



Department of Transportation

Office of Project Development

700 E Broadway Avenue

Pierre, South Dakota 57501-2586 605/773-3268

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March 3, 2016

ADDENDUM NO. 1

RE: Item #10, March 16, 2016 Letting - P 0065(16)164, PCN 04F1, Ziebach County - Cold Milling Asphalt Concrete, Asphalt Concrete Resurfacing, & Fault Repair

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

BID ITEM FILE: *Bidders must log in to retrieve the addendum bid item file that must be loaded into the SDEBS to incorporate the revisions listed here.*

Bid Items were added:

Asphalt Concrete Alternate A”

Bid Item 320E0007 “G 64-28 Asphalt Binder”

Bid Item 320E100 “Class Q2 Hot Mixed Asphalt Concrete”

Bid Item 320E4000 “Hydrated Lime”

Asphalt Concrete Alternate B

Bid Item 320E0007 “PG 64-28 Asphalt Binder”

Bid Item 320E1002 “Class Q2 Hot Mixed Asphalt Concrete”

Bid Item 320E4000 “Hydrated Lime”

Bid Items were removed:

Bid Item 320E0007 “PG 64-28 Asphalt Binder”

Bid Item 320E1002 “Class Q2 Hot Mixed Asphalt Concrete”

Bid Item 320E4000 “Hydrated Lime”

PLANS: Please destroy sheets 2, 10, 18, 19, 20, 21, 27, 31, and 35, and replace with the enclosed sheets, dated 2/25/16. Sheet 18A was added.

Sheet 2: Bid items 320E0007, 320E1002, and 320E4000 were removed from main estimate of quantities table and Alternates A and B were added

Sheet 10: CLASS Q2 HOT MIXED ASPHALT CONCRETE and ADDITIONAL QUANTITIES notes were revised

Sheet 18: RATES OF MATERIALS were revised to show rates for Alternate A

Sheet 18A: Sheet was added to show rates of materials for Alternate B

Sheet 19: MATERIAL QUANTITIES table was revised to show Alternates A and B

Sheet 20: TABLE OF ADDITIONAL QUANTITIES was revised to show Alternates A and B

Sheet 21: SUMMARY OF ASPHALT CONCRETE was revised to show Alternates A and B

Sheets 27, 31, and 35: ESTIMATED QUANTITIES table was revised to show Alternates A and B

Sincerely,

Sam Weisgram
Engineering Supervisor

SW/cj

CC: John Forman, Pierre Region Engineer
John Villbrandt, Mobridge Area Engineer

ESTIMATE OF QUANTITIES

Revised by JJR on 1/12/2016
 Revised by JJR on 1/15/2016
 Revised by JJR on 2/25/2016

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0065(16)164	2	61

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0300	Remove Concrete Curb and Gutter	30	Ft
110E0730	Remove Beam Guardrail	925.0	Ft
110E1700	Remove Silt Fence	170	Ft
120E0010	Unclassified Excavation	8,837	CuYd
120E0100	Unclassified Excavation, Digouts	1,257	CuYd
120E0600	Contractor Furnished Borrow Excavation	1,183	CuYd
120E2000	Undercutting	5,602	CuYd
230E0010	Placing Topsoil	1,085	CuYd
260E1010	Base Course	2,429.1	Ton
260E1030	Base Course, Salvaged	6,510.2	Ton
* 260E6000	Granular Material, Furnish	1,746.5	Ton
260E6000	Granular Material, Furnish	2,026.2	Ton
270E0040	Salvage and Stockpile Asphalt Mix and Granular Base Material	2,457.0	Ton
* 270E0200	Blend, Haul, and Stockpile Granular Material	3,493.0	Ton
270E0200	Blend, Haul, and Stockpile Granular Material	4,053.2	Ton
320E7012	Grind 12" Rumble Strip or Stripe in Asphalt Concrete	50.1	Mile
330E0100	SS-1h or CSS-1h Asphalt for Tack	300.9	Ton
330E0210	SS-1h or CSS-1h Asphalt for Flush Seal	112.8	Ton
330E2000	Sand for Flush Seal	1,300.6	Ton
332E0010	Cold Milling Asphalt Concrete	70,279	SqYd
430E0700	Precast Concrete Headwall for Drain	7	Each
600E0300	Type III Field Laboratory	1	Each
630E0110	Straight Double Class A Thrie Beam Guardrail with Wood Posts	50.0	Ft
630E1010	Straight Class A W Beam Guardrail with Wood Posts	850.0	Ft
630E1015	Straight Class A W Beam Guardrail with CRT Posts	25.0	Ft
630E1025	Curved Class A W Beam Guardrail with CRT Posts	25.0	Ft
630E1150	Straight Double Class B W Beam Guardrail with Wood Posts	200.0	Ft
630E2000	W Beam to Thrie Beam Guardrail Transition	4	Each
630E2015	W Beam Guardrail Flared End Terminal	11	Each
630E2035	W Beam Guardrail Special Anchor Assembly	1	Each
632E2220	Guardrail Delineator	48	Each
633E1300	Pavement Marking Paint, White	850	Gal
633E1305	Pavement Marking Paint, Yellow	211	Gal
634E0010	Flagging	528.0	Hour
634E0020	Pilot Car	264.0	Hour
634E0110	Traffic Control Signs	1,417	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0280	Type 3 Barricade, 8' Single Sided	4	Each
634E0600	4" Temporary Pavement Marking Tape Type I	20,628	Ft
634E0630	Temporary Pavement Marking	78.4	Mile
634E0810	Groove 6" Wide Rumble Strip	816	Ft
634E0900	Portable Temporary Traffic Control Signal	2	Unit

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
650E4390	Type D49 Concrete Curb and Gutter	30	Ft
680E0240	4" Corrugated Polyethylene Drainage Tubing	200	Ft
680E0440	4" Slotted Corrugated Polyethylene Drainage Tubing	280	Ft
680E2500	Porous Backfill	98.0	Ton
734E0010	Erosion Control	Lump Sum	LS
734E0604	High Flow Silt Fence	680	Ft
734E0610	Mucking Silt Fence	47	CuYd
734E0620	Repair Silt Fence	170	Ft
831E0300	Reinforcement Fabric (MSE)	1,918	SqYd
900E0010	Refurbish Single Mailbox	10	Each
900E0012	Refurbish Double Mailbox	2	Each
900E1980	Storage Unit	1	Each

