



North Dakota Department of Transportation

Grant Levi, P.E.
Director

Jack Dalrymple
Governor

December 10, 2015

ADDENDUM 1 – JOB 14

TO: All prospective bidders on project IM-8-029(133)078, Job No. 14, scheduled for the December 16, 2015 bid opening.

The following plan and proposal revisions shall be made:

Plan Revisions:

See attached summary from Jeff Lansink, PE; Houston Engineering, Inc., dated December 8, 2015 for an explanation.

Request for Proposal Revisions:

Remove and replace pages 9 to 13 of 17 of the Proposal pages located at the beginning of the Request for Proposal, with the enclosed page revised 12/10/2015.

Page 9 of 17:

Item 602 1130 CLASS AE-3 CONCRETE has been deleted, quantity 149 CY.

Item 602 1131 CLASS AE-3 CONCRETE-BOX CULVERT quantity has increased from 1,279.60 to 1,428.60 CY.

Pages 10 to 12 of 17:

Items have shifted due to deleted bid item.

Page 13 of 17:

Item 762 0122 PREFORMED PATTERNED PVMT MK-MESSAGE GROOVED has been deleted, quantity 135 SF.

Item 762 0136 EPOXY PVMT MK MESSAGE-GROOVED has been added, quantity 135 SF.

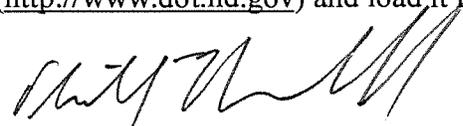
Item 762 0430 SHORT TERM 4IN LINE-TYPE NR quantity decreased from 59,604 to 55,080 LF.

Item 900 1000 TEMPORARY STREAM DIVERSION has been added, quantity 11 EA.

Add the enclosed SP 256(14) TEMPORARY WATER DIVERSION.

This addendum is to be incorporated into the bidder's proposal for this project.

Expedite bid files should be updated by downloading the addendum file from the Bid Express on-line bidding exchange at <http://www.bidx.com/> or the Department's web page (<http://www.dot.nd.gov>) and load it into the Expedite program.


CAL J. GENDREAU – CONSTRUCTION SERVICES ENGINEER
80:dch
Enclosure



December 8, 2015

Justin Schlosser
ND Department of Transportation
608 East Boulevard Avenue
Bismarck ND 58501

**SUBJECT: Project IM-8-029(133)078, PCN 18985
Interstate 29 – Argusville to Hunter Separation SB
HE Project No. 3950_087**

Justin,

Addendum 1 for the above project is attached for your use. Below is a brief summary of the revisions made.

- Section 2 Sheet 1 – Added SP 256(14) Temporary Water Diversion
- Section 6 Sheet 2 – Revised note 302-P01 to state Surface Tolerance Type C is required beneath all 12" Concrete areas and Surface Tolerance Type B to be used under 8' shoulder and ramps.
Revised note 302-P05 to state all excess material shall become the property of the contractor.
- Section 6 Sheet 3 - Added note 550-P02
Revised note spacing.
- Section 6 Sheet 4-5 - Revised not spacing.
- Section 8 Sheet 3 - Revised 762-0430 Short Term 4IN Line-Type NR from 59,604 LF to 55,080 LF
Added 900-1000 Temporary Stream Diversion, 11 EA
- Section 30 Sheet 9 – Revised typical section to show Type R1 fabric beneath the aggregate base. No quantity was necessary as quantity was previously accounted for.
- Section 51 Sheet 1 – Revised allowable pipe list to separate Class III pipe conduit and Class V Jack and Bored pipe quantities as shown in Section 60.

Sincerely,

HOUSTON ENGINEERING, INC.

Jeffrey T. Lansink, P.E.

JTL:sh

Enclosure

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BID ITEMS

Project: IM-8-029(133)078 (PCN-18985)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
033	261	0121	REMOVE FIBER ROLLS 20IN	LF	290.				
034	262	0100	FLOTATION SILT CURTAIN	LF	100.				
035	262	0101	REMOVE FLOTATION SILT CURTAIN	LF	100.				
036	302	0101	SALVAGED BASE COURSE	CY	4,133.				
037	401	0050	TACK COAT	GAL	264.				
038	401	0060	PRIME COAT	GAL	2,500.				
039	401	0160	BLOTTER MATERIAL CL 44	TON	102.				
040	411	0105	MILLING PAVEMENT SURFACE	SY	2,564.				
041	430	0040	SUPERPAVE FAA 40	TON	93.				
042	430	0043	SUPERPAVE FAA 43	TON	952.				
043	430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	1,046.				
044	430	1000	CORED SAMPLE	EA	26.				
045	430	2000	PATCHING	TON	50.				
046	430	5828	PG 58-28 ASPHALT CEMENT	TON	127.				
047	602	1131	CLASS AE-3 CONCRETE-BOX CULVERT	CY	1,428.600				
048	612	0114	REINFORCING STEEL-GRADE 60-BOX CULVERT	LBS	239,791.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
049	702	0100	MOBILIZATION	L SUM	1.				
050	704	0100	FLAGGING	MHR	2,175.				
051	704	1000	TRAFFIC CONTROL SIGNS	UNIT	7,014.				
052	704	1045	ATTENUATION DEVICE-TYPE B-75	EA	2.				
053	704	1052	TYPE III BARRICADE	EA	68.				
054	704	1060	DELINEATOR DRUMS	EA	217.				
055	704	1067	TUBULAR MARKERS	EA	1,132.				
056	704	1070	DELINEATOR	EA	225.				
057	704	1072	FLEXIBLE DELINEATORS	EA	674.				
058	704	1080	STACKABLE VERTICAL PANELS	EA	96.				
059	704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	3.				
060	704	1088	SEQUENCING ARROW PANEL-TYPE C-CROSSOVER	EA	2.				
061	704	1500	OBLITERATION OF PAVEMENT MARKING	SF	4,524.				
062	704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	79.				
063	706	0400	FIELD OFFICE	EA	1.				
064	706	0500	AGGREGATE LABORATORY	EA	1.				

BID ITEMS

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
065	706	0550	BITUMINOUS LABORATORY	EA	1.				
066	706	0600	CONTRACTOR'S LABORATORY	EA	1.				
067	709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	21,920.				
068	709	0155	GEOSYNTHETIC MATERIAL TYPE RR	SY	370.				
069	714	4090	PIPE CONDUIT 12IN	LF	500.				
070	714	4115	PIPE CONDUIT 36IN	LF	276.				
071	714	4120	PIPE CONDUIT 42IN	LF	88.				
072	714	4125	PIPE CONDUIT 48IN	LF	188.				
073	714	4135	PIPE CONDUIT 60IN	LF	424.				
074	714	4145	PIPE CONDUIT 72IN	LF	212.				
075	714	4168	PIPE CONDUIT 60IN-JACKED OR BORED	LF	300.				
076	720	0125	ALIGNMENT MONUMENTS	EA	38.				
077	720	0130	IRON PIN R/W MONUMENTS	EA	2.				
078	720	0135	IRON PIN REFERENCE MONUMENTS	EA	18.				
079	752	0700	FENCE WOVEN WIRE	LF	48,810.				
080	752	3120	CORNER ASSEMBLY WOVEN WIRE	EA	21.				

