



# North Dakota Department of Transportation

Grant Levi, P.E.  
Director

Jack Dalrymple  
Governor

November 4, 2014

## ADDENDUM 3 – JOB 17

TO: All prospective bidders on project CNOA-SC-5018(073), Job No. 17 scheduled for the November 14, 2014 bid opening.

The following plan and proposal revisions shall be made:

### Plan Revisions:

See attached letter dated Nov 3, 2014 from Jon Markusen, P.E. – KLJ Engineering for an explanation.

### Request For Proposal Revisions:

**Remove and replace page 7, 8, and 11 of 14 of the Proposal Form pages located at the beginning of the Request For Proposal, with the enclosed page revised 11/4/14.**

Page 7 of 14:

Item 216 0100 WATER, quantity has increased from 1,113 to 1,123 MGAL.

Page 8 of 14:

Item 302 0120 AGGREGATE BASE COURSE CL 5, quantity has increased from 10,138 to 10,658 TON.

Page 11 of 14:

Item 764 0131 W-BEAM GUARDRAIL, quantity has increased from 257.4 to 282.8 LF.

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 online 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.

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

◇ November 3, 2014

ADDENDUM 3 JOB 17

TO: All prospective bidders and suppliers on Project CNOA-SC-5018(073) scheduled for the November 14, 2014 bid opening.

Please incorporate the following revisions into the plans for the referenced project:

Plan Revisions:

**Remove and replace sheets 6-2, 8-1, 8-3, 10-1, 11-1, 30-1, 30-3, 51-1, 130-4 and 130-5 with the enclosed sheets.**

- Sheet No. 6-2: Note 411-P01 has been updated.
- Sheet No. 8-1: "AGGREGATE BASE COURSE CL 5" has been updated to reflect shoulder gravel in the reconstruction and pipe replacement areas. "WATER" has been updated to reflect quantity increase of "AGGREGATE BASE COURSE CL 5".
- Sheet No. 8-3: "W-BEAM GUARDRAIL" has been updated to reflect the Thrie Beam Transition length.
- Sheet No. 10-1: Quantity per mile for "AGGREGATE BASE COURSE CL 5" for Typical B has been updated from 8,556 Ton/Mile to 9,604 Ton/Mile.
- Sheet No. 11-1: "AGGREGATE BASE COURSE CL 5" has been updated in the Pipe Patching Quantities Table due to adding quantity for shoulder gravel.
- Sheet No. 30-1: Shoulder detail for milling and gravel has been updated on Typical Sections A and B.
- Sheet No. 30-3: Millings installation has been removed from the typical section.
- Sheet No. 51-1: Revised pipe length for culvert at Station 63+69 (Station 63+32 to Station 64+05) and added pipe backfill details to culverts at Stations 63+69 and 64+42.
- Sheet No. 130-4: The Thrie Beam Transition has been lengthened from 39.4' to 45.7' and the W-BEAM GUARDRAIL quantity has been changed from 128.7 LF to 141.4 LF
- Sheet No. 130-5: The Thrie Beam Transition has been lengthened from 39.4' to 45.7' and the W-BEAM GUARDRAIL quantity has been changed from 128.7 LF to 141.4 LF



Proposal Revisions:

Remove and replace pages 7-8 and 11 of the Proposal located at the beginning of the Bidders Proposal with the enclosed sheets.

- |               |  |
|---------------|--|
| Page 7 of 14  | The following bid item has been updated:<br>216 0100 WATER = 1,123 M GAL                     |
| Page 8 of 14  | The following bid item has been updated:<br>302 0120 AGGREGATE BASE COURSE CL 5 = 10,658 TON |
| Page 11 of 14 | The following bid item has been updated:<br>764 0131 W-BEAM GUARDRAIL = 282.8 LF             |

Jon E. Markusen /s/  
Jon E. Markusen, PE

Enclosures

BID ITEMS

Project: CNOA-SC-5018(073) (PCN-20642)

**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
001	103	0100	CONTRACT BOND	L SUM	1.				
002	107	0100	RAILWAY PROTECTION INSURANCE	L SUM	1.				
003	201	0352	REMOVAL OF TREES & BRUSH	L SUM	1.				
004	202	0102	REMOVAL OF BOX CULVERT	EA	1.				
005	202	0137	REMOVAL OF PAVEMENT	SY	7,148.				
006	202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	764.				
007	203	0105	COMMON EXCAVATION-TYPE B	L SUM	1.				
008	203	0109	TOPSOIL	CY	33,825.				
009	203	0113	COMMON EXCAVATION-WASTE	CY	478.				
010	203	0121	TOPSOIL-WETLAND	CY	315.				
011	203	0140	BORROW-EXCAVATION	CY	62,272.				
012	216	0100	WATER	M GAL	1,123.				
013	230	0300	SUBGRADE PREPARATION-TYPE A	STA	21.350				
014	251	0200	SEEDING CLASS II	ACRE	65.310				
015	251	1000	WETLAND SEED	ACRE	.390				
016	253	0101	STRAW MULCH	ACRE	65.700				

BID ITEMS

Project: CNOA-SC-5018(073) (PCN-20642)

**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
017	255	0202	TRM TYPE 2	SY	4,378.				
018	256	0100	RIPRAP GRADE I	CY	144.				
019	256	0600	RIPRAP-SALVAGED	CY	300.				
020	260	0200	SILT FENCE SUPPORTED	LF	1,000.				
021	260	0201	REMOVE SILT FENCE SUPPORTED	LF	1,000.				
022	261	0112	FIBER ROLLS 12IN	LF	31,068.				
023	261	0113	REMOVE FIBER ROLLS 12IN	LF	8,325.				
024	262	0100	FLOTATION SILT CURTAIN	LF	1,300.				
025	262	0101	REMOVE FLOTATION SILT CURTAIN	LF	1,300.				
026	302	0120	AGGREGATE BASE COURSE CL 5	TON	10,658.				
027	401	0050	TACK COAT	GAL	20,658.				
028	401	0060	PRIME COAT	GAL	2,015.				
029	401	0160	BLOTTER MATERIAL CL 44	TON	61.				
030	411	0105	MILLING PAVEMENT SURFACE	SY	89,647.				
031	430	1000	CORED SAMPLE	EA	222.				
032	624	3002	DOUBLE BOX BEAM RAIL RETROFIT - E-RAIL	LF	130.300				

BID ITEMS

Project: CNOA-SC-5018(073) (PCN-20642)