* - Denotes Non-Participating

Alternative A

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0007	PG 64-28 Asphalt Binder	3,993.8	Ton
320E1002	Class Q2 Hot Mixed Asphalt Concrete	69,571.2	Ton
320E4000	Hydrated Lime	694.7	Ton

Alternative B

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
320E0007	PG 64-28 Asphalt Binder	3,535.4	Ton
320E1002	Class Q2 Hot Mixed Asphalt Concrete	71,376.2	Ton
320E4000	Hydrated Lime	695.9	Ton

SPECIFICATIONS

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

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0065(16)164	10	61

Revised by JJR on 1/11/2016
 Revised by JJR on 1/25/2016
 Revised by JJR on 2/25/2016

COLD MILLING ASPHALT CONCRETE

Cold milling asphalt concrete shall be done according to the typical sections. The depth or width of milling may need to be adjusted due to rutting, maintenance patches, or roadway irregularities. Additional asphalt concrete shall be milled in these areas to provide a uniform typical section from centerline to the edge of the finished shoulder. These areas may also include farm & field entrances and intersecting roads. Any additional costs associated with this additional cold milling shall be incidental to the contract unit price per square yard for "Cold Milling Asphalt Concrete". No adjustments in quantity or price will be made.

The Contractor shall remove a portion of the existing asphalt concrete surface as shown on the "Approach Pavement Removal/Reconstruction" sheets and/or as directed by the Engineer.

The Contractor shall utilize some of the generated cold milled material to construct a 20:1 temporary on/off transition from the finished grade of base course throughout each end of the Approach Roadway Reconstruction section prior to switching construction phases to allow a safe traveled way for the traveling public. This material shall be removed once paving commences. The material shall become the property of the Contractor once it is determined by the Engineer that it is no longer needed on the project. All costs associated constructing and removing the transitions shall be incidental to the contract unit price per square yard for "Cold Milling Asphalt Concrete".

After completion of the milling operation, the Contractor shall clean up and dispose of any remaining debris to the satisfaction of the Engineer.

The Los Angeles Abrasion Loss value on the aggregate used for the in place asphalt concrete was from 25 to 29 percent. This value was obtained from testing during construction of the in place asphalt concrete.

Cold milling asphalt is estimated to produce 3,632.4 tons of salvaged asphalt concrete material. Salvaged asphalt concrete material shall be blended with Granular Material, Furnish and stockpiled at a site determined by the Engineer.

CLASS Q2 HOT MIXED ASPHALT CONCRETE

Mineral Aggregate:

Mineral aggregate for Class Q2 Hot Mixed Asphalt Concrete - Alternate A shall conform to the requirements of Class Q2.

Mineral aggregate for Class Q2 Hot Mixed Asphalt Concrete - Alternate B shall consist of a minimum of 80 percent crushed limestone ledgerock and shall conform to the requirements of Class Q2.

Mix Design Criteria:

Gyratory Controlled QC/QA Mix Design requirements for the Class Q2 Hot Mixed Asphalt Concrete – Alternate B shall conform to the requirements of Class Q2 except as modified by the following:

Voids in Mineral Aggregate (VMA):

	Minimum VMA (%):
Class Q2	13.0

All remaining requirements for Class Q2 shall apply.

GRANULAR MATERIAL, FURNISH

Granular Material shall be furnished by the Contractor for use in blending with the reclaimed asphalt pavement (RAP) material from this project.

It is estimated that 2,026.2 tons will be participating and 1,746.5 tons will be non-participating.

The Granular Material shall be Base Course meeting the requirements of Section 882.

BLEND, HAUL & STOCKPILE GRANULAR MATERIAL

General:

The Contractor shall use a portable platform scale, stationary commercial scale, stationary commercial plant, portable plant scale, or a belt scale to control the blending and weighing of the salvage material with Contractor furnished granular material.

The RAP shall be crushed to meet the requirements of Section 884.2 C.1 prior to blending into the stockpile.

RAP shall be blended with Granular Material, Furnished at a rate of 50% RAP material and 50% Granular Material, Furnished to obtain stockpile material. The use of a pugmill to blend the materials will be accepted.

Screening or scalping of the RAP stockpile(s) will not be allowed.

Calibrated conveyor(s) shall be used to provide a uniform blending of the materials. Material shall be blended prior to incorporation into the pile.

No further testing of the blended material will be required.

All costs for crushing the salvaged asphalt mix material, hauling, stockpiling, and blending asphalt mix material and Granular Material, Furnish shall be incidental to the contract unit price per ton for "Blend, Haul & Stockpile Granular Material".

Participating:

An Estimated 2,026.2 tons (for informational purposes only) of RAP material shall be blended with 2,026.2 tons of Granular Material, Furnish shall be used as Base Course, Salvaged.

Non-Participating:

An Estimated 1,746.5 tons (for informational purposes only) of RAP material shall be blended with 1,746.5 tons of Granular Material, Furnish and hauled and stockpiled at Isabel DOT Maintenance Yard located at NE ¼ SEC 32 T17N R22E in Dewey County.

FLUSH SEAL

Application of Flush Seal shall be completed within 10 working days following completion of the asphalt concrete surfacing.

SAND FOR FLUSH SEAL

Sand for Flush Seal shall be furnished by the Contractor.

The spreading device placing the sand shall leave a gap of 6 inches each side of centerline, applicable lane lines and the edge-line to ensure a better bond between the pavement and the permanent pavement marking.

ADDITIONAL QUANTITIES

Included in the Table of Additional Quantities for Alternative A are 100 tons of Class Q2 Hot Mixed Asphalt Concrete, 5.8 tons of PG 64-28 Asphalt Binder, and 1.0 ton of Hydrated Lime per mile and for Alternative B are 100 tons of Class Q2 Hot Mixed Asphalt Concrete, 5.0 tons of PG 64-28 Asphalt Binder, and 1.0 ton of Hydrated Lime per mile for spot leveling, strengthening and repair of the existing surface. Also included in the Table of Additional Quantities are 7.0 tons of SS-1h or CSS-1h Emulsified Asphalt for Tack for repair and leveling areas throughout the project. The aforementioned materials shall be placed as directed by the Engineer.

RUMBLE STRIP ROADWAY CLEANING

The Contractor shall be required to remove loose material from the driving surface and/or asphalt shoulders of the roadway. Loose material may be swept to the edge of shoulders and it shall be the Contractor's responsibility to ensure the loose material does not enter any vegetated areas and/or waterways.

