North Dakota Department of Transportation

Thomas K. Sorel
Director

Doug Burgum
Governor

November 9, 2017

ADDENDUM 2 – JOB 42

TO: All prospective bidders on project – NH-NHU-7-002(156)022, Job No. 42 scheduled for the November 17, 2017 bid opening.

The following request for proposal revisions shall be made:

Plan Revisions

See attached summary from Derek Anderson, PE, Apex Engineering Group dated October 30, 2017 for an explanation.

Request for Proposal Revisions

Remove and replace pages 7, 8, 10, 11, 12 and 13 of 15 of the Proposal pages located at the beginning of the Request for Proposal with the enclosed page revised 11/9/2017.

The following changes were made to the Bid Items:

Spec No.	Code No.	Description	Description of Change
550	0300	8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	Increased from 9,581 to 10,208 SY
704	1500	OBLITERATION OF PAVEMENT MARKING	Decreased from 16,246 to 5,125 SF
762	0420	SHORT TERM 4IN LINE-TYPE R	Removed Bid Item
762	0430	SHORT TERM 4IN LINE-TYPE NR	Added Bid Item at 50,037 LF
762	1361	PAVEMENT MARKING 6IN LINE-MASKING	Added Bid Item at 1,500 LF

This addendum is to be incorporated into the bidder's proposal for this project. AASHTOWare Project Bids files should be updated by downloading the addendum file from the Bid Express on-line bidding exchange at http://www.bidx.com/ and load it into the AASHTOWare Project Bids program.

PHILLIP MURDOFF – CONSTRUCTION SERVICES ENGINEER
80:jwj
Enclosure

Apex Engineering Group
Water | Transportation| Municipal | Facilities

701.323.3950
600 South 2nd Street – Suite 145
Bismarck, ND 58504

October 30, 2017

ADDENDUM 2 – JOB 42

TO: All prospective bidders and suppliers on Project NH-NHU-7-002(156)022 Job 42 scheduled for the November 17th, 2017 bid opening.

The following plan revisions shall be made:

Plan revisions for NH-NHU-7-002(156)022:

REMOVE the following Plan Sheets and REPLACE with the enclosed sheets revised 10/30/2017.

- Section 2 Sheet 1
- Section 6 Sheet 2
- Section 8 Sheet 1
- Section 10 Sheet 1, 4 & 5
- Section 90 Sheet 3
- Section 100 Sheet 1, 14-17
- Section 120 Sheet 1, 2, & 6

ADD the following Plan Sheet dated 10/30/2017.

- Section 20 Sheet 19

Section 2

Sheet 1:

- Revised Section 20 from "1-18" to "1-19".

Section 6

Sheet 2:

- Added Plan Note 411-P02.

Section 8

Sheet 1:

- Revised bid item 550-0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED from 9,581 SY to 10,208 SY.
- Revised bid item 704-1500 OBILITERATION OF PAVEMENT MARKINGS from 16,246 SF to 5,125 SF.
- Removed bid item 762-0420 SHORT TERM 4 IN LINE – TYPE R and removed quantity 50,037 LF
- Added bid item 762-0430 SHORT TERM 4 IN LINE – TYPE NR and added quantity 50,037 LF
- Added bid item 762-1361 PAVEMENT MARKING 6IN LINE – MASKING and added quantity 1500 LF

Section 10

Sheet 1:

- Obliteration of Pavement Marking table added
- Changed 762-0420 SHORT TERM 4 IN LINE – TYPE R to 762-0430 SHORT TERM 4 IN LINE – TYPE NR

Sheet 4:

- Added quantity of 217.78 for 550-0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED in "Transition from Typical 2 to 1" table.

Sheet 5:

- Revised quantity of 550-0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED in "Summary Table (1 of 5)" from 7,398 SY to 8,025 SY and "Cumulative Paving Summary Table" from 9,581 SY to 10,208 SY.

Section 20

Sheet 19:

- Added Plan Sheet.

Section 90

Sheet 3:

- Added middle inset to show concrete turn lane east of 84th St Intersection.

Section 100

Sheet 1:

- Removed 762-0420 SHORT TERM 4 IN LINE – TYPE R with a quantity of 50,037 LF.
- Added 762-0430 SHORT TERM 4 IN LINE – TYPE NR with a quantity of 50,037 LF.
- Added 762-1361 PAVEMENT MARKING 6IN LINE – MASKING with a quantity of 1500 LF.