**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
065	714	5825	END SECT CORR STEEL .079IN 30IN	EA	6.				
066	714	5830	END SECT CORR STEEL .079IN 36IN	EA	4.				
067	714	5835	END SECT CORR STEEL .109IN 42IN	EA	6.				
068	754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	133.400				
069	754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	122.900				
070	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	575.200				
071	754	0214	GALV STEEL POSTS-W-SHAPE POSTS(TWO OR MORE)	LF	111.300				
072	754	0534	PANEL FOR SIGNS-TYPE IV REFLECTIVE SHEETING	SF	64.				
073	754	0805	OBJECT MARKERS - CULVERTS	EA	18.				
074	760	0009	RUMBLE STRIPS - INTERSECTION	EA	1.				
075	762	0103	PVMT MK PAINTED-MESSAGE	SF	156.500				
076	762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	57,495.				
077	762	1104	PVMT MK PAINTED 4IN LINE	LF	90,685.				
078	764	0131	W-BEAM GUARDRAIL	LF	282.800				
079	764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	4.				
080	764	0151	REMOVE W-BEAM GUARDRAIL & POSTS	LF	121.900				

## PLAN NOTES

Revised 11/03/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CNOA-SC-5018(073)	6	2

**256-P01 RIPRAP:** Riprap shall be clean and free of any contaminants before it is placed. All costs for labor, materials, and equipment to locate, load, haul and place the riprap shall be included in the price bid for "RIPRAP GRADE I". The Contractor shall place riprap around the proposed pipe conduit in such a manner that the pipe is not damaged and the flow is not obstructed. All costs to place riprap around the pipe shall be included in the price bid for "RIPRAP GRADE I".

The Contractor shall remove and salvage all existing riprap in the ditch between Stations 335+00 and 360+00 LT and 340+00 to 345+00 RT. If the salvaged riprap meets the gradation requirements for Grade I in Section 256.03 C.1 of the Standard Specifications, it may be used on the project. All costs associated with removing, salvaging, hauling, and placing the riprap around the designated pipe on the project shall be included in the price bid for "RIPRAP-SALVAGED". The salvaged riprap will not be paid for a second time under the "RIPRAP GRADE I" bid item.

Any riprap removed and not used on the project shall become the property of the County. The Contractor shall stockpile the riprap at the County's pit located adjacent to the project, approximately 2 miles east of ND Highway 32 at Station 97+35 RT. All costs associated with removing, hauling and stockpiling the riprap shall be included in the price bid for "RIPRAP-SALVAGED".

**401-P01 PRIME COAT:** The prime coat may be eliminated at the discretion of the Engineer in the field based on site conditions and the Contractor's operation.

**411-P01 MILLING PAVEMENT SURFACE:** The Contractor shall mill the top 1 inch of existing roadway for use in the shoulders (see Sheet 1 Section 30). In addition, the hot bituminous pavement overlay shall require milled transitions as shown on Sheet 2 Section 20.

Payment for milling shall be by the square yard based on a top width of 24 feet. Sloughs or areas wider than 24 feet, if present, will not be measured for payment but shall be incidental to the bid item "MILLING PAVEMENT SURFACE". The milled transitions will not be quantified separately but shall be included as part of the entire roadway milling.

The milled material shall be produced in such a way that the maximum particle size is less than or equal to 2 inches. The Contractor may use whatever means/methods of their choosing to remove any oversized milled material (greater than 2 inches).

The Contractor shall ensure the shoulders are constructed with a traversable cross-section and compacted prior to releasing the roadway to the traveling public at the end of each work day. The final leveling, compacting, shaping and finishing of the shoulders shall be completed after final rolling of the adjacent paved lane(s). All costs for labor and equipment to mill, place, spread, and compact the milled material shall be included in the price bid for "MILLING PAVEMENT SURFACE".

**411-P02 TEMPORARY ASPHALT WEDGES:** The Contractor shall place temporary asphalt or milled material wedges at the milled taper locations to allow for the smooth passage of vehicles. All costs for labor, materials, and equipment to install and remove the wedges shall be included in the unit price bid for "MILLING PAVEMENT SURFACE".

**430-P01 SUPERPAVE FAA 43:** Pavement surface areas showing signs of failure shall be patched as per the Patching Detail (see Sheet 2 Section 20). Existing irregularities in the roadway surface shall be cleaned, tacked, filled with hot bituminous pavement and compacted in a separate operation. The patching and leveling course shall be compacted with a minimum of one self-propelled pneumatic roller which shall meet NDDOT Standard Specification 151.01 A.3. All hot bituminous mix and asphalt cement required for the patching and leveling course shall be measured and paid for by the ton of "SUPERPAVE FAA 43" and "PG 58-28 ASPHALT CEMENT". This shall be considered full payment for performing this work.

The location and actual quantity of Superpave FAA 43 used for patching and leveling will be determined in the field by the Engineer. The unit price bid will govern regardless of quantity used and an increase or decrease in plan quantity will not be accepted as a reason to negotiate any pay adjustment.

On mainline, the Superpave FAA 43 shall be placed in three lifts as shown in the plans. Only one lift shall be placed per day. If the Contractor chooses to pave both lanes in the same day, the Contractor shall exercise extreme care not to mark or tear the new driving surface and shall keep all loaded trucks off the newly placed hot bituminous pavement. Any damage to the newly paved surface shall be repaired at the Contractor's expense.

**430-P02 RECYCLED ASPHALT PAVEMENT:** The Contractor has the option to bid the project utilizing RAP-Superpave FAA 43 (Alternate B). Recycled material will not be available on the project and shall be supplied by the Contractor.

**704-P01 TRAFFIC CONTROL DURING WORKING AND NON-WORKING HOURS:** The Contractor shall maintain one lane of traffic at the posted speed limit at all times during working hours (except as noted below in 704-P03). During non-working hours, the Contractor shall leave the work area free of all hazards. The Contractor shall open the roadway to two-way traffic during non-working hours. A minimum 24-foot roadway width will be required to maintain two lanes of traffic.

During paving and shouldering operations, flagging and pilot car shall be used to maintain traffic during working hours. The traffic control devices for flagging shall be removed at the end of each day and reinstalled when work commences.

If a hazard exists after working hours, the Contractor shall leave the required traffic control devices in place and provide flag persons at his own expense until the hazard has been eliminated. Hazards include but are not limited to steep embankment areas, inslopes steeper than 4:1 adjacent to the roadway, or drop-offs.

**704-P02 TRAFFIC CONTROL FOR WIDENING:** As per Standard Drawing D-704-26 Type BB, the Contractor shall place shoulder work signs (W21-5-48) at each end of their shouldering operation. When construction activities will encroach on the driving lane, the Contractor shall provide flaggers and a pilot car as necessary to safely move traffic through the construction zone. Traffic control for shoulder work which does not encroach on the driving lane but leaves a hazardous edge along the shoulder shall consist of shoulder drop-off signs (W8-9a-48) at each end of the hazard and stackable vertical panels shall be installed spaced at two times the posted speed limit along the drop-off. No extra compensation will be allowed for relocation due to progression of the work.