BID ITEMS

Project: IM-8-029(133)078 (PCN-18985)

Bidder must type or neatly print unit prices in numerals, make extensions for each item, and total. Do not carry unit prices further than three (3) decimal places.

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
081	752	4120	DOUBLE BRACE ASSEMBLY WOVEN WIRE	EA	49.				
082	754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	20.				
083	754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	12.				
084	754	0195	DIAMOND GRADE DELINEATORS-TYPE A	EA	115.				
085	754	0196	DIAMOND GRADE DELINEATORS-TYPE B	EA	19.				
086	754	0198	DIAMOND GRADE DELINEATORS-TYPE D	EA	9.				
087	754	0210	GALV STEEL POST-STANDARD PIPE	LF	93.				
088	754	0214	GALV STEEL POSTS-W-SHAPE POSTS(TWO OR MORE)	LF	111.				
089	754	0534	PANEL FOR SIGNS-TYPE IV REFLECTIVE SHEETING	SF	190.				
090	754	0556	INTERSTATE MILE POSTS-TYPE B	EA	7.				
091	754	0592	RESET SIGN PANEL	EA	2.				
092	754	0596	RESET MILE POST	EA	2.				
093	754	0801	OBJECT MARKERS - TYPE I	EA	1.				
094	754	0803	OBJECT MARKERS - TYPE III	EA	16.				
095	754	0805	OBJECT MARKERS - CULVERTS	EA	16.				
096	754	1100	CLASS AE CONCRETE-SIGN FOUNDATIONS	CY	3.200				

BID ITEMS

Project: IM-8-029(133)078 (PCN-18985)

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
097	754	1104	REMOVE SIGN FOUNDATION	EA	8.				
098	760	0001	RUMBLE STRIPS - CONCRETE SHOULDER	MILE	17.830				
099	762	0110	EPOXY PVMT MK 4IN LINE-GROOVED	LF	216,292.				
100	762	0113	EPOXY PVMT MK 4IN LINE	LF	5,268.				
101	762	0132	EPOXY PVMT MK 8IN LINE-GROOVED	LF	2,211.				
102	762	0136	EPOXY PVMT MK MESSAGE-GROOVED	SF	135.				
103	762	0200	RAISED PAVEMENT MARKERS	EA	24,395.				
104	762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	55,080.				
105	764	0131	W-BEAM GUARDRAIL	LF	313.				
106	764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	3.				
107	764	2020	REMOVE 3-CABLE GUARDRAIL & POSTS	LF	15,560.				
108	772	2110	FLASHING BEACON-POST MOUNTED	EA	2.				
109	900	1000	TEMPORARY STREAM DIVERSION	EA	11.				
			SUBTOTAL						
			ALTERNATE A						

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION (SP)

TEMPORARY WATER DIVERSION

Project # 8-029(133)078 - PCN 18985

DESCRIPTION

Diversions are used to temporarily reroute surface water or restrict flows to allow for the construction activities to take place.

This work consists of constructing and maintaining a temporary diversion to allow for the installation of box culverts and pipes at the locations shown in Appendix A.

This work is in conjunction with the requirements of SP 03(14) "Temporary Erosion and Sediment Best Management Practices," and the Construction General Permits.

MATERIALS

Item	Section
Geosynthetic Type R1	858

Where R1 material is specified according to the design, alternative materials may be used if the alternative material has a lower permittivity and higher strength than Geosynthetic Type R1.

CONSTRUCTION REQUIREMENTS

A. General.

Obtain and modify all appropriate permits before work commences on the diversions.

Design, construct, operate, and remove temporary diversions to prevent soil/water interaction.

Strip and stockpile topsoil from areas where the temporary diversion will be constructed and installed. Do not place stockpiles between the diversion and the work area. Stabilize stockpiles placed within 200 feet of the diversion and work area within 24 hours of construction of the stockpile

Isolate work area using dikes or other methods even when no water is present. Construct the diversion before beginning work on the structure.

1. Plan Submittal.

Submit a plan for the diversion that includes work drawings and include the submittals with the Storm Water Pollution Prevention Plan (SWPPP).

2. Design.

Design the temporary diversion to withstand the 2 year event shown in Appendix A and meet the following:

- If flow occurs while the diversion is in place, a portion of the flow must be passed as water accumulates in order to maintain flows downstream;
- Maintain downstream water quality equal to the preconstruction upstream water quality; and
- Include provisions that will prevent the accumulation of job site sediment in the diversion.

B. Diversion Components.

Construction of the diversion may entail using the components listed below or other methods approved by the Engineer.

Install diversion measures before beginning work on the structure.

1. Dike.

Construct upstream and downstream dikes to isolate the work area. Construct dikes using one or more of the following materials:

- Sandbags;
- Sheet piles;
- Soil or rock wrapped with Geosynthetic Type R1;
- Water filled bladder;
- Impermeable containers; or
- Prefabricated dams.

2. Work Area Dewatering.

Operate the dewatering system within the work area to prevent any change in water quality of the water body. Before beginning dewatering of the work area, provide an inlet control system that limits sediment from entering the system and provide a stabilized discharge from the dewatering system.

Inlet control systems may include:

- Surface skimmers;
- Aggregate filled perforated containers; or
- Inlet filter sock.

Stabilized discharges may include:

- Dewatering basin;
- Sediment bag; or
- Filtering through vegetation.

Design and operate the discharge so that there is no visible sediment plume present in the water body and the discharge causes no additional erosion or sediment.

Do not discharge water directly to the water body or the diversion.

3. Culvert Installation.

Provide positive drainage from the upstream to downstream ends of the culvert and install energy dissipation measures at culvert outlets.

a. Culvert Through Existing Structure.

Install pipes through the existing structure.

Construction may include using the following steps:

- (1) Install a temporary culvert through the structure.
- (2) Anchor and seal the installed pipes at the upstream impervious dike.
- (3) Extend the installed pipes through the downstream impervious dike.

b. Culvert Diversion.

Install a temporary pipe crossing under the roadway near the existing culvert.

4. Channels.

Construct channels with side slopes that are 2:1 or flatter with a channel bottom of sufficient width. Cover disturbed slopes and channel bottom with Geosynthetic Material, Type R1.

Overlap splices and joints placed at least 36 inches.

Secure the liner using methods that will ensure that the liner will not be disturbed by the design flows shown in Appendix A. Potential methods of securing the liner may include:

- Staples;
- Pins;
- Sandbags; or
- Riprap.

Patch damaged areas by overlapping the tear a minimum of 36 inches with geosynthetic and secure the perimeter of the patch area.

Install fiber rolls or silt fence along the top of the channel to prevent any sediment or debris from entering the channel.

Connect the downstream end of the channel before connecting the upstream end of the channel to the existing water body.