Sheet 14:

- Revised Note 4 regarding discretionary quantity of PAVEMENT MARKING 6IN LINE – MASKING.

Sheet 15:

- Revised Note 4 regarding discretionary quantity of PAVEMENT MARKING 6IN LINE – MASKING.

Sheet 16:

- Revised Note 4 regarding discretionary quantity of PAVEMENT MARKING 6IN LINE – MASKING.

Sheet 17:

- Revised Note 4 regarding discretionary quantity of PAVEMENT MARKING 6IN LINE – MASKING.

Section 120

Sheet 1:

- Revised quantity for Obliteration of Pavement from 226 LF to 75 LF.

Sheet 2:

- Revised quantity for Obliteration of Pavement from 226 LF to 75 LF.

Sheet 6:

- Revised quantity for Obliteration of Pavement from 226 LF to 75 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 on-line bidding exchange at http://www.bidx.com/ or the Department's web page (http://wwww.dot.nd.gov) and load it into the Expedite program.

Sincerely,

Apex Engineering Group, Inc.

Derek Anderson, PE
Lead Engineer

Enclosures: Revised Plan Sheets
Project NH-NHU-7-002(156)022

CC: Amy Beise, NDDOT

Project: NH-NHU-7-002(156)022 (PCN-20845)

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

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
033	430	0145	RAP - SUPERPAVE FAA 45	TON	58,292.				
034	430	1000	CORED SAMPLE	EA	255.				
035	430	5809	PG 58V-28 ASPHALT CEMENT	TON	2,506.				
036	550	0300	8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	10,208.				
037	550	0355	CONCRETE OVERLAY	CY	13,423.				
038	550	0365	CONCRETE PLACEMENT - DOWELED	SY	54,915.				
039	550	3005	CONCRETE MEDIAN PAVEMENT	SY	30.				
040	702	0100	MOBILIZATION	L SUM	1.				
041	704	0100	FLAGGING	MHR	2,350.				
042	704	1000	TRAFFIC CONTROL SIGNS	UNIT	9,760.				
043	704	1041	ATTENUATION DEVICE-TYPE B-55	EA	1.				
044	704	1043	ATTENUATION DEVICE-TYPE B-65	EA	1.				
045	704	1052	TYPE III BARRICADE	EA	42.				
046	704	1060	DELINEATOR DRUMS	EA	347.				
047	704	1065	TRAFFIC CONES	EA	118.				
048	704	1067	TUBULAR MARKERS	EA	130.				

Project: NH-NHU-7-002(156)022 (PCN-20845)

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
049	704	1072	FLEXIBLE DELINEATORS	EA	795.				
050	704	1080	STACKABLE VERTICAL PANELS	EA	50.				
051	704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	8.				
052	704	1088	SEQUENCING ARROW PANEL-TYPE C-CROSSOVER	EA	2.				
053	704	1500	OBLITERATION OF PAVEMENT MARKING	SF	5,125.				
054	704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	69.				
055	706	0400	FIELD OFFICE	EA	1.				
056	706	0500	AGGREGATE LABORATORY	EA	1.				
057	706	0550	BITUMINOUS LABORATORY	EA	1.				
058	706	0600	CONTRACTOR'S LABORATORY	EA	1.				
059	708	1540	INLET PROTECTION-SPECIAL	EA	10.				
060	708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	10.				
061	709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	3,375.				
062	714	0615	PIPE CONC REINF 24IN CL III	LF	12.				
063	714	0820	PIPE CONC REINF 30IN CL III	LF	8.				
064	714	3023	END SECT-TRAVERSABLE REINF. CONC.24IN	EA	1.				

Project: NH-NHU-7-002(156)022 (PCN-20845)

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
081	754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	478.				
082	754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	151.				
083	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	1,173.				
084	754	0592	RESET SIGN PANEL	EA	6.				
085	754	0805	OBJECT MARKERS - CULVERTS	EA	3.				
086	760	0001	RUMBLE STRIPS - CONCRETE SHOULDER	MILE	6.236				
087	760	0005	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	12.098				
088	762	0112	EPOXY PVMT MK MESSAGE	SF	1,808.				
089	762	0113	EPOXY PVMT MK 4IN LINE	LF	210,672.				
090	762	0115	EPOXY PVMT MK 8IN LINE	LF	4,498.				
091	762	0200	RAISED PAVEMENT MARKERS	EA	21,385.				
092	762	0426	SHORT TERM 24IN LINE-TYPE R	LF	29.				
093	762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	50,037.				
094	762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	17,079.				
095	762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	13,701.				
096	762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	LF	351.				

