DESIGN DATA				
Traffic	Average Daily			
Current 2014	Pass: 195	Trucks: 65	Total: 260	
Forecast 2034	Pass: 262	Trucks: 88	Total: 350	
Clear Zone Distance: 26'		Design Speed: 65 MPH		
Minimum Sight Dist. for Stopping: 645'		Bridges: N/A		
Sight Dist. for No Passing Zone: 1100'				
Pavement Design Life (years)				
Design Accumulated One-way ESALs:				

STATE	PROJECT NO.	PCN	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	20976	1	1

JOB # 19
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

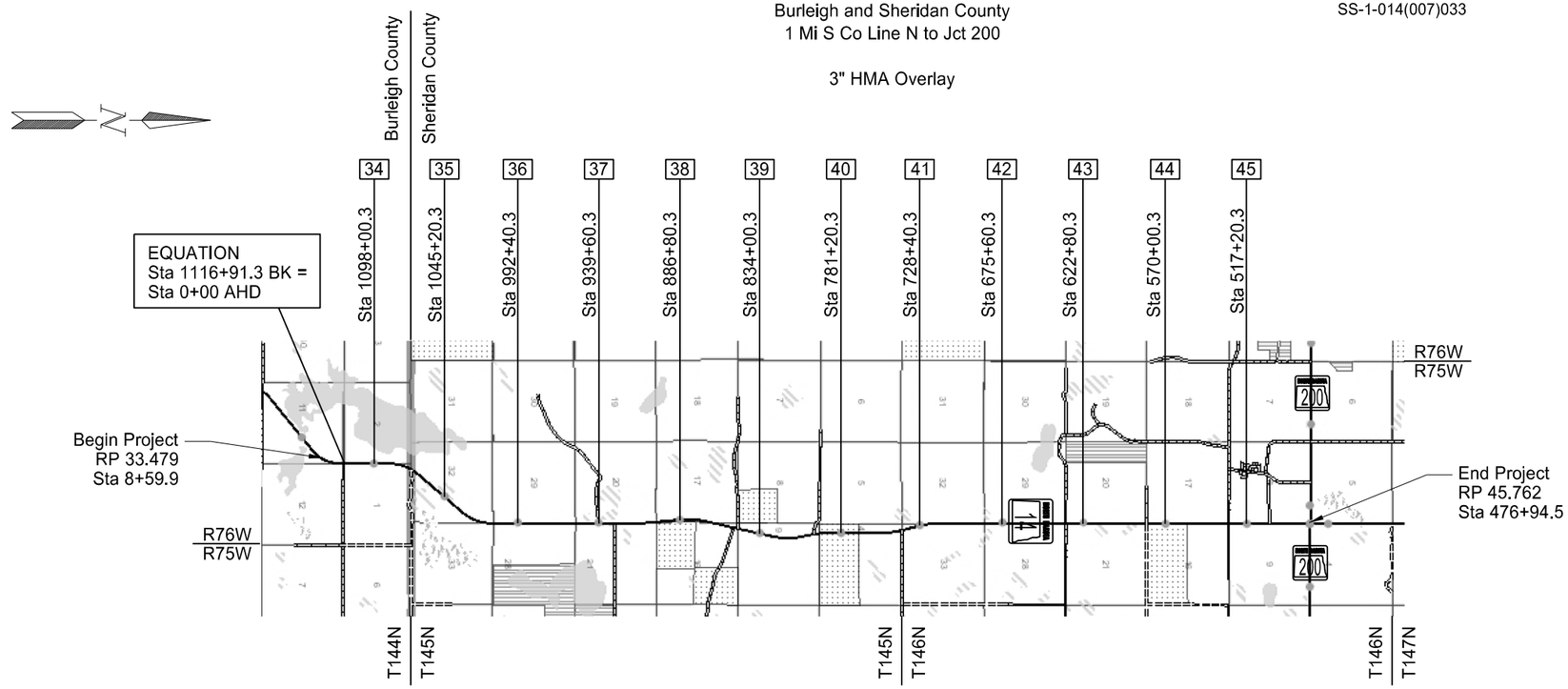
SS-1-014(007)033

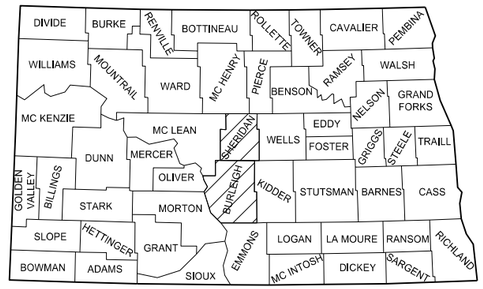
GOVERNING SPECIFICATIONS:
2014 Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION	NET MILES	GROSS MILES
SS-1-014(007)033	12.283	12.283

Burleigh and Sheridan County
1 Mi S Co Line N to Jct 200

3" HMA Overlay





STATE COUNTY MAP

DESIGNERS

Aaron Derman /s/

APPROVED DATE 6-16-16

Roger Weigel /s/
for OFFICE OF PROJECT DEVELOPMENT
ND DEPARTMENT OF TRANSPORTATION

I hereby certify that the attached plans were prepared by me or under my direct supervision and that I am a duly registered professional engineer under the laws of the state of ND.

APPROVED DATE 6-16-16

James Douglas Rath /s/
NDDOT DESIGN

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STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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20	1 - 4	General Details
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110	1 - 2	Signing
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D-101-10	NDDOT Utility Company and Organization Abbreviations
D-101-20, 21	Line Styles
D-101-30, 31, 32	Symbols
D-704-2	Traffic Control For Coring Of Hot Bituminous Pavement
D-704-5	Contractor Sign Detail
D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube
D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post
D-704-9	Construction Sign Details - Terminal And Guide Signs
D-704-10	Construction Sign Details - Regulatory Signs
D-704-11	Construction Sign Details - Warning Signs
D-704-13	Barricade And Channelizing Device Details
D-704-14	Construction Sign Punching And Mounting Details
D-704-15	Road Closure Layouts
D-704-20	Terminal And Seal Coat Sign Layouts
D-704-22	Construction Truck And Temporary Detour Layouts
D-704-26	Miscellaneous Sign Layouts
D-704-27	Traffic Control Plan For Moving Operations
D-704-50	Portable Sign Support Assembly
D-704-56	Mobile Operation - Grinding Shoulder Rumble Strips
D-706-1	Bituminous Laboratory
D-754-23	Perforated Tube Assembly Details
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D-754-29	Sign Punching, Stringer And Support Location Details Regulatory, Warning, And Guide Signs
D-760-4	Rumble Strips Undivided Highways (Shoulders Less Than 4')
D-760-5	Saw Slotted Rumble Strips At Intersections
D-762-1	Pavement Marking Message Details
D-762-4	Pavement Marking
D-762-11	Short-Term Pavement Marking

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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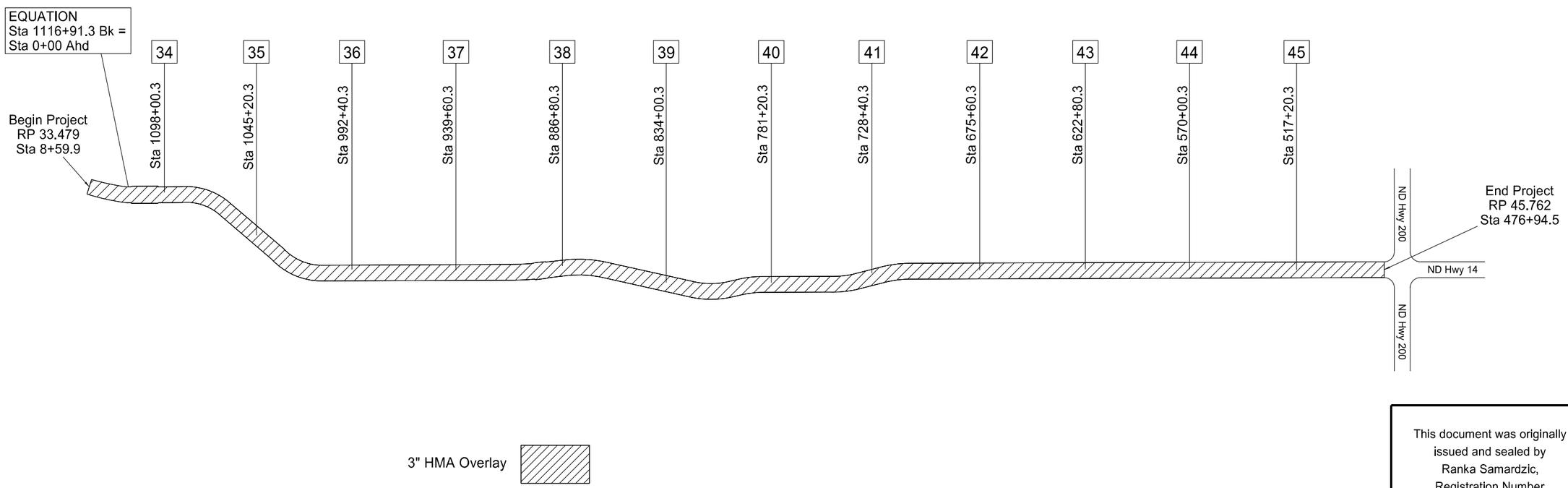

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Scope of Work

3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	6	1

NOTES

107-700 HAUL ROADS: The Engineer will not designate paved roads off the state system as haul roads.

107-710 HAUL ROADS: Before submitting a proposal, contact the appropriate State, County, Township, or City officials to determine if there are any roadways that will be designated as "no haul routes".

430-P01 HOT MIX ASPHALT - TIGHT BLADING: Use approximately 1/4" of the 3” asphalt overlay for tight blading before the asphalt overlay is applied. Place the tight blading in a single motor grader pass across the full width of the lane and shoulder. Compact the material with a pneumatic roller prior to the overlay. Include all costs associated with tight blading in the bid price for "Superpave FAA 43” and “PG 58-28 Asphalt Cement”.

430-P02 HOT MIX ASPHALT: Paver lay the hot mix asphalt in two lifts with the top lift being 1½”.

704-P01 TRAFFIC CONTROL FOR BITUMINOUS PAVEMENT: Provide traffic control consisting of a temporary road closure, flagging, and a pilot car. Provide additional devices at no additional cost to the Department.

Traffic control device quantities are based on a 6 mile limitation and the list below.

D-704-15, layout A for a temporary lane closure with pilot car to perform placing of aggregate, milling, paving, and cutting in centerline rumble strips. Quantities are based on two lane closures happening simultaneously.

D-704-20, layout G as the basis of the Construction Signing Sheet.

D-704-22, layouts K and L for trucks entering and existing the roadway as needed.

D-704-26, layouts BB, CC, EE, and GG as needed.

D-704-27, for pavement marking.

D-704-56, for grinding shoulder rumble strips.

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ESTIMATE OF QUANTITIES

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	8	1

SPEC	CODE	ITEM DESCRIPTION	UNIT	MAINLINE	TOTAL
103	0100	CONTRACT BOND	L SUM	0.49	0.49
230	0125	SHOULDER PREPARATION	MILE	24.566	24.566
302	0120	AGGREGATE BASE COURSE CL 5	TON	623	623
401	0050	TACK COAT	GAL	24,002	24,002
411	0105	MILLING PAVEMENT SURFACE	SY	354	354
430	0043	SUPERPAVE FAA 43	TON	38,833	38,833
430	1000	CORED SAMPLE	EA	130	130
430	5828	PG 58-28 ASPHALT CEMENT	TON	2,332	2,332
702	0100	MOBILIZATION	L SUM	0.49	0.49
704	0100	FLAGGING	MHR	300	300
704	1000	TRAFFIC CONTROL SIGNS	UNIT	412	412
704	1185	PILOT CAR	HR	150	150
706	0550	BITUMINOUS LABORATORY	EA	0.49	0.49
706	0600	CONTRACTOR'S LABORATORY	EA	0.49	0.49
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	6	6
754	0195	DIAMOND GRADE DELINEATORS-TYPE A	EA	7	7
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	18	18
760	0005	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	24.566	24.566
760	0007	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	12.283	12.283
760	0010	RUMBLE STRIPS - INTERSECTION	SET	1	1
762	0103	PVMT MK PAINTED-MESSAGE	SF	82	82
762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	164,696	164,696
762	1104	PVMT MK PAINTED 4IN LINE	LF	184,219	184,219

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	10	1

MATERIALS

AGGREGATE BASE COURSE CL 5 @ 1.5 TON/CY + 25% = 1.875 TON/CY
TACK COAT @ 0.05 GAL/SY
SUPERPAVE FAA 43 @ 2.0 TON/CY
PG 58-28 ASPHALT CEMENT @ 6.0% of SUPERPAVE FAA 43

430-1000 CORED SAMPLE							
	A	B	C	D			
Specification Section	**Lanes**	**Lifts**	**Distance (Feet)**	**Sublots (A x B x C) ÷ 2000**	**Quantity (D x 2)**	**Quantity (1 per mile)**	**Unit**
430.04 I.2.b(1), "General"	2	1	64857	65	130	N/A	EA
430.04 I.2.b(2) "Pavement Thickness Determination Cores"					N/A	0	EA
				Total	**130**	**0**	**EA**

SPEC	CODE	BID ITEM	UNIT	QUANTITY
760	0005	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	24.566
760	0007	RUMBLE STRIPS - ASPHALT CENTERLINE	MILE	12.283
760	0010	RUMBLE STRIPS - INTERSECTION	SET	1

White Edge Lines - Pvmt Mk Painted 4In Line			
Location - ND 14	Basis	Quantity	Unit
8+60 to 0+00 = 1116+91 to 476+94	10,560 LF/mile	**129,714**	LF
Exception Areas		420	LF
	Total	**129,294**	LF

Yellow Centerline Skips - Pvmt Mk Painted 4In Line			
Location - ND 14	Basis	Quantity	Unit
8+60 to 0+00 = 1116+91 to 476+94	1,320 LF/mile	**16,214**	LF
Minus Double Barrier Length		**1,098**	LF
	Total	**15,116**	LF

Yellow Centerline Barrier - Pvmt Mk Painted 4In Line			
Location - ND 14	Basis	Quantity	Unit
8+60 to 0+00 = 1116+91 to 476+94	30,945	**30,945**	LF

Yellow Double Barrier - Pvmt Mk Painted 4In Line			
Location - ND 14	Basis	Quantity	Unit
8+60 to 0+00 = 1116+91 to 476+94	10,560 LF/mile	**8,784**	LF

TOTAL Pvmt Mk Painted 4In Line	**184,139**	**LF**

*See Section 110 for additional Pavement Marking quantities

Short Term 4In Line-Type NR			
Location	Basis		Quantity
Yellow Centerline Top of 1st Lift	Center Skips	1,320 LF / mile	15,116 LF
	Barrier Stripe	30,945 LF	30,945 LF
	Double Barrier	10,560 LF/mile	8,784 LF
	Climbing Lane	1,320 LF/mile	80 LF
Yellow Centerline Top of 2nd Lift	Center Skips	1,320 LF / mile	15,116 LF
	Barrier Stripe	30,945 LF	30,945 LF
	Double Barrier	10,560 LF/mile	8,784 LF
	Climbing Lane	1,320 LF/Mile	80 LF
Yellow Centerline Rumble Strip Fogging	Center Skips	1,320 LF / Mile	15,116 LF
	Barrier Stripe	30,945 LF	30,945 LF
	Double Barrier	10,560 LF/mile	8,784 LF

TOTAL Short Term 4In Line - Type NR	**164,696 LF**

Barrier Striping Locations			
Stations	Single Barrier SB(LF)	Single Barrier NB(LF)	Double Barrier(LF)
Sta 476+94 to Sta 485+90			896
Sta 485+90 to Sta 491+87	597		
Sta 491+87 to Sta 494+19			232
Sta 494+19 to Sta 501+48		729	
Sta 501+48 to Sta 506+65			517
Sta 506+65 to Sta 510+50	385		
Sta 510+50 to Sta 512+30			180
Sta 512+30 to Sta 517+63		533	
Sta 517+63 to Sta 519+06			143
Sta 519+06 to Sta 522+65	359		
Sta 526+23 to Sta 531+19		496	
Sta 567+05 to Sta 579+46	1241		
Sta 579+46 to Sta 591+39		1193	
Sta 591+39 to Sta 602+48	1109		
Sta 602+48 to Sta 604+22			174
Sta 604+22 to Sta 611+88		766	
Sta 618+90 to Sta 628+40	950		
Sta 630+72 to Sta 638+43		771	
Sta 646+62 to Sta 657+02	1040		
Sta 658+50 to Sta 668+53		1003	
Sta 680+09 to Sta 683+26		317	
Sta 711+88 to Sta 720+01	813		
Sta 726+19 to Sta 733+90		771	
Sta 736+01 to Sta 745+14	913		
Sta 748+10 to Sta 756+86		876	
Sta 766+79 to Sta 773+60	681		
Sta 776+35 to Sta 783+79		744	
Sta 797+20 to Sta 808+08	1088		
Sta 809+03 to Sta 818+22		919	
Sta 862+62 to Sta 876+03	1341		
Sta 876+03 to Sta 889+60		1357	
Sta 903+96 to Sta 911+04	708		
Sta 916+05 to Sta 922+54		649	
Sta 934+16 to Sta 946+52	1236		
Sta 946+52 to Sta 939+71		681	
Sta 939+71 to Sta 944+57			486
Sta 944+57 to Sta 950+17	560		
Sta 976+67 to Sta 983+06		639	
Sta 994+62 to Sta 1006+98	1236		
Sta 1006+98 to Sta 1024+62			1764
Sta 1024+62 to Sta 1027+05	243		
Sta 1058+40 to Sta 1069+80	1140		
Sta 1069+80 to Sta 1086+59		1679	
Sta 1086+59 to Sta 1092+13	554		
Sta 1098+37 to Sta 1104+65		628	
Total	16194	14751	4392

