarson@McLauryEngineering.com
jacob.folkeringa@bolton-menk.com

Upon preliminary review of the submittals, they will be sent by the Engineer to the following SDDOT email addresses for concurrence of approvals and remarks:

Dave.Huft@state.sd.us
Patrick.Brueggeman@state.sd.us

TAX LIABILITY

The SD Department of Transportation is a South Dakota sales tax-exempt government entity. Therefore, a Certificate of Exemption will be provided to the successful bidding party which excuses the party from paying sales tax on the materials being furnished to the SDDOT. It is the responsibility of bidding parties to contact the SD Department of Revenue @ 1-800-829-9188 to determine tax licensure requirements.

STATE FURNISHED MATERIALS

Cellular Modems, Antennas, and Power Supply

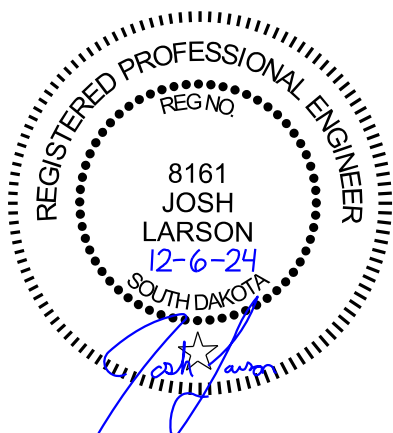
The cellular modems, antennas, and power supplies will be pre-purchased by the Department of Transportation through a separate contract. The modems, antennas, and power supplies will be available for delivery on or before June 30, 2025. The Department will supply, install, and configure the modems. The make and model numbers are shown below for information.

Layer 2 Internet Switches	Fortinet FortiGate FGR-50G-5G Rugged Cellular Modem and Firewall
Antennas	Airgain AP-RT5G-CR-Q-B1 RECON 5G antenna with MIMO 5G (600MHz – 6GHz) cellular, threaded bolt mount, 1' coax
Antenna Cables	Airgain CCH-C4-1-1 Cable Harness 1'-SMA
	Airgain CCH-C4-1-5 Cable Harness 5'-SMA
Power Supplies	TDK-Lambda DPP120-24-1 24 VDC, 5A Power Supply for Cellular Modem

Twenty-Five total units will be purchased. Twenty-One units will be installed, and Four units will be spares for SDDOT to have on hand.

The cost of the materials for tax purposes is \$63,450.00. The Contractor is responsible for paying State use tax, applicable City use tax and excise tax on these materials.

All costs associated with this work will be included in the contract unit price per each for "Type 1 Communication Cabinet" or "Variable Speed Limit Sign" provided.



ON-SITE INSPECTION

An on-site inspection of the VSL equipment will be conducted before acceptance of the project, once the VSL equipment is installed and operational. The on-site inspection will be conducted by Project Engineer, the Region Traffic Engineer, the Contractor, and the ITS Engineer present. See ITS Special Provisions for standalone, subsystem and system testing and acceptance.

VARIABLE SPEED LIMIT SIGN

See Section 2.0 Variable Speed Limit Signs of the ITS Special Provisions for Variable Speed Limit Sign requirements. Variable Speed Limit Signs will be constructed where shown in plans and in accordance with the Plan details and ITS Special Provisions.

Costs for labor and material, including supplying, installing, and testing the variable speed limit signs will include but not be limited to the sign, the flashing beacon, the variable speed limit module controller as called out on the plans and as specified in the special provisions, pole mounted service cabinet, installing cable modem and antenna provided by SDDOT, miscellaneous cabling, control cables, patch cords, and Ethernet cables, will be included in the contract unit price per each for "Variable Speed Limit Sign".

TABLE OF VARIABLE SPEED LIMIT SIGNS

Device ID	Direction	Station - L/R	Location	Quantity (Each)
VSL1	NB	251+93 R	I29 Median Ditch	1
VSL2	NB	251+93 R	I29 Outside Ditch	1
VSL3	SB	540+96 L	I29 Outside Ditch	1
VSL4	SB	540+96 L	I29 Median Ditch	1
VSL5	NB	620+96 R	I29 Outside Ditch	1
VSL6	NB	620+96 R	I29 Median Ditch	1
VSL7	SB	861+60 L	I29 Outside Ditch	1
VSL8	SB	861+60 L	I29 Median Ditch	1
VSL9	NB	938+59 R	I29 Outside Ditch	1
VSL10	NB	938+59 R	I29 Median Ditch	1
VSL11	SB	1006+59 L	I29 Median Ditch	1
VSL12	SB	1006+59 L	I29 Outside Ditch	1
VSL13	NB	1083+59 R	I29 Outside Ditch	1
VSL14	NB	1083+59 R	I29 Median Ditch	1
VSL15	SB	1116+59 L	I29 Median Ditch	1
VSL16	SB	1116+59 L	I29 Outside Ditch	1
VSL17	SB	1185+60 L	I29 Median Ditch	1
VSL18	SB	1185+60 L	I29 Outside Ditch	1
VSL19	NB	1190+00 R	I29 Outside Ditch	1
VSL20	NB	1190+00 R	I29 Median Ditch	1
VSL21	SB	1303+32 L	I29 Outside Ditch	1
VSL22	SB	1303+32 L	I29 Median Ditch	1
TOTAL:				22

MISCELLANEOUS, ELECTRICAL

The following items will be incidental to the contract lump sum price for "Miscellaneous, Electrical".