Project: NH-NHU-7-002(156)022 (PCN-20845)

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
097	762	1361	PAVEMENT MARKING 6IN LINE-MASKING	LF	1,500.				
098	764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	2.				
099	764	0150	REMOVE & RESET GUARDRAIL	LF	491.300				
100	764	1059	RESET W-BEAM GUARDRAIL END TERMINAL	EA	2.				
101	764	2081	REMOVE END TREATMENT & TRANSITION	EA	2.				
102	766	0100	MAILBOX-ALL TYPES	EA	1.				
103	770	0007	DESTINATION LIGHTING	EA	1.				
104	770	0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	EA	34.				
105	770	0060	CONCRETE FOUNDATION-FEED POINT-TYPE B	EA	2.				
106	770	0330	2IN DIAMETER RIGID CONDUIT	LF	6,293.				
107	770	0503	UNDERGROUND CONDUCTOR NO2-TYPE RHW	LF	486.				
108	770	0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	LF	13,134.				
109	770	0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	6,567.				
110	770	0735	FEED POINT-TYPE II-PAD MOUNTED	EA	2.				
111	770	1778	LT STD 10FT MA 42FT MT HT BREAKAWAY	EA	28.				
112	770	4210	LED LUMINAIRE	EA	41.				

Project: NH-NHU-7-002(156)022 (PCN-20845)

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
113	**770**	**4523**	**REVISE HIGHWAY LIGHTING FEED POINT**	**EA**	**1.**				
114	**770**	**4540**	**RELOCATE LIGHT STANDARD**	**EA**	**9.**				
115	**772**	**2110**	**FLASHING BEACON-POST MOUNTED**	**EA**	**2.**				
116	**772**	**2810**	**TEMPORARY TRAFFIC SIGNALS**	**EA**	**1.**				
117	**772**	**9811**	**TRAFFIC SIGNAL SYSTEM - SITE 1**	**EA**	**1.**				
118	**772**	**9812**	**TRAFFIC SIGNAL SYSTEM - SITE 2**	**EA**	**1.**				
119	**990**	**0400**	**PIPE CLEANOUT**	**EA**	**1.**				
			SUBTOTAL						
			OPTION 1						
120	**714**	**0210**	**PIPE CONC REINF 15IN CL III-STORM DRAIN**	**LF**	**585.**				
121	**714**	**0315**	**PIPE CONC REINF 18IN CL III-STORM DRAIN**	**LF**	**168.**				
			SUBTOTAL OPTION 1						
			OPTION 2						
122	**714**	**4097**	**PIPE CONDUIT 15IN-STORM DRAIN**	**LF**	**585.**				

BID ITEMS

Project: NH-NHU-7-002(156)022 (PCN-20845)

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
123	**714**	**4101**	**PIPE CONDUIT 18IN-STORM DRAIN**	**LF**	**168.**				
			SUBTOTAL OPTION 2						
			SUBTOTAL + ALL OPTIONS						

Revised 10/30/2017	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
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PLAN SECTIONS

SPECIAL PROVISIONS

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NOTES

202-P02 REMOVAL OF NEW CROSSOVERS: Remove the traffic control crossover(s) when no longer needed for traffic control. This work will consist of:

1. Remove and dispose of all asphalt surfacing, salvaged base and embankment used to construct the crossover.
2. Remove the temporary culvert.
3. Protect the edge of existing concrete during removal and replace safety slope with millings.
4. Shape the median inslopes to original condition.
5. Re-spread topsoil install permanent erosion control.

All costs for this work will be included in the pay item "Removal of Temporary Bypass".

203-010 SHRINKAGE: 25 percent additional volume is included for shrinkage in earth embankment.

203-385 AVERAGE HAUL: No average haul has been computed for this project.

203-P01 COMMON EXCAVATION - TYPE A: Determine the optimum moisture and density, as specified in ND T 180, for each type of material encountered that requires compaction control. Perform a multi-point test using a minimum of 4 points. Submit the results to the Engineer along with a split sample of each material.

The Engineer will perform comparison tests using the same procedure on the split sample. The Engineer's results will be used for determining in place density of material.

203-P02 COMMON EXCAVATION - TYPE A: Dispose 1,892 CY of waste excavation outside of NDDOT right of way. All costs for this work will be included in “Common Excavation-Type A”.