During non-working hours, all equipment shall be removed from the roadway clear zone, and the traffic control devices for shoulder work shall be removed.

During construction operations the Contractor will not be permitted to widen both sides of the roadway simultaneously at any given location.

**704-P03 TRAFFIC CONTROL FOR CENTERLINE PIPE INSTALLATIONS AND RECONSTRUCTION AREAS:** The Contractor shall use the construction signing layout on Section 100 Sheet 2 for replacement of centerline pipe. The Contractor will be allowed to close the roadway for two days at each site for removing and replacing centerline pipe. The Contractor will be allowed to close the roadway for ten days at each of the two reconstruction areas. Traffic control devices have been provided for one site closure. The Contractor will be allowed to work on multiple sites simultaneously if they are located within the same mile. The Contractor shall coordinate his schedule with the Engineer and the County to ensure the least amount of downtime and disruption to traffic.

Pavement ends signs (W8-3-48) have been provided in the plan quantities to be used at each centerline pipe installation and reconstruction location. Once the pipe is installed and the reconstruction areas constructed, the Contractor shall install the pavement ends signs until paving operations are completed.

**704-P04 STACKABLE VERTICAL PANEL:** Stackable vertical panels shall be spaced at two times the posted speed limit on the shoulder where a drop off occurs.

The item "STACKABLE VERTICAL PANEL" shall be measured by the number of each installed. The quantities measured will be paid for at the contract price and shall be full compensation for all labor, equipment, materials, relocation and removal, necessary to complete the installation.

This document was originally issued and sealed by  
Jon E. Markusen  
Registration Number  
PE-5453,  
on 11/03/14 and the original document is stored at the  
Walsh County  
Highway Department.

<b>CNOA-SC-5018(073)</b> <small>WALSH COUNTY, NORTH DAKOTA COUNTY ROAD 15</small>		
	<b>PLAN NOTES</b>	
DRWN. BY ZV	CHKD. BY JM	PROJECT NO. 6313127

Revised 11/03/14

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CNOA-SC-5018(073)	8	1

### ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	COUNTY HIGHWAY 15				
				MAINLINE	PATCHING & LEVELING	GUARDRAIL	DRIVES	TOTAL
103	0100	CONTRACT BOND	L SUM	1.0	-	-	-	1.0
107	0100	RAILWAY PROTECTION INSURANCE	L SUM	1.0	-	-	-	1.0
201	0352	REMOVAL OF TREES & BRUSH	L SUM	1.0	-	-	-	1.0
202	0102	REMOVAL OF BOX CULVERT	EA	1	-	-	-	1
202	0137	REMOVAL OF PAVEMENT	SY	7,148	-	-	-	7,148
202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	764	-	-	-	764
203	0105	COMMON EXCAVATION-TYPE B	L SUM	1.0	-	-	-	1.0
203	0109	TOPSOIL	CY	33,825	-	-	-	33,825
203	0113	COMMON EXCAVATION-WASTE	CY	-	478	-	-	478
203	0121	TOPSOIL-WETLAND	CY	315	-	-	-	315
203	0140	BORROW-EXCAVATION	CY	56,697	-	675	4,900	62,272
216	0100	WATER	M GAL	1,042	12	10	59	1,123
230	0300	SUBGRADE PREPARATION-TYPE A	STA	21.35	-	-	-	21.35
251	0200	SEEDING CLASS II	ACRE	65.31	-	-	-	65.31
251	1000	WETLAND SEED	ACRE	0.39	-	-	-	0.39
253	0101	STRAW MULCH	ACRE	65.70	-	-	-	65.70
255	0202	TRM TYPE 2	SY	4,378	-	-	-	4,378
256	0100	RIPRAP GRADE I	CY	144	-	-	-	144
256	0600	RIPRAP-SALVAGED	CY	300	-	-	-	300
260	0200	SILT FENCE SUPPORTED	LF	1,000	-	-	-	1,000
260	0201	REMOVE SILT FENCE SUPPORTED	LF	1,000	-	-	-	1,000
261	0112	FIBER ROLLS 12IN	LF	31,068	-	-	-	31,068
261	0113	REMOVE FIBER ROLLS 12IN	LF	8,325	-	-	-	8,325
262	0100	FLOTATION SILT CURTAIN	LF	1,300	-	-	-	1,300
262	0101	REMOVE FLOTATION SILT CURTAIN	LF	1,300	-	-	-	1,300
302	0120	AGGREGATE BASE COURSE CL 5	TON	9,426	598	144	490	10,658
401	0050	TACK COAT	GAL	15,204	4,552	-	902	20,658
401	0060	PRIME COAT	GAL	2,015	-	-	-	2,015
401	0160	BLOTTER MATERIAL CL 44	TON	61	-	-	-	61
411	0105	MILLING PAVEMENT SURFACE	SY	89,647	-	-	-	89,647
430	1000	CORED SAMPLE	EA	222	-	-	-	222
624	3002	DOUBLE BOX BEAM RAIL RETROFIT-E-RAIL	LF	-	-	130.3	-	130.3
702	0100	MOBILIZATION	L SUM	1.0	-	-	-	1.0
704	0100	FLAGGING	MHR	2,880	-	-	-	2,880
704	1000	TRAFFIC CONTROL SIGNS	UNIT	2,358	-	-	-	2,358
704	1052	TYPE III BARRICADE	EA	10	-	-	-	10

<b>CNOA-SC-5018(073)</b> WALSH COUNTY, NORTH DAKOTA COUNTY ROAD 15		
	<b>ESTIMATE OF QUANTITIES</b>	
	DRAWN BY: KS	CHECKED BY: JL

Revised 11/03/14

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	CNOA-SC-5018(073)	8	3

**ESTIMATE OF QUANTITIES**

SPEC	CODE	ITEM DESCRIPTION	UNIT	COUNTY HIGHWAY 15				TOTAL
				MAINLINE	PATCHING & LEVELING	GUARDRAIL	DRIVES	
754	0805	OBJECT MARKERS - CULVERTS	EA	18	-	-	-	18
760	0009	RUMBLE STRIPS - INTERSECTION	EA	1	-	-	-	1
762	0103	PVMT MK PAINTED-MESSAGE	SF	156.5	-	-	-	156.5
762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	57,495	-	-	-	57,495
762	1104	PVMT MK PAINTED 4IN LINE	LF	90,685	-	-	-	90,685
764	0131	W-BEAM GUARDRAIL	LF	-	-	282.8	-	282.8
764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	-	-	4	-	4
764	0151	REMOVE W-BEAM GUARDRAIL & POSTS	LF	-	-	121.9	-	121.9
766	0100	MAILBOX-ALL TYPES	EA	4	-	-	-	4