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Basis of Estimate

3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	10	2

				Hwy 14 Tangent Section				Hwy 14 Curve Section				Hwy 14 Climbing Lane				Hwy 14 Variable Width			
				Sta 478+68.5 to Sta 493+00 Sta 510+00 to Sta 715+53.6 Sta 729+98.6 to Sta 740+66.1 Sta 755+04.4 to Sta 789+03.1 Sta 801+51.4 to Sta 805+50.4 Sta 824+97.8 to Sta 868+84.6 Sta 887+64.6 to Sta 901+80.7 Sta 914+00.7 to Sta 1007+00.3 Sta 1030+38.6 to Sta 1065+66.2 Sta 1088+99.5 to Sta 1116+91.3 BK= Sta 0+00 AHD to Sta 0+89				Sta 715+53.6 to Sta 729+98.6 Sta 740+66.1to Sta 755+04.4 Sta 789+03.1to Sta 801+51.4 Sta 805+50.4 to Sta 824+97.8 Sta 868+84.6 to Sta 887+64.6 Sta 901+80.7 to Sta 914+00.7 Sta 1007+00.3 to Sta 1030+38.6 Sta 1065+66.2 to Sta 1088+99.5 Sta 0+89 to Sta 8+59.9				Sta 496+00 to Sta 507+00				Sta 477+69.5 to Sta 478+68.5 Sta 493+00 to Sta 496+00 Sta 507+00 to Sta 510+00			
				Total Stations = 483.61				Total Stations = 146.22				Total Stations = 11.00				Total Stations = 6.99			
SPEC	**CODE**	**BID ITEM**	**UNIT**	Width (ft)	Depth (in)	Quantity per Station	SubTotal	Width (ft)	Depth (in)	Quantity per Station	SubTotal	Width (ft)	Depth (in)	Quantity per Station	SubTotal	Width (ft)	Depth (in)	Quantity per Station	SubTotal
230	0125	SHOULDER PREPARATION	MILE	--	--	0.0379	18.319	--	--	0.0379	5.539	--	--	0.0379	0.417	--	--	0.0379	0.265
401	0050	TACK COAT @ 0.05 GAL/SY	GAL	31.6	--	17.56	8,492	31.6	--	17.56	2,568	42.91	--	23.8	262	31.6 - 42.91	--	20.6	144
401	0050	TACK COAT @ 0.05 GAL/SY	GAL	34	--	18.89	9,135	34	--	18.89	2,762	44	--	24.5	269	34 - 44	--	21.6	151
430	0043	SUPERPAVE FAA 43 @ 2 TON/CY	TON	29.63	3	58.60	28,340	29.63	3	58.6	8,568	41.82	3	79.5	875	29.63 - 41.82	3	68.9	482
430	5828	PG 58-28 ASPHALT CEMENT @ 6.0% OF SUPERPAVE FAA 43	TON	29.63	3	3.52	1,702	29.63	3	3.52	515	41.82	3	4.77	52	29.63 - 41.82	3	4.13	29

				Hwy 14 Milling Section			
				Sta 476+94.5 to Sta 477+69.5			
				Total Stations = 0.75			
SPEC	**CODE**	**BID ITEM**	**UNIT**	Width (ft)	Depth (in)	Quantity per Station	SubTotal
230	0125	SHOULDER PREPARATION	MILE	--	--	0.0379	0.028
401	0050	TACK COAT @ 0.05 GAL/SY - 1st Lift	GAL	34-43	--	23.6	18
401	0050	TACK COAT @ 0.05 GAL/SY - 2nd Lift	GAL	34-43	--	23.6	18
411	0105	MILLING PAVEMENT SURFACE	SY	30-43	--	472.0	354
430	0043	SUPERPAVE FAA 43 @ 2 TON/CY	TON	39.82	1.5 - 3	57.8	43
430	5828	PG 58-28 ASPHALT CEMENT @ 6.0% OF SUPERPAVE FAA 43	TON	39.82	1.5 - 3	3.47	2.6

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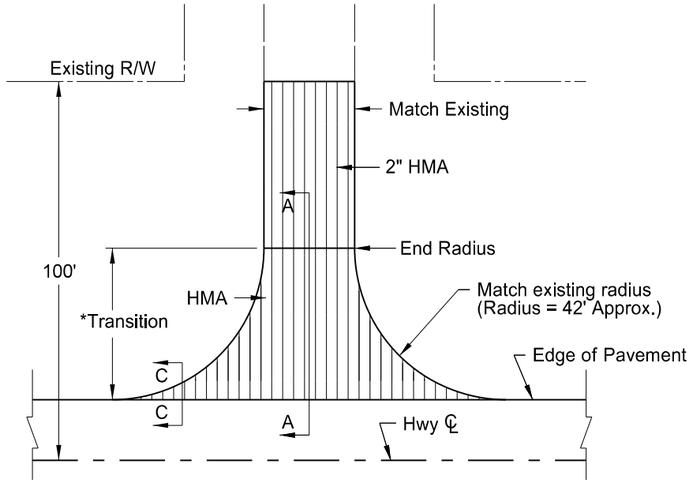
Basis of Estimate

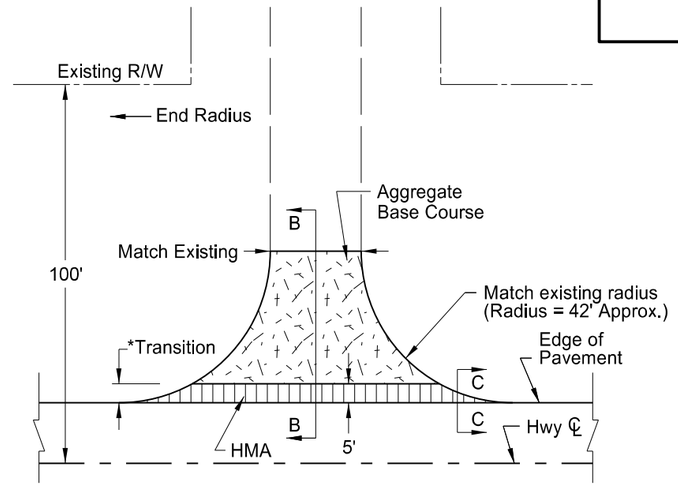
3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	20	1



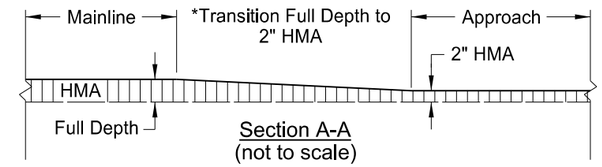
(1) Paved Section Line, County Road, or Street Approach



(2) Gravel Section Line, County Road, or Street Approach

Notes:

1. Actual HMA paving and aggregate base course locations may vary in the field, as approved by the Engineer.
2. Quantity totals have been included in the bid items of the "Estimate of Quantities" of the plans.
3. 400 Tons of aggregate base course has been provided in the quantities to fill in around the radii. This material will be required when sloughs are steeper than 4:1 (see section C-C)



Section A-A
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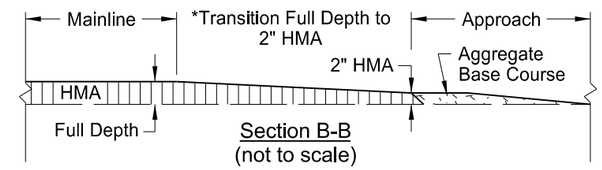

Section B-B
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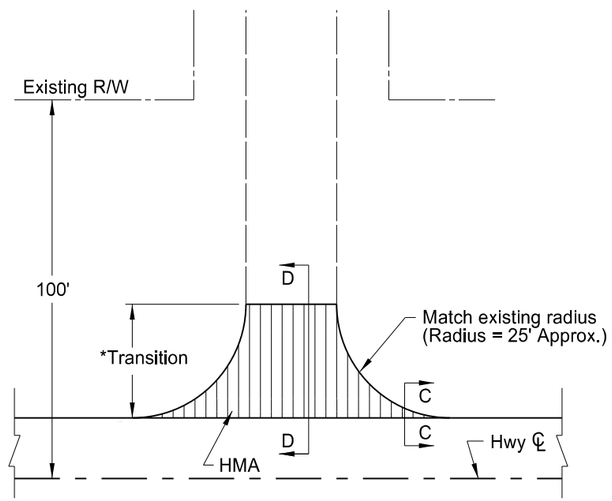
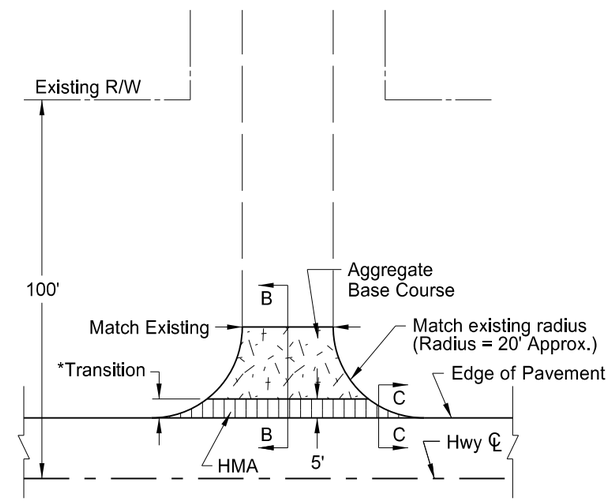
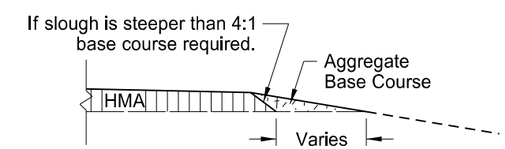


(3) Paved Private Drive Approach



(4) Gravel Private or Field Drive Approach



Section C-C
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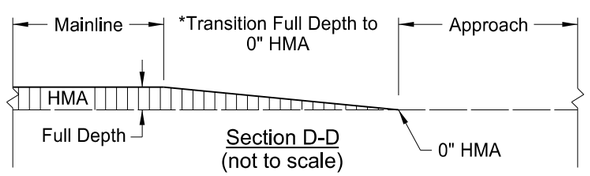

Section D-D
(not to scale)

BASIS OF ESTIMATE		(1)	(2)	(3)	(4)	
ITEM	UNIT	Paved Section Line	Gravel Section Line	Paved Private Drive	Gravel Field/ Private Drive	TOTALS
Number of Locations	#	3	8	1	54	66
Aggregate Base Course CL 5	TON	N/A	6	N/A	3	210
Tack Coat	GAL	15.5	2.3	4.3	1.2	134
Superpave FAA 43	TON	40	6.3	7.2	3.3	356
PG 58-28 Asphalt Cement	TON	2.4	0.38	0.43	0.2	21

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Approach Paving Details for Preventive Maintenance or Minor Rehabilitation Projects

3" HMA Overlay

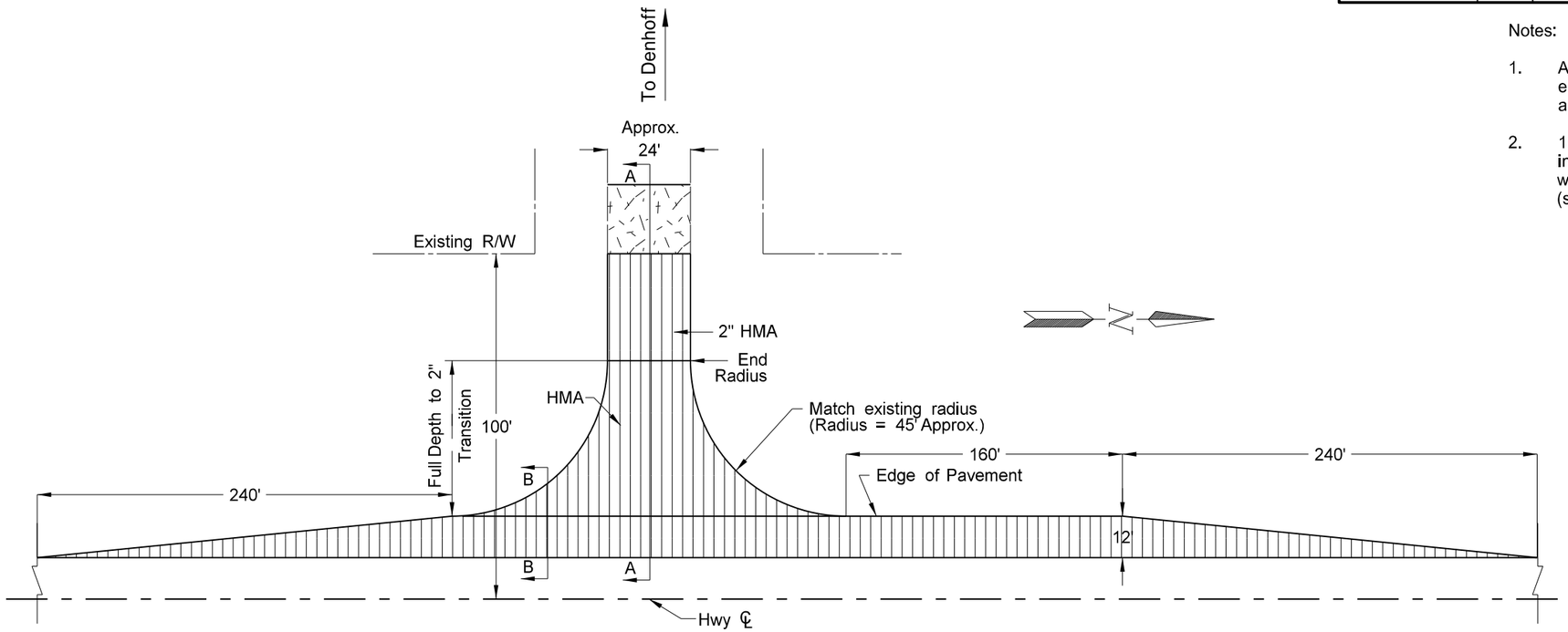
ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	20	2

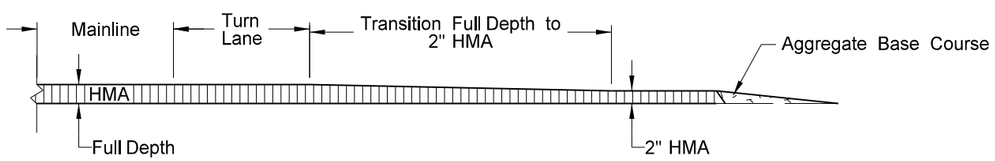
Notes:

1. A longer HMA wedge may be needed if an existing elevation difference between the mainline and the approach exists.

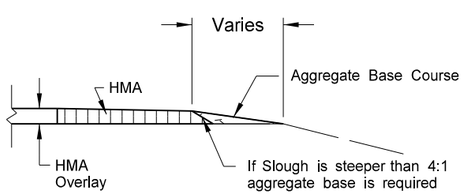
2. 10 Tons of aggregate base course has been provided in the quantities to filll in around the radii. This material will be required when sloughs are steeper than 4:1 (see section B-B)



Sta 529+05.4



Section A-A
(not to scale)



Section B-B
(not to scale)

BASIS OF ESTIMATE		
ITEM	UNIT	TOTALS
Aggregate CL 5	TON	3
Tack Coat	GAL	48.9
FAA 43	TON	169
PG 58-28	TON	10.1

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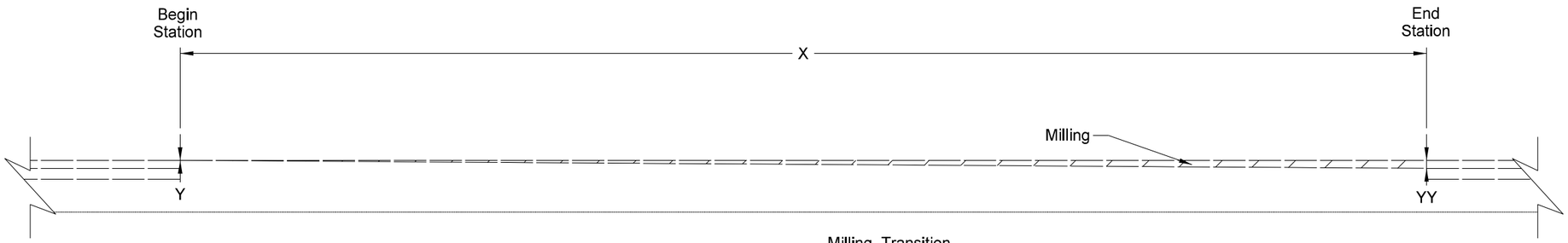
Right Turn Lane & Approach
Sta 529+05.4

3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

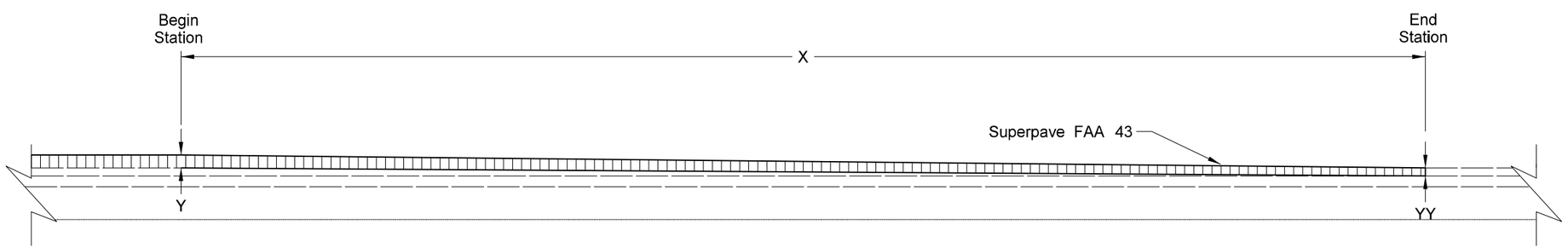
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	20	3



Milling Transition

Milling Transitions

X	Begin Station	Y	End Station	YY
150 ft.	477+69.5	0 in.	476+94.5	1.5 in.