411-P01 MILLING / CONCRETE PAVING CONTROL SYSTEM: Erect a string line to establish the grade reference for control of milling depth, concrete overlay depth and transverse slopes. The Engineer will provide the proposed profile grades, spaced every 50 feet for tangent sections and 25 feet for curve sections, for the erected string line. Maintain the string line for both the milling and concrete paving operations. For estimating purposes, calculations were based on a 3" milled depth at centerline. The milling depth will vary in order to correct profile and cross slope.

All costs for this work will be included in the pay item "Milling Pavement Surface".

411-P02 MILLING PAVEMENT SURFACE: Any excess millings produced by the Contractor's operation not used for RAP, milling safety slopes, or any other item outlined in the plans will become the property of the Contractor. All costs for this work will be included in the pay item "Milling Pavement Surface".

411-P03 TEMPORARY ASPHALT WEDGES: Place temporary asphalt or milled material wedges at the milled straight vertical edge locations to allow for a smooth passage of vehicles. All costs for this work will be included in the pay item "Milling Pavement Surface".

411-P04 RELAYING MILLED MATERIAL: Construct 4:1 milling safety slope out of millings salvaged from the milling operation and constructed as shown in the typical sections. Stockpile the millings at a location approved by the engineer for later use constructing the milling safety slope. Weigh millings prior to placement. All costs for this work will be included in the pay item "Relaying Milled Material".

411-P05 SURFACE TOLERANCE: Construct the finished surface of the mainline profile milling to within 0.04 feet of the proposed elevation.

411-P06 MILLING PAVEMENT SURFACE: There are no time limitations between milling and placement of pavement overlay.

550-P01 LEAVE OUTS: A leave out will consist of only paving a portion of a crossroad intersection and allowing through traffic on the portion left out. The portion will not be paved until the concrete overlay has attained a flexural strength of 450 psi or a compressive strength of 3,000 psi. All costs for this work will be included in the pay items "Concrete Overlay" & "Concrete Placement - Doweled".

550-P02 JOINT SAWING: Saw longitudinal joints in conjunction with transverse sawing operations.

550-P03 CONCRETE PAVEMENT: Construct the overlay portion of the project half at a time. If the Contractor chooses to overlay the entire roadway at one time, the Engineer will waive the requirement to place the reinforcing steel, tie bars and dowel assemblies a minimum of 2,000 feet ahead of the paving operation as stated in Sections 550.04 E.1 and 550.04 G.2 and allow the use of the roadway as a haul road provided the following conditions are met:

- Repair all damaged areas
- Construct the finished surface to the specified surface tolerance prior to the placement of the reinforcing steel, tie bars and dowel bar assemblies.
- Place the reinforcing steel and tie bars on approved supports securely, properly and accurately in advance of the paving operation.

The Contractor is not allowed to build a temporary access road adjacent to the roadway to be used as a haul road.

550-P04 KEYED JOINT: Provide a keyed joint at centerline if concrete overlay is placed half at a time.

704-100 TRAFFIC CONTROL SUPERVISOR: Provide a Traffic Control Supervisor.

This document was originally issued and sealed by Derek Anderson, Registration Number PE-7107, on 10/30/17 and the original document is stored at the North Dakota Department of Transportation.