All costs associated with the work shall be incidental to the contract unit price per mile for "Grind 12" Rumble Strip or Stripe in Asphalt Concrete".

RUMBLE STRIPS

Rumble strips shall be installed in rural areas with posted speeds greater than 50 M.P.H. Rumble strips will not be required in urban areas or where there is development in close proximity to the highway. The Engineer shall provide the exact start and stop locations for the rumble strip installation.

The gaps for the rumble strip installation as detailed on the standard plates shall be included with the measurement and payment.

Rumble strips shall not be placed on any bridge deck or within 25 feet of the approach slab or within 50 feet of any railroad crossing.

The placement of rumble strips from the driving lane may vary depending on the existing typical section of the roadway as directed by the Engineer.

The Contractor shall install rumble strips as per standard plate shown in the plans. The rumble strips must be grooved into the asphalt concrete surfacing. Following installation, the rumble strips shall be flush sealed with SS-1h or CSS-1h Asphalt for Flush Seal.

Rumble Strip installation shall be completed prior to application of the Flush Seal and Permanent Pavement Markings.

In the event the Flush Seal is eliminated from the contract, the Contractor will still be required to apply a Flush Seal to the newly installed 12" Rumble Strip at a width of 1.5' and at the same rate as specified in this plan set. No adjustment in payment will be made and SS-1h or CSS-1h Asphalt for Flush Seal will be paid at the contract unit price per ton.

All costs for installing the rumble strips shall be paid for at the contract unit price per mile for "Grind 12" Rumble Strip or Stripe in Asphalt Concrete".

RATES OF MATERIALS

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0065(16)164	18	61

Revised by JJR on 2/25/2016

SECTION 1 (per mile)

Station 0+20.00 (1st) to Station 3+75.81 (1st)
 Station 10+48.56 (1st) to Station 555+00.00 (2nd)
 (Thru Equation)
 Station 2+00.00 (4th) to Station 437+87.00 (6th)
 (Thru Equation)
 Station 442+00.20 (6th) to Station 595+00.00 (6th)
 (Thru Equation)

Alternative A

Class Q2 Hot Mixed Asphalt Concrete (1" Lift, Leveling Course)

Aggregate	767 Tons
PG 64-28 Asphalt Binder	47 Tons
TOTAL MIX	814 Tons
Hydrated Lime	8 Tons
TOTAL MIX WITH HYDRATED LIME	822 Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 6.1 ton applied 27.0 feet wide (Rate = 0.09 gallon per square yard), prior to application of 1" lift of Class Q2 Hot Mixed Asphalt Concrete.

SECTION 1 (per mile)

Station 0+20.00 (1st) to Station 3+75.81 (1st)
 Station 10+48.56 (1st) to Station 555+00.00 (2nd)
 (Thru Equation)
 Station 2+00.00 (4th) to Station 437+87.00 (6th)
 (Thru Equation)
 Station 442+00.20 (6th) to Station 595+00.00 (6th)
 (Thru Equation)

Alternative A

Class Q2 Hot Mixed Asphalt Concrete (1.5" Lift, Wearing Course)

Aggregate	1,656 Tons
PG 64-28 Asphalt Binder	102 Tons
TOTAL MIX	1,758 Tons
Hydrated Lime	18 Tons
TOTAL MIX WITH HYDRATED LIME	1,776 Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 5.8 ton applied 39 feet wide (Rate = 0.06 gallon per square yard), prior to application of 1.5" lift of Class Q2 Hot Mixed Asphalt Concrete.

Flush Seal

Provide SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 4.5 ton applied 36 feet wide (Rate = 0.05 gallon per square yard).

Provide Sand for Flush Seal at the rate of 52 ton applied 22 feet wide for (Rate = 8 pounds per square yard).

SECTION 2 (per mile)

Station 168+01.02 (3rd) to Station 79+25.00 (3rd)
 Station 67+15.00 (3rd) to Station 2+00.00 (4th)
 (Thru Equation)

Cold Milling Asphalt Concrete is computed at 21,902 Square Yards, applied 37.3 feet wide.

Alternative A

Class Q2 Hot Mixed Asphalt Concrete (1" Lift, Leveling Course)

Aggregate	767 Tons
PG 64-28 Asphalt Binder	47 Tons
TOTAL MIX	814 Tons
Hydrated Lime	8 Tons
TOTAL MIX WITH HYDRATED LIME	822 Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 6.1 ton applied 27.0 feet wide (Rate = 0.09 gallon per square yard), prior to application of 1" lift of Class Q2 Hot Mixed Asphalt Concrete.

SECTION 2 (per mile)

Station 168+01.02 (3rd) to Station 79+25.00 (3rd)
 Station 67+15.00 (3rd) to Station 2+00.00 (4th)
 (Thru Equation)

Alternative A

Class Q2 Hot Mixed Asphalt Concrete (1.5" Lift, Wearing Course)

Aggregate	1,687 Tons
PG 64-28 Asphalt Binder	104 Tons
TOTAL MIX	1,791 Tons
Hydrated Lime	18 Tons
TOTAL MIX WITH HYDRATED LIME	1,809 Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 5.8 ton applied 39 feet wide (Rate = 0.06 gallon per square yard), prior to application of 1.5" lift of Class Q2 Hot Mixed Asphalt Concrete.

Flush Seal

Provide SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 4.7 ton applied 37.4 feet wide (Rate = 0.05 gallon per square yard).

Provide Sand for Flush Seal at the rate of 52 ton applied 22 feet wide for (Rate = 8 pounds per square yard).

RATES OF MATERIALS

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0065(16)164	18A	61

Revised by JJR on 2/25/2016

SECTION 1 (per mile)

Station 0+20.00 (1st) to Station 3+75.81 (1st)
 Station 10+48.56 (1st) to Station 555+00.00 (2nd)
 (Thru Equation)
 Station 2+00.00 (4th) to Station 437+87.00 (6th)
 (Thru Equation)
 Station 442+00.20 (6th) to Station 595+00.00 (6th)
 (Thru Equation)

Alternative B

Class Q2 Hot Mixed Asphalt Concrete (1" Lift, Leveling Course)

Aggregate	794 Tons
PG 64-28 Asphalt Binder	42 Tons
TOTAL MIX	836 Tons
Hydrated Lime	8 Tons
TOTAL MIX WITH HYDRATED LIME	844 Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 6.1 ton applied 27.0 feet wide (Rate = 0.09 gallon per square yard), prior to application of 1" lift of Class Q2 Hot Mixed Asphalt Concrete.