Paving Transition

*Drawing is not to scale

Paving Transitions

X	Begin Station	Y	End Station	YY
150 ft.	477+69.5	3 in.	476+94.5	1.5 in.

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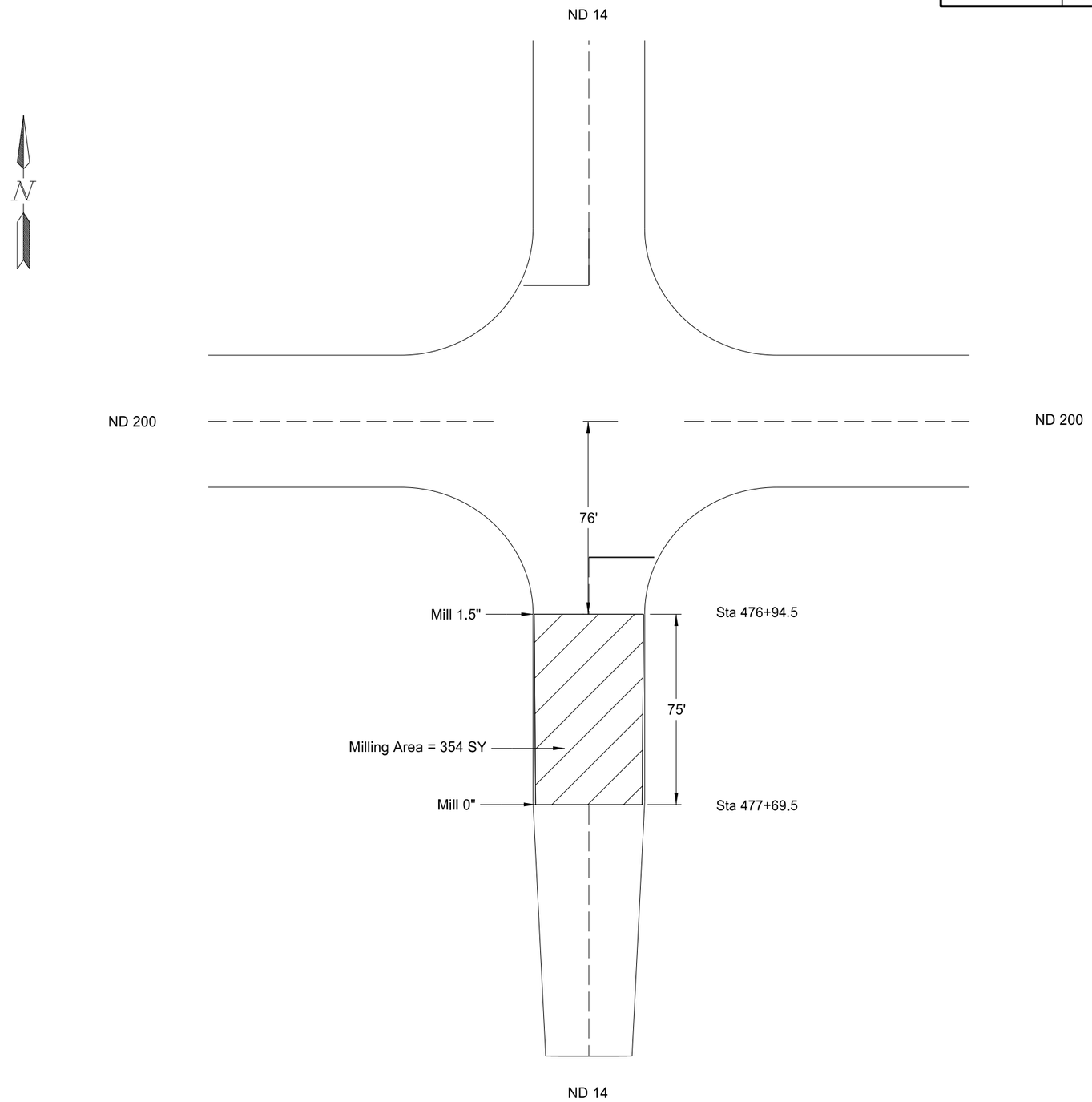
Milling and Paving Transitions

3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	20	4



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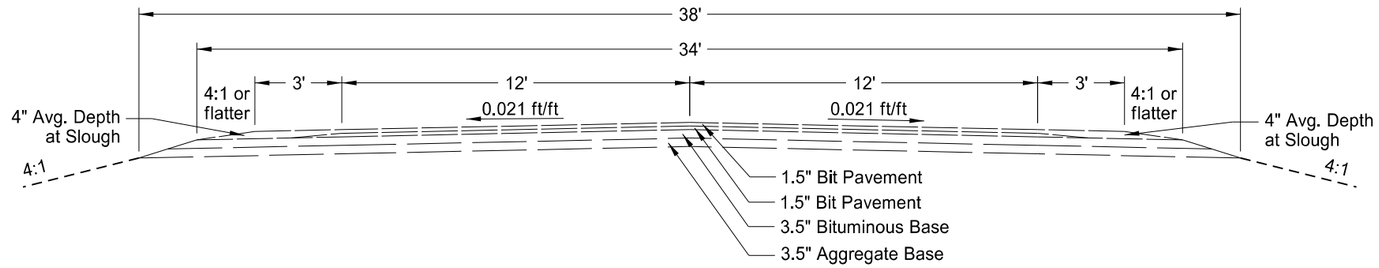
Milling - Jct ND 200 & ND 14

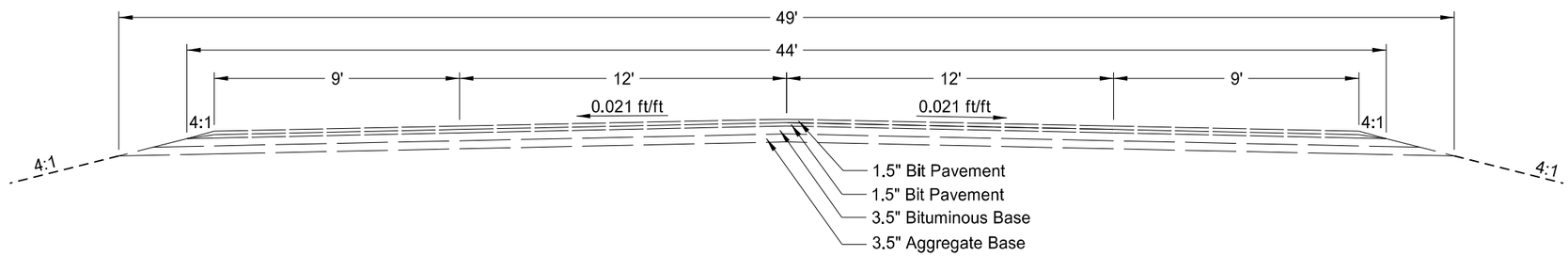
3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

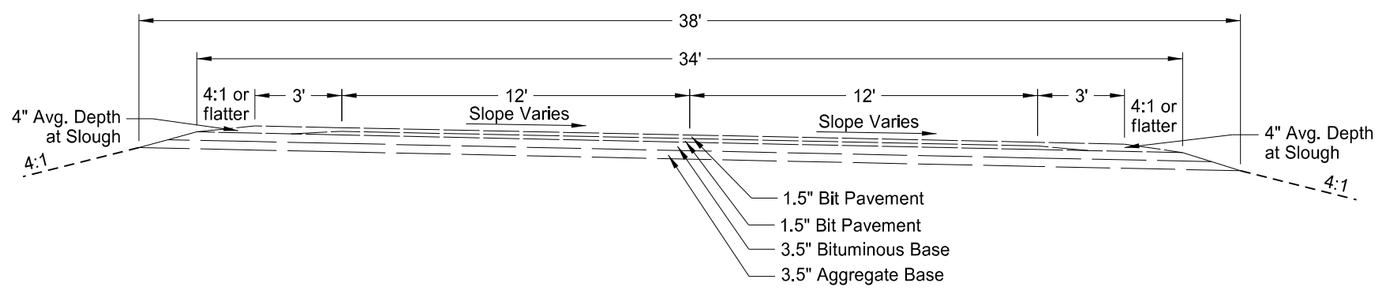
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	30	1



Tangent Section 1
Sta 478+68.5 to Sta 493+00
Sta 510+00 to Sta 715+53.6
Sta 729+98.6 to Sta 740+66.1
Sta 755+04.4 to Sta 789+03.1
Sta 801+51.4 to Sta 805+50.4
Sta 824+97.8 to Sta 868+84.6
Sta 887+64.6 to Sta 901+80.7
Sta 914+00.7 to Sta 1007+00.3
Sta 1030+38.6 to Sta 1065+66.2
Sta 1088+99.5 to Sta 1116+91.3 BK=
Sta 0+00 AHD to Sta 0+89



Tangent Section 2
Sta 476+94.5 to Sta 477+68.5
width varies Sta 477+68.5 to Sta 478+68.5



Curve Section
Sta 715+53.6 to Sta 729+98.6
Sta 740+66.1 to Sta 755+04.4
Sta 789+03.1 to Sta 801+51.4
Sta 805+50.4 to Sta 824+97.8
Sta 868+84.6 to Sta 887+64.6
Sta 901+80.7 to Sta 914+00.7
Sta 1007+00.3 to Sta 1030+38.6
Sta 1065+66.2 to Sta 1088+99.5
Sta 0+89 to Sta 8+59.9

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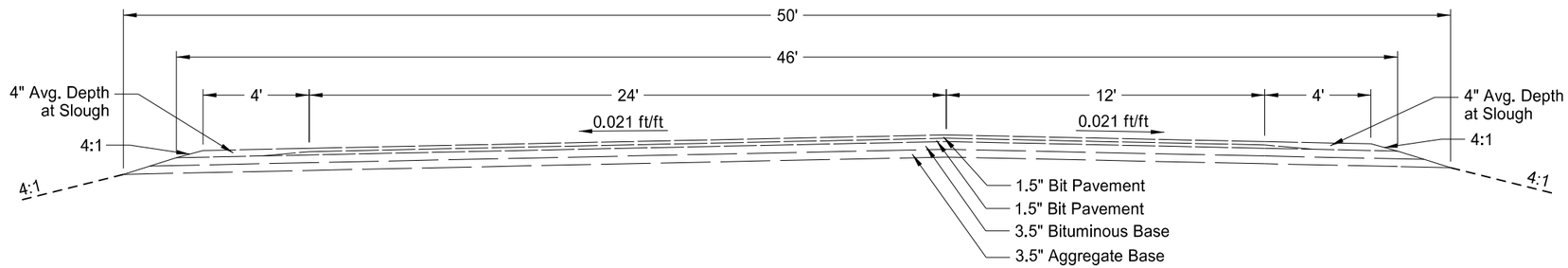
Existing Typical Sections

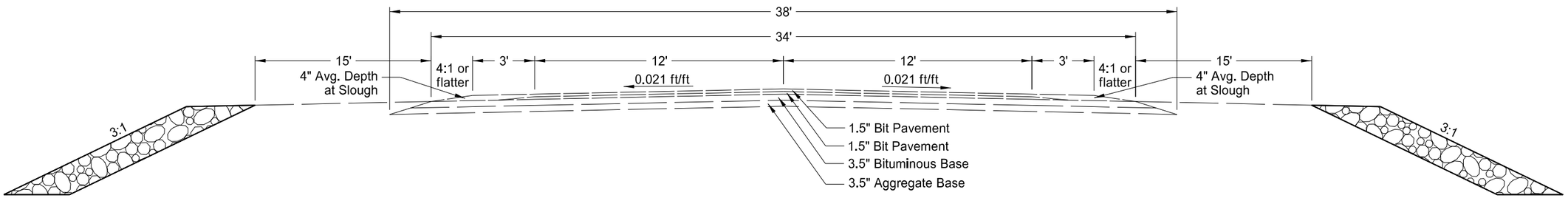
3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	30	2



Climbing Lane
Sta 496+00 to Sta 507+00
width varies Sta 493+00 to Sta 496+00;
Sta 507+00 to Sta 510+00



Widened Section
Sta 1103+28.3 to Sta 1115+00.5 LT. & Rt.