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	8	1

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	US 2	FRONTAGE ROAD	SIGNALS & LIGHTING	TOTAL
103	0100	CONTRACT BOND	L SUM	1	-	-	1
201	0330	CLEARING & GRUBBING	L SUM	1	-	-	1
202	0114	REMOVAL OF CONCRETE PAVEMENT	SY	2,165	25	-	2,190
202	0130	REMOVAL OF CURB & GUTTER	LF	568	250	-	818
202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	7,318	434	-	7,752
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	460	-	-	460
202	0235	REMOVAL OF CATCH BASIN	EA	1	-	-	1
202	0289	REMOVE APPROACH	EA	6	-	-	6
202	0350	REMOVAL OF TEMPORARY BYPASS	EA	2	-	-	2
202	0400	REMOVAL OF RIPRAP - LOOSE ROCK	CY	-	465	-	465
203	0101	COMMON EXCAVATION-TYPE A	CY	7,104	2,000	-	9,104
203	0109	TOPSOIL	CY	6,051	90	-	6,141
203	0119	TOPSOIL-IMPORTED	CY	608	58	-	666
203	0140	BORROW-EXCAVATION	CY	163	-	-	163
203	0180	ROADWAY OBLITERATION	LF	360	-	-	360
216	0100	WATER	M GAL	739	-	-	739
230	0165	SUBGRADE PREPARATION-TYPE A-12IN	STA	-	8.27	-	8.27
251	0200	SEEDING CLASS II	ACRE	7.83	0.15	-	7.98
251	2000	TEMPORARY COVER CROP	ACRE	7.20	-	-	7.20
253	0201	HYDRAULIC MULCH	ACRE	15.03	0.15	-	15.18
255	0103	ECB TYPE 3	SY	91	22	-	113
260	0200	SILT FENCE SUPPORTED	LF	521	-	-	521
260	0201	REMOVE SILT FENCE SUPPORTED	LF	521	-	-	521
261	0112	FIBER ROLLS 12IN	LF	7,358	2,060	-	9,418
261	0113	REMOVE FIBER ROLLS 12IN	LF	3,494	1,030	-	4,524
302	0100	SALVAGED BASE COURSE	TON	12,936	2,615	-	15,551
302	0356	AGGREGATE SURFACE COURSE CL 13	TON	625	521	-	1,146
302	0405	SALVAGE & RELAY AGGREGATE SURFACE COURSE	CY	1,873	-	-	1,873
401	0050	TACK COAT	GAL	24,599	266	-	24,865
401	0060	PRIME COAT	GAL	1,455	666	-	2,121
411	0105	MILLING PAVEMENT SURFACE	SY	191,655	-	-	191,655
411	0132	RELAYING MILLED MATERIAL	TON	1,056	-	-	1,056
430	0145	RAP - SUPERPAVE FAA 45	TON	57,626	666	-	58,292
430	1000	CORED SAMPLE	EA	246	9	-	255
430	5809	PG 58V-28 ASPHALT CEMENT	TON	2,477	29	-	2,506
550	0300	8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	10,208	-	-	10,208
550	0355	CONCRETE OVERLAY	CY	13,423	-	-	13,423
550	0365	CONCRETE PLACEMENT - DOWELED	SY	54,915	-	-	54,915
550	3005	CONCRETE MEDIAN PAVEMENT	SY	30	-	-	30
702	0100	MOBILIZATION	L SUM	1	-	-	1
704	0100	FLAGGING	MHR	2,350	-	-	2,350
704	1000	TRAFFIC CONTROL SIGNS	UNIT	9,571	189	-	9,760
704	1041	ATTENUATION DEVICE-TYPE B-55	EA	1	-	-	1
704	1043	ATTENUATION DEVICE-TYPE B-65	EA	1	-	-	1
704	1052	TYPE III BARRICADE	EA	34	8	-	42
704	1060	DELINEATOR DRUMS	EA	290	57	-	347
704	1065	TRAFFIC CONES	EA	76	42	-	118
704	1067	TUBULAR MARKERS	EA	130	-	-	130
704	1072	FLEXIBLE DELINEATORS	EA	795	-	-	795
704	1080	STACKABLE VERTICAL PANELS	EA	50	-	-	50
704	1087	SEQUENCING ARROW PANEL-TYPE C	EA	8	-	-	8
704	1088	SEQUENCING ARROW PANEL-TYPE C-CROSSOVER	EA	2	-	-	2
704	1500	OBLITERATION OF PAVEMENT MARKING	SF	5,125	-	-	5,125
704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	69	-	-	69
706	0400	FIELD OFFICE	EA	1	-	-	1
706	0500	AGGREGATE LABORATORY	EA	1	-	-	1
706	0550	BITUMINOUS LABORATORY	EA	1	-	-	1
706	0600	CONTRACTOR'S LABORATORY	EA	1	-	-	1
708	1540	INLET PROTECTION-SPECIAL	EA	1	9	-	10
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	1	9	-	10
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	3,375	-	-	3,375
714	0615	PIPE CONC REINF 24IN CL III	LF	12	-	-	12
714	0820	PIPE CONC REINF 30IN CL III	LF	8	-	-	8
714	3023	END SECT-TRAVERSABLE REINF. CONC.24IN	EA	1	-	-	1
714	4099	PIPE CONDUIT 18IN-APPROACH	LF	50	-	-	50