SECTION 1 (per mile)

Station 0+20.00 (1st) to Station 3+75.81 (1st)
 Station 10+48.56 (1st) to Station 555+00.00 (2nd)
 (Thru Equation)
 Station 2+00.00 (4th) to Station 437+87.00 (6th)
 (Thru Equation)
 Station 442+00.20 (6th) to Station 595+00.00 (6th)
 (Thru Equation)

Alternative B

Class Q2 Hot Mixed Asphalt Concrete (1.5" Lift, Wearing Course)

Aggregate	1,716 Tons
PG 64-28 Asphalt Binder	90 Tons
TOTAL MIX	1,806 Tons
Hydrated Lime	18 Tons
TOTAL MIX WITH HYDRATED LIME	1,824 Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 5.8 ton applied 39 feet wide (Rate = 0.06 gallon per square yard), prior to application of 1.5" lift of Class Q2 Hot Mixed Asphalt Concrete.

Flush Seal

Provide SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 4.5 ton applied 36 feet wide (Rate = 0.05 gallon per square yard).

Provide Sand for Flush Seal at the rate of 52 ton applied 22 feet wide for (Rate = 8 pounds per square yard).

SECTION 2 (per mile)

Station 168+01.02 (3rd) to Station 79+25.00 (3rd)
 Station 67+15.00 (3rd) to Station 2+00.00 (4th)
 (Thru Equation)

Cold Milling Asphalt Concrete is computed at 21,902 Square Yards, applied 37.3 feet wide.

Alternative B

Class Q2 Hot Mixed Asphalt Concrete (1" Lift, Leveling Course)

Aggregate	794 Tons
PG 64-28 Asphalt Binder	42 Tons
TOTAL MIX	836 Tons
Hydrated Lime	8 Tons
TOTAL MIX WITH HYDRATED LIME	844 Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 6.1 ton applied 27.0 feet wide (Rate = 0.09 gallon per square yard), prior to application of 1" lift of Class Q2 Hot Mixed Asphalt Concrete.

SECTION 2 (per mile)

Station 168+01.02 (3rd) to Station 79+25.00 (3rd)
 Station 67+15.00 (3rd) to Station 2+00.00 (4th)
 (Thru Equation)

Alternative B

Class Q2 Hot Mixed Asphalt Concrete (1.5" Lift, Wearing Course)

Aggregate	1,747 Tons
PG 64-28 Asphalt Binder	92 Tons
TOTAL MIX	1,839 Tons
Hydrated Lime	18 Tons
TOTAL MIX WITH HYDRATED LIME	1,857 Tons

The exact proportions of these materials will be determined on construction.

Provide SS-1h or CSS-1h Asphalt for Tack at the rate of 5.8 ton applied 39 feet wide (Rate = 0.06 gallon per square yard), prior to application of 1.5" lift of Class Q2 Hot Mixed Asphalt Concrete.

Flush Seal

Provide SS-1h or CSS-1h Asphalt for Flush Seal at the rate of 4.7 ton applied 37.4 feet wide (Rate = 0.05 gallon per square yard).

Provide Sand for Flush Seal at the rate of 52 ton applied 22 feet wide for (Rate = 8 pounds per square yard).

TABLE OF PROJECT STATIONING AND MATERIAL QUANTITIES

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0065(16)164	19	61

PROJECT STATIONING

Revised by JJR on 1/11/2016
Revised by JJR on 1/14/2016
Revised by JJR on 2/25/2016

SECTION	STATION	TO	STATION	DESCRIPTION	RESURFACING LENGTHS	EXCEPTIONS: STRUCTURE LENGTHS	GROSS PROJECT LENGTHS
	Begin Project	0+00.00 (1st)	to 0+20.00 (1st)	SD 65 ~ Rural 2 Lane	-	-	20.00'
1	0+20.00 (1st)	to 3+75.81 (1st)		SD 65 ~ Rural 2 Lane	355.81'	-	355.81'
Approach Pavement	3+75.81 (1st)	to 6+95.81 (1st)		Approach Pavement Reconstruction Limits	320.00'	-	320.00'
Structure	6+95.81 (1st)	to 7+72.56 (1st)		Structure No. 69-220-289	-	76.75'	76.75'
Approach Pavement	7+72.56 (1st)	to 10+92.56 (1st)		Approach Pavement Reconstruction Limits	320.00'	-	320.00'
1	10+92.56 (1st)	to 505+66.50 (1st)		SD 65 ~ Rural 2 Lane	49473.94'	-	49473.94'
Equation	505+66.50 (1st) Bk	= 497+59.56 (2nd) Ah		-	-	-	-
1	497+59.56 (2nd)	to 555+00.00 (2nd)		SD 65 ~ Rural 2 Lane	5740.44'	-	5740.44'
Equation	555+00.00 (2nd) Bk	= 168+01.02 (3rd) Ah		-	-	-	-
2	168+01.02 (3rd)	to 79+63.00 (3rd)		SD 65 ~ Rural 2 Lane	8838.02'	-	8838.02'
Approach Pavement	79+63.00 (3rd)	to 75+05.00 (3rd)		Approach Pavement Reconstruction Limits	458.00'	-	458.00'
Structure	75+05.00 (3rd)	to 71+35.00 (3rd)		Structure 69-249-183	-	370.00'	370.00'
Approach Pavement	71+35.00 (3rd)	to 66+77.00 (3rd)		Approach Pavement Reconstruction Limits	458.00'	-	458.00'
2	66+77.00 (3rd)	to 6+86.50 (3rd)		SD 65 ~ Rural 2 Lane	5990.50'	-	5990.50'
Equation	6+86.50 (3rd) Bk	= 0+00.00 (4th) Ah		-	-	-	-
2	0+00.00 (4th)	to 2+00.00 (4th)		SD 65 ~ Rural 2 Lane	200.00'	-	200.00'
1	2+00.00 (4th)	to 67+10.52 (4th)		SD 65 ~ Rural 2 Lane	6510.52'	-	6510.52'
Equation	67+10.52 (4th) Bk	= 67+71.92 (5th) Ah		-	61.40'	-	-
1	67+71.92 (5th)	to 106+49.85 (5th)		SD 65 ~ Rural 2 Lane	3877.93'	-	3877.93'
Equation	106+49.85 (5th) Bk	= 105+81.28 (6th) Ah		-	-	-	-
1	105+81.28 (6th)	to 437+87.00 (6th)		SD 65 ~ Rural 2 Lane	33205.72'	-	33205.72'
Approach Pavement	437+87.00 (6th)	to 441+07.00 (6th)		Approach Pavement Reconstruction Limits	320.00'	-	320.00'
Structure	441+07.00 (6th)	to 442+00.02 (6th)		Structure No. 69-260-092	-	93.02'	93.02'
Approach Pavement	442+00.02 (6th)	to 445+20.02 (6th)		Approach Pavement Reconstruction Limits	320.00'	-	320.00'
1	445+20.02 (6th)	to 595+00.00 (6th)		SD 65 ~ Rural 2 Lane	14979.98'	-	14979.98'
	595+00.00 (6th)	to 603+10.11 (6th)	End Project	SD 65 ~ Rural 2 Lane	810.11'	-	810.11'
TOTALS =					132240.37'	539.77'	132738.74'
					25.046 Miles	0.102 Miles	25.148 Miles