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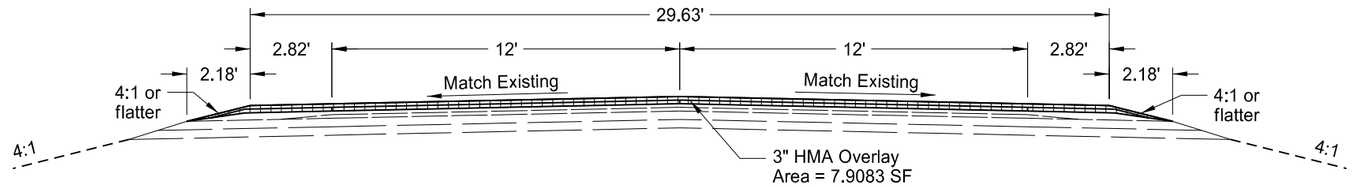
Existing Typical Sections

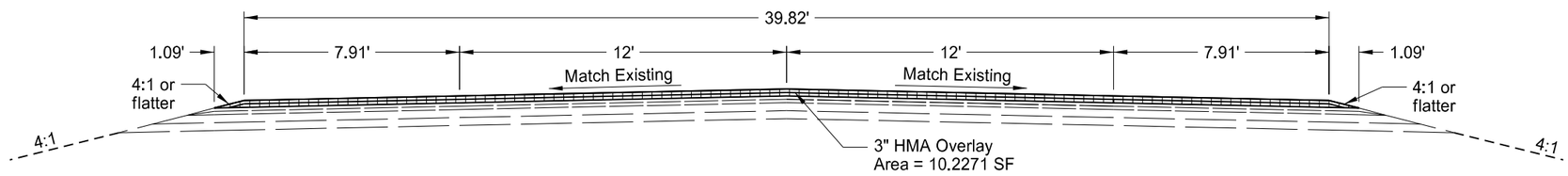
3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

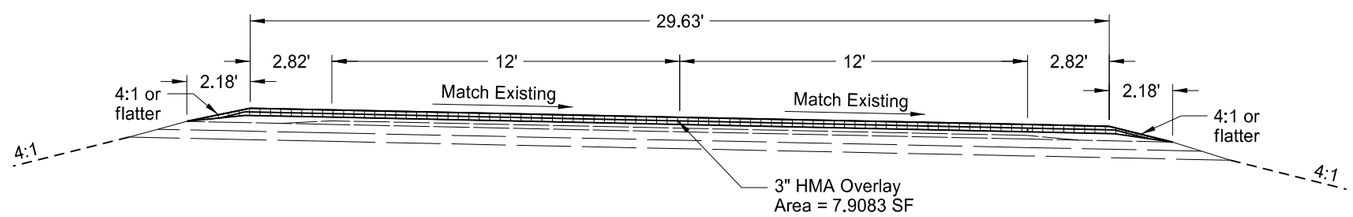
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	30	3



Tangent Section 1
Sta 478+68.5 to Sta 493+00
Sta 510+00 to Sta 715+53.6
Sta 729+98.6 to Sta 740+66.1
Sta 755+04.4 to Sta 789+03.1
Sta 801+51.4 to Sta 805+50.4
Sta 824+97.8 to Sta 868+84.6
Sta 887+64.6 to Sta 901+80.7
Sta 914+00.7 to Sta 1007+00.3
Sta 1030+38.6 to Sta 1065+66.2
Sta 1088+99.5 to Sta 1116+91.3 BK=
Sta 0+00 AHD to Sta 0+89



Tangent Section 2
Sta 476+94.5 to Sta 477+68.5
width varies Sta 477+68.5 to Sta 478+68.5



Curve Section
Sta 715+53.6 to Sta 729+98.6
Sta 740+66.1 to Sta 755+04.4
Sta 789+03.1 to Sta 801+51.4
Sta 805+50.4 to Sta 824+97.8
Sta 868+84.6 to Sta 887+64.6
Sta 901+80.7 to Sta 914+00.7
Sta 1007+00.3 to Sta 1030+38.6
Sta 1065+66.2 to Sta 1088+99.5
Sta 0+89 to Sta 8+59.9

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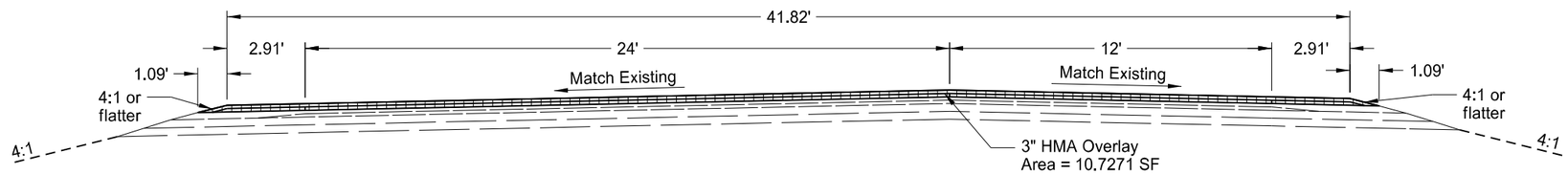
Proposed Typical Sections

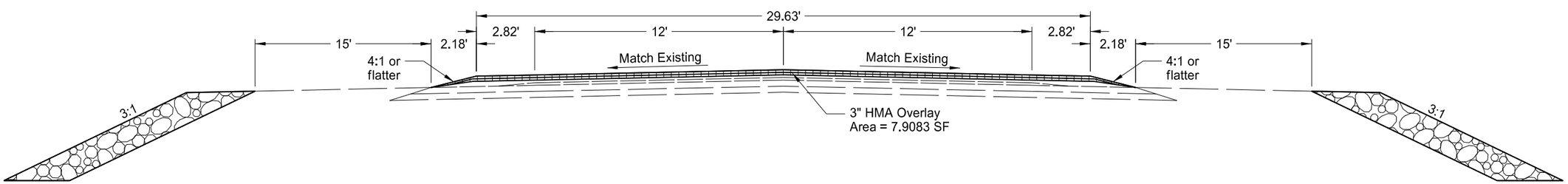
3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	30	4



Climbing Lane
Sta 496+00 to Sta 507+00
width varies Sta 493+00 to Sta 496+00;
Sta 507+00 to Sta 510+00



Widened Section
Sta 1103+28.3 to Sta 1115+00.5 Lt. & Rt.

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Proposed Typical Sections

3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
D3-36	36"x6"	STREET NAME SIGN (Sign and installation only)		6	
G20-1-60	**60"x24"**	**ROAD WORK NEXT __ MILES**	**1**	**34**	**34**
G20-1b-60	60"x24"	WORK IN PROGRESS/ NO WORK IN PROGRESS (Sign and installation only)		26	
G20-2-48	**48"x24"**	**END ROAD WORK**	**1**	**19**	**19**
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)		18	
G20-10-108	108"x48"	CONTRACTOR SIGN		64	
G20-50a-72	**72"x36"**	**ROAD WORK NEXT __ MILES RT & LT ARROWS**	**2**	**37**	**74**
G20-52a-72	**72"x24"**	**ROAD WORK NEXT __ MILES RT or LT ARROW**	**6**	**30**	**180**
G20-55-96	96"x48"	SPEED LIMIT ENFORCED - MINIMUM FEE $80 WHEN WORKERS PRESENT		59	
M1-1-36	36"x36"	INTERSTATE ROUTE MARKER (Post and installation only)		10	
M1-4-24	24"x24"	U.S. ROUTE MARKER (Post and installation only)		10	
M1-5-24	24"x24"	STATE ROUTE MARKER (Post and installation only)		10	
M3-1-24	24"x12"	NORTH (Mounted on route marker post)		7	
M3-2-24	24"x12"	EAST (Mounted on route marker post)		7	
M3-3-24	24"x12"	SOUTH (Mounted on route marker post)		7	
M3-4-24	24"x12"	WEST (Mounted on route marker post)		7	
M4-8-24	24"x12"	DETOUR (Mounted on route marker post)		7	
M4-9-30	30"x24"	DETOUR ARROW RIGHT or LEFT/AHD AND RT or LT		15	
M4-10-48	48"x18"	DETOUR ARROW RIGHT or LEFT		23	
M5-1-21	21"x15"	ARROW AHD AND RT or LT(Mounted on route marker post)		7	
M5-2-21	21"x15"	ARROW AHD UP & RT or LT (Mounted on route marker post)		7	
M6-1-21	21"x15"	ARROW RT or LT (Mounted on route marker post)		7	
M6-2-21	21"x15"	ARROW UP & RT or LT (Mounted on route marker post)		7	
M6-3-21	21"x15"	ARROW AHD (Mounted on route marker post)		7	
R1-1-48	48"x48"	STOP		32	
R1-1a-18	18"x18"	STOP and SLOW PADDLE Back to Back		5	
R1-2-60	60"x60"	YIELD		29	
R2-1-48	48"x60"	SPEED LIMIT __		39	
R2-1a-24	24"x18"	MINIMUM FEE $80 (Mounted on Speed Limit post)		10	
R3-7-48	48"x48"	LEFT or RIGHT LANE MUST TURN LEFT or RIGHT		35	
R4-1-48	48"x60"	DO NOT PASS		39	
R4-7-48	48"x60"	KEEP RIGHT SYMBOL		39	
R5-1-48	48"x48"	DO NOT ENTER		35	
R6-1-36	36"x12"	ONE WAY RIGHT or LEFT		13	
R7-1-12	12"x18"	NO PARKING		11	
R10-6-24	24"x36"	STOP HERE ON RED		16	
R11-2-48	48"x30"	ROAD CLOSED		28	
R11-2a-48	48"x30"	STREET CLOSED		28	
R11-3a-60	60"x30"	ROAD CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY		31	
R11-3c-60	60"x30"	STREET CLOSED __ MILES AHEAD LOCAL TRAFFIC ONLY		31	
R11-4a-60	60"x30"	STREET CLOSED TO THRU TRAFFIC		31	
W1-3-48	48"x48"	RIGHT or LEFT SHARP REVERSE CURVE ARROW		35	
W1-4-48	48"x48"	RIGHT or LEFT REVERSE CURVE ARROW		35	
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW		35	
W1-6-48	48"x24"	LARGE ARROW		26	
W3-1-48	48"x48"	STOP AHEAD SYMBOL		35	
W3-3-48	48"x48"	SIGNAL AHEAD SYMBOL		35	
W3-4-48	48"x48"	BE PREPARED TO STOP		35	
W3-5-48	48"x48"	SPEED REDUCTION AHEAD		35	
W4-2-48	48"x48"	RIGHT or LEFT LANE TRANSITION SYMBOL		35	
W5-1-48	48"x48"	ROAD NARROWS		35	
W5-8-48	48"x48"	THRU TRAFFIC RIGHT LANE		35	
W5-9-48	48"x48"	ROAD WORK TRAFFIC ONLY DOWN & LT or RT ARROW		35	
W6-3-48	48"x48"	TWO WAY TRAFFIC SYMBOL		35	
W8-1-48	48"x48"	BUMP		35	
W8-3-48	48"x48"	PAVEMENT ENDS		35	
W8-7-48	48"x48"	LOOSE GRAVEL		35	
W8-9a-48	48"x48"	SHOULDER DROP-OFF		35	
W8-11-48	48"x48"	UNEVEN LANES		35	
W8-12-48	48"x48"	NO CENTER STRIPE		35	
W8-53-48	48"x48"	TRUCKS ENTERING HIGHWAY		35	
W8-54-48	48"x48"	TRUCKS ENTERING AHEAD or __ FT.		35	
W8-55-48	48"x48"	TRUCKS CROSSING AHEAD or __ FT.		35	
W8-56-48	48"x48"	TRUCKS EXITING HIGHWAY		35	
W9-3a-48	48"x48"	CENTER LANE CLOSED SYMBOL		35	
W12-2-48	48"x48"	LOW CLEARANCE SYMBOL		35	
W13-1-24	24"x24"	__ MPH ADVISORY SPEED PLATE (Mounted on warning sign post)		11	
W13-4-48	48"x60"	RAMP ARROW		39	
W14-3-48	48"x36"	NO PASSING ZONE		23	
W20-1-48	**48"x48"**	**ROAD WORK AHEAD or _FT or _ MILE**	**3**	**35**	**105**
W20-2-48	48"x48"	DETOUR AHEAD or __ FT		35	
W20-3-48	48"x48"	ROAD or STREET CLOSED AHEAD or __ FT.		35	
W20-4-48	48"x48"	ONE LANE ROAD AHEAD or __ FT.		35	
W20-5-48	48"x48"	RIGHT or LEFT LANE CLOSED AHEAD or __ FT.		35	
W20-7a-48	48"x48"	FLAGGING SYMBOL		35	
W20-7k-24	24"x18"	__ FEET (Mounted on warning sign post)		10	
W20-8-48	48"x48"	STREET CLOSED		35	
W20-51-48	48"x48"	EQUIPMENT WORKING		35	
W20-52-54	54"x12"	NEXT __ MILES (Mounted on warning sign post)		12	
W21-1a-48	48"x48"	WORKERS SYMBOL		35	
W21-2-48	48"x48"	FRESH OIL		35	
W21-3-48	48"x48"	ROAD MACHINERY AHEAD or __ FT		35	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W21-5-48	48"x48"	SHOULDER WORK		35	
W21-5a-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED		35	
W21-5b-48	48"x48"	RIGHT or LEFT SHOULDER CLOSED AHEAD or __ FT.		35	
W21-6a-48	48"x48"	SURVEY CREW AHEAD		35	
W21-50-48	48"x48"	BRIDGE PAINTING AHEAD or __ FT.		35	
W21-51-48	48"x48"	MATERIAL ON ROADWAY		35	
W22-8-48	48"x48"	FRESH OIL LOOSE ROCK		35	
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)		11	

SPECIAL SIGNS

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS**	**412**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY
704-0100	**FLAGGING**	**MHR**	**300**
704-1041	ATTENUATION DEVICE-TYPE B-55	EACH	
704-1043	ATTENUATION DEVICE-TYPE B-65	EACH	
704-1044	ATTENUATION DEVICE-TYPE B-70	EACH	
704-1050	TYPE I BARRICADES	EACH	
704-1051	TYPE II BARRICADES	EACH	
704-1052	TYPE III BARRICADES	EACH	
704-1060	DELINEATOR DRUMS	EACH	
704-1065	TRAFFIC CONES	EACH	
704-1067	TUBULAR MARKERS	EACH	
704-1070	DELINEATOR	EACH	
704-1072	FLEXIBLE DELINEATORS	EACH	
704-1081	VERTICAL PANELS - BACK TO BACK	EACH	
704-1085	SEQUENCING ARROW PANEL - TYPE A	EACH	
704-1086	SEQUENCING ARROW PANEL - TYPE B	EACH	
704-1087	SEQUENCING ARROW PANEL - TYPE C	EACH	
704-1088	SEQUENCING ARROW PANEL - TYPE C - CROSSOVER	EACH	
704-1095	TYPE B FLASHERS	EACH	
704-1185	**PILOT CAR**	**HR**	**150**
704-1500	OBLITERATION OF PVMT MK	SF	
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	
704-3510	PRECAST CONCRETE MED BARRIER - STATE FURNISHED	EACH	
762-0200	RAISED PAVEMENT MARKERS	EACH	
762-0420	SHORT TERM 4IN LINE - TYPE R	LF	
762-0430	**SHORT TERM 4IN LINE - TYPE NR**	**LF**	**164696**
772-2110	FLASHING BEACON - POST MOUNTED	EACH	

NOTE:
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.
http://www.dot.nd.gov/

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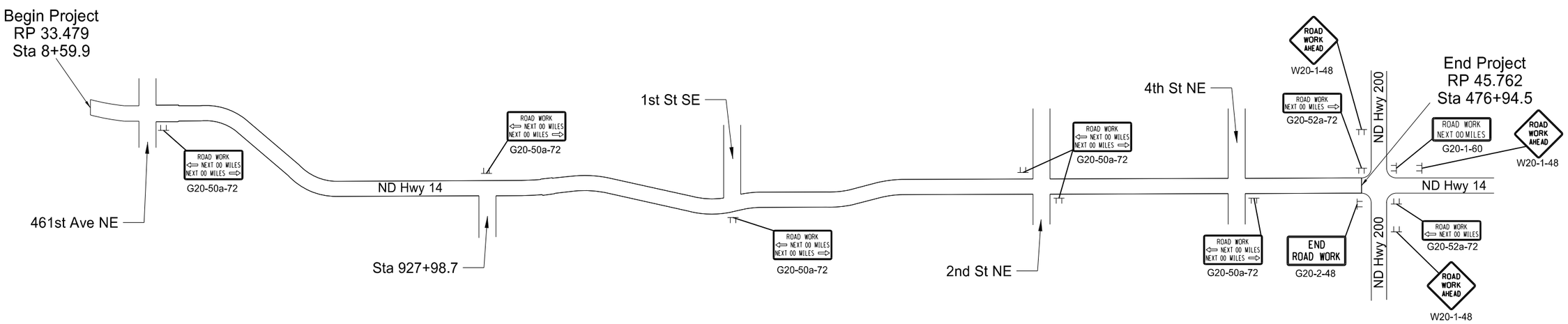
Traffic Control Devices List

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	100	2



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Traffic Control Layout

3" HMA Overlay

ND Highway 14
1 Mi S Co Line N to Jct 200

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
N.D.	SS-1-014(007)033	110	1

Sta/RP	Sign No.	Assembly No.	Flat Sheet For Signs IV SF	Flat Sheet For Signs XI SF	Sign Support Length 1st LF	Sign Support Length 2nd LF	Sign Support Length 3rd LF	Sign Support Length 4th LF	Support Size	Max Post Len LF	Sleeve Length 1st LF	Sleeve Length 2nd LF	Sleeve Length 3rd LF	Sleeve Length 4th LF	Sleeve Size	Anchor EA	Anchor LF	Anchor Size	Reset Sign Panel EA	Reset Sign Support EA	Break-Away EA	Comments
45.223 Rt		19		6.3	13.8				2.5 x 2.5 12 ga	14.5						1	4	3 x 3 7 ga				
Sub Total			0.0	6.3		**Total**	13.8									**Total**	4		0	0	0	
Grand Total			0.0	6.3		**Total**	13.8									**Total**	4		0	0	0	

Basis of Estimate
Sign Support Lengths

The sign support lengths have been calculated
using the following vertical clearances:

Areas where parking and/or pedestrian movement will occur - 84"
Urban/rural expressway and freeway - 84" (Offset - 60")
Rural Roadway - 60"
Bike route - 60"