ESTIMATE OF QUANTITIES

SPEC	CODE	ITEM DESCRIPTION	UNIT	US 2	FRONTAGE ROAD	SIGNALS & LIGHTING	TOTAL
714	5015	PIPE CORR STEEL .064IN 18IN	LF	10	-	-	10
714	9660	REMOVE & RELAY END SECTION-ALL TYPE & SIZES	EA	1	-	-	1
722	0100	MANHOLE 48IN	EA	-	4	-	4
722	0110	MANHOLE 60IN	EA	-	1	-	1
722	3510	INLET-TYPE 2	EA	1	4	-	5
722	3520	INLET-TYPE 2 DOUBLE	EA	-	5	-	5
722	3800	INLET SPECIAL CATCH BASIN-TYPE A 60IN	EA	1	-	-	1
722	3910	INLET SLOTTED DRAIN 15IN	LF	20	-	-	20
722	6140	ADJUST GATE VALVE BOX	EA	1	-	-	1
722	6200	ADJUST MANHOLE	EA	1	-	-	1
748	0120	CURB & GUTTER MOUNTABLE-TYPE I	LF	-	50	-	50
748	0140	CURB & GUTTER-TYPE I	LF	1,018	1,747	-	2,765
748	1000	VALLEY GUTTER 36IN	LF	-	182	-	182
750	0020	PIGMENTED CONCRETE	SY	579	-	-	579
750	1020	DRIVEWAY CONCRETE 8IN	SY	-	104	-	104
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	444	34	-	478
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	151	-	-	151
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	1,097	76	-	1,173
754	0592	RESET SIGN PANEL	EA	6	-	-	6
754	0805	OBJECT MARKERS - CULVERTS	EA	2	1	-	3
760	0001	RUMBLE STRIPS - CONCRETE SHOULDER	MILE	6.236	-	-	6.236
760	0005	RUMBLE STRIPS - ASPHALT SHOULDER	MILE	12.098	-	-	12.098
762	0112	EPOXY PVMT MK MESSAGE	SF	1,808	-	-	1,808
762	0113	EPOXY PVMT MK 4IN LINE	LF	210,672	-	-	210,672
762	0115	EPOXY PVMT MK 8IN LINE	LF	4,498	-	-	4,498
762	0200	RAISED PAVEMENT MARKERS	EA	21,385	-	-	21,385
762	0426	SHORT TERM 24IN LINE-TYPE R	LF	29	-	-	29
762	0430	SHORT TERM 4IN LINE-TYPE NR	LF	50,037	-	-	50,037
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	17,079	-	-	17,079
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	13,701	-	-	13,701
762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	LF	351	-	-	351
762	1361	PAVEMENT MARKING 6IN LINE-MASKING	LF	1,500	-	-	1,500
764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	2	-	-	2
764	0150	REMOVE & RESET GUARDRAIL	LF	491.3	-	-	491.3
764	1059	RESET W-BEAM GUARDRAIL END TERMINAL	EA	2	-	-	2
764	2081	REMOVE END TREATMENT & TRANSITION	EA	2	-	-	2
766	0100	MAILBOX-ALL TYPES	EA	1	-	-	1
770	0007	DESTINATION LIGHTING	EA	-	-	1	1
770	0020	CONCRETE FOUNDATION-HIGHWAY LIGHTING	EA	-	-	34	34
770	0060	CONCRETE FOUNDATION-FEED POINT-TYPE B	EA	-	-	2	2
770	0330	2IN DIAMETER RIGID CONDUIT	LF	-	-	6,293	6,293
770	0503	UNDERGROUND CONDUCTOR NO2-TYPE RHW	LF	-	-	486	486
770	0505	UNDERGROUND CONDUCTOR NO6-TYPE RHW	LF	-	-	13,134	13,134
770	0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	-	-	6,567	6,567
770	0735	FEED POINT-TYPE II-PAD MOUNTED	EA	-	-	2	2
770	1778	LT STD 10FT MA 42FT MT HT BREAKAWAY	EA	-	-	28	28
770	4210	LED LUMINAIRE	EA	-	-	41	41
770	4523	REVISE HIGHWAY LIGHTING FEED POINT	EA	-	-	1	1
770	4540	RELOCATE LIGHT STANDARD	EA	-	-	9	9
772	2110	FLASHING BEACON-POST MOUNTED	EA	2	-	-	2
772	2810	TEMPORARY TRAFFIC SIGNALS	EA	-	-	1	1
772	9811	TRAFFIC SIGNAL SYSTEM - SITE 1	EA	-	-	1	1
772	9812	TRAFFIC SIGNAL SYSTEM - SITE 2	EA	-	-	1	1
990	0400	PIPE CLEANOUT	EA	1	-	-	1