MATERIAL QUANTITIES

Description	(For Info Only) Water For Granular Material (MGal)	Cold Milling Asphalt Concrete (SqYd)	Undercutting (CuYd)	Contractor Furnished Borrow Excavation (CuYd)	Salvage & Stockpile Asphalt Mix & Granular Base Material (Ton)	Base Course, Salvaged (Ton)	Base Course (Ton)	ALT A	ALT B	ALT A	ALT B	ALT A	ALT B	SS-1h or CSS-1h Asphalt For Tack (Ton)	SS-1h or CSS-1h Asphalt For Flush Seal (Ton)	Sand For Flush Seal (Ton)
								Class Q2 Hot Mixed Asphalt Concrete (Ton)	Class Q2 Hot Mixed Asphalt Concrete (Ton)	PG 64-28 Asphalt Binder (Ton)	PG 64-28 Asphalt Binder (Ton)	Hydrated Lime (Ton)	Hydrated Lime (Ton)			
Section 1	-	-	-	-	-	-	-	56,163.6	57,676.8	3,221.0	2,853.6	562.0	562.0	257.3	97.3	1,124.1
Section 2	-	61,128	-	-	-	-	-	7,469.7	7,668.5	428.7	380.4	73.8	73.8	33.6	13.4	148.8
Table of Additional Quantities Totals =	85.8	9,151	5,602	1,183	2,457.0	6,510.2	2,429.1	5,937.9	6,030.9	344.1	301.4	58.9	60.1	10.0	2.1	27.7
TOTALS =	85.8	70,279	5,602	1,183	2,457.0	6,510.2	2,429.1	69,571.2	71,376.2	3,993.8	3,535.4	694.7	695.9	300.9	112.8	1,300.6

TABLE OF ADDITIONAL QUANTITIES

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0065(16)164	20	61

Revised by JJR on 1/11/2016
 Revised by JJR on 1/14/2016
 Revised by JJR on 2/25/2016

Description	(For Info Only) Water For Granular Material (MGal)	Cold Milling Asphalt Concrete (SqYd)	Unclassified Excavation, Digouts (CuYd)	Undercutting (CuYd)	Contractor Finished Borrow Excavation (CuYd)	Salvage & Stockpile Asphalt Mix & Granular Base Material (Ton)	Base Course, Salvaged (Ton)	Base Course (Ton)	Granular Material, Furnish (Ton)	Blend, Haul, & Stockpile Granular Material (Ton)	ALT A Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALT B Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALT A PG 64-28 Asphalt Binder (Ton)	ALT B PG 64-28 Asphalt Binder (Ton)	ALT A Hydrated Lime (Ton)	ALT B Hydrated Lime (Ton)	SS-1h or CSS-1h Asphalt For Tack (Ton)	SS-1h or CSS-1h Asphalt For Flush Seal (Ton)	Sand For Flush Seal (Ton)
Asphalt to End of ROW 11 Intersecting Road Entrances Sta. 54+70 Rt, Sta. 107+44 Rt & Lt, Sta. 160+17 Rt, Sta. 213+10 Lt, Sta. 413+40 Rt, Sta. 52+08 (c) Lt, Sta. 82+06 (e) Rt, Sta. 230+64 (f) Rt, Sta. 336+21 (f) Lt, Sta. 380+07 (f) Lt	0.1	-	-	-	-	-	-	-	-	-	298.4	306.5	17.1	15.2	3.0	3.0	0.1	-	-
Asphalt to End of Radius/Base Course, Salvaged Asphalt Mix to ROW 9 Intersecting Road Entrances Sta. 54+70 Lt, Sta. 160+18 Lt, Sta. 213+10 Rt, Sta. 359+98 Lt, Sta. 487+64 Rt, Sta. 161+98 (c) Lt, Sta. 19+07 (d) Rt, Sta. 231+90 (f) Lt, Sta. 495+68 (f) Rt	0.6	-	-	-	-	-	60.5	-	-	-	153.1	157.3	8.8	7.8	1.5	1.6	0.3	-	-
Farm & Field Entrances 107 Farm & Field Entrances	15.4	-	-	-	-	-	1605.0	-	-	-	-	-	-	-	-	-	-	-	-
*Reconstruct Approach at Structure 69-220-289 Begin Bridge - Sta. 3+75.81 (1st) to Sta. 6+95.81 (1st) End Bridge - Sta. 7+72.56 (1st) to Sta. 10+92.56 (1st)	0.0 3.4 3.4	- 926 953	- - -	- - -	- - -	141.3 - 141.1	- - -	353.5 - 357.2	74.4 - 66.3	148.8 - 132.6	307.8 - 300.1	316.1 - 308.2	17.9 - 17.4	15.8 - 15.4	3.0 - 3.0	3.1 - 3.1	0.3 - 0.3	0.2 - 0.2	2.9 - 2.9
*Reconstruct Approach at Structure 69-249-183 Begin Bridge - Sta. 79+63 (3rd) to Sta. 75+05 (3rd) End Bridge - Sta. 71+35 (3rd) to Sta. 66+77 (3rd)	0.0 4.5 5.7	- 1619 1539	- - -	- - -	- - 417	245.5 - 226.5	- - -	473.0 - 595.5	95.3 - 81.0	190.6 - 162	490.2 - 476.2	503.5 - 489.0	28.4 - 27.6	25.2 - 24.5	4.9 - 4.7	5.0 - 4.8	0.4 - 0.4	0.3 - 0.3	4.1 - 4.1
*Reconstruct Approach at Structure 69-260-092 Begin Bridge - Sta. 437+87 (6th) to Sta. 441+07 (6th) End Bridge - Sta. 442+00.02 (6th) to Sta. 445+20.02 (6th)	0.0 3.0 3.2	- 922 916	- - -	- - -	- - -	140.9 - 142.4	- - -	314.2 - 335.7	73.8 - 80.9	147.6 - 161.8	293.9 - 271.7	301.8 - 279.0	17.0 - 15.8	15.1 - 14.0	2.9 - 2.7	3.0 - 2.8	0.3 - 0.3	0.2 - 0.2	2.9 - 2.9
Fault Heave Repairs (2.5" Lift) MRM 165.00 + 0.200 MRM 167.00 + 0.200 MRM 172.00 +0.900 MRM 173.00 + 0.300	2.8 2.8 2.8 14.0	- - - -	- - - -	700 700 700 3502	140 140 140 346	177.3 177.3 177.3 887.4	291.3 291.3 291.3 1456.8	- - - -	- - - -	- - - -	105.2 105.2 105.2 526.3	108.1 108.1 108.1 540.6	6.1 6.1 6.1 30.5	5.4 5.4 5.4 27.0	1.0 1.0 1.0 5.2	1.1 1.1 1.1 5.4	0.1 0.1 0.1 0.5	0.1 0.1 0.1 0.4	1.0 1.0 1.0 4.9
Blend, Haul, & Stockpile Cold Milled Asphalt	-	-	-	-	-	-	-	-	3,152.0	6,304.0	-	-	-	-	-	-	-	-	-
Spot Leveling, Strengthening, & Repair	-	-	-	-	-	-	-	-	-	-	2504.6	2504.6	145.3	125.2	25.0	25.0	7.0	-	-
Cold Milling Transitions at Begin/End Project	-	2276	-	-	-	-	-	-	149.4	298.8	-	-	-	-	-	-	-	-	-
Backfill for Digouts	24.1	-	1257	-	-	-	2514	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS =	85.8	9,151	1,257	5,602	1,183	2,457.0	6,510.2	2,429.1	3,773.1	7,546.2	5,937.9	6,030.9	344.1	301.4	58.9	60.1	10.0	2.1	27.7