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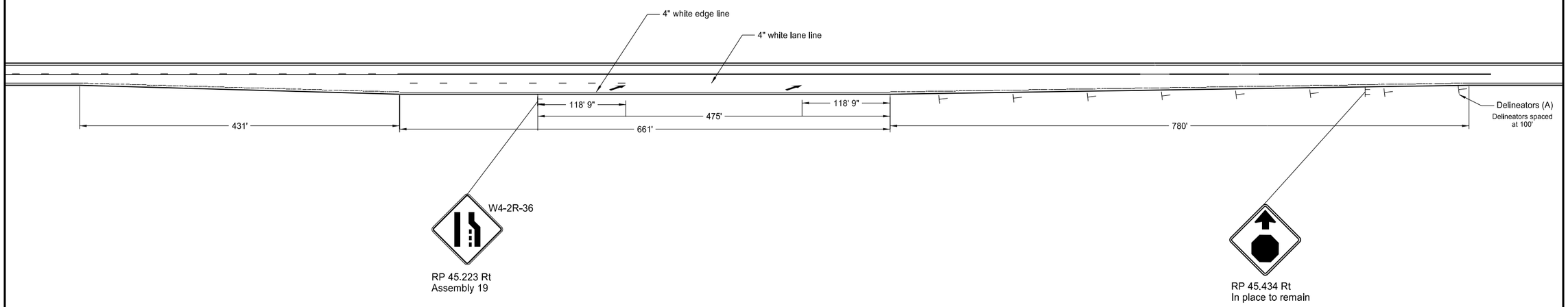
Sign Summary
Perforated Tube

ND 14 and US 200 Intersection

ND Hwy 14

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	110	2

(A) Delineators to be placed 11' from 4" white edge line



Pvmt mk painted message	
Left merge arrow (x2)	82 SF

Pvmt mk painted 4in line	
4" white lane line	80 LF

Diamond grade delineators	
Type A	7 EA

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Signing - Pavement Layout

ND 14 and US 200 Intersection

ND Hwy 14

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	180	1

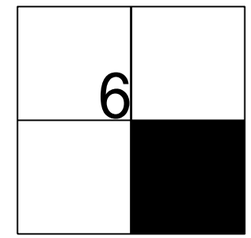
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

TEST HOLE PLAT

Location: SE1/4 6-144-76 County: Burleigh

Ownership: Van Zee Ranch LLC (Ryan Van Zee)

LOCATION OF PIT IN SECTION

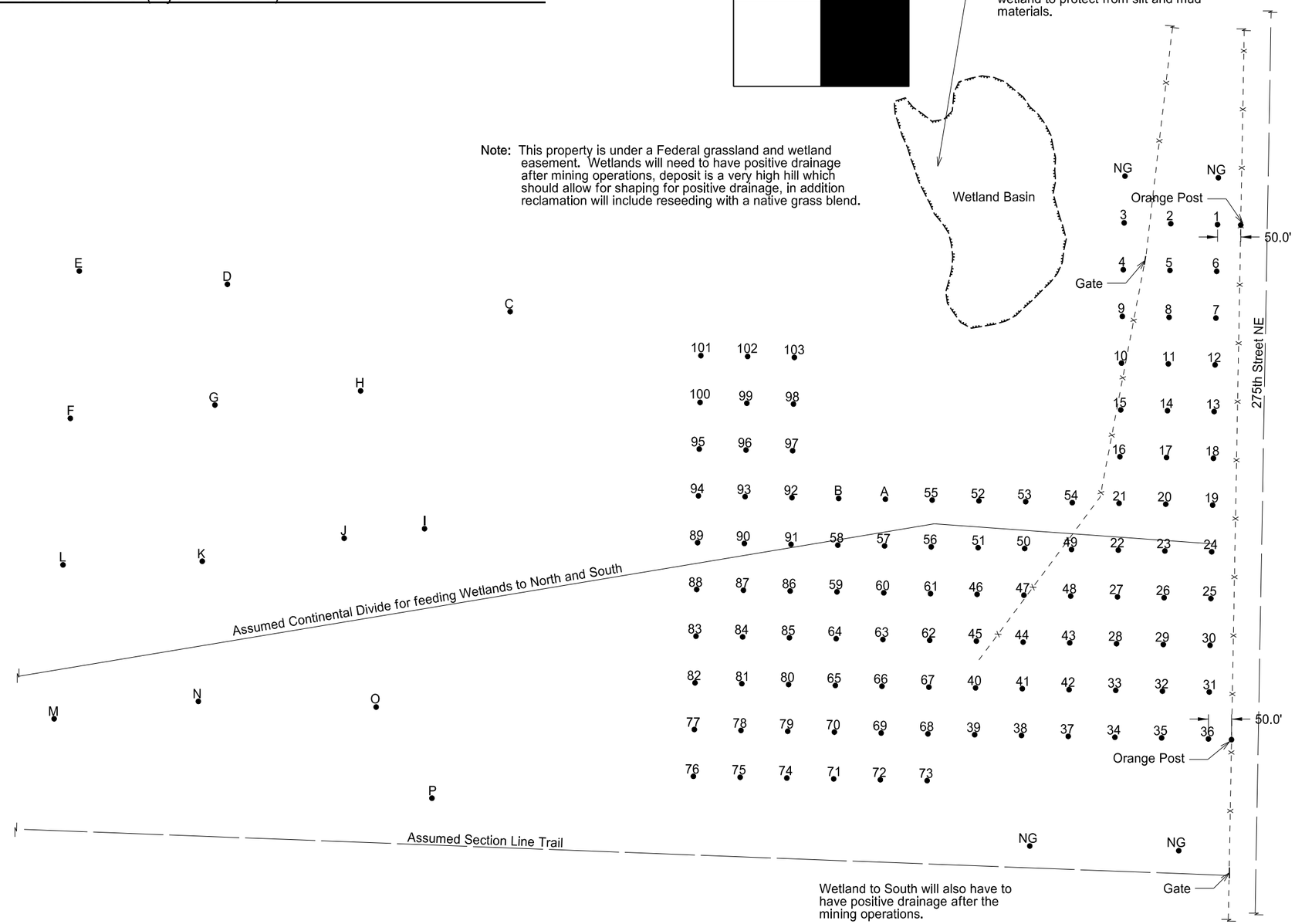


Protected wetland will need to have positive drainage back to it after mining operations. A silt fence will also need to be placed around wetland to protect from silt and mud materials.

Note: This property is under a Federal grassland and wetland easement. Wetlands will need to have positive drainage after mining operations, deposit is a very high hill which should allow for shaping for positive drainage, in addition reclamation will include reseeding with a native grass blend.

Area "A" consists of test holes 1-9
Area "B" consists of test holes 10-18
Area "C" consists of test holes 19-27
Area "D" consists of test holes 28-36
Area "E" consists of test holes 37-45
Area "F" consists of test holes 46-54
Area "G" consists of test holes 55-64
Area "H" consists of test holes 65-73
Area "I" consists of test holes 74-82
Area "J" consists of test holes 83-91
Area "K" consists of test holes 92-103

Legend
gr = gravel
Fgr = fine gravel
CGr = coarse gravel
sd = sand
FS = fine sand
CS = coarse sand
sh = shale
SiCl = silt clay
rk = rock
FeO = iron oxide
CoS = coal slack
NG = no gravel
DM = disturbed material
WL = water line



Scale 1"=250'

5/5/2016 8:22:32 AM ajderman R:\project\10014033.007\design\180PT_001_Van Zee Pit Plat.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	**SS-1-014(007)033**	**180**	**2**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
1	1.5	0.5 Fgr SiCl	0	6	18	27	SiCl
		2.0 gr SiCl					
		1.0 Fgr SiCl					
2	1.0	3.0 gr SiCl	2	15	26	40	+WL 8.0
		3.0 Fgr					
		1.0 gr					
3	3.0	6.0 gr SiCl	0	4	17	30	SiCl
4	1.0	2.0 gr SiCl	1	11	20	29	SiCl
		2.0 gr					
5	1.0	2.0 gr SiCl	0	7	19	32	SiCl
		2.0 gr					
		1.0 Fgr SiCl					
		1.0 gr SiCl					
		2.0 gr					
6	0.5	2.5 gr SiCl	1	5	13	20	SiCl
		1.0 gr					
		1.0 sd sh					
7	1.0	1.0 sd SiCl	0	4	12	21	SiCl
		2.5 sd					
		0.5 Fgr					
		2.0 gr					
8	3.0	1.0 gr SiCl	2	8	18	29	SiCl
		2.0 gr					
		1.0 gr SiCl					
		3.0 sd sh					
		1.0 Fgr					
9	1.0	2.5 gr SiCl	0	3	13	24	SiCl
		0.5 gr					
		2.0 Fgr					
		4.0 sd					
		1.0 Fgr					
		1.0 gr SiCl					
10	0.5	3.5 gr SiCl	1	8	18	29	SiCl
		3.0 sd sh					
		2.0 Fgr					
		2.0 CS					
11	1.0	3.0 gr SiCl	0	6	16	25	SiCl
		1.0 Fgr					
		1.0 Fgr SiCl					
		3.0 sd					
		2.0 sd sh					
12	1.0	2.0 gr SiCl	2	8	21	33	SiCl
		2.0 gr sh					
		3.5 gr					
13	1.5	0.5 Fgr SiCl	0	8	19	31	SiCl
		1.0 sd					
		1.0 Fgr					
		5.0 gr					
		1.0 gr SiCl					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
14	1.0	1.0 gr SiCl	2	10	19	30	SiCl
		5.0 gr					
		3.0 sd sh					
		2.0 Fgr sh					
		1.0 gr SiCl					
15	1.0	2.0 gr SiCl	0	4	12	24	SiCl
		1.0 sd					
		1.0 sd CoS					
		2.0 sd					
		1.0 sd sh					
		1.0 gr SiCl					
16	2.0	2.0 Fgr sh	0	3	12	25	SiCl
		1.0 sd sh					
		1.0 gr					
17	1.0	1.0 gr SiCl	0	6	16	29	
		0.5 Fgr SiCl					
		2.5 sd					
		1.0 Fgr					
		3.0 gr					
		2.0 Fgr					
18	2.0	2.0 FS SiCl	1	8	19	30	+WL 10.0
		5.0 gr					
		1.0 sd sh					
19	1.5	0.5 sd SiCl	0	8	21	30	SiCl
		1.0 gr SiCl					
		1.0 sd SiCl					
		2.0 gr SiCl					
		2.5 gr					
		1.5 sd					
		1.0 Fgr					
		1.0 gr					
20	1.0	1.0 gr SiCl	1	7	14	24	SiCl
		1.0 sd sh					
		1.0 gr					
		2.0 gr sh					
		2.0 sd sh					
		2.0 Fgr sh					
		2.0 CS sh					
		1.0 Fgr sh					
21	1.0	1.0 gr SiCl	0	1	8	17	SiCl
		3.0 sd					
		2.0 Fgr sh					
22	1.0	0.5 gr SiCl	0	2	9	14	SiCl
		1.5 FS sh					
		2.0 FS					
		1.0 gr sh					
		2.0 sd sh					
		1.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
23	0.5	1.5 gr SiCl	0	3	9	20	SiCl
		1.0 Fgr SiCl					
		2.0 gr SiCl					
		2.0 sd					
		1.0 sd SiCl					
		1.0 sd					
		3.0 sd sh					
24	0.5	3.5 gr	2	10	23	39	SiCl
		3.0 Fgr					
		3.0 gr					
		1.0 sd sh					
		1.0 gr SiCl					
		2.0 sd sh					
25	0.5	1.5 gr	0	4	13	23	SiCl
		1.5 Fgr					
		0.5 sd					
		2.0 gr					
		1.0 sd					
		1.0 SiCl					
		1.0 sd SiCl					
		1.0 sd sh					
		1.0 Fgr sh					
26	1.0	1.0 gr SiCl	0	6	13	21	SiCl
		3.0 FS sh					
		2.0 sd					
		1.0 sd sh					
		3.0 Fgr sh					
27	0.5	0.5 gr SiCl	0	9	19	29	SiCl
		1.0 sd SiCl					
		1.0 Fgr SiCl					
		1.0 gr SiCl					
		3.0 gr					
		2.0 sd sh					
28	1.5	2.5 gr SiCl	1	8	20	31	SiCl
		1.0 gr					
		1.0 gr sh					
		1.5 gr					
		1.5 sd sh					
		1.0 gr					
29	0.5	3.5 gr SiCl	0	6	16	25	SiCl
		1.0 sd CoS					
		3.5 sd					
		0.5 Fgr					
		2.0 Fgr sh					
		1.0 gr					
30	1.0	1.0 gr	0	4	13	25	SiCl
		1.0 gr sh					
		2.0 Fgr					
		1.0 FS sh					
		2.0 sd sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	
31	1.0	1.0 Fgr SiCl	2	13	24	34	SiCl
		1.0 gr SiCl					
		4.0 gr					
		1.0 Fgr					
		2.0 gr					
		1.0 FS					
		1.0 Fgr					
		1.0 sd					
		1.0 gr					
32	0.5	4.5 gr SiCl	1	11	21	30	rk
		1.0 gr					
		1.0 FS sh					
		3.0 FS					
		2.0 sd sh					
		3.0 Fgr					
33	1.0	1.0 Fgr SiCl	0	1	7	15	SiCl
		1.0 sd					
		1.0 gr					
		1.0 Fgr sh					
		1.0 sd sd					
		1.0 sd					
		1.0 Fgr					
		1.0 Fgr SiCl					
34	2.0	1.0 FS SiCl	0	4	7	11	SiCl
		1.0 gr SiCl					
		3.0 sd sh					
		1.0 sd					
35	2.5	0.5 Fgr SiCl	0	7	15	24	SiCl
		1.0 Fgr sh					
		4.0 gh sh					
		4.0 sd sh					
		1.0 CS sh					
		1.0 sd sh					
		1.0 Fgr sh					
		1.0 CS sh					
		1.0 Fgr sh					
36	2.0	1.0 Fgr	0	10	20	28	SiCl
		3.5 gr					
		2.0 FS sh					
		2.5 sd sh					

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COUNTY Burleigh Nov-15

PROSPECTED BY Volk/Nelson

INSPECTED & APPROVED Jeffrey Swank Jan-16

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	**SS-1-014(007)033**	**180**	**3**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
37	1.0	2.0 sd SiCl	0	6	12	18	SiCl
		1.0 gr SiCl					
		1.0 sd sh					
		1.0 Fgr sh					
		1.0 gr sh					
		4.0 sd sh					
		1.0 gr SiCl					
38	1.0	4.0 gr SiCl	1	11	21	29	SiCl
		1.0 sd					
		2.0 gr					
		3.0 sd sh					
		1.0 Fgr					
39	1.0	1.0 sd SiCl	0	6	16	26	SiCl
		1.0 gr sh					
		1.0 gr					
		2.0 sd sh					
		1.0 CS sh					
		1.0 sd CoS					
		3.0 sd sh					
		1.0 gr sh					
40	1.0	1.0 gr SiCl	0	7	16	24	SiCl
		2.0 FS SiCl					
		2.0 gr					
		4.0 sd sh					
		1.0 sd CoS					
		1.0 gr					
41	0.5	2.5 gr SiCl	1	11	20	31	SiCl
		3.5 gr					
		4.5 sd sh					
		3.0 Fgr sh					
42	1.0	1.0 gr SiCl	0	9	18	27	SiCl
		1.0 sd SiCl					
		1.0 sd sh					
		1.0 gr sh					
		1.0 gr					
		3.0 sd sh					
		1.0 gr sh					
43	1.0	2.0 gr SiCl	0	6	15	26	SiCl
		1.0 gr					
		3.0 sd sh					
		1.0 Fgr					
		1.0 SiCl					
		1.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
44	2.0	1.0 sd SiCl	0	7	16	25	SiCl
		1.0 Fgr SiCl					
		1.0 sd SiCl					
		1.0 Fgr SiCl					
		1.0 gr					
		2.0 gr SiCl					
		1.0 Fgr					
		1.0 sd					
		2.0 sd sh					
		1.0 Fgr sh					
45	1.5	1.5 sd SiCl	0	10	19	27	SiCl
		1.0 Fgr SiCl					
		3.0 gr SiCl					
		2.0 sd sh					
		2.5 gr sh					
46	3.0	1.0 sd SiCl	0	10	19	27	SiCl
		1.0 gr					
		2.0 sd					
		1.5 gr					
47	1.0	4.0 gr SiCl	2	16	28	41	SiCl
		1.0 gr sh					
		1.0 gr					
		1.0 Fgr					
		1.0 gr SiCl					
48	0.5	1.0 gr SiCl	0	3	11	20	SiCl
		1.5 FS sh					
		1.0 gr					
		3.0 Fgr					
		2.0 sd sh					
49	1.5	3.5 gr SiCl	0	6	14	23	SiCl
		3.0 sd sh					
		2.0 sd					
50	0.5	0.5 gr SiCl	0	8	19	27	SiCl
		1.0 Fgr SiCl					
		5.0 gr					
		1.0 sd sh					
		1.0 sd CoS					
		2.0 sd sh					
51	2.0	2.0 FS	0	1	7	13	SiCl
		3.0 FS SiCl					
		3.0 sd SiCl					
		2.0 gr					
52	2.5	0.5 sd SiCl	0	2	9	17	SiCl
		1.0 sd sh					
		1.0 Fgr SiCl					
		1.0 gr SiCl					
		1.0 Fgr					
		3.0 sd sh					
		0.5 Fgr sh					
		1.0 gr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
53	2.5	2.0 sd SiCl	0	4	10	16	rk
		1.0 gr					
		1.5 FS SiCl					
		2.0 gr					
54	1.0	1.0 sd SiCl	0	4	12	20	SiCl
		1.0 sd					
		1.5 gr SiCl					
		1.5 sd sh					
		1.0 sd					
		1.0 sd sh					
		1.0 gr sh					
55	0.5	1.5 Fgr	0	3	10	16	+WL 13.0
		3.0 FS					
		1.0 Si Cl					
		2.0 Fgr Si Cl					
		1.0 gr Si Cl					
		2.0 Fgr					
		1.0 sd					
		1.0 Fgr					
56	6.0	4.0 Fgr	0	8	17	26	WL 14.0
		1.0 sd					
		3.0 CS					
57	5.0	2.0 Fgr Si Cl	0	4	9	17	SiCl
		3.0 Fgr					
		1.0 sd					
		1.0 CS					
		1.0 gr					
58	2.0	1.0 gr	2	12	22	29	SiCl
		1.0 Fgr					
		3.0 gr					
		2.0 sd					
		1.0 Fgr					
		1.0 Fgr Si Cl					
		1.0 CS					
		2.0 Fgr					
		2.0 sd					
		1.0 Fgr					
59	2.0	1.0 gr	0	6	19	28	SiCl
		2.0 Fgr					
		1.0 gr					
		1.0 Fgr					
		1.0 Fgr Si Cl					
60	7.0	1.0 Fgr	0	2	8	17	SiCl
		1.0 CS					
		1.0 sd					
		2.0 Fgr					
		2.0 sd					
		1.0 Fgr Si Cl					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
61	1.0	2.0 gr	0	7	15	26	Si Cl
		1.0 Fgr					
		2.0 CS					
		4.0 Fgr					
		1.0 CS					
		0.5 Fgr					
62	3.0	2.0 Fgr	0	6	10	17	Si Cl
		2.0 sd					
		0.5 Fgr					
		0.5 Fgr Si Cl					
63	5.0	1.0 gr	0	2	9	20	Si Cl
		6.0 Fgr					
64	3.0	2.0 FS	0	3	8	12	Si Cl
		3.0 FS Si Cl					
		0.5 Fgr					
		1.5 Fgr Si Cl					
		1.0 sd					
		1.0 Fgr					
65	4.0	1.5 Fgr	0	12	21	27	Si Cl
		1.5 FS Si Cl					
		1.0 Fgr					
		1.0 gr					
		1.0 Fgr Si Cl					
66	4.0	3.0 sd Si Cl	0	5	16	29	Si Cl
		1.0 Fgr Si Cl					
		1.0 Fgr					
		3.0 gr					
		1.0 sd					
		1.0 Fgr Si Cl					
67	1.5	1.5 gr	0	4	12	23	Si Cl
		1.0 Fgr					
		1.0 CS					
		1.0 Fgr					
68	1.0	3.0 gr	0	8	18	26	Si Cl
		1.0 Fgr					
		3.0 FS					
		1.0 Fgr					