OPTION 1: REINFORCED CONCRETE PIPE

SPEC	CODE	ITEM DESCRIPTION	UNIT	US 2	FRONTAGE ROAD	SIGNALS & LIGHTING	TOTAL
714	0210	PIPE CONC REINF 15IN CL III-STORM DRAIN	LF	-	585	-	585
714	0315	PIPE CONC REINF 18IN CL III-STORM DRAIN	LF	-	168	-	168

OPTION 2: FLEXIBLE PIPE (SEE SECTION 51 FOR ALLOWABLE MATERIALS)

SPEC	CODE	ITEM DESCRIPTION	UNIT	US 2	FRONTAGE ROAD	SIGNALS & LIGHTING	TOTAL
714	4097	PIPE CONDUIT 15IN-STORM DRAIN	LF	-	585	-	585
714	4101	PIPE CONDUIT 18IN-STORM DRAIN	LF	-	168	-	168

Estimate of Quantities

US 2
Frontage Road
Signals & Lighting

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	10	1

MATERIALS

Salvaged Base Course @ 1.875 Ton/CY
Aggregate Base Course Class 13 @ 1.875 Ton/CY
Milled Material @ 2 Ton/CY
RAP Superpave FAA 45 @ 2.0 Ton/CY
PG 58V-28 Asphalt Cement @ 4.3% of RAP Superpave FAA 45
Tack Coat @ 0.05 Gal/SY

WATER

25 MGal/Mile for Dust Palliative
20 Gal/Ton for Base Course
10 Gal/CY for Embankment

REMOVAL OF PAVEMENT

Concrete @ 2.0 Ton/CY
Bituminous Pavement @ 1.875 Ton/CY
Base Material @ 1.875 Ton/CY

RUMBLE STRIPS

RUMBLE STRIPS - CONCRETE SHOULDER			
Begin Station	End Station	Basis	Quantity (Mile)
63+62	228+26	10,560 LF/Mile	6.236
		Total:	6.236 Mile

RUMBLE STRIPS - ASPHALT SHOULDER			
Begin Station	End Station	Basis	Quantity (Mile)
239+26	558+64	10,560 LF/Mile	12.098
		Total:	12.098 Mile

MAILBOXES - ALL TYPES

MAILBOX - ALL TYPES		
Station	Offset	Quantity
339+38	Rt	1
	Total:	1

SUBGRADE PREPARATION TYPE A - 12IN

SUBGRADE PREPARATION - TYPE A - 12 IN			
Begin Station	End Station	Basis	Quantity
2002+33	2010+60	100 LF/Sta	8.27 STA
		Total:	8.27 STA

SHORT TERM PAVEMENT MARKING

Short Term Pavement Marking Details Summary						
Begin Sta	End Sta	Spec	Code	Bid Item	Basis	Quantity
43+05	57+50	762	0200	RAISED PAVEMENT MARKERS - EACH	Crossover - South (Raised White)	252
49+50	57+50	762	0200	RAISED PAVEMENT MARKERS - EACH	Crossover - South (Raised Yellow)	193
562+80	580+07	762	0200	RAISED PAVEMENT MARKERS - EACH	Crossover - North (Raised White)	346
562+80	581+86	762	0200	RAISED PAVEMENT MARKERS - EACH	Crossover - North (Raised Yellow)	579
57+50	562+80	762	0200	RAISED PAVEMENT MARKERS - EACH	Head to Head Traffic (Raised Yellow)	20,015
57+50	562+80	762	0130	SHORT TERM 4 IN LINE - TYPE NR (LF)	4 IN Edge Line for Head to Head Traffic	50,037
62+37	-	762	0426	SHORT TERM 24 IN LINE - TYPE R (LF)	Stop Bar	12
234+33	-	762	0426	SHORT TERM 24 IN LINE - TYPE R (LF)	Stop Bar	17