* Note -- A portion of Class Q2 Hot Mixed Asphalt Concrete shall be to "Specified Density Compaction".
 Quantities for Base Course, Salvage to be placed on approaches and farm & field entrances that are to only have asphalt pads were calculated using 15 tons per entrance.
 Tonnage shown in the tables above for Class Q2 Hot Mixed Asphalt Concrete is based on a compacted depth as detailed in the plans.

SUMMARY OF ASPHALT CONCRETE

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	P 0065(16)164	21	61

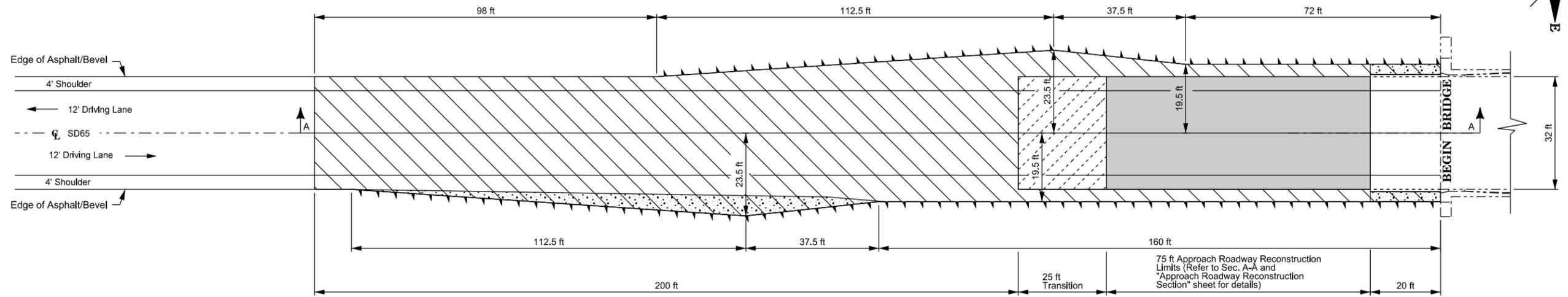
Revised by JJR on 1/11/2016
Revised by JJR on 2/25/2016

Location	<u>ALT A</u> Class Q2 Hot Mixed Asphalt Concrete With Specified Density Compaction (Ton)	<u>ALT A</u> Class Q2 Hot Mixed Asphalt Concrete Without Specified Density Compaction (Ton)	<u>ALT B</u> Class Q2 Hot Mixed Asphalt Concrete With Specified Density Compaction (Ton)	<u>ALT B</u> Class Q2 Hot Mixed Asphalt Concrete Without Specified Density Compaction (Ton)
Section 1 (1" Leveling Lift) 24' Finished Roadway Width w/ 1' Bevel	-	17,770.0	-	18,245.6
Section 1 (1.5" Lift) 24' Finished Roadway Width	25,593.4	-	26,285.1	-
4' Finished Shoulder w/ 2' Bevel	-	12,800.2	-	13,146.1
Section 1 Totals =	25,593.4	30,570.2	26,285.1	31,391.7
Section 2 (1" Leveling Lift) 24' Finished Roadway Width w/ 1' Bevel	-	2,294.2	-	2,355.6
Section 2 (1.5" Lift) 24' Finished Roadway Width	3,397.9	-	3,478.3	-
4' Finished Shoulder w/ 2' Bevel	-	1,777.6	-	1,834.6
Section 2 Totals =	3,397.9	4,071.8	3,478.3	4,190.2
Table of Additional Quantities Totals =	754.8	5,183.1	783.0	5,247.9
TOTALS =	29,746.1	39,825.1	30,546.4	40,829.8

APPROACH PAVEMENT RECONSTRUCTION/SURFACING

Structure # 69-220-289 on SD 65 at MRM 164.20,
0.2 miles north of US 212 over Bear Creek

Revised by JJR on 02/25/2016



ASPHALT CONCRETE TRANSITION (2.5" to 6" Depth)

ASPHALT CONCRETE (6" Depth)
(1st & 2nd Lift - 3.5" Total)
(3rd Lift - 1" Leveling Lift)
(4th Lift - 1.5" Top Lift)
(Note: Lift 3 & 4 shall be done with Mainline Paving)

BASE COURSE (12" Depth)

ASPHALT CONCRETE (2.5" Depth)
(Note: These lifts shall be accomplished with the mainline paving)

RECONSTRUCTED INSLOPE BREAK POINT LIMIT
The Contractor shall maintain a 4:1 inslope from the edge of asphalt to the clear zone (30'). Beyond the clear zone, the Contractor shall maintain a 3:1 inslope until the new inslope ties into the existing inslope.