5. Diversion Pumping.

Place an inlet control system at pump inlets. An inlet control systems may include:

- Surface skimmers;
- Aggregate filled perforated containers; or
- Inlet filter sock.

Route the discharge hose through the structure or work area.

Design and operate the discharge so that no visible sediment plume is present in the water body and so the discharge causes no additional erosion of the water body.

C. Diversion Removal.

Do not begin removal of the temporary diversion until the construction activities relating to the structure are complete and all permanent erosion and sediment control devices are in place. Remove the diversion in a manner that prevents soil/water interaction.

Remove all materials used to construct the diversion.

Restore the area affected by the temporary diversion to the same condition that existed before construction.

1. Downstream Dike.

Remove the downstream dike first. Stabilize the areas above the waterline where the downstream dike was located.

2. Upstream Dike.

Remove the upstream dike to restore normal flow through the structure before removal of any devices used to create the diversion.

Stabilize the areas above the waterline where the upstream dike was located.

a. Suspended Pipe.

Remove the suspended pipe at the same time as removing the upstream dike.

b. Channel and Pipe Diversion.

Remove the upstream dike and construct a dike to prevent water from entering the channel or pipe diversion.

3. Pipe.

Remove pipe after the stream has been restored to normal flow.

4. Channel.

Backfill temporary channels outside of the roadway embankment as specified in Section 203.04 E.3, "Compaction Control, Type B". When backfilling roadway embankment areas, benching of slopes will be required as specified in Section 203.04 E.1, "General".

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Pay Item	Pay Unit
Temporary Stream Diversion	Each

The Engineer will pay for the stream diversion according to the Table 1.

Table 1	
Work Completed	Percent of Contract Unit Price
Stream Diversion Installed	75
Restoration of the Diversion	25

Include the cost for installation, maintenance, and removal of erosion control devices used in conjunction with the stream diversion in the contract unit price for "Temporary Stream Diversion". Section 4, "Basis of Payment" in SP 03(14) does not apply to erosion control devices used in conjunction with stream diversions.

Such payment is full compensation for designing, furnishing all equipment, material, labor, and other incidentals to complete the work as specified.

Appendix A

2 Year 24 Hour Flow				
Mainline				
<u>Station</u>	<u>Structure No.</u>	<u>Description</u>	<u>2-Yr Discharge (CFS)</u>	<u>Number of Diversions</u>
4201+85	79.580	Quad 10x6 RCB	163	1
4255+24	80.588	Triple 10x6 RCB	94	1
4309+78	81.620	Double 8x4 RCB	71	1
4365+35 & 4365+60	N/A	2-72" Pipe Conduit	88	1
4420+63	83.719	Triple 10x4 RCB	71	1
4474+97	84.749	Triple 8x5 RCB	88	1
4530+33 & 4530+43	N/A	2-48" Pipe Conduit	30	1
4533+65	85.859	Double 9x4 RCB	56	1
4584+89	86.829	10x6 RCB	61	1
4640+24	87.88	10x6 RCB	62	1
Gardner Interchange NW Ramp				
<u>Station</u>	<u>Structure No.</u>	<u>Description</u>	<u>2-Yr Discharge (CFS)</u>	<u>Number of Diversions</u>
1+84, 1+94 and 2+04	N/A	3-60" Pipe Conduit	56	1
Total Number of Diversions				11

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6	1 – 5	Notes	Federal Migratory Bird Treaty Act
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Revised 12/2/15	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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NOTES

230-P03 EXCESS EXCAVATION: All excess excavation shall remain the property of the NDDOT. Excess excavation quantities are shown on the Summary of Earthwork Quantity Table. Excess excavation shall be hauled and stockpiled at the following locations:

- County Road 20 Interchange of I-29 (within NDDOT Right of Way).

Prior to placement of the excess excavation, the storage site shall be cleared and stripped of existing topsoil. The excess excavation shall be placed and blended into the existing terrain. All placed material shall be made traversable as approved by the Engineer in the field. The Contractor shall restore topsoil and seed and mulch the stockpile upon grading approval by the Engineer in the field. All costs for topsoil stripping, clearing and grubbing, hauling, placing and grading of excess excavation and restoration and seeding of the stockpile site shall be included in the price bid for "Reshape Roadway".

230-P04 SUBGRADE: Construct the final subgrade elevation to within 0.08 feet of the proposed subgrade elevation.

Use low ground pressure equipment on the exposed subgrade.

251-P01 SEED APPLICATION: In addition to Class II Seeding, apply Temporary Cover Crop to the first 10 feet of disturbed topsoil adjacent to pavement surfaces. All costs associated with the placement of the additional Temporary Cover Crop to the first 10 feet of disturbed topsoil adjacent to pavement surfaces, shall be included in the unit price bid for "Seeding Class II".

251-P02 FERTILIZER: After placing topsoil, but prior to seeding, place fertilizer that meets the requirements of Section 251.03 G, "Fertilizer". Do not place fertilizer in locations where wetland topsoil will be placed. All costs associated with the placement of fertilizer shall be included in the price bid for "Seeding Class II".

256-P01 REMOVE AND REPLACE RIPRAP: The existing riprap placed in the median under project IM-8-029(132)078 shall be removed and salvaged. Stockpile the riprap in a location as specified in the Standard Specifications not to impact existing wetlands. All costs associated with the removal and stockpiling of existing riprap shall be included in the price bid for "Riprap - Salvaged".

The costs associated with the placement of salvaged riprap shall be included in the price bid for "Riprap Grade II". If additional riprap is needed to meet the requirements specified in the plans due insufficient salvaged material by the Contractor, the Contractor shall obtain additional material meeting requirements stated in Section 256.03 C of the Standard Specifications. No additional payment will be made for obtaining additional riprap material.

262-P01 FLOTATION SILT CURTAIN: A quantity of 100 LF of flotation silt curtain has been included to be used at the Engineer's discretion to supplement additional erosion control measures.

302-P01 SALVAGED BASE COURSE: Surface tolerance for the salvaged base course shall be in accordance with 302.04 C.2, Surface Tolerance Type C, for all areas beneath the 12" Non-Reinf Concrete Pavement CL AE - Doweled (i.e. mainline pavement, inside shoulder, and ramp gore area).

Surface tolerance for the salvaged base course shall be in accordance with 302.04 C.1, Surface Tolerance Type B, for the 8' outside shoulder and ramp areas.

Excess material removed from high points of the base course by the trimming operation shall be reincorporated into the base course.

302-P02 SALVAGED BASE COURSE FOR SUBCUT REPAIRS: Aggregate meeting the requirement of Class 3 or Class 5 specified in Section 816.02, "Miscellaneous Aggregates" may be used if no salvage based material is available at the time subcuts are filled.

Aggregate used in subcut repairs is subject to the requirements of note 230-P01, "Reshaping Roadway", except the optimum moisture and density shall be determined as specified in ND T 180.

Aggregate used in subcut repairs will be paid for at the contract unit price for "Salvaged Base Course" regardless of the class of material used.