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COUNTY Burleigh Nov-15

PROSPECTED BY Volk/Nelson

INSPECTED & APPROVED Jeffrey Swank Jan-16

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	**SS-1-014(007)033**	**180**	**4**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
69	6.0	2.0 sd	0	3	9	17	Si Cl
		1.0 FS					
		2.0 FS Si Cl					
		4.0 Fgr					
		1.0 gr					
		1.0 Fgr					
70	2.0	2.0 Fgr	0	13	23	32	Si Cl
		4.0 gr					
		2.5 Fgr					
71	2.0	6.0 Fgr	0	7	20	32	Si Cl
		1.0 sd					
		1.0 sd sh					
		1.0 Fgr					
		1.0 Si Cl					
		1.0 Fgr					
		1.0 gr					
		1.0 Fgr					
		3.0 gr					
		1.0 gr Si Cl					
72	1.0	1.5 gr	0	5	10	16	Si Cl
		1.5 Fgr					
		1.0 FS					
		2.0 Fgr Si Cl					
		2.0 Fgr					
		1.5 FS					
		1.5 Fgr					
		1.0 FS					
		1.0 gr					
73	3.0	3.0 Fgr	0	1	5	10	Si Cl
		2.5 FS					
		0.5 sd					
		2.0 Fgr					
74	2.0	2.0 gr	0	9	20	31	Si Cl
		2.0 sd sh					
		1.0 Fgr					
		2.0 sd sh					
		3.0 gr					
75	2.0	1.0 sd sh	2	6	16	27	Si Cl
		2.5 CS sh					
		0.5 Fgr sh					
		2.0 sd sh					
		1.0 Fgr					
		2.0 gr					
		4.0 gr sh					
		1.0 CS sh					
		2.0 Fgr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
76	1.0	1.0 Fgr sh	0	1	7	17	FS Si Cl
		3.0 sd sh					
		4.0 FS Si Cl					
		1.0 gr sh					
		3.0 sd sh					
		1.0 Fgr sh					
		3.0 sd sh					
77	1.0	1.0 sd Si Cl	0	8	18	28	Si Cl
		1.0 sd sh					
		1.0 sd					
		1.0 sd Co S					
		1.0 sd sh					
		2.0 gr sh					
		1.0 Fgr sh					
		1.0 gr sh					
		1.0 gr Si Cl					
		1.0 gr Co S					
		1.0 gr Si Cl					
78	1.0	2.0 sd	0	7	18	30	Si Cl
		1.0 Fgr					
		1.0 Fgr sh					
		1.0 FS sh					
		1.0 sd					
		3.0 gr					
		2.0 sd sh					
		1.0 Fgr					
		2.0 gr					
79	1.0	1.0 gr Si Cl	0	2	10	19	Si Cl
		2.0 Fgr sh					
		3.0 sd sh					
		1.5 Fgr sh					
		0.5 Fgr Co S					
		1.0 gr Si Cl					
80	1.0	2.0 CS	0	0	6	16	Si Cl
		3.0 sd					
		1.0 sd sh					
		1.0 Fgr sh					
		1.0 sd sh					
		1.0 sd					
		1.0 sd sh					
		1.0 gr Si Cl					
81	1.5	1.5 Fgr	0	3	10	22	Si Cl
		2.0 sd					
		2.0 Fgr					
		1.0 sd					
		1.0 Fgr					
		1.0 sd sh					
		1.0 Fgr					
		2.0 sd					
		1.0 sd sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
82	0.5	1.5 Fgr sh	1	9	21	33	Si Cl
		1.0 sd sh					
		2.0 Fgr sh					
		2.0 sd sh					
		4.5 gr					
		0.5 Si Cl					
		2.0 gr					
		3.5 gr Co S					
83	1.0	1.0 CS Si Cl	0	5	15	27	Si Cl
		1.0 sd					
		4.0 sd sh					
		4.0 gr					
		1.0 sd sh					
		2.0 gr sh					
		2.0 gr Si Cl					
84	0.5	1.5 sd	0	2	11	22	Si Cl
		4.0 Fgr					
		1.0 FS sh					
		2.0 Fgr sh					
85	2.0	4.0 sd Si Cl	0	3	7	13	Si Cl
		2.0 gr Si Cl					
86	1.0	4.0 FS	0	3	6	11	Si Cl
		1.0 Fgr					
		2.0 FS Si Cl					
87	1.0	1.0 gr Si Cl	0	4	10	18	Si Cl
		1.0 Fgr					
		1.0 CS Co S					
		3.0 sd sh					
		1.0 Fgr sh					
		1.0 sd sh					
		1.0 sd Co S					
		1.0 Fgr					
		1.0 gr sh					
88	1.0	1.0 Fgr	0	6	14	26	Si Cl
		1.0 gr					
		4.0 sd					
		3.0 gr					
		1.0 Fgr					
		2.0 sd					
		2.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
89	2.0	1.0 sd sh	0	6	15	25	rk
		1.0 sd Co S					
		1.5 sd sh					
		0.5 Fgr					
		1.0 CS sh					
		1.0 sd sh					
		1.0 sd					
		2.0 Fgr sh					
		1.0 gr					
		2.0 gr Si Cl					
		1.0 gr Co S					
		1.0 gr Si Cl					
90	1.0	1.0 gr	0	3	13	26	Si Cl
		4.0 Fgr					
		1.0 sd					
		2.0 Fgr					
		1.0 sd					
		1.0 gr					
		2.0 sd					
91	2.0	1.0 sd Si Cl	0	8	16	22	Si Cl
		1.0 sd					
		1.0 sd Si Cl					
		3.0 gr Si Cl					
		2.0 sd					
		1.0 sd sh					
		1.0 gr					
		1.0 Fgr Si Cl					
92	2.0	4.0 sd Si Cl	0	0	3	5	Si Cl
		4.0 sd					
93	2.0	1.0 gr Si Cl	0	7	17	27	Si Cl
		1.0 sd					
		3.0 Fgr					
		3.0 sd sh					
		1.0 FS sh					
		1.0 Fgr sh					
		1.0 gr sh					
		1.5 gr Si Cl					

RANGE 76 **TWP** 144 **SEC** SE1/4 6

COUNTY Burleigh Nov-15

PROSPECTED BY Volk/Nelson

INSPECTED & APPROVED Jeffrey Swank Jan-16

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	**SS-1-014(007)033**	**180**	**5**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
94	2.0	1.0 Fgr	0	5	15	25	Si Cl
		2.0 sd					
		1.0 Fgr					
		4.0 sd					
		2.0 FS					
		3.0 gr					
		2.0 gr Si Cl					
95	2.0	1.0 sd Si Cl	0	2	11	22	+WL 17.0
		1.0 sd					
		2.0 Fgr					
		1.0 sd					
		2.0 sd sh					
		1.0 Fgr sh					
		1.5 sd sh					
		0.5 Fgr sh					
		2.0 sd sh					
		1.0 gr sh					
		1.0 gr Si Cl					
		1.0 gr sh					
96	1.0	2.0 Fgr	0	4	13	23	Si Cl
		1.0 sd					
		1.0 Fgr sh					
		1.0 sd sh					
		2.0 sd					
		1.0 FS					
		1.0 sd sh					
		1.0 gr					
97	3.0	1.0 FS Si Cl	0	2	6	10	Si Cl
		3.0 sd Si Cl					
98	3.0	1.5 FS	0	6	10	13	Si Cl
		2.5 Fgr					
99	1.0	3.0 Fgr	0	5	14	25	Si Cl
		1.0 CS					
		4.0 Fgr					
		1.0 FS					
		1.0 gr					
		1.0 Fgr					
		1.0 gr					
100	2.0	6.0 Fgr	0	3	12	25	Si Cl
		1.5 sd					
		3.5 Fgr					
101	2.0	3.0 Fgr	1	11	21	32	+WL 15.0
		1.0 sd					
		1.0 Fgr					
		1.0 FS					
		1.0 Fgr					
		5.0 gr					
		1.0 Fgr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
102	1.0	1.0 Fgr	0	8	18	28	Si Cl
		1.0 sd					
		1.0 Fgr Co S					
		7.0 Fgr					
103	3.0	8.0 Fgr	0	5	13	22	Si Cl
		2.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
A	1.0	5.0 sd Si Cl	0	0	6	13	Si Cl
		2.0 Fgr sh					
B	2.0	3.0 FS Si Cl	0	0	4	5	rk
		1.0 sd Si Cl					
C	0.5	0.5 gr Si Cl	1	9	21	33	Si Cl
		1.0 sd					
		2.0 Fgr					
		8.0 gr					
D	2.0	1.0 sd	0	5	16	26	+
		2.0 Fgr					
		1.0 sd					
		2.0 Fgr					
		2.0 sd					
		1.0 Fgr					
		1.0 sd					
		1.0 Fgr					
		1.0 gr					
E	1.0	6.0 Fgr	0	8	18	29	Si Cl
		2.0 sd					
		1.0 gr Si Cl					
		1.0 FS					
		3.0 gr Si Cl					
		1.0 Fgr					
F	1.0	1.0 sd Si Cl	0	7	17	26	+
		2.0 sd					
		1.5 Fgr					
		2.5 gr					
		4.0 Fgr					
		1.0 gr					
		1.0 sd					
		1.0 Fgr					
G	1.0	2.0 Fgr	0	6	16	28	Si Cl
		3.0 sd					
		2.0 Fgr					
		2.0 sd sh					
		1.0 gr					
		2.0 Fgr					
		4.0 Fgr sh					
		2.0 gr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
H	1.0	1.0 sd	0	6	15	28	+
		3.0 Fgr					
		2.0 Fgr sh					
		1.0 gr					
		2.0 FS					
		1.0 gr					
		1.0 sd sh					
		4.0 gr					
		2.0 Fgr sh					
		2.0 gr Si Cl					
I	0.5	1.5 Fgr sh	1	10	22	34	+Cave
		1.0 sd					
		2.0 Fgr					
		1.0 sd					
		2.0 Fgr					
		10.0 gr					
J	1.0	1.0 sd	0	9	20	31	Si Cl
		4.0 Fgr					
		1.0 sd Co S					
		0.5 sd					
		1.5 Fgr					
		1.0 gr					
		1.0 gr Si Cl					
		1.0 gr					
		1.0 gr Si Cl					
		3.0 gr					
		1.0 gr Si Cl					
K	2.0	3.0 sd	0	6	17	27	+
		5.0 Fgr					
		2.0 sd					
		1.0 Fgr					
		7.0 gr					
L	1.0	5.0 Fgr	0	8	19	31	Si Cl
		2.0 sd sh					
		1.0 Fgr sh					
		7.0 gr					

RANGE 76 **TWP** 144 **SEC** SE1/4 6

COUNTY Burleigh Nov-15

PROSPECTED BY Volk/Nelson

INSPECTED & APPROVED Jeffrey Swank Jan-16

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	**SS-1-014(007)033**	**180**	**6**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
M	1.0	1.0 sd	0	10	20	29	Si Cl
		2.0 Fgr					
		1.0 sd					
		1.5 Fgr					
		1.5 sd					
		2.0 gr					
		1.0 Fgr					
		3.0 gr					
N	1.0	2.0 Fgr	1	7	16	27	Si Cl
		5.0 sd sh					
		2.0 gr sh					
		1.0 sd sh					
		3.0 gr					
		2.0 gr Si Cl					
O	0.5	4.5 sd	1	9	20	33	+
		1.0 sd sh					
		1.0 sd					
		1.0 Fgr					
		1.0 sd sh					
		11.0 gr					
P	2.0	2.0 Fgr	1	8	18	28	Si Cl
		2.0 sd sh					
		2.0 gr					
		2.0 sd					
		2.0 gr Si Cl					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole

RANGE 76 **TWP** 144 **SEC** SE1/4 6

COUNTY Burleigh Nov-15

PROSPECTED BY Volk/Nelson

INSPECTED & APPROVED Jeffrey Swank Jan-16

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SS-1-014(007)033	180	7

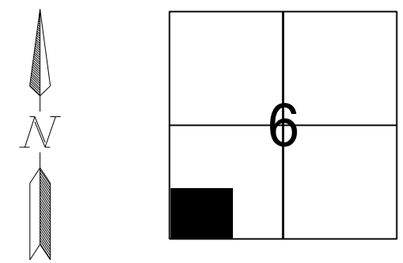
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