**ALTERNATE A**

SPEC	CODE	ITEM DESCRIPTION	UNIT	COUNTY HIGHWAY 15				TOTAL
				MAINLINE	PATCHING & LEVELING	GUARDRAIL	DRIVES	
430	0043	SUPERPAVE FAA 43	TON	32,374	1,910	42	1,200	35,526
430	5828	PG 58-28 ASPHALT CEMENT	TON	2,106	124	3	81	2,314

**ALTERNATE B**

SPEC	CODE	ITEM DESCRIPTION	UNIT	COUNTY HIGHWAY 15				TOTAL
				MAINLINE	PATCHING & LEVELING	GUARDRAIL	DRIVES	
430	0143	RAP-SUPERPAVE FAA 43	TON	32,374	1,910	42	1,200	35,526
430	5828	PG 58-28 ASPHALT CEMENT	TON	1,558	92	2	57	1,709

CNOA-SC-5018(073)  
WALSH COUNTY, NORTH DAKOTA  
COUNTY ROAD 15



**ESTIMATE OF QUANTITIES**

DRWN BY KS	CHKD BY JL	PROJECT NO. 6313127
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### BASIS OF ESTIMATE

TYPICAL A			TYPICAL B		TYPICAL C		DRIVES		UNIT	DESCRIPTION
MAINLINE		PATCHING & LEVELING	MAINLINE		MAINLINE		PRIVATE & SECTION DRIVES (17/14)	FIELD DRIVES (18)		
QUANTITY PER MILE	TOP WIDTH	QUANTITY PER MILE	QUANTITY PER MILE	TOP WIDTH	QUANTITY PER MILE	TOP WIDTH				
-	-	75	-	-	-	-	-	-	CY	Common Excavation-Waste
733	4.5'	94	9,604	30'	-	-	10	10	TON	Aggregate Base Course CL 5 (1.875 Ton/CY)
-	-	-	4,987	34'	-	-	-	-	GAL	Prime Coat (0.25 Gal/SY)
748	25.5'	715	748	25.5'	821	28'	9	1.2	GAL	Tack Coat 1st and 3rd Lifts (0.05 Gal/SY)
748	25.5'	-	748	25.5'	-	-	9	1.2	GAL	Tack Coat 2nd Lift (0.05 Gal/SY)
-	-	-	150	34'	-	-	-	-	TON	Blotter Material CL 44 (15 Lbs/SY)
14,080	-	-	-	-	-	-	-	-	SY	Milling Pavement Surface
2 / 2,000' / Lane / Lift + 1 Full Depth / Mile	-	-	2 / 2,000' / Lane / Lift + 1 Full Depth / Mile	-	2 / 2,000' / Lane / Lift + 1 Full Depth / Mile	-	-	-	EA	Cored Sample
-	-	-	17,600	30'	-	-	-	-	SY	Geosynthetic Material Type G
-	-	225	-	-	-	-	-	-	SY	Geosynthetic Material Type R1

### ALTERNATE A

TYPICAL A			TYPICAL B		TYPICAL C		DRIVES		UNIT	DESCRIPTION
MAINLINE		PATCHING & LEVELING	MAINLINE		MAINLINE		PRIVATE & SECTION DRIVES (17/14)	FIELD DRIVES (18)		
QUANTITY PER MILE	TOP WIDTH	QUANTITY PER MILE	QUANTITY PER MILE	TOP WIDTH	QUANTITY PER MILE	TOP WIDTH				
1,662	25.5'	300	1,662	25.5'	1,825	28'	10	5	TON	Superpave FAA 43 for 1st and 3rd Lifts (2.0 Ton/CY)
1,454	25.5'	-	1,454	25.5'	-	-	10	5	TON	Superpave FAA 43 for 2nd Lift (2.0 Ton/CY)
108	25.5'	19.5	108	25.5'	119	28'	0.7	0.3	TON	PG 58-28 Asphalt Cement for 1st and 3rd Lifts (6.5% Superpave FAA 43)
95	25.5'	-	95	25.5'	-	-	0.7	0.3	TON	PG 58-28 Asphalt Cement for 2nd Lift (6.5% Superpave FAA 43)

### ALTERNATE B

TYPICAL A			TYPICAL B		TYPICAL C		DRIVES		UNIT	DESCRIPTION
MAINLINE		PATCHING & LEVELING	MAINLINE		MAINLINE		PRIVATE & SECTION DRIVES (17/14)	FIELD DRIVES (18)		
QUANTITY PER MILE	TOP WIDTH	QUANTITY PER MILE	QUANTITY PER MILE	TOP WIDTH	QUANTITY PER MILE	TOP WIDTH				
1,662	25.5'	300	1,662	25.5'	1,825	28'	10	5	TON	RAP-Superpave FAA 43 for 1st and 3rd Lifts (2.0 Ton/CY)
1,454	25.5'	-	1,454	25.5'	-	-	10	5	TON	RAP-Superpave FAA 43 for 2nd Lift (2.0 Ton/CY)
80	25.5'	14.4	80	25.5'	88	28'	0.5	0.2	TON	PG 58-28 Asphalt Cement for 1st and 3rd Lifts (4.8% RAP-Superpave FAA 43)
70	25.5'	-	70	25.5'	-	-	0.5	0.2	TON	PG 58-28 Asphalt Cement for 2nd Lift (4.8% RAP-Superpave FAA 43)

Water: 10 Gal/CY of Embankment, 20 Gal/Ton Aggregate Base Course CL 5, & 10 M Gal/Mile for Dust Palliative

This document was originally issued and sealed by Jon E. Markusen Registration Number PE-5453, on 11/03/14 and the original document is stored at the Walsh County Highway Department.

<b>CNOA-SC-5018(073)</b> <small>WALSH COUNTY, NORTH DAKOTA  COUNTY ROAD 15</small>		
		<b>BASIS OF ESTIMATE</b>
DRAWN BY: KS	CHECKED BY: JL	PROJECT NO. 6313127

### MASS HAUL TABLE

ITEM DESCRIPTION	UNIT	COUNTY HIGHWAY 15						
		MILE #1	MILE #2	MILE #3	MILE #4	MILE #5	MILE #6	MILE #7
		STA. 12+64 TO 63+69	STA. 63+69 TO 116+50	STA. 116+50 TO 169+45	STA. 169+45 TO 222+28	STA. 222+28 TO 273+89	STA. 273+89 TO 326+75	STA. 326+75 TO 371+02
CUT	CY	2,246	52	193	7,274	497	82	11,585
FILL	CY	8,508	8,979	6,618	9,064	8,662	9,511	6,899
FILL + 35%	CY	11,486	12,122	8,934	12,236	11,694	12,840	9,314
GUARDRAIL EMBANKMENT	CY	675	0	0	0	0	0	0
APPROACH INSLOPE FLATTENING	CY	900	1,100	700	600	600	400	600
EXCESS MATERIAL	CY	0	0	0	0	0	0	1,671
MATERIAL REQUIRED	CY	10,815	13,170	9,441	5,562	11,797	13,158	0

### EARTHWORK SUMMARY

EMBANKMENT <sup>1</sup>			COMMON EXCAVATION-TYPE B <sup>2</sup>	TOTAL BORROW REQUIRED (CY)
MAINLINE (CY)	GUARDRAIL (CY)	APPROACHES (CY)		
78,626	675	4,900	21,929	62,272

- 1) Volumes include 35% for shrinkage for mainline, guardrail and approaches.  
 2) Volume includes excavation in reconstruction areas.