302-P03 SALVAGED BASE COURSE: Section 817.01 D, "Salvage Base Course Containing Bituminous Material" is modified as follows:

"The maximum amount of bituminous material in salvaged base course placed beneath a concrete roadway is 65 percent."

302-P04 HAULING: The shoulder can be used as a haul route. Haul vehicles shall only drive on the subgrade. Do not drive on the base course and/or geosynthetic material, except when the haul vehicle is dumping. When dumping, the haul vehicle is allowed to drive on the base course in the immediate vicinity of where the load is dumped. Re-establish subgrade surface tolerance per contract requirements prior to placement of the salvaged base course.

302-P05 SALVAGED BASE COURSE: All salvaged concrete material shall be incorporated into the salvaged base course. All other material required for the salvaged base course shall be recycled HBP or virgin aggregate. All excess material to become the property of the contractor.

401-P01 TRIMMING AND PRIME: Priming shall be within one mile or within 48 hours of the trimming operations unless, HBP paving is to take place within 24 hours of trimming.

411-P01 MILLING PAVEMENT SURFACE: All milled material from the NW and SW ramps of the Gardner Interchange shall become the property of the Contractor and shall be disposed of offsite.

430-P01 CONTRACTOR MIX DESIGN: The concrete mix design shall meet the following requirements:

Gyratory Effort, # Gyration	$N_{ini}=7, N_{des}=75, N_{max}=115$	AASHTO R 35
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430-P02 SUPERPAVE FAA 43: An additional quantity of 100 ton of Superpave FAA 43 and 6 ton of PG 58-28 Asphalt Cement has been included in the plans to be used at the tie in location of the mainline and north crossover.

550-P01 CONCRETE PAVEMENT: The development of a maturity curve specified in Section 550.04 B, "Mix Design" will not be required.

704-016 TRAFFIC CONTROL SUPERVISOR: A Traffic Control Supervisor shall be provided on this project.

This document was originally issued and sealed by Jeffrey T. Lansink, Registration Number PE-5244, on 12/2/15 and the original document is stored at the North Dakota Department Of Transportation.

Revised 12/8/15	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	IM-8-029(133)078	6	3

NOTES

550-P02 CONCRETE PAVEMENT: The Department will waive the requirement to place the reinforcing steel, tie bars and dowel bar assemblies a minimum of 2,000 feet ahead of the paving operation as stated in Sections 550.04 E.1 and 550.04 G.2 and allow the use of the roadway as a haul road at the Contractors request, provided the following conditions are met:

- Repair all damaged areas
- Provide an additional trimmer in advance of the paving operation.
- Construct the finished surface to within 0.10 feet of the proposed elevation with the first pass of trimming equipment.
- Construct the finished surface to the specified surface tolerance prior to the placement of reinforcing steel, tie bars and dowel bar assemblies.
- Place the reinforcing steel and tie bars on approved supports securely, properly and accurately in advancing of the paving operation.

704-016 TRAFFIC CONTROL SUPERVISOR: A Traffic Control Supervisor shall be provided on this project.

704-030 CONSTRUCTION TRAFFIC ACCESS: Construction traffic shall access the area within Highway and/or Interstate R/W under construction only at interchanges unless a request for a temporary access for other locations has been otherwise approved. To receive temporary access allowance at other locations, the Contractor shall develop and submit to the Engineer a traffic control plan, a traffic impact analysis, a safety analysis, and an environmental impact analysis. The Engineer shall then request temporary access allowance and environmental clearance from FHWA. To be considered for approval, the construction traffic control plans along with the request for temporary access allowance at locations other than at interchanges must provide:

1. That the construction site and the plant site are on the same side of the interstate median;
2. That the construction traffic will not cross the lanes of traffic being used by the public at grade;
3. There are methods in place to prevent the public use of the temporary access during active construction and during shutdown periods;
4. The restoration of the access control fence and right-of-way to pre-project conditions prior to the completion of the project.

Any additional costs associated with the construction traffic control plan, traffic impact analysis, safety analysis, environmental clearance, and restoration of fence and R/W will be at the Contractor's expense.

704-P01 PRECAST CONCRETE MEDIAN BARRIERS - STATE FURNISHED: Obtain 79 barriers from the NDDOT Casselton Maintenance storage yard. Return barriers to the NDDOT Casselton Maintenance storage yard at 15482 37th St. SE.

Some 4 inch x 4 inch boards are available at the return location. Provide any additional 4 inch x 4 inch boards necessary to stack barriers. The boards will become property of the Department. Include the cost for boards in the contract unit price for "Precast Concrete Median Barrier - State Furnished".

704-P02 TRAFFIC CONTROL PHASING: The traffic control details, as indicated on the plans, have been developed based on the premise that this project will be constructed in six phases for I-29 and one phase for the ramps. The work zone traffic control summary lists include the required number of devices for each phase of each described work area. The Contractor shall be responsible for removing and resetting devices for each phase of construction. The costs associated with removing and resetting traffic control devices shall be included in the price bid for other items.

Phase 1: Phase 1 traffic control is for the outside lane closure of Northbound I-29 for the installation of w-beam guardrail end terminal at the Argusville Interchange.

Phase 2: Phase 2 traffic control is for the right lane closure of Southbound I-29 for construction of temporary ramp connections within the gore areas at the Argusville and Gardener Interchanges. Phases 1 & 2 may be completed concurrently. If the Contractor elects to construct Phases 1 & 2 concurrently, all

additional devices shall be supplied by the Contractor and no additional payment will be made for the additional traffic control devices.

Phase 3: Phase 3 traffic control is for the left lane closure of Northbound and Southbound I-29 for construction of temporary ramp connections within the median at the Argusville and Gardener Interchanges, median grading, obliteration of pavement markings, and installation of new temporary traffic control striping in preparation for Phase 4 (head to head traffic on the Northbound I-29).

Phase 4: Phase 4 traffic control is for the closure of Southbound I-29, implementing head to head traffic on Northbound I-29, and activating the temporary access ramps and crossovers for the reconstruction of the Southbound I-29.

Phase 5: Phase 5 traffic control is for the left lane closure of Northbound and Southbound I-29 for removal of 3-cable guardrail installed under project IM-8-029(132)078, temporary ramp connections, south median crossover, and temporary embankment in the median.

Phase 6: Phase 6 traffic control is for the mill and overlay and reconstruction of the Gardner exit and entrance ramps and the removal of temporary ramp connections within the gore areas at the Argusville and Gardner Interchanges. The ramps will remain open to traffic during construction. Work will be performed in stages with traffic being switched between the left and right sides of the ramps. Work on the ramps will not begin until after Southbound I-29 is reopened to traffic and temporary construction ramps within the median have been removed.

Phase 7: Phase 7 traffic control is for the outside lane closure of Northbound I-29 for the removal of w-beam guardrail extensions and installation of end treatments at the Argusville Interchange, Arthur Separation, and Gardner Interchange.