- Overall system configuration and the Contractor will provide working electrical service as shown on plan sheets.
- Existing DMS
 - Move Existing DMS controller from existing sign to Communications Cabinet. A new DMS is being provided under a separate contract. The sign will have the DMS controller mounted inside the sign. The Contractor will move the DMS controller from the sign to the Communications Cabinet (SC9), including furnishing and installing new multimode fiber optic cable between DMS controller and DMS display. The Contractor will provide all work and materials needed to move the DMS controller from the sign to the Communications Cabinet.
 - Remove the Existing Camera for Reset from the existing DMS and Reset Existing Camera on new RWIS tower.
- Update Existing Drop Arm Road Closure Gates as detailed in the plans.
- All connections into switches and modems located at all cabinets
- Disconnect and abandon existing electrical power line at Exit 121 and 136 as shown on plan sheets.
- The Contractor will coordinate the location of the utility transformer with the Utility company.
- The Contractor will pull all wiring and terminate all connections. This will include making all connections to existing infrastructure as shown in plans.

INSTALL DYNAMIC MESSAGE SIGN (DMS) WITH POLE

See Section 3.0 Dynamic Message Signs of the ITS Special Provisions for DMS requirements. The Contractor will install Dynamic Message Sign (DMS) with Pole where shown on the plans. The Contractor will be responsible for the design of the pole mounting to the SDDOT designed footing to support the DMS sign. The Contractor will submit a detailed plan for the pole mounted on SDDOT designed footing. The plan must be stamped by a Professional Engineer registered in South Dakota. The original DMS Pole was manufactured by Hurtt Fabricating Corp out of Marceline Missouri.

The DMS and pole to be installed are located at DOT Brookings Yard. This sign and pole were removed from I29 on a previous project and stored at this location. The Contractor will pick up the existing DMS and pole from the DOT Brookings Yard at 3131 34th Ave, Brookings, SD. The yard is approximately 5.8 miles NE of the installation location. The Contractor will contact Tommy Lindstrom of DOT Brookings office at #(605) 688-5001 at least 48 hours in advance of pick up of the DMS at the DOT Brookings Yard. The Contractor will be responsible for paying the excise tax on the furnished value of the DMS Pole which has been determined to be \$5,000. Taxes on the DMS Board have been paid as part of a separate contract. The DMS controller will be installed in the Communications Cabinet at this site.

All costs for labor and material, including transporting to site, installing, miscellaneous cabling, installing the DMS controller in Communications Cabinet, and testing the Dynamic Message Sign with Pole as called out on the plans and as specified in the special provisions will be incidental to the contract unit price per each for "Install Dynamic Message Sign with Pole".

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TABLE OF DYNAMIC MESSAGE SIGN WITH POLE

Device ID	Direction	Station - L/R	Quantity (Each)
DMS1	NB	951+50 - 84' R	1
TOTAL:			1

ROADWAY WEATHER INFORMATION SYSTEM (RWIS) TOWER

All costs for labor and material, including supplying, and installing the roadway weather information system tower, tower hinge, side arm and lightning rod kit as called out on the plans and as specified in the special provisions, will be included in the contract unit price per each for "Roadway Weather Information System Tower".

ROADWAY WEATHER INFORMATION SYSTEM (RWIS)

See Section 4.0 Road Weather Information System of the ITS Special Provisions for Road Weather Information System requirements. Road Weather Information Systems will be constructed where shown in plans and in accordance with the Plan details and ITS Special Provisions.

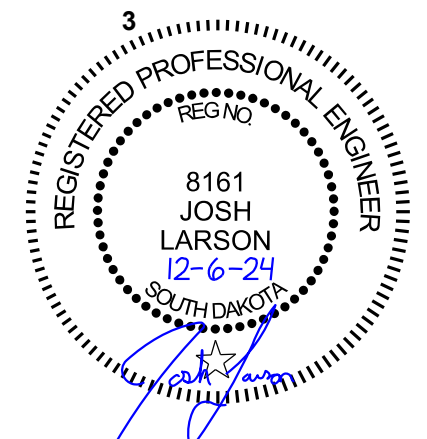
All costs for labor and material, including supplying and installing the Roadway Weather Information Systems, the cabinet, controllers, atmospheric sensors, pavement sensors, miscellaneous cabling, miscellaneous conduit, enclosure panels, power, fiber, and Ethernet cables will be included in the contract unit price per each for "Roadway Weather Information System".