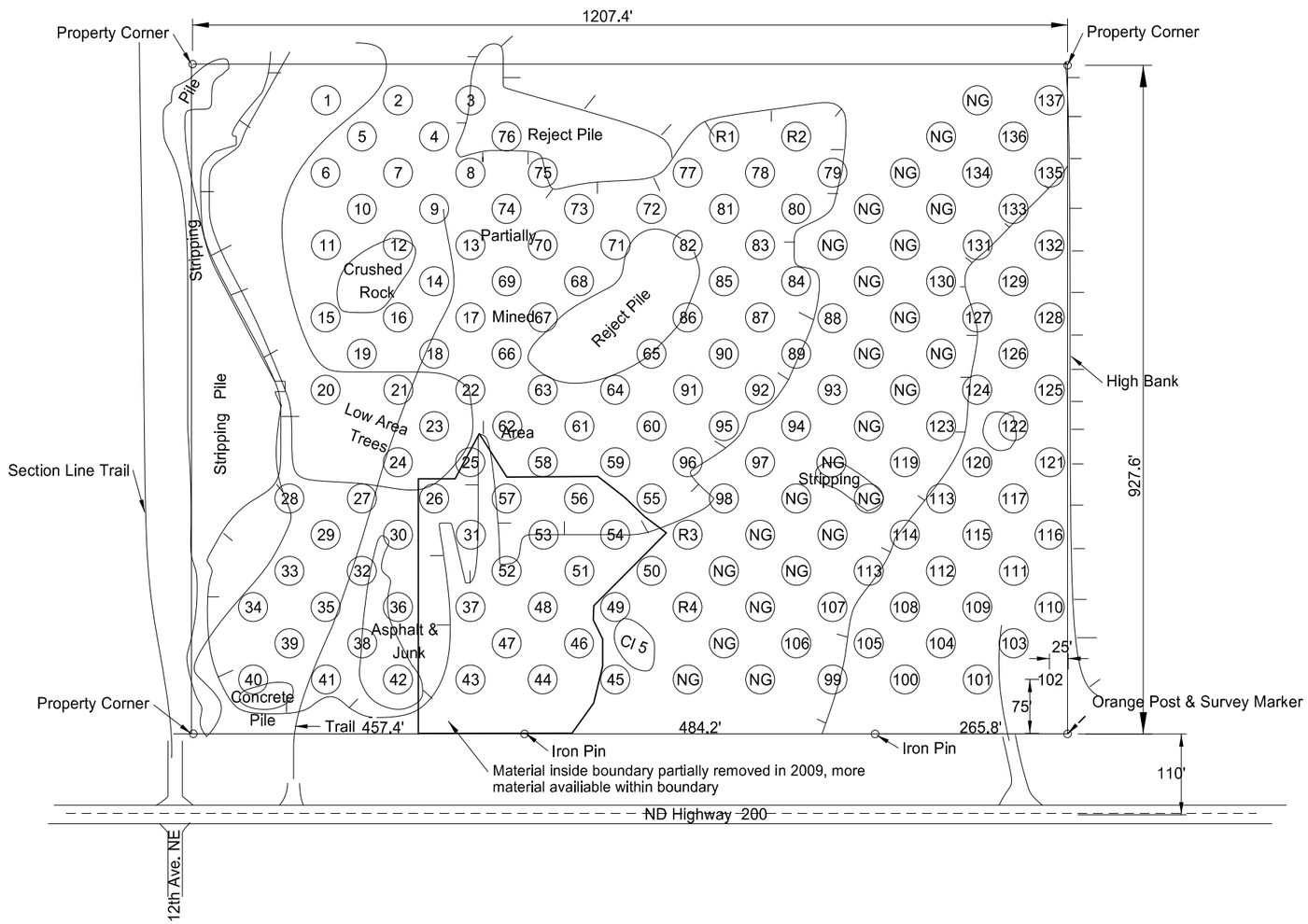
TEST HOLE PLAT

Location: SW1/4SW1/4 6-146-75 County: Sheridan

Ownership: State Owned

LOCATION OF PIT IN SECTION





Scale 1" = 200'

Area " A " consists of Test Holes	1 - 14
Area " B " consists of Test Holes	15 - 28
Area " C " consists of Test Holes	29 - 43
Area " D " consists of Test Holes	44 - 54
Area " E " consists of Test Holes	55 - 66
Area " F " consists of Test Holes	67 - 76
Area " G " consists of Test Holes	77 - 88
Area " H " consists of Test Holes	89 - 98
Area " I " consists of Test Holes	99 - 113
Area " J " consists of Test Holes	114 - 125
Area " K " consists of Test Holes	126 - 137

Legend:
gr = gravel
sd = sand
FS = fine sand
Fgr = fine gravel
CS = coarse sand
sh = shale
SiCl = silt clay
rk = rock
FeO = Iron oxide
CoS = Coal Slack
WL = water line
NG = no gravel
DM = disturbed material

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	**SS-1-014(007)033**	**180**	**8**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
1	2.0	3.0 gr SiCl	2	26	40	49	+WL 5.0
2	5.0 DM	1.0 FgrSiCl	1	19	33	50	+WL 8.0
		1.0 Fgr					
		1.0 gr					
3	8.0 DM	3.0 gr	1	15	37	55	+WL14.0
		3.0 gr SiCl					
4	2.0 DM	1.0 FgrSiCl	1	10	22	36	+WL10.0
		3.0 Fgr					
		1.0 gr					
		1.0 sd CoS					
		1.0 Fgr CoS					
		1.0 sd CoS					
5	1.5 DM	1.0 Fgr	0	3	12	24	+WL 8.0
		2.5 FS					
		2.0 Fgr sh					
		1.0 gr					
6	1.0 DM	2.5 FgrSiCl	0	11	26	42	+WL 6.0
		2.5 Fgr					
7	1.0	2.0 gr sh	0	9	18	28	+WL 9.0
		1.0 FS					
		2.0 SiCl					
		3.0 gr sh					
8	2.0	2.0 Fgr	0	13	28	40	+WL 9.0
		1.0 gr					
		2.0 Fgr					
		1.0 gr					
		1.0 Fgr					
9	0.5	2.5 gr sh	0	14	27	38	+WL 9.0
		1.0 SiCl					
		1.0 sd					
		4.0 gr					
10	0.5	1.5 Fgr SICl	0	8	23	37	+WL 7.5
		2.0 gr SiCl					
		1.0 Fgr SICl					
		1.0 Fgr					
		1.5 Fgr sh					
11	0.5	2.5 gr SiCl	0	13	27	42	+WL 6.0
		3.0 gr sh					
12	3.5 DM	0.5 FgrSiCl	1	15	30	42	+WL 9.0
		1.0 Fgr					
		3.0 FgrSiCl					
		1.0 gr					
13	0.5	2.5 gr sh	1	13	31	47	+WL 7.0
		1.0 Fgr sh					
		3.0 gr					
14	4.0	1.0 FgrSiCl	1	14	31	41	+WL 6.0
		1.0 gr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
15	1.0	1.0 gr SiCl	1	15	28	42	+WL 5.5
		1.0 Fgr sh					
		2.0 gr					
		0.5 sd					
16	2.0	1.0 Fgr	0	11	25	42	+WL 6.0
		1.0 Fgr CoS					
		1.0 Fgr					
		1.0 gr CoS					
17	0.5	4.5 gr SiCl	1	18	33	48	+WL 5.0
18	1.0	1.0 FgrSiCl	0	10	24	43	+WL 5.0
		3.0 Fgr					
19	1.0 DM	1.0 gr SiCl	0	4	15	36	+WL 4.5
		2.5 Fgr					
20	0.5	1.0 sd sh	0	10	22	41	+WL 3.0
		1.5 sd sh					
21	0.5	0.5 Fgr CoS	0	6	16	29	+WL 4.0
		1.0 Fgr					
		1.0 sd					
		1.0 Fgr					
22	0.5	3.5 gr SiCl	0	4	13	22	+WL 5.0
		1.0 sd					
23	0.5	1.5 Fgr SiCl	1	13	26	44	+WL 4.0
		1.0 gr SiCl					
		1.0 Fgr CoS					
24	0.5	1.0 gr SiCl	0	4	13	27	+WL 3.5
		2.0 Fgr sh					
25	0.5	3.5 Fgr	0	5	10	33	+WL10.5
		2.0 sd					
		2.0 FS SiCl					
		2.5 Fgr CoS					
26	0.5	4.5 gr	1	14	28	45	+WL11.0
		4.0 sd CoS					
		2.0 Fgr CoS					
27	0.5	1.5 gr SiCl	0	8	21	39	+WL 7.5
		2.0 Fgr					
		1.0 sd					
		2.5 gr					
28	0.5	2.5 gr	0	2	10	24	+WL13.0
		1.5 sd					
		0.5 Fgr CoS					
		1.0 sd CoS					
		1.0 sd sh					
		1.0 SiCl					
		1.0 sd					
		2.0 Fgr					
		2.0 gr CoS					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
29	0.5	1.5 sd CoS	0	8	21	34	+WL10.0
		1.0 gr					
		1.0 Fgr					
		1.0 sd					
		2.0 sd CoS					
		1.0 Fgr					
		1.5 gr					
		0.5 gr CoS					
30	0.5	1.5 gr SiCl	0	9	22	41	+WL 8.0
		2.0 Fgr					
		3.0 Fgr sh					
		1.0 gr					
31	0.5	0.5 Fgr	0	9	22	34	+WL10.0
		1.0 Fgr CoS					
		2.0 Fgr					
		1.0 sd sh					
		1.0 FS					
		2.0 sd					
		1.0 Fgr CoS					
		1.0 gr CoS					
32	0.5	3.5 gr sh	0	11	26	43	+WL12.0
		1.5 sd sh					
		1.5 Fgr sh					
		1.0 FgrSiCl					
		2.0 Fgr					
		1.0 FS CoS					
		1.0 gr					
33	0.5	1.0 sd sh	0	7	20	37	+WL10.5
		4.5 Fgr sh					
		1.0 sd					
		3.5 gr sh					
34	0.5	0.5 Fgr	2	10	25	39	+WL17.0
		1.0 gr					
		1.0 Fgr CoS					
		1.0 Fgr					
		1.0 Fgr sh					
		2.0 Fgr					
		1.0 Fgr sh					
		1.0 sd sh					
		1.0 Fgr					
		1.0 sd CoS					
		3.0 Fgr					
		1.0 Fgr CoS					
		2.0 gr					
35	0.5	4.5 gr SiCl	1	10	23	38	+WL15.0
		2.0 sd sh					
		3.0 gr					
		2.0 sd sh					
		2.0 Fgr sh					
		1.0 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	
36	0.5	2.5 FgrSiCl	1	11	25	42	+WL14.0
		3.0 gr					
		1.0 Fgr					
		1.0 gr					
		2.0 Fgr sh					
		2.0 sd sh					
		1.0 CS CoS					
		1.0 Fgr CoS					
37	0.5	0.5 FgrSiCl	4	17	30	42	+
		4.0 gr					
		1.0 sd					
		1.0 sd CoS					
		2.0 Fgr					
		2.0 Fgr CoS					
		1.0 Fgr sh					
		1.0 FS CoS					
		1.0 Fgr sh					
		1.0 sd sh					
		4.0 gr					
38	0.5	0.5 Fgr SiCl	0	1	12	25	+WL15.0
		3.0 gr					
		2.0 Fgr sh					
		2.0 Fgr CoS					
		1.0 sd					
		2.0 Fgr					
		1.0 sd					
		3.0 Fgr sh					
39	1.0	3.0 gr SiCl	1	10	21	36	+WL17.0
		1.0 sd					
		1.0 sd CoS					
		2.0 gr					
		5.0 Fgr sh					
		2.0 sd sh					
		2.0 Fgr sh					

RANGE 75 **TWP** 146 **SEC** SW1/4SW1/4 6

COUNTY Sheridan Jun-08

PROSPECTED BY Volk/KNelson

INSPECTED & APPROVED Carter Jun-08

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	**SS-1-014(007)033**	**180**	**9**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
40	7.0 DM	1.0 Fgr CoS	0	8	20	35	+WL16.0
		2.0 Fgr					
		1.0 sd sh					
		1.0 Fgr					
		1.0 sd CoS					
		1.0 Fgr CoS					
		1.0 Fgr sh					
		1.0 Fgr					
41	0.5	2.5 gr	1	13	26	38	+WL18.5
		2.0 Fgr sh					
		2.0 gr					
		1.0 sd sh					
		1.0 SiCl					
		1.0 sd CoS					
		3.0 gr					
		3.0 sd sh					
		2.5 Fgr sh					
42	10.0 DM	2.0 gr SiCl	2	11	25	41	+WL18.0
		1.0 Fgr					
		1.0 Fgr CoS					
		2.0 Fgr					
		1.0 sd CoS					
		1.0 gr CoS					
43	0.5	1.5 Fgr SiCl	2	18	31	44	+
		3.0 gr sh					
		2.0 Fgr sh					
		1.0 gr					
		1.0 sd sh					
		4.0 gr					
		3.0 sd sh					
		4.0 gr					
44	0.5	1.5 Fgr SiCl	1	14	29	43	+
		2.0 Fgr sh					
		4.5 gr					
		3.5 sd sh					
		2.0 gr sh					
		1.0 sd					
		3.0 Fgr sh					
		2.0 gr					
45	4.0	2.0 gr SiCl	1	13	25	38	+
		1.0 gr					
		2.0 Fgr					
		1.0 Fgr sh					
		1.0 Fgr					
		2.0 Fgr sh					
		3.0 Fgr					
		2.0 gr					
		1.0 Fgr					
		1.0 Fgr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
46	1.0	5.0 gr	1	16	30	42	+
		1.0 sd sh					
		2.0 Fgr sh					
		2.0 sd sh					
		4.5 gr					
		1.5 sd sh					
		2.0 Fgr					
		1.0 gr					
47	1.0	2.0 Fgr SiCl	0	10	25	39	+
		2.0 Fgr sh					
		1.0 Fgr					
		1.0 Fgr sh					
		1.0 Fgr					
		1.0 sd sh					
		1.0 Fgr					
		1.0 sd sh					
		1.0 gr					
		2.0 Fgr					
		1.0 sd sh					
		2.0 Fgr sh					
		1.0 gr					
		2.0 Fgr sh					
48	0.5	2.5 gr SiCl	2	18	32	44	+
		2.0 sd sh					
		4.0 gr					
		1.0 sd sh					
		3.5 gr					
		1.5 sd sh					
		2.0 gr					
		1.0 sd CoS					
		2.0 gr					
49	5.0 DM	3.0 gr	0	1	13	25	+
		1.0 sd CoS					
		2.0 Fgr					
		1.0 gr					
		1.0 Fgr CoS					
		1.0 Fgr sh					
		1.0 Fgr					
		1.0 gr					
		2.0 gr					
		1.0 Fgr CoS					
50	1.0	6.0 gr	0	13	26	39	+
		1.0 sd					
		2.0 Fgr sh					
		1.0 gr					
		3.0 Fgr sh					
		1.0 sd sh					
		3.0 Fgr sh					
		1.0 gr					
		1.0 sd sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
51	0.5	0.5 FgrSiCl	2	15	28	41	+
		2.0 gr					
		1.0 Fgr sh					
		5.0 Fgr					
		1.0 Fgr sh					
		1.0 gr					
		1.0 sd CoS					
		1.0 Fgr CoS					
		1.0 gr					
		1.0 FgrSiCl					
		1.0 gr					
		1.0 gr sh					
		2.0 Fgr CoS					
		1.0 sd sh					
52	0.5	1.5 gr	1	13	28	41	+
		2.0 gr sh					
		1.0 sd sh					
		2.0 gr					
		5.0 sd sh					
		5.0 gr					
		1.0 FS					
		2.0 gr					
53	0.5	0.5 Fgr	3	18	31	46	+
		2.0 gr					
		1.0 Fgr					
		1.0 Fgr sh					
		1.0 Fgr					
		2.0 Fgr sh					
		3.0 Fgr					
		3.0 gr					
		1.0 sd CoS					
		1.0 Fgr CoS					
54	3.5	1.5 gr sh	1	13	27	41	+
		2.0 gr					
		2.0 Fgr					
		2.0 gr					
		2.0 sd sh					
		2.0 gr					
		3.0 sd CoS					
		2.0 Fgr CoS					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
55	0.5	0.5 Fgr CoS	0	10	21	39	+WL18.0
		1.0 Fgr					
		2.0 gr					
		1.0 sd sh					
		1.0 Fgr sh					
		2.0 Fgr					
		1.0 Fgr sh					
		1.0 sd sh					
		2.0 Fgr					
		3.0 sd sh					
		1.0 Fgr sh					
		1.0 Fgr					
		1.0 Fgr sh					
56	2.0	2.0 Fgr	0	9	21	35	+WL16.5
		2.5 gr					
		1.5 sd CoS					
		2.0 Fgr					
		1.0 sd					
		2.0 gr					
		1.0 sd sh					
		1.0 gr					
		1.0 FS					
		0.5 Fgr CoS					
57	0.5	1.5 Fgr	0	9	21	39	+WL12.0
		1.0 gr					
		2.0 Fgr sh					
		1.0 sd					
		1.0 Fgr					
		1.0 sd CoS					
		2.0 Fgr					
		2.0 Fgr sh					
58	0.5	2.0 Fgr sh	0	11	25	41	+WL 7.5
		1.5 FS sh					
		1.0 Fgr sh					
		1.0 sd					
		1.5 gr					