704-P03 TRAFFIC CONTROL DEVICES: The traffic control devices list for each phase has been developed using traffic control signing layouts (shown in Section 100 of the plans) and Standard Drawings as listed below:

- D-704-1 Attenuation Device
- D-704-5, 7, 8, 9, 10, 11 Are applicable
- D-704-12, 13, and 14 Are applicable.
- D-704-22 Layouts Type K and L for construction trucks hauling material.
- D-704-24 Layout Type HH for shoulder closure on freeway.
- D-704-26 Layouts Type CC, EE, and GG for milling and paving operations on the Arthur and Gardner crossroads where needed.
- D-704-27 For moving operations.
- D-704-35 For one lane closure on Interstate system.
- D-704-38, 39 For median crossovers.
- D-704-45 For construction traffic median crossovers.
- D-704-50 For portable sign support assemblies.
- D-704-51 For portable precast concrete median barriers.
- D-704-56 For grinding shoulder rumble strips.

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704-P04 CONSTRUCTION TRAFFIC MEDIAN CROSSOVERS: The Contractor shall be allowed to construct median crossovers for the purpose of hauling material over the roadway being used by the motoring public. The Contractor shall not be allowed to haul pavement removals on the roadway being used by the public. Only right-hand on and off movements will be allowed. No crossing of opposing lanes of traffic will be allowed.

Construction traffic median crossovers used for entering the roadway used by the public shall have a stabilized construction access to prevent dust or mud problems on the public roadway. All of the Contractor's vehicles using this crossover must come to a complete stop before entering the public roadway. The Contractor's traffic shall always yield the right of way to the public traffic. A flag person and stop sign shall always be used as specified on Standard Drawing D-704-45.

The minimum distance between construction traffic median crossovers shall be 3,000 feet or the minimum distance required to install all traffic control required plus an additional 500'. See Standard Drawing D-704-45 for applicable traffic control devices. No more than two median crossovers shall be in use at any time and any crossovers not in use shall be barricaded with Type III barricades. Construction traffic median crossovers shall be barricaded at night and used only during daylight hours.

All vehicles using the construction traffic median crossovers shall be equipped with top mounted flashing beacons visible up to 500' in all directions.

The Contractor must restore the crossover area to pre-project conditions prior to the completion of the project.

The cost for materials, equipment, and labor for Construction Traffic Median Crossovers will not be paid for separately. Include the costs for Construction Traffic Median Crossovers in the contract unit price of other items.

704-P05 INTERCHANGE RAMP CONNECTIONS: During the period that the mainline pavement being utilized for temporary ramp connections is being reconstructed, the public traffic using the ramps shall be routed around the paving area as shown in Section 100 of the plans. The proposed interstate and ramp paving should be complete and fully cured to prevent the need for temporary paving. Traffic then may use the new ramp for access to the interchange. All costs associated with aggregate surfacing and shifting traffic control to accommodate paving operations shall not be paid for separately but included in the price bid for other items.

704-P06 PAVEMENT MARKING REMOVAL: The centerline and edge lines shall be obliterated as shown in Section 100 of the plans and Standard Drawings D-704-38 and D-704-39. At the interchange ramp connections, the centerline and edge lines shall be obliterated as shown in Section 100 of the plans. No grinding will be allowed on new pavement surfaces for obliteration of existing pavement marking. Masking of existing pavement markings on the Northbound roadway will be accepted. The obliteration of the markings shall be paid by the square yard removed. The cost of all equipment, material, and labor, including the removal of sheeting, if used, shall be included in the price bid for "Obliteration of Pavement Marking."

704-P07 TUBULAR MARKERS: There are 230 triple-weighted tubular markers that are currently in place at the locations of the existing median crossovers. These described tubular markers shall remain property of the NDDOT and are to be delivered to the NDDOT Casselton Maintenance yard, at 15482 37th St. SE, when no longer needed for current or future traffic control. The cost to remove, load, haul and deliver the existing tubular markers shall not be paid separately but shall be included in the price bid for traffic control items.

Upon completion of the project and returning traffic to normal operation, 40 of the removed triple-weighted tubular markers shall be installed at the north median crossovers. The tubular markers shall be

spaced at 5' on center. The cost to install the tubular markers shall be included in the price bid for "Tubular Markers".

704-P08 FLEXIBLE DELINEATORS: All temporary flexible delineators to be installed within the southbound roadway shall be bolt mounted. Butyl pads will not be allowed. Upon removal of the devices, all bolt holes shall be filled and sealed as approved.

706-P01 AGGREGATE LABORATORY: In the Aggregate Laboratory, provide a phone and a printer capable of scanning 11x17 inch paper and producing 8.5x11 inch photocopies. Supply ink or toner for the duration of the project. Copier/printer machine shall have a Windows based operating software compatible with that used by NDDOT.

706-P02 FIELD OFFICE: Provide a field office which meets the following requirements:

1. The field office shall be a minimum of 450 square feet.
2. Indoor bathroom facilities
3. Air conditioner (20,000 BTU minimum)
4. Lighting (lumens required 110 foot-candles)
5. Minimum of 3 phone jacks (NDDOT to pay for phone service)
6. Heat, electric, sewer, and water hookups to be furnished by contractor, contractor to pay utility bills.
7. Cabinet space of a minimum of 32 cubic feet.
8. Counter space of a minimum of 40 square feet.
9. The floor is to be free of protrusions so that it will accommodate NDDOT furnished office equipment.
10. The location of the field office shall be on, or as close to the project as possible and approved by the Engineer. Any rental fees shall be paid by Contractor.
11. The field office shall be available for occupancy at the start of the project and remain available to project completion.
12. The following services will be furnished and paid for by the NDDOT and requested through the Work Management System:
 1. Telephone
 2. Broadband internet service including State Network access
 3. Printer/Photocopier

All requirements of the Field Office are subject to approval by the Engineer.

Payment for the field office shall be under the bid item "Field Office."

Schedule for Payments:

- 25% when set up on site
- 50% when 30% of work is complete
- 75% when 60% of work is complete
- 100% when project is complete

714-P01 TEMP CHANNEL DIVERSION: The Contractor shall be responsible for cleaning out and rerouting of all water channels at the proposed box culvert locations. The Contractor shall develop an erosion control plan for the proposed work. Exposed earthen berms shall not be allowed. If additional impacts to the drains or wetlands result from rerouting the water, the Contractor shall obtain a modified 404 permit from the US Army Corp of Engineers. All work associated with rerouting and reestablishing the existing channels shall not be paid for separately but included in the price bid for other items.

714-P02 PIPE CONDUIT: Aggregate used for bedding and backfill is subject to the requirements of note 230-P01, "Reshaping Roadway", except the optimum moisture and density shall be determined as specified in Section 714 of the Standard Specifications.

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752-P01 RIGHT OF WAY FENCE: All right-of-way fence shall be removed and replaced throughout the I-29 project limits. The existing fence shall be removed and become property of the Contractor. The Contractor shall dispose of the materials offsite. All fence posts for corner assemblies, double brace assemblies, line posts, and terminal posts shall be steel. All costs associated with the removal and installation of the right-of-way fence shall be included in the price bid for "Fence Woven Wire" and associated post assemblies.