### TOPSOIL

	TOPSOIL EXCAVATION <sup>1</sup> (CY)	TOPSOIL EMBANKMENT <sup>2</sup> (CY)	EXCESS TOPSOIL <sup>3</sup> (CY)
TOPSOIL	33,825	33,710	115
TOPSOIL-WETLAND	315	315	0

- 1) Excavation depth is based upon removing 6" of topsoil.  
 2) Embankment depth is based upon replacing 5" of topsoil.  
 3) Excess topsoil shall be wasted on site within the right of way.

### OBJECT MARKERS-CULVERTS

STATION	OBJECT MARKERS - CULVERTS (EA)
57+93 ~ LT	1
63+23 ~ LT & RT	2
162+04 ~ LT & RT	2
162+14 ~ LT & RT	2
187+40 ~ LT	1
247+19 ~ LT & RT	2
247+27 ~ LT & RT	2
366+09 ~ LT & RT	2
366+18 ~ LT & RT	2
366+27 ~ LT & RT	2

### PIPE PATCHING QUANTITIES

BEGIN STA	END STA	LENGTH (FT)	REMOVAL OF PAVEMENT (SY)	GEOGRID (SY)	CL 5 (TON)
57+54	58+32	78	208	260	142
161+64	162+54	90	240	300	164
162+88	163+12	24	64	80	44
169+49	170+23	74	197	247	135
234+32	234+67	35	93	117	64
246+81	247+65	84	224	280	153
365+69	366+67	98	261	327	178
<b>TOTAL</b>			1,287	1,611	880

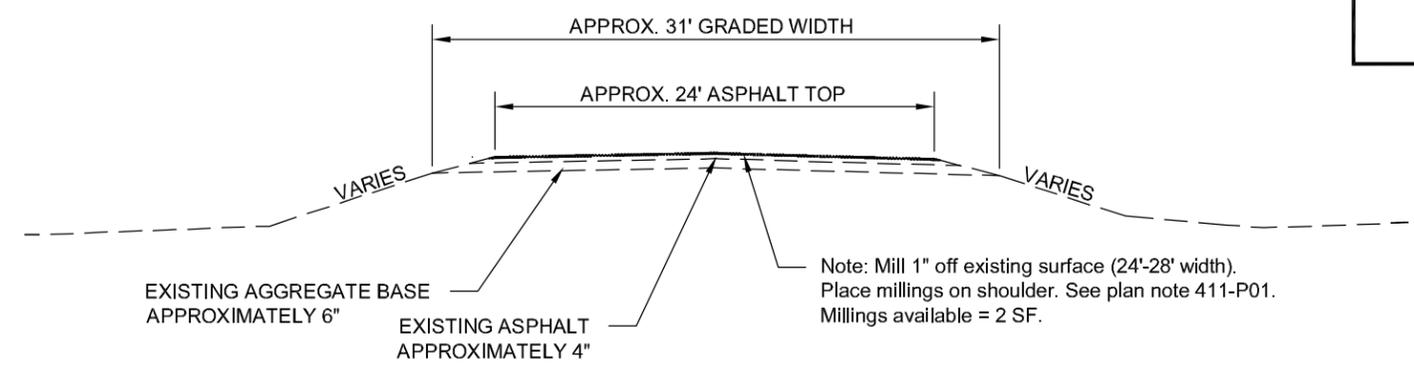
### MAILBOX SUMMARY

STATION	TYPE
69+04 ~ RT	1A
69+04 ~ RT	1A
279+55 ~ RT	1
368+41 ~ RT	1

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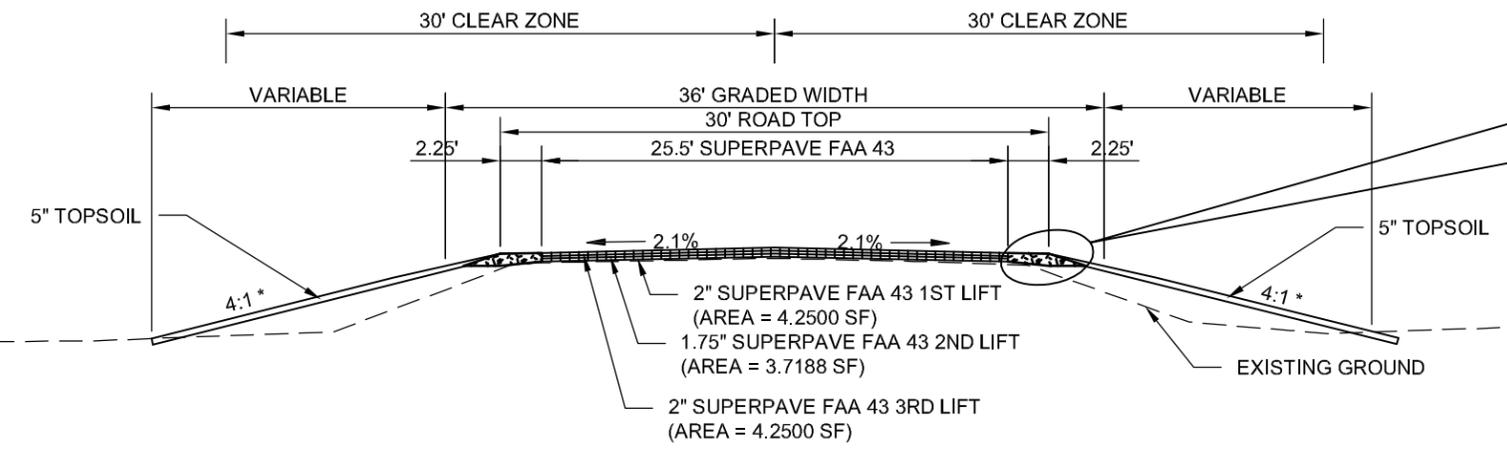
<b>CNOA-SC-5018(073)</b> WALSH COUNTY, NORTH DAKOTA COUNTY ROAD 15		
	<b>QUANTITY SUMMARIES</b>	
	DRWN BY ZV	CHKD BY JK