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COUNTY Sheridan Jun-08

PROSPECTED BY Volk/KNelson

INSPECTED & APPROVED Carter Jun-08

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ND	**SS-1-014(007)033**	**180**	**10**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
59	0.5	0.5 Fgr	0	5	14	34	+WL 9.0
		1.0 gr					
		2.0 Fgr					
		1.0 FS sh					
		1.0 Fgr					
		2.0 Fgr CoS					
		1.0 Fgr sh					
60	0.5	1.5 sd sh	0	5	18	33	+WL 7.5
		2.0 Fgr CoS					
		1.0 FS sh					
		1.0 Fgr					
		1.0 sd CoS					
		0.5 gr					
61	0.5	1.5 Fgr sh	0	3	16	37	+WL 5.0
		1.0 Fgr					
		2.0 Fgr sh					
62	0.5	1.5 sd SiCl	1	14	26	38	+WL 8.0
		2.0 gr					
		2.0 sd sh					
		2.0 gr					
63	1.0	1.0 Fgr SiCl	0	6	18	35	+WL 5.0
		2.0 Fgr					
		1.0 gr					
64	0.5	1.5 Fgr sh	0	1	10	27	+WL 4.5
		1.5 sd sh					
		1.0 Fgr sh					
65	4.0 DM	3.0 Fgr sh	0	4	16	31	+WL11.0
		1.0 sd sh					
		1.0 Fgr sh					
		1.0 sd					
		1.0 Fgr					
66	0.5	0.5 Fgr	0	6	19	37	+WL 5.0
		1.0 Fgr CoS					
		2.0 Fgr					
		1.0 gr					
67	4.0 DM	1.0 sd sh	0	2	5	9	+WL 5.0
68	0.5	2.5 Fgr sh	0	4	17	31	+WL 4.0
		1.0 Fgr					
69	0.5	1.5 FgrSiCl	1	15	29	42	+WL 5.0
		1.0 Fgr					
		2.0 gr					
70	0.5	0.5 Fgr sh	0	10	23	37	+WL 4.5
		3.5 Fgr					
71	0.5	0.5 gr SiCl	0	9	24	39	+WL 5.0
		1.0 sd sh					
		3.0 Fgr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
72	0.5	0.5 gr SiCl	2	12	25	39	+WL 5.5
		1.0 Fgr SiCl					
		1.0 Fgr CoS					
		1.0 Fgr					
		1.0 Fgr sh					
		0.5 gr CoS					
73	0.5	1.5 gr SiCl	0	12	27	44	+WL 5.0
		3.0 gr sh					
74	0.5	0.5 Fgr SiCl	0	11	25	42	+WL 5.5
		1.0 gr					
		1.0 Fgr CoS					
		1.0 sd CoS					
		0.5 Fgr					
		1.0 gr					
75	4.0 DM	1.0 FgrSiCl	0	10	25	40	+WL 9.0
		2.0 Fgr sh					
		2.0 Fgr					
76	0.5	2.5 gr SiCl	1	14	27	41	+WL10.0
		1.0 Fgr sh					
		1.0 sd					
		2.0 gr					
		3.0 Fgr sh					
77	0.5	1.5 FgrSiCl	0	3	24	42	+WL 4.0
		2.0 Fgr sh					
78	0.5	1.5 Fgr sh	0	2	16	29	+WL 3.0
		1.0 FS sh					
79	4.0	4.0 Fgr	0	10	23	36	+WL17.0
		1.0 Fgr sh					
		1.0 sd sh					
		1.0 sd SiCl					
		3.0 Fgr sh					
		1.0 Fgr					
		1.0 gr					
		1.0 Fgr sh					
80	4.0	3.0 Fgr sh	1	13	27	38	+WL 9.5
		1.0 gr					
		1.5 Fgr					
81	0.5	4.5 Fgr sh	0	12	27	43	+WL 5.0
82	0.5	3.0 Fgr	0	4	16	33	+WL 6.5
		1.0 sd sh					
		1.5 Fgr					
83	0.5	0.5 sd sh	0	5	17	35	+WL 5.5
		1.0 Fgr CoS					
		3.5 Fgr sh					
84	5.0	1.0 sd	0	4	15	29	+WL13.5
		3.0 Fgr sh					
		2.0 sd sh					
		1.0 Fgr sh					
		1.5 Fgr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
85	0.5	1.0 Fgr sh	0	10	21	35	+WL 4.5
		2.5 sd					
		0.5 gr					
86	0.5	1.5 Fgr	0	10	26	45	+WL 6.5
		3.0 Fgr sh					
		1.5 Fgr CoS					
87	1.5	0.5 Fgr sh	0	6	19	35	+WL 6.5
		1.0 sd sh					
		3.5 Fgr sh					
88	4.0	3.0 gr SiCl	1	13	26	40	SiCl
		2.0 Fgr					
		2.0 Fgr SiCl					
89	5.0	3.0 gr	1	10	25	42	+
		2.0 sd sh					
		7.0 Fgr					
		1.0 sd					
		2.0 Fgr sh					
90	0.5	0.5 sd CoS	0	1	9	25	+WL 5.0
		2.0 Fgr CoS					
		1.0 Fgr sh					
		1.0 sd sh					
91	0.5	3.5 Fgr	0	6	20	38	+WL 6.0
		2.0 sd sh					
92	5.0	1.0 Fgr sh	0	8	18	34	+WL16.5
		1.0 sd CoS					
		2.0 Fgr sh					
		3.0 sd CoS					
		1.0 Fgr					
		1.0 sd sh					
		1.0 Fgr sh					
93	8.0	2.0 Fgr	0	10	23	37	+
		2.0 gr sh					
		2.0 sd					
		2.0 Fgr sh					
		2.0 gr sh					
		2.0 sd sh					
94	7.0	3.0 gr	0	10	25	40	+
		5.0 Fgr sh					
		2.0 gr sh					
		3.0 Fgr sh					
95	3.0	1.0 Fgr sh	0	4	15	30	+WL11.5
		1.0 sd sh					
		1.0 Fgr sh					
		1.0 FS CoS					
		4.5 Fgr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
96	0.5	1.5 gr sh	0	8	23	38	+WL14.0
		1.0 sd CoS					
		4.0 Fgr sh					
		1.0 sd					
		2.0 gr sh					
		2.0 sd sh					
		1.0 gr					
		1.0 sd sh					
97	11.0	4.0 Fgr sh	0	10	26	42	+
		2.0 gr sh					
		3.0 Fgr sh					
98	9.0	5.0 gr SiCl	0	12	25	40	+
		3.0 Fgr sh					
		1.0 FS					
		2.0 Fgr					
99	0.5	3.5 Fgr sh	0	9	21	34	+
		5.0 gr sh					
		3.0 gr					
		3.0 sd sh					
		3.0 sd sh					
		2.0 FS sh					
		3.0 sd sh					
100	2.0	1.0 Fgr SiCl	0	8	25	40	+
		2.0 gr					
		1.0 Fgr sh					
		2.0 gr sh					
		1.0 Fgr sh					
		2.0 gr sh					
		1.0 sd sh					
		8.0 Fgr sh					
101	1.0	3.0 gr SiCl	1	10	25	42	+
		2.0 gr sh					
		3.0 Fgr					
		5.0 gr					
		2.0 Fgr sh					
		2.0 gr					
		2.0 sd sh					

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COUNTY Sheridan Jun-08

PROSPECTED BY Volk/KNelson

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PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
102	1.0	2.0 gr SiCl	1	11	27	41	+
		2.0 Fgr sh					
		3.0 gr					
		3.0 Fgr					
		4.0 gr					
		2.0 sd sh					
		3.0 Fgr					
103	1.0	4.0 gr SiCl	0	13	28	42	+
		5.0 Fgr sh					
		2.5 FS					
		3.5 Fgr sh					
		2.0 gr sh					
		2.0 Fgr sh					
104	0.5	0.5 FgrSiCl	1	12	27	41	+
		1.0 gr SiCl					
		1.0 gr					
		1.0 gr CoS					
		1.5 gr sh					
		1.5 Fgr sh					
		3.5 gr sh					
		0.5 sd sh					
		4.0 gr					
		2.0 gr sh					
		3.0 Fgr sh					
105	0.5	4.5 gr	1	16	30	43	+
		6.0 Fgr sh					
		3.0 gr sh					
		1.0 sd sh					
		2.0 gr sh					
		1.0 sd sh					
		1.0 FS					
		1.0 FS CoS					
106	1.0	1.0 Fgr SiCl	0	2	13	27	+
		2.0 gr sh					
		2.0 Fgr CoS					
		4.0 Fgr sh					
		1.0 sd sh					
		1.0 sd CoS					
		1.0 Fgr sh					
		1.0 sd sh					
		1.0 Fgr sh					
		2.0 sd sh					
		3.0 Fgr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
107	2.0	1.0 Fgr	0	12	27	42	+
		1.0 gr					
		1.0 Fgr sh					
		1.0 Fgr					
		1.0 gr sh					
		2.0 sd sh					
		1.0 Fgr sh					
		1.0 gr					
		1.0 Fgr CoS					
		4.0 Fgr sh					
		4.0 gr sh					
108	0.5	1.5 gr SiCl	1	17	31	44	+
		3.0 gr					
		11.0 Fgr sh					
		2.0 gr					
		1.0 FS					
		1.0 gr					
109	1.0	2.0 gr SiCl	1	13	25	38	+
		2.0 gr					
		7.0 Fgr sh					
		2.0 gr sh					
		1.0 FS sh					
		1.0 gr sh					
		1.0 Fgr CoS					
		2.0 Fgr sh					
		1.0 sd sh					
110	1.0	1.0 FgrSiCl	0	14	27	39	+
		2.0 gr					
		1.0 sd					
		4.0 Fgr					
		1.0 Fgr CoS					
		1.0 FS					
		4.0 Fgr					
		2.0 gr					
111	2.0	6.0 gr SiCl	2	18	34	48	+
		2.0 Fgr sh					
		5.0 gr					
		2.0 Fgr sh					
		3.0 gr					
112	1.0	2.0 gr SiCl	0	0	15	42	+
		1.5 Fgr sh					
		2.0 gr SiCl					
		1.5 Fgr sh					
		2.0 Fgr CoS					
		5.0 gr sh					
		2.0 gr					
		2.0 gr sh					
		1.0 Fgr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
113	0.5	2.5 gr	0	11	25	38	+
		8.0 Fgr sh					
		1.0 sd CoS					
		5.0 Fgr sh					
		1.0 FS					
		1.0 Fgr sh					
		1.0 sd					
114	0.5	1.5 gr	2	17	30	40	+
		4.0 Fgr sh					
		1.0 sd					
		2.0 gr sh					
		5.0 gr					
		2.0 Fgr					
		1.0 Fgr sh					
		3.0 FS					
115	2.0	1.0 gr SiCl	0	8	22	35	+
		1.0 Fgr sh					
		1.5 gr sh					
		1.5 sd sh					
		3.0 Fgr sh					
		1.0 gr					
		2.0 sd sh					
		2.0 gr sh					
		2.0 gr					
		3.0 Fgr sh					
116	0.5	2.5 gr	2	16	31	43	+
		2.0 gr sh					
		3.0 Fgr sh					
		2.0 gr sh					
		1.0 sd sh					
		2.0 gr					
		2.0 Fgr sh					
		5.0 gr					
117	1.0	4.5 gr SiCl	2	16	30	46	+
		2.5 Fgr sh					
		2.0 gr sh					
		1.0 Fgr sh					
		3.0 gr sh					
		1.0 Fgr sh					
		1.0 gr sh					
		4.0 Fgr sh					
118	1.0	1.0 gr SiCl	1	16	28	41	+
		3.0 gr sh					
		1.5 sd sh					
		11.5 gr					
		1.5 Fgr CoS					
		0.5 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
119	9.0	1.0 gr SiCl	0	5	16	29	+
		2.0 Fgr sh					
		1.0 CS sh					
		3.5 Fgr sh					
		0.5 sd CoS					
		1.0 Fgr sh					
		1.0 sd sh					
		1.0 Fgr sh					
120	0.5	6.5 Fgr sh	0	11	26	41	+
		5.0 gr					
		1.0 sd CoS					
		1.0 gr					
		1.0 sd sh					
		1.5 gr					
		3.5 sd sh					
121	1.0	1.0 gr SiCl	2	14	25	38	+
		2.0 gr					
		5.0 Fgr					
		1.0 Fgr CoS					
		4.0 Fgr					
		1.0 CS					
		1.0 Fgr					
		2.0 Fgr sh					
		2.0 Fgr					
122	1.5	0.5 Fgr SiCl	0	10	26	41	+
		4.0 gr sh					
		2.5 Fgr sh					
		0.5 sd CoS					
		2.0 Fgr sh					
		1.0 gr sh					
		1.0 CS sh					
		7.0 Fgr sh					

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PROSPECTED BY Volk/KNelson

INSPECTED & APPROVED Carter Jun-08

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ND	**SS-1-014(007)033**	**180**	**12**

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
123	4.0	2.0 gr SiCl	0	7	19	31	+
		2.0 Fgr					
		2.0 gr					
		2.0 gr sh					
		1.0 sd					
		1.0 gr					
		1.0 sd sh					
		2.0 Fgr sh					
		1.0 sd CoS					
		2.0 sd sh					
124	2.0	2.0 gr SiCl	0	9	21	34	+
		5.0 sd sh					
		11.0 Fgr sh					
125	1.0	1.0 gr SiCl	0	6	16	29	+
		2.0 gr					
		2.0 Fgr sh					
		1.0 sd					
		6.5 Fgr sh					
		2.5 sd sh					
		3.0 sd					
		1.0 Fgr sh					
126	0.5	0.5 gr SiCl	0	6	18	33	+
		1.0 FgrSiCl					
		2.0 Fgr sh					
		2.0 gr sh					
		1.0 sd sh					
		1.0 Fgr sh					
		1.0 gr sh					
		11.0 Fgr sh					
127	1.0	2.0 sd sh	0	8	20	33	+
		4.0 Fgr sh					
		3.0 gr					
		1.0 sd CoS					
		1.0 sd sh					
		2.0 Fgr sh					
		1.0 sd sh					
		2.0 gr					
		3.0 Fgr sh					
128	0.5	1.5 gr SiCl	0	9	20	35	SiCl
		1.0 FgrSiCl					
		1.0 Fgr					
		1.0 gr					
		3.0 Fgr					
		1.0 Fgr sh					
		1.0 gr SiCl					
		5.0 Fgr					
		1.0 Fgr sh					
		1.0 SiCl					
		2.5 sd CoS					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
129	1.0	1.0 gr SiCl	0	11	24	38	+
		1.0 Fgr sh					
		1.0 gr					
		6.0 gr sh					
		2.0 Fgr sh					
		1.0 sd sh					
		2.0 Fgr sh					
		1.5 FS sh					
		0.5 Fgr sh					
		2.0 gr sh					
		1.0 Fgr sh					
130	1.0	9.0 Fgr sh	0	8	18	30	SiCl
		3.0 sd sh					
		2.0 Fgr sh					
131	1.0	2.0 Fgr sh	0	10	25	39	+
		2.0 gr					
		1.0 Fgr sh					
		1.5 gr sh					
		0.5 FgrSiCl					
		2.0 Fgr sh					
		1.0 Fgr CoS					
		1.5 Fgr sh					
		1.5 gr sh					
		2.0 Fgr sh					
		4.0 gr sh					
132	1.0	1.0 FS	1	9	21	34	+
		1.0 gr SiCl					
		2.0 gr					
		1.0 sd sh					
		1.0 gr sh					
		2.0 sd sh					
		1.0 gr sh					
		2.0 Fgr sh					
		3.0 gr sh					
		3.0 sd sh					
		1.0 gr					
		1.0 FS sh					
133	1.0	2.0 Fgr sh	1	12	26	38	+
		2.0 gr sh					
		2.0 Fgr sh					
		2.0 gr					
		4.0 sd sh					
		1.0 SiCl					
		2.0 FS CoS					
		3.0 gr					
		1.0 Fgr sh					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
134	4.0	1.0 FgrSiCl	0	0	8	18	SiCl
		1.0 sd sh					
		1.0 sd SiCl					
		1.0 FS SiCl					
		1.0 sd sh					
		3.0 Fgr sh					
135	2.0	1.0 gr SiCl	0	10	19	33	+
		3.0 Fgr					
		3.0 gr					
		1.0 Fgr					
		1.0 sd					
		1.0 Fgr					
		1.0 Fgr sh					
		1.5 sd					
		0.5 sd CoS					
		5.0 gr					
136	0.5	2.5 gr	0	7	17	28	SiCl
		2.0 Fgr sh					
		3.0 sd sh					
		4.0 gr					
		1.0 gr SiCl					
		2.0 sd sh					
		1.0 sd SiCl					
137	2.0	3.0 gr SiCl	1	12	24	38	+WL18.5
		2.0 gr sh					
		1.0 sd sh					
		7.0 Fgr sh					
		3.0 sd sh					
		0.5 gr					

PIT LOGGING BY TEST HOLES

Test Hole No.	Depth of Stripping (Ft)	Depth of Material (Ft)	% Retained on 1½" Screen	% Retained on ¾" Screen	% Retained on 3/8" Screen	% Retained on #4 Screen	Bottom of Test Hole
R1	1.0	1.0 gr	0	1	7	19	+WL 2.0
R2	0.5	2.0 Fgr sh					
R3	5.0	2.0 gr sh	1	16	28	41	+
		6.0 Fgr sh					
		1.0 Fgr					
		3.0 Fgr sh					
		1.0 gr					
		2.0 gr CoS					
R4	11.0	7.0 Fgr sh	0	11	27	42	+
		2.0 gr					

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