754-P01 DELINEATORS: The existing delineators within the construction area shall be removed and become the property of the Contractor.

New delineators shall be furnished and installed as shown on Standard Drawing D-754-21 and D-754-22A. The following are the approximate quantities required: Type A 115 Each, Type B 19 Each, and Type D 9 Each.

The cost for removal and disposal of the delineators shall not be paid for separately but shall be included in the price bid for the item "Diamond Grade Delineators – Type _."

754-P02 REMOVED CONCRETE FOUNDATIONS: Existing concrete foundations shall be either completely removed or obliterated to a minimum 3 foot depth below proposed finished grade.

754-P03 REMOVED SIGNING: All existing telescoping perforated tube, w-shape post supports, yellow faced signs and extruded aluminum sign panels shall become the property of the Contractor and shall be removed and disposed of outside the highway right-of-way. Existing round pipe supports shall remain the property of the NDDOT and shall be delivered to the Fargo District sign shop at 503 38th St South, Fargo. The Contractor shall contact the Fargo District sign shop 24 hours prior to delivery at (701) 239-8900. All costs associated with the removal and delivery of the sign panels and supports shall not be bid separately but shall be included in the price bid for the item "Remove Sign Foundation".

754-P03 OBJECT MARKERS – TYPE III: Type III object markers shall be installed at each box culvert installation site per standard drawing D-754-82.

762-P01 RAISED PAVEMENT MARKERS: Raised pavement markers shall be placed on the centerline of the two-lane two-way roadway. The markers shall be placed in pairs, 4 inches apart, spaced at 5 feet along the centerline. Raised pavement markers shall also be placed on the median crossovers at the beginning and end project locations and on the interchange ramp connections. The markers shall be placed as shown on the Traffic Control System Median Crossover sheets and Interchange Ramp Connection sheets. The spacing of raised pavement markers shall be 5 feet on median crossovers and interchange ramp connections. The raised pavement markers shall be Stimsonite NO. 66, Flex-O-Lite, RCM construction marker, or equal. The raised pavement markers shall be cleaned when necessary to retain reflectivity. At completion of the project, the markers shall be removed in accordance with the manufacturer's recommendations and when removed, shall have the adhesive pad removed down as close as possible to the pavement using a mechanical scraper such as a loader-type machine with a bucket. The raised pavement markers shall be measured by the number complete in place and accepted by the Engineer. The cost of furnishing, installing, maintaining, and removing shall be included in the price bid for "Raised Pavement Markers."

762-P02 EPOXY PVMT MK MESSAGE-GROOVED: Speed Measurement Pavement markings shall be placed on the shoulder every half mile beginning at RP 79.500 and ending at RP 88.000. The markings shall be 18" by 30" and shall be placed with the 18" side in the longitudinal direction.

764-P01 W-BEAM GUARDRAIL END TERMINALS FOR TWO-WAY TRAFFIC: The W-beam guardrail end terminals and additional guardrail materials required for two-way traffic shall be removed when no longer needed for two-way traffic operation and delivered to the NDDOT Maintenance Storage Yard in Fargo at 503 38th St South, Fargo and neatly stacked by the Contractor at the location in the storage yard. The Contractor shall notify the NDDOT Maintenance Storage Yard 24 hours prior to delivery at (701) 239-

8900. All costs to remove and deliver temporary guardrail material shall be included in the price bid for "W-Beam Guardrail".

764-P02 REMOVE 3-CABLE GUARDRAIL & POSTS: Upon completion of work in the median, the 3-cable guardrail placed along the northbound and southbound median lane under project IM-8-029(132)078 shall be removed and the posts delivered to the NDDOT Maintenance Storage Yard in Fargo at 503 38th St South, Fargo and neatly stacked by the Contractor at the location in the storage yard. All additional intermediate and end anchors shall also be removed. All cable and anchors shall become the property of the Contractor and disposed of offsite. The Contractor shall notify the NDDOT Maintenance Storage Yard 24 hours prior to delivery at (701) 239-8900. All costs to remove and deliver temporary guardrail material shall be included in the price bid for "Remove 3-Cable Guardrail & Posts".

764-P03 GUARDRAIL REFLECTOR: Prior to head to head traffic on the northbound roadway, all guardrail reflectors shall be revised to be yellow from the southerly direction and white from the northerly direction. All costs associated with revising the reflectors shall not be paid for separately but included in the price bid for other items.

772-500 FLASHING BEACONS AND SEQUENCING ARROW PANELS: The Contractor shall furnish and install the flashing beacons and sequencing arrow panels as shown on the plans and standard drawings for crossovers.

The Contractor shall be responsible for obtaining the electrical source to operate the flashing beacons and sequencing arrow panels. The Contractor shall make arrangements with the utility company or provide generators for electrical service. Solar powered flashing beacons may be used. The Contractor shall be responsible for all costs of providing the electrical source and any costs required to operate and maintain the flashing beacons and sequencing arrow panels.

If the Contractor chooses to use solar power flashing beacons, the solar powered flashing beacons shall be MUTCD and ITE compliant. The beacons shall be visible to drivers for a distance of at least ¼ mile under normal atmospheric daylight conditions. The flashing beacons shall flash a minimum of 50 times per minute not to exceed 60 times per minute and shall be capable of operating 20 days without solar charging.

If the Contractor chooses to use the utility company, the poles and all equipment shall be placed at least 60 feet from the roadway centerline. The power shall be placed a minimum of 6 inches below the ground except it may be draped from barriers away from traffic. If poles are required in certain areas to get power to the median, the poles shall have attenuation devices placed to protect traffic. All the beacons and sequencing arrow panels on each crossover may be powered by the same power source.