Revised 11/03/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CNOA-SC-5018(073)	30	1



**EXISTING TYPICAL SECTION (MILLING)**

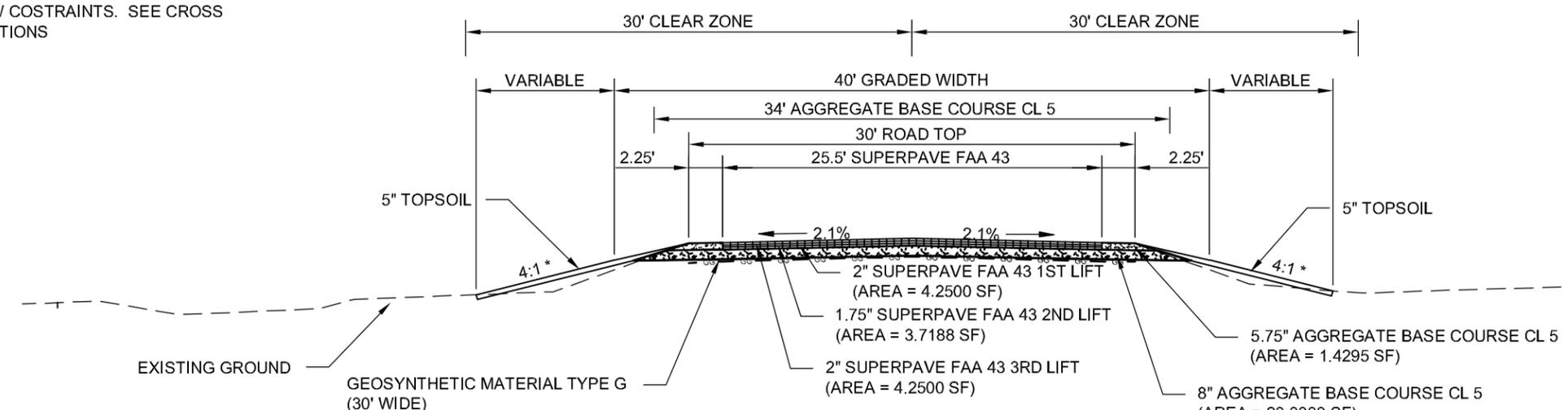
STA. 12+64 TO 40+40  
 STA. 53+33 TO 177+20  
 STA. 186+25 TO 371+02



**PROPOSED TYPICAL SECTION A (OVERLAY)**

STA. 12+64 TO 40+40  
 STA. 53+33 TO 177+20  
 STA. 186+25 TO 371+02

\* INSLOPE BREAKS TO 3:1 AT CLEAR ZONE IN ISOLATED AREAS DUE TO ROW COASTRAINTS. SEE CROSS SECTIONS



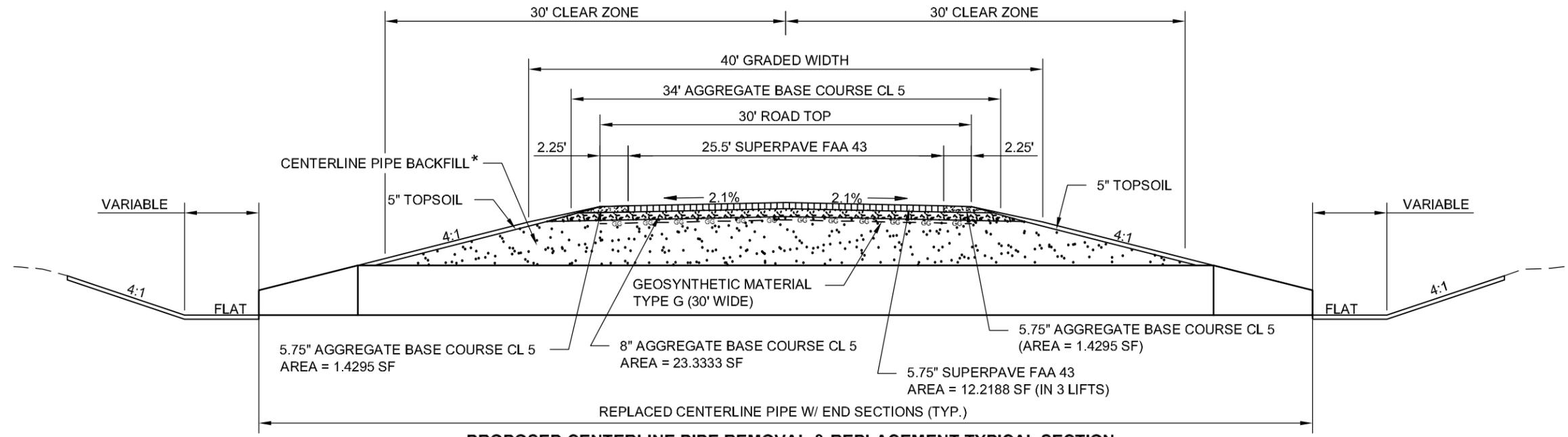
**PROPOSED TYPICAL SECTION B (RECONSTRUCTION)**

STA. 40+40 TO 47+70  
 STA. 48+33 TO 53+33  
 STA. 177+20 TO 186+25

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<b>CNOA-SC-5018(073)</b> WALSH COUNTY, NORTH DAKOTA COUNTY ROAD 15		
<b>TYPICAL SECTIONS</b>		
DRAWN BY: KS	CHECKED BY: JL	PROJECT NO. 6313127

Revised 11/03/14	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	CNOA-SC-5018(073)	30	3



**PROPOSED CENTERLINE PIPE REMOVAL & REPLACEMENT TYPICAL SECTION**

- STA. 57+54 TO 58+32
- STA. 161+64 TO 162+54
- STA. 162+88 TO 163+12 (REMOVAL ONLY)
- STA. 169+49 TO 170+23
- STA. 234+32 TO 234+67
- STA. 246+81 TO 247+65
- STA. 365+69 TO 366+67

\* REFER TO APPLICABLE BACKFILL DETAILS IN STANDARD DRAWINGS.