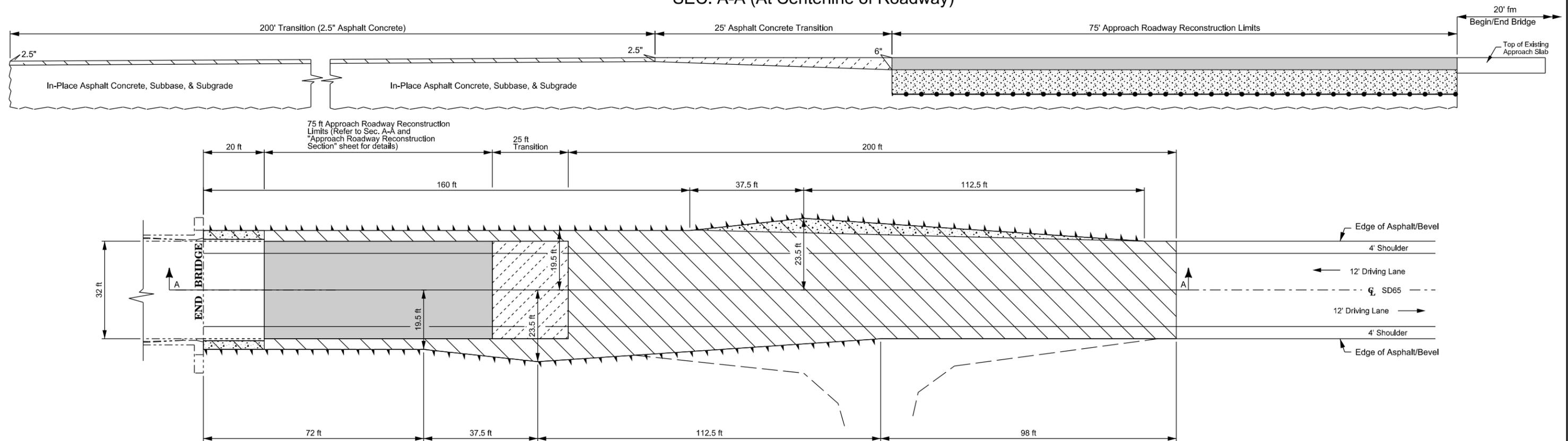
BASE COURSE (6" Depth) on top of the New Embankment material
ASPHALT CONCRETE (2" Depth) on top of Base Course

REINFORCEMENT FABRIC (MSE)

ESTIMATED QUANTITIES

LOCATION	ALT A Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALT B Class Q2 Hot Mixed Asphalt Concrete (Ton)	Base Course (Ton)	Reinforcement Fabric (MSE) (SqYd)
BEGIN BRIDGE	307.8	316.1	353.5	307
END BRIDGE	300.1	308.2	357.2	307

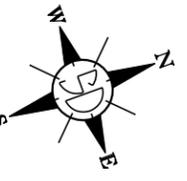
SEC. A-A (At Centerline of Roadway)



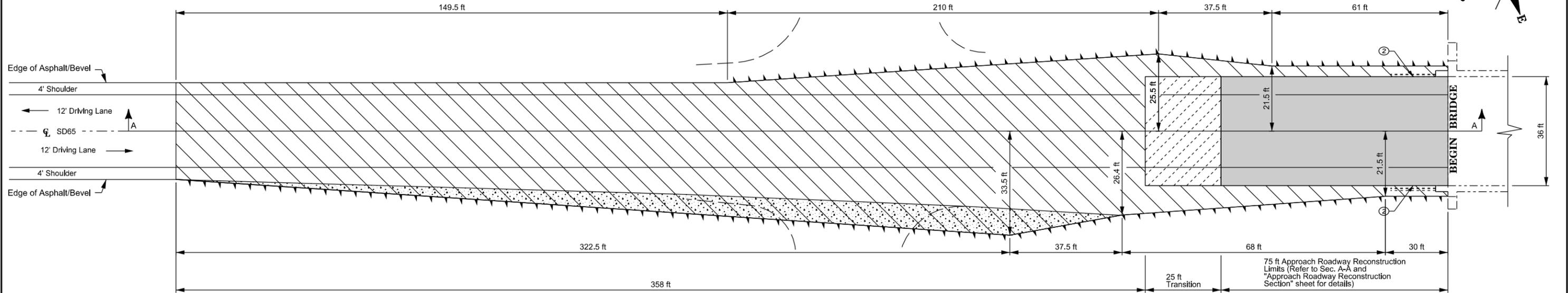
APPROACH PAVEMENT RECONSTRUCTION/SURFACING