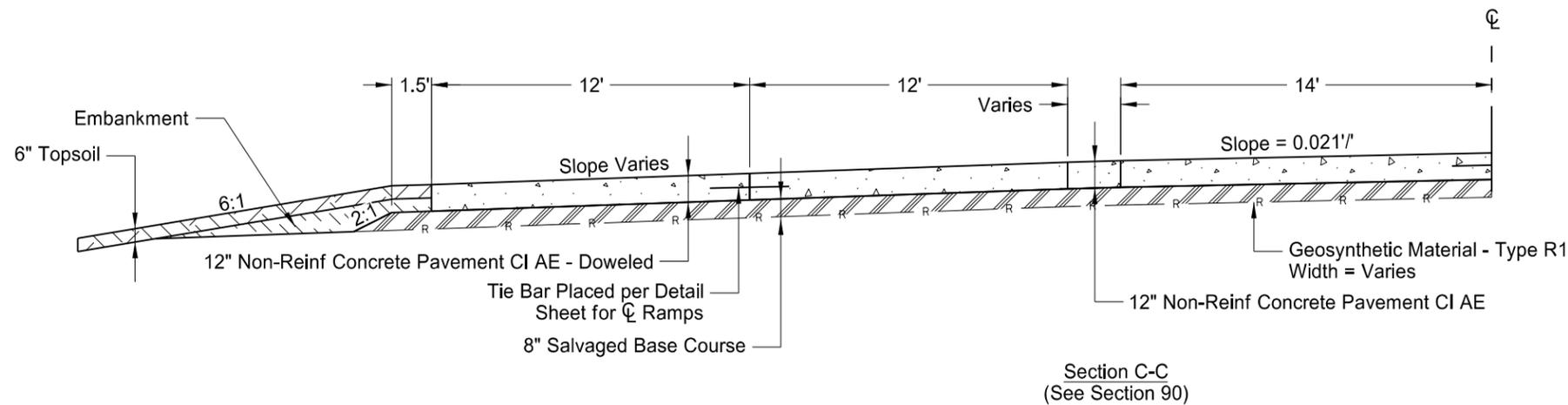
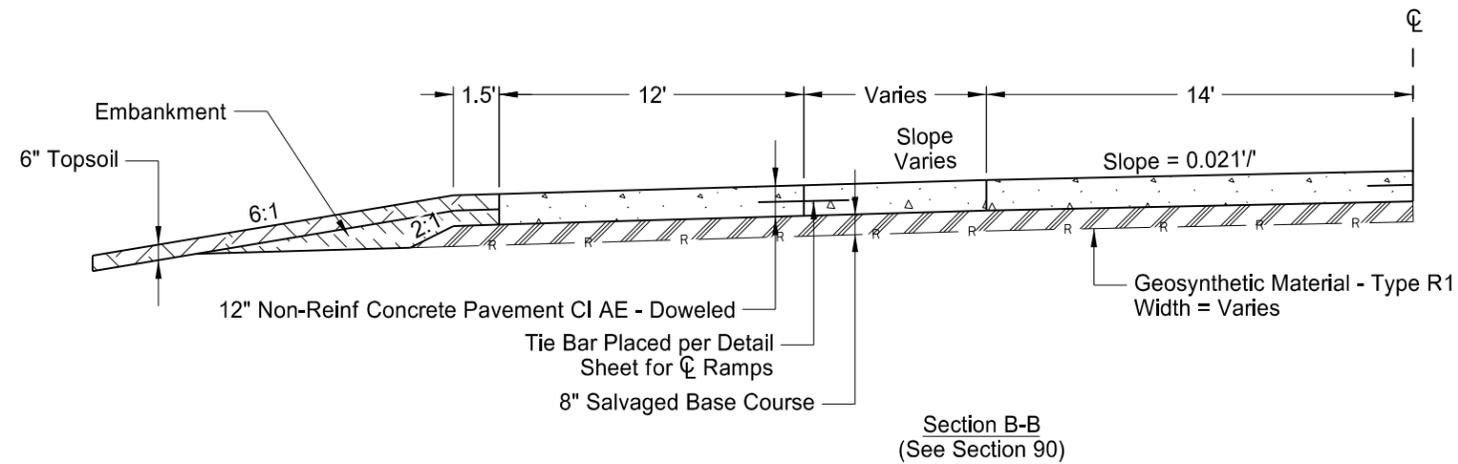
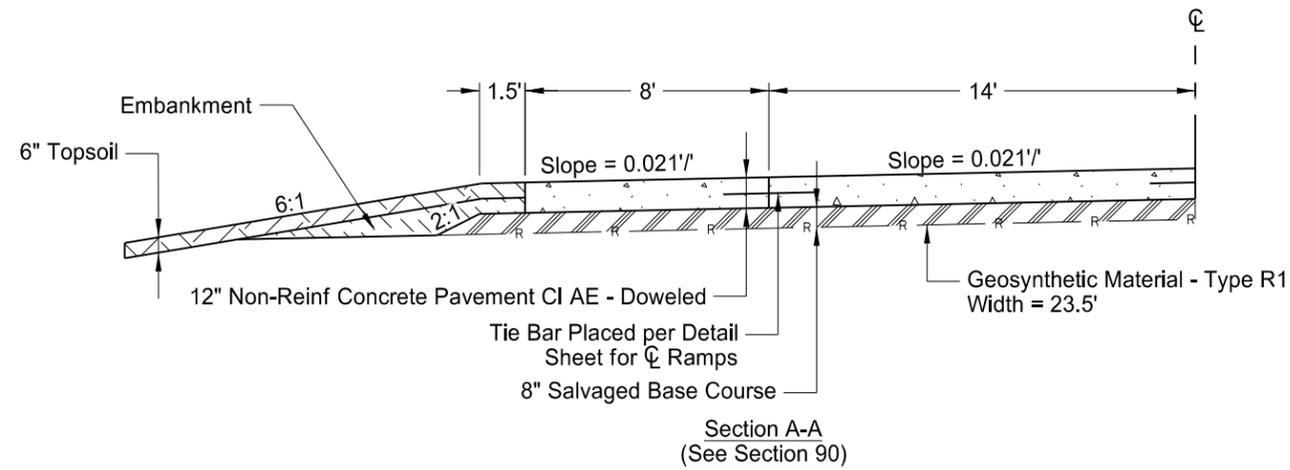
If the Contractor chooses to use generators to provide power, the flasher and other equipment shall be placed at or near the generator. The generator shall be placed at least 60 feet from the roadway centerline. The beacons and sequencing arrow panels may have one generator.

Upon completion of the project and the traffic is returned to the closed roadway, all equipment shall be removed.

The cost of labor, materials, installation, providing electric source, operation and maintenance, power poles, flashing beacons, and sequencing arrow panels shall be included in the price bid for the items "Flashing Beacon - Post Mounted" and "Sequencing Arrow Panel – Type C - Crossover."