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<b>CNOA-SC-5018(073)</b> WALSH COUNTY, NORTH DAKOTA COUNTY ROAD 15		
	<b>CENTERLINE          PIPE REPLACEMENT          TYPICAL SECTION</b>	
	DRAWN BY: KS	CHECKED BY: JL

Begin Station / Location	Begin Offset	End Station / Location	End Offset	Length	Pipe Conduit Pay Size	Pipe Conduit Approach Pay Size	Allowable Material (B)	Required Diameter	Minimum Thickness		R1 Fabric (Pay Item)	End Sections (A)(B)		Applicable Backfill Detail
									IN	Gauge		SY	EA	
				LF	IN	IN		IN	IN			EA	EA	
23+89	41.0' LT	24+35	41.0' LT	EXTEND 8 BACK & 6 AHEAD	-	24	Aluminum Coated Steel (Type 2)	24	0.064	16	-	Y	Y	-
23+89	43.0' RT	24+41	43.0' RT	EXTEND 10 BACK & 10 AHEAD	-	24	Aluminum Coated Steel (Type 2)	24	0.064	16	-	Y	Y	-
45+26	40.0' RT	45+74	40.0' RT	48	-	24	Reinforced Concrete Pipe - Class III (barrel length = 44 LF)	24	-	-	-	Y	Y	-
							Aluminum Coated Steel (Type 2)		0.064	16				
							Polymeric Coated Steel (over zinc or aluminum coated) (A)		0.064	16				
48+54	34.0' LT	48+68	34.0' LT	14	-	24	Reinforced Concrete Pipe - Class III (barrel length = 10 LF)	24	-	-	-	FLAP GATE	Y	-
							Aluminum Coated Steel (Type 2)		0.064	16				
							Polymeric Coated Steel (over zinc or aluminum coated) (A)		0.064	16				
50+26	40.0' LT	50+74	40.0' LT	48	-	24	Reinforced Concrete Pipe - Class III (barrel length = 44 LF)	24	-	-	-	Y	Y	-
							Aluminum Coated Steel (Type 2)		0.064	16				
							Polymeric Coated Steel (over zinc or aluminum coated) (A)		0.064	16				
57+93	24.8' LT	57+93	31.2' RT	56	60	-	Reinforced Concrete Pipe - Class III (barrel length = 50 LF)	73 X 45	-	-	223	Y	Y	D-714-26
							Aluminum Coated Steel (Type 2)	71 X 47	0.138	10				
							Polymeric Coated Steel (over zinc or aluminum coated) (A)	ARCH	0.138	10				
63+23	24.0' LT	63+23	24.0' RT	0	36	-	Reinforced Concrete Pipe - Class III (barrel length = 0 LF)	36	-	-	-	Y	Y	D-714-26
63+32	34.2' RT	64+05	34.3' LT	84	36	-	Reinforced Concrete Pipe - Class III (barrel length = 80 LF)	36	-	-	300	Y	Y	D-714-26
							Aluminum Coated Steel (Type 2)		0.079	14				
							Polymeric Coated Steel (over zinc or aluminum coated) (A)		0.079	14				
63+42	40.0' RT	63+98	40.0' RT	EXTEND 8 BACK & 8 AHEAD	-	30	Aluminum Coated Steel (Type 2)	30	0.079	14	-	Y	Y	-
64+42	27.0' LT	64+42	25.0' RT	6 (LT)	30	-	Reinforced Concrete Pipe - Class III (barrel length = 6 LF)	30	-	-	-	Y	Y	D-714-26
68+90	39.0' RT	69+50	39.0' RT	EXTEND 8 BACK & 10 AHEAD	-	24	Aluminum Coated Steel (Type 2)	24	0.064	16	-	Y	Y	-
109+62	41.0' RT	109+94	41.0' RT	0	-	24	Aluminum Coated Steel (Type 2)	24	0.064	16	-	Y	Y	-
116+17	39.0' LT	116+87	39.0' LT	EXTEND 12 BACK & 6 AHEAD	-	24	Aluminum Coated Steel (Type 2)	24	0.064	16	-	Y	Y	-
116+24	43.0' RT	116+85	43.0' RT	EXTEND 0 BACK & 10 AHEAD	-	18	Aluminum Coated Steel (Type 2)	18	0.064	16	-	Y	Y	-

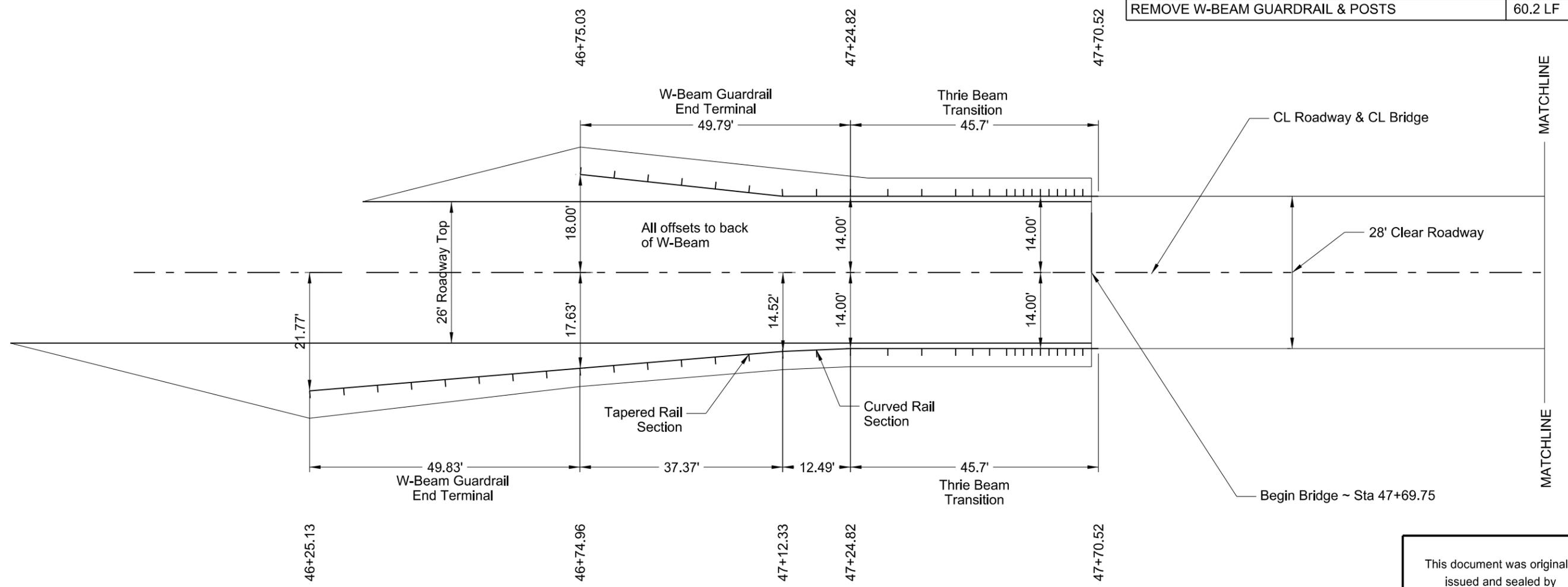
(A) Walsh County is reserving the right to allow burning in their ditches. Plastic coated metal or plastic pipe must have approved segments and end treatments that are non-flammable.  
(B) End sections installed with new pipe are included in the price bid for "PIPE CONDUIT". End sections installed with or without extensions on existing pipe are paid for under the appropriate end section bid item.