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	P 0065 (16) 164	31	61

Revised by JJR on 01/14/2016
Revised by JJR on 02/22/2016



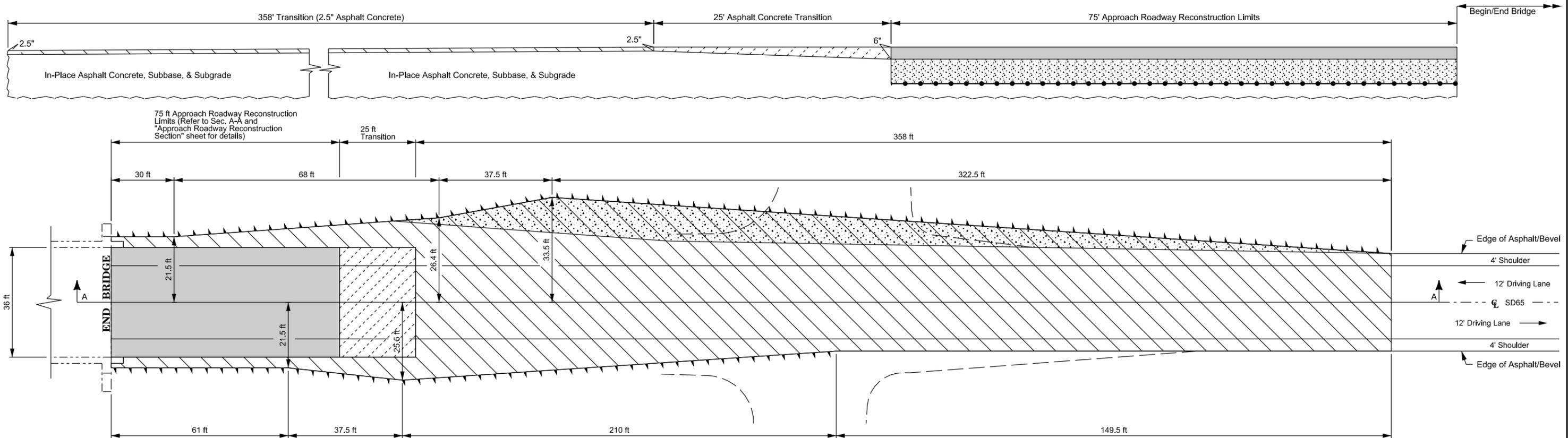
Structure # 69-249-183 on SD 65 at MRM 176.84,
12.8 miles south of SD 20 over Moreau River



ESTIMATED QUANTITIES					
LOCATION	ALT A Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALT B Class Q2 Hot Mixed Asphalt Concrete (Ton)	Base Course (Ton)	Reinforcement Fabric (MSE) (SqYd)	TYPE D49 CONCRETE CURB & GUTTER (Ft)
BEGIN BRIDGE	490.2	503.5	473.0	345	30
END BRIDGE	476.2	489.0	595.5	345	0

- ASPHALT CONCRETE TRANSITION (2.5" to 6" Depth)
- ASPHALT CONCRETE (6" Depth) (1st & 2nd Lift - 3.5" Total) (3rd Lift - 1" Leveling Lift) (4th Lift - 1.5" Top Lift) (Note: Lift 3 & 4 shall be done with Mainline Paving)
- BASE COURSE (12" Depth)
- ASPHALT CONCRETE (2.5" Depth) (Note: These lifts shall be accomplished with the mainline paving)
- BASE COURSE (6" Depth) on top of the New Embankment material ASPHALT CONCRETE (2" Depth) on top of Base Course
- REINFORCEMENT FABRIC (MSE)
- RECONSTRUCTED INSLOPE BREAK POINT LIMIT
The Contractor shall maintain a 4:1 inslope from the edge of asphalt to the clear zone (30'). Beyond the clear zone, the Contractor shall maintain a 3:1 inslope until the new inslope ties into the existing inslope.

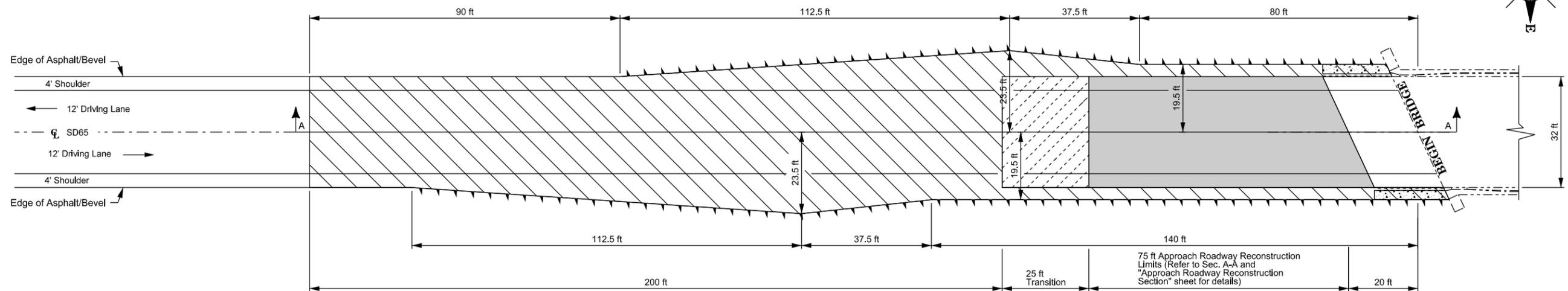
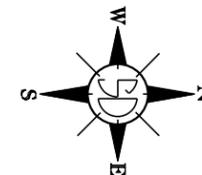
SEC. A-A (At Centerline of Roadway)



APPROACH PAVEMENT RECONSTRUCTION/SURFACING

Structure # 69-260-092 on SD 65 at MRM 186.43,
3.1 miles south of SD 20 over Red Earth Creek

Revised by JJR on 02/22/2016



ESTIMATED QUANTITIES				
LOCATION	ALT A Class Q2 Hot Mixed Asphalt Concrete (Ton)	ALT B Class Q2 Hot Mixed Asphalt Concrete (Ton)	Base Course (Ton)	Reinforcement Fabric (MSE) (SqYd)
BEGIN BRIDGE	293.9	301.8	314.2	307
END BRIDGE	271.7	279.0	335.7	307

ASPHALT CONCRETE TRANSITION (2.5" to 6" Depth)

ASPHALT CONCRETE (6" Depth)
(1st & 2nd Lift - 3.5" Total)
(3rd Lift - 1" Leveling Lift)
(4th Lift - 1.5" Top Lift)
(Note: Lift 3 & 4 shall be done with Mainline Paving)

BASE COURSE (12" Depth)

ASPHALT CONCRETE (2.5" Depth)
(Note: These lifts shall be accomplished with the mainline paving)

REINFORCEMENT FABRIC (MSE)

BASE COURSE (6" Depth) on top of the New Embankment material
ASPHALT CONCRETE (2" Depth) on top of Base Course

RECONSTRUCTED INSLOPE BREAK POINT LIMIT
The Contractor shall maintain a 4:1 inslope from the edge of asphalt to the clear zone (30'). Beyond the clear zone, the Contractor shall maintain a 3:1 inslope until the new inslope ties into the existing inslope.

SEC. A-A (At Centerline of Roadway)