TABLE OF ROADWAY WEATHER INFORMATION SYSTEM

Device ID	Station	L/R	Roadway Weather Information System (Each)	Roadway Weather Information System Tower (Each)	Direction of RWIS Tower Fold
RWIS1	211+72.3	175.5' R	1	1	East
RWIS2	687+57.2	70.5' L	1	1	North
RWIS3	1319+56.7	156.0' L	1	1	West
TOTAL:			3	3	

4 pavement sensors will be installed at each location, one in the wheel path of each lane, as noted on the plans. Approximate length of sensor cable needed to lane farthest from RWIS as follows:

- RWIS1 Southbound Lanes – 400'
- RWIS2 Southbound Lanes – 650'
- RWIS3 Southbound Lanes – 350'



COMMUNICATION CABINETS

The Contractor will install Communications Cabinets at locations as shown on the plans and as specified in the special provisions. Communication Cabinets will be defined as follows (Length x Width x Height):

- Type 1 Communication Cabinet – 30"x24"x66"

All costs for furnishing, installing, and configuring the Communications Cabinet, including all components within and attached to the cabinet will be incidental to the contract unit price per each for "Type 1 Communication Cabinet".

TABLE OF COMMUNICATION CABINETS

Device ID	Station	L/R	Footing Base	Quantity (Each)
SC1 (Exit 114)	211+72.6	181.5' R	Weather Tower Footing	1
SC2 (MRM 118)	369+45.3	142.0' L	HP Footing	1
Existing RWIS (Exit 121)	581+60.0	80.0' L	Controller Cabinet Footing	1
SC3 (MRM 124)	687+51.2	69.9' L	Weather Tower Footing	1
SC4 (Exit 127)	896+26.5	141.1' R	HP Footing	1
SC5 (MRM 129)	951+15.0	130.0' R	Controller Cabinet Footing	1
SC6 (Exit 130)	1052+17.5	164.4' R	HP Footing	1
SC7 (Exit 132)	1160+36.4	175.4' R	HP Footing	1
SC8 (Exit 133)	1212+56.9	146.3' R	HP Footing	1
SC9 (MRM 136)	1319+56.0	161.9' L	Weather Tower Footing	1
TOTAL:				10

ELECTRICAL SERVICE CABINET

The Contractor will contact and coordinate work with the Utility Companies regarding hookup requirements, fees, materials, and equipment necessary. All costs for furnishing and installing 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, conduit and incidentals will be incidental to the contract unit price per each for "Electrical Service Cabinet".

TABLE OF ELECTRICAL SERVICE CABINETS

Device ID	Station	L/R	Electrical Service Cabinet (Each)
ESC1	213+16	457' R	1
ESC2	369+75	148' L	1
ESC7	582+00	627' R	1
ESC3	690+00	148' L	1
ESC4	895+67	600' R	1
ESC5	950+00	148' R	1
ESC6	1052+94	200' R	1
TOTAL:			7

UTILITY APPROVED METER SOCKETS FOR ELECTRIC SERVICE

The meter sockets will be provided where shown on the drawings and will be a utility approved meter socket appropriate for the electrical service it is connected to. All costs for coordinating and installation of meter sockets will be incidental to the contract unit price per each for "Electrical Service Cabinet".

GROUNDING RODS

The Contractor will furnish and install grounding rods at locations as shown on the plans and as specified in the special provisions. The payment for supplying and installing ground rods will be incidental to the contract unit price per each for the device the ground rods are installed on.

SAWED-IN DETECTOR LOOP

The Contractor will install sawed-in loop detectors at locations as shown on the plans and specified in the special provisions. Loop detectors will be installed in accordance with standard plate 635.71 or as shown in the Plans.

All costs for labor and material, including supplying, installing, and testing the sawed-in loop detectors will be included in the contract unit price per each for "Sawed-In Loop Detector".

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TABLE OF SAWED-IN DETECTOR LOOP

Device ID	Direction	Station	L/R	Quantity (Each)
LD1	I29 NB-OFF RAMP	1150+76	154.9' R	1
LD2	I29 NB-OFF RAMP	1202+80	145.0' R	1
LD3	I29 SB-OFF RAMP	1222+45	154.9' L	1
TOTAL:				3

DETECTOR LOOP WIRE SPLICING

Detector loop wire splices will be made using wire nuts over soldered connections and sealed in 3M Scotchcast 3570G-N connector sealing packs or an approved equal.

The drain wire of the TSP cable will be left unattached to the ground lug in the traffic monitoring controller.

CONDUIT INSTALLATION

Each end of each conduit will be marked with a 1/2-inch dia. x 12-inch long reinforcing bar driven flush with the finished grade, except when the conduit end terminates inside a junction box. The ends of each conduit run will be capped to prevent water and soil from entering.

HDPE CONDUIT (SDR 13.5)

Conduit will meet the following requirements:

- Compliant with NFPA70, National Electric Code
- UL listed
- Meets NEMA TC-7
- Have smooth interior & exterior walls

TRACER WIRE

The Contractor will furnish and install tracer wire with all conduits. The payment for supplying, installing, and testing will be incidental to the contract unit price per foot for "(Size)" Conduit, SDR 13.5".

GROUNDING WIRES

Grounding wires from individual devices combine to share a common ground back from the devices back to the communication cabinets.

TESTING

See Section 9.0 Testing of the ITS Special Provisions for Testing requirements