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SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	RAMPS	TOTAL
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	12		12
754	0195	DIAMOND GRADE DELINEATORS-TYPE A	EA	115		115
754	0196	DIAMOND GRADE DELINEATORS-TYPE B	EA		19	19
754	0198	DIAMOND GRADE DELINEATORS-TYPE D	EA		9	9
754	0210	GALV STEEL POSTS-STANDARD PIPE	LF	67	26	93
754	0214	GALV STEEL POSTS-W-SHAPE POSTS(TWO OR MORE)	LF		111	111
754	0534	PANEL FOR SIGNS-TYPE IV REFLECTIVE SHEETING	SF	127	63	190
754	0556	INTERSTATE MILE POSTS - TYPE B	EA	7		7
754	0592	RESET SIGN PANEL	EA		2	2
754	0596	RESET MILE POST	EA	2		2
754	0801	OBJECT MARKERS - TYPE I	EA	1		1
754	0803	OBJECT MARKERS - TYPE III	EA	16		16
754	0805	OBJECT MARKER - CULVERTS	EA	16		16
754	1100	CLASS AE CONCRETE-SIGN FOUNDATIONS	CY	2.7	0.5	3.2
754	1104	REMOVE SIGN FOUNDATION	EA	4	4	8
760	0001	RUMBLE STRIPS -CONCRETE SHOULDER	MILE	17.83		17.83
762	0110	EPOXY PVMT MK 4IN LINE-GROOVED	LF	216,292		216,292
762	0113	EPOXY PVMT MK 4IN LINE	LF		5,268	5,268
762	0132	EPOXY PVMT MK 8IN LINE-GROOVED	LF		2,211	2,211
762	0136	EPOXY PVMT MK MESSAGE-GROOVED	SF	135.00		135.00
762	0200	RAISED PAVEMENT MARKERS	EA	24,395		24,395
762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	55,080		55,080
764	0131	W-BEAM GUARDRAIL	LF	313		313
764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	3		3
764	2020	REMOVE 3-CABLE GUARDRAIL & POSTS	LF	15,560		15,560
772	2110	FLASHING BEACON-POST MOUNTED	EA	2		2
900	1000	TEMPORARY STREAM DIVERSION	EA	11		11
SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	RAMPS	TOTAL
ALTERNATE A - CONCRETE SHOULDERS						
216	0100	WATER	M GAL	2,236	38	2,274
302	0101	SALVAGED BASE COURSE	CY	59,630	1,013	60,643
550	0105	6IN NON-REINF CONCRETE PAVEMENT CL AE	SY	41,107		41,107
550	0320	12IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	160,217	4,081	164,298
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	223,044		223,044
ALTERNATE B - CONCRETE MEDIAN SHOULDER & 8' ASPHALT SHOULDER						
216	0100	WATER	M GAL	2,453	38	2,491
302	0101	SALVAGED BASE COURSE	CY	65,419	1,013	66,432
401	0050	TACK COAT	GAL	2,112		2,112
401	0060	PRIME COAT	GAL	10,919		10,919
401	0160	BLOTTER MATERIAL CL 44	TON	408		408
430	0040	SUPERPAVE FAA 40	TON	9,317		9,317
430	5828	PG 58-28 ASPHALT CEMENT	TON	559		559
550	0320	12IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	160,217	4,081	164,298
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	223,044		223,044



Gardner Interchange	
Southwest Ramp	
00+00.00 to 09+99.55	2.1% Lt.
09+99.55 to 11+09.44	Transition 2.1% Lt. to 5.70% Lt.
11+09.44 to 15+31.65	5.70% Lt.
15+31.65 to 16+41.54	Transition 5.94% Lt to Existing
16+41.54 to 21+21.12	Match Existing
Northwest Ramp	
00+00.00 to 06+45.14	Match Existing
06+45.14 to 06+95.99	Transition Existing to 3.71% Lt.
06+95.99 to 14+22.69	3.71% Lt.
14+22.69 to 14+73.55	Transition 3.71% Lt. to 2.10% Lt.
14+73.55 to 21+29.39	2.10% Lt.

Note:
See Section 90
Paving Layout Sheets

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Proposed Typical Sections
Gardner Interchange Ramp Tapers
Interstate 29 - Argusville to Hunter SB

Plan & Profile Sheet Number	Begin Station / Location	Begin Offset	End Station / Location	End Offset	Length	Pipe Conduit Pay Size	Allowable Material	Required Diameter	Minimum Thickness	Geosynthetic Material Type R1 (Pay Item)	(A) End Sections		Applicable Backfill Detail
											Begin	End	
					LF	In		In	In	SY	EA	EA	
3	4229+71	13' Lt	4229+71	99' Lt	86	36	Reinforced Concrete Pipe - Class III (barrel length = 84 LF)	36		458	N	Y - Flared	D-714-26
10	4365+35	4' Lt	4365+35	102' Lt	98	72	Reinforced Concrete Pipe - Class III (barrel length = 96 LF)	72		409	N	Y - Flared	D-714-26M
10	4365+60	4' Lt	4365+60	102' Lt	98	72	Reinforced Concrete Pipe - Class III (barrel length = 96 LF)	72		409	N	Y - Flared	D-714-26M
10	4368+95	5' Rt	4368+95	99' Lt	104	60	Reinforced Concrete Pipe - Class III (barrel length = 102 LF)	60		637	N	Y - Flared	D-714-26
10	4369+95	5' Rt	4369+95	99' Lt	104	60	Reinforced Concrete Pipe - Class III (barrel length = 102 LF)	60		618	N	Y - Flared	D-714-26
17	4504+04	11' Lt	4504+36	100' Lt	94	36	Reinforced Concrete Pipe - Class III (barrel length = 92 LF)	36		331	N	Y - Flared	D-714-26M
17	4504+23	9' Lt	4504+56	99' Lt	96	36	Reinforced Concrete Pipe - Class III (barrel length = 94 LF)	36		331	N	Y - Flared	D-714-26M
18	4530+23	9' Lt	4530+51	99' Lt	94	48	Reinforced Concrete Pipe - Class III (barrel length = 92 LF)	48		346	N	Y - Flared	D-714-26M
18	4530+43	9' Lt	4530+70	99' Lt	94	48	Reinforced Concrete Pipe - Class III (barrel length = 92 LF)	48		346	N	Y - Flared	D-714-26M
19	4551+72	11' Lt	4551+72	99' Lt	88	42	Reinforced Concrete Pipe - Class III (barrel length = 86 LF)	42		470	N	Y - Flared	D-714-26
27	1+84 *	76' Lt	1+88	43' Lt	33	60	Reinforced Concrete Pipe - Class III (barrel length = 30 LF)	60		171	Y - Flared	N	D-714-16
27	1+88 *	43' Lt	2+04	56' Rt	100	60	Reinforced Concrete Pipe - Class V (barrel length = 100 LF)	60			N	N	D-714-16
27	2+04 *	56' Rt	2+10	94' Rt	39	60	Reinforced Concrete Pipe - Class III (barrel length = 36 LF)	60		209	N	Y - Flared	D-714-16
27	1+94 *	76' Lt	1+98	43' Lt	33	60	Reinforced Concrete Pipe - Class III (barrel length = 30 LF)	60		171	Y - Flared	N	D-714-16
27	1+98 *	43' Lt	2+14	56' Rt	100	60	Reinforced Concrete Pipe - Class V (barrel length = 100 LF)	60			N	N	D-714-16
27	2+14 *	56' Rt	2+20	94' Rt	39	60	Reinforced Concrete Pipe - Class III (barrel length = 36 LF)	60		209	N	Y - Flared	D-714-16
27	2+04 *	76' Lt	2+08	43' Lt	33	60	Reinforced Concrete Pipe - Class III (barrel length = 30 LF)	60		171	Y - Flared	N	D-714-16
27	2+08 *	43' Lt	2+24	56' Rt	100	60	Reinforced Concrete Pipe - Class V (barrel length = 100 LF)	60			N	N	D-714-16
27	2+24 *	56' Rt	2+30	94' Rt	39	60	Reinforced Concrete Pipe - Class III (barrel length = 36 LF)	60		209	N	Y - Flared	D-714-16

(A) Not paid for separately, to be included in the price bid for Pipe Conduit.

* I-29 Southbound exit ramp to have 3 additional 60" RCP pipes bored through embankment, and existing 42" RCP will remain in place.

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Allowable Pipe Material List
Interstate 29 - Argusville to Hunter SB