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<b>CNOA-SC-5018(073)</b> WASH COUNTY, NORTH DAKOTA COUNTY ROAD 15		
		<b>ALLOWABLE PIPE LIST</b>
DRWN BY: ZV	CHKD BY: JM	PROJECT NO. 6313127



WEST W-BEAM GUARDRAIL QUANTITIES	
AGGREGATE BASE COURSE CL 5	72 TON
SUPERPAVE FAA 43	21 TON
PG 58-28 ASPHALT CEMENT	1.5 TON
W-BEAM GUARDRAIL	141.4 LF
W-BEAM GUARDRAIL END TERMINAL	2 EA
REMOVE W-BEAM GUARDRAIL & POSTS	60.2 LF



**NOTES:**

- Rail element shall meet the requirements of Standard Drawing D-764-1 & D-764-10.
- Button head "post" bolts (ASTM A307) shall be of sufficient length to extend through the full thickness of the nut (ASTM A563) and the Type A 1 3/4" O.D. washer and not more than 1" beyond it.  
  
Button head "splice" bolts (ASTM A307) are 5/8" Diameter with a 5/8" Diameter recessed nut (ASTM A563).
- All hardware (bolts, nuts, and washers) shall be galvanized in accordance with AASHTO M232. Hardware shall not be measured for separate payment but shall be included in the unit price bid for "W-BEAM GUARDRAIL".
- Guardrail posts shall not be set in concrete.
- All material and work involved to install the Thrie Beam Transition shall be included in the pay item "W-BEAM GUARDRAIL".
- The existing guardrail and guardrail posts shall be removed and given to Walsh County. All costs associated with the removal of all existing guardrail components shall be included in the pay item "REMOVE W-BEAM GUARDRAIL & POSTS".

\* See Standard Drawing D-764-22

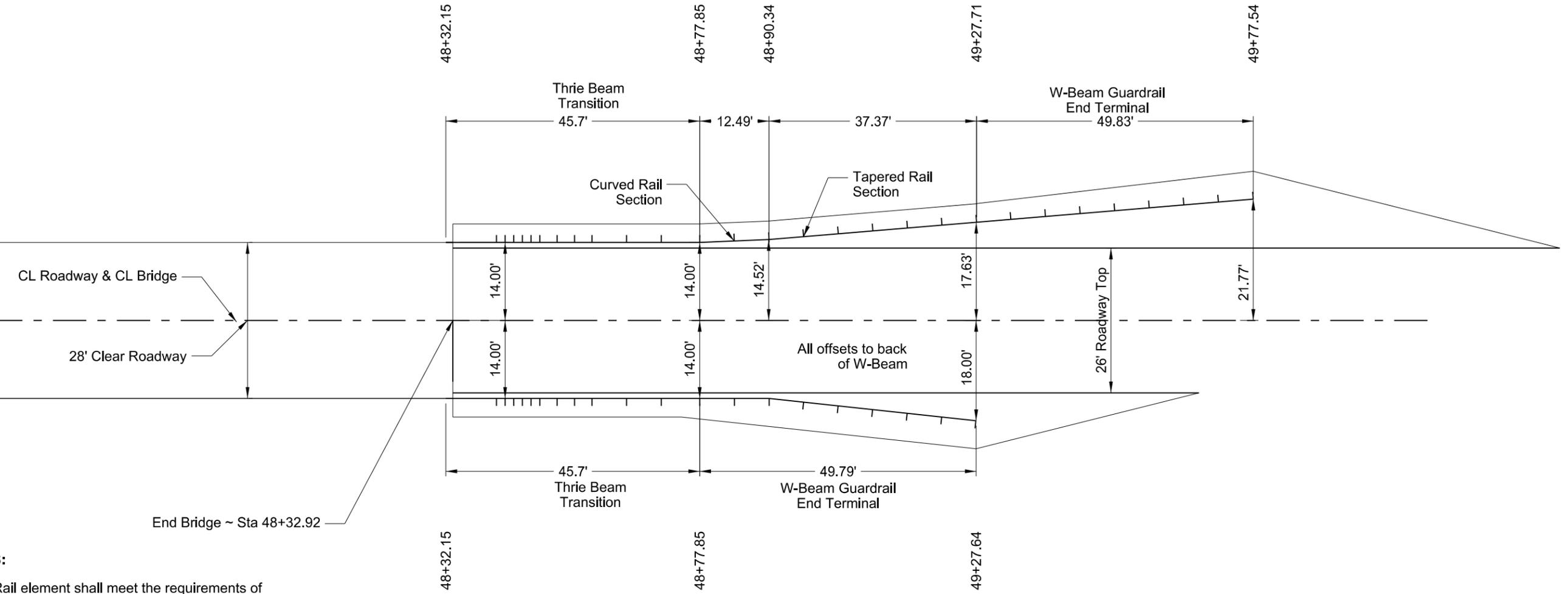
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CNOA-SC-5018(073) WALSH COUNTY, NORTH DAKOTA COUNTY ROAD 15		
	<b>W-BEAM GUARDRAIL LAYOUT</b>	
	DRAWN BY DMW	CHECKED BY CAM



MATCHLINE

MATCHLINE



**NOTES:**

- Rail element shall meet the requirements of Standard Drawing D-764-1 & D-764-10.
- Button head "post" bolts (ASTM A307) shall be of sufficient length to extend through the full thickness of the nut (ASTM A563) and the Type A 1 3/4" O.D. washer and not more than 1" beyond it.  
  
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- The existing guardrail and guardrail posts shall be removed and given to Walsh County. All costs associated with the removal of all existing guardrail components shall be included in the pay item "REMOVE W-BEAM GUARDRAIL & POSTS".

EAST W-BEAM GUARDRAIL QUANTITIES	
AGGREGATE BASE COURSE CL 5	72 TON
SUPERPAVE FAA 43	21 TON
PG 58-28 ASPHALT CEMENT	1.5 TON
W-BEAM GUARDRAIL	141.4 LF
W-BEAM GUARDRAIL END TERMINAL	2 EA
REMOVE W-BEAM GUARDRAIL & POSTS	61.7 LF

\* See Standard Drawing D-764-22

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CNOA-SC-5018(073) WALSH COUNTY, NORTH DAKOTA COUNTY ROAD 15		
	<b>W-BEAM GUARDRAIL LAYOUT</b>	
	DRWN. BY DW	CHKD. BY CAM
PROJECT NO. 6313127		