CORED SAMPLE

HBP Cored Samples										
				A	B	C	D	430 1000 CORED SAMPLE		
Specification Section	Location	Begin Station	End Station	Distance (Ft)÷2000	Lanes	Lifts	Sublots (A × B × C)	Quantity (D × 2)	Quantity (1 per mile)	Unit
430.04 I.2.b(1), "General"	US2 EB	99+59	104+70	1	1	4	4	8	N/A	EA
		114+54	119+73	1	1	4	4	8	N/A	EA
		124+58	129+67	1	1	4	4	8	N/A	EA
		138+14	143+57	1	2	4	8	16	N/A	EA
		179+20	183+16	1	1	4	4	8	N/A	EA
		239+26	558+64	16	2	3	96	192	N/A	EA
	Frontage Road	2002+33	2010+60	1	2	2	4	8	N/A	EA
430.04 I.2.b(2), "Pavement Thickness Determination Cores"	US2 EB	239+26	558+64					N/A	6	EA
	Frontage Road	2002+33	2010+60					N/A	1	EA
							Total	248	7	EA

SALVAGED AGGREGATE SUMMARY

SALVAGED AGGREGATE SUMMARY		
	TON	TON
Removal Of Concrete Pavement	730	
Removal Of Bituminous Surfacing	1,615	
Milling Pavement Surface	24,121	
Subtotal	26,466	
5% Less for Crushing and Handling	1323	
Total Salvaged Material Available		25,143
Salvaged Material needed for Relaying Milled Material		1,056
Aggregate needed for Salvaged Base Course	15,551	
Salvaged Material Needed to Achieve 50% Blend		7,776
Virgin Material Needed for Salvaged Base Course	7776	
RAP Superpave 45	58,292	
Salvaged Material Needed to Achieve 25% Blend		14,573
Excess Salvage Material		**1,738**

Note: This is not a balance sheet. The contractor must balance their own materials. Material may not be available when needed.

Quantities have been estimated using the following:
3" HBP Milling from Station 55+16 to 229+26
2" HBP Milling from Station 239+26 to 558+64
6" Removal of Concrete Pavement
4" Removal of Bituminous Surfacing

OBLITERATION OF PAVEMENT MARKING

Location	Begin Station	Offset	End Station	Offset	Skips (SF)	Solid (SF)
Section 100						
US 2 Eastbound - South Cross Over	42+78	Rt	54+88	Rt	101	-
US 2 Eastbound - South Cross Over	49+50	Rt	52+48	Rt	-	100
US 2 Westbound - South Cross Over	52+77	Lt	55+80	Lt	26	-
US 2 Westbound - South Cross Over	53+78	Lt	57+50	Lt	-	124
US 2 Westbound - Centerline Skips	55+80	Lt	564+50	Lt	4240	-
US 2 Westbound - North Cross Over	562+79	Lt	566+79	Lt	-	134
US 2 Westbound - North Cross Over	564+50	Lt	581+90	Lt	145	-
US 2 Eastbound - North Cross Over	569+52	Rt	572+00	Rt	-	83
US 2 Eastbound - North Cross Over	568+78	Rt	580+32	Rt	97	-
Section 120						
Intersection US 2 & 84th St W	169+77	Rt	-	-	-	75
				Total:	**5125**	

OBJECT MARKERS - CULVERTS

OBJECT MARKERS - CULVERTS			
Station		Offset	Quantity (EA)
168+85	US2 EB	Rt	1
2063+90	US2 WB	Lt	1
2001+67	Frontage Rd	Rt	1
		Total:	3 EA

EXISTING CORING INFORMATION

Reference Point	Depth
22.386	7.50
22.500	14.00
22.750	10.50
23.000	10.25
23.250	10.50
23.500	9.50
23.750	9.25
24.000	7.75
24.250	9.50
24.500	9.25
24.750	9.50
25.000	8.75
25.250	9.25
25.500	14.00
25.750	9.25
26.000	8.75
26.250	9.00
26.500	9.25
26.750	9.25
27.000	9.75
27.250	8.75
27.500	9.50
27.750	9.25
28.000	9.00
28.250	10.00
28.500	7.50
28.750	9.25
29.000	8.75
29.250	9.25
29.500	9.50
29.750	10.25
30.000	9.50
30.250	8.50
30.500	8.75
30.750	7.50
31.000	9.25
31.250	9.75

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Basis of Estimate

US 2

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	10	4

Mainline Paving Table 5 of 7

		US Hwy 2 - Transitions									
		Transition from Typical 2 to 1		Transition from Typical 2 to 3		Transition from Typical 2 to 4		Transition from Typical 2 to 5		Transition from Typical 5 to 6	
		Stations	# of Sta	Stations	# of Sta	Stations	# of Sta	Stations	# of Sta	Stations	# of Sta
		57+66 to 60+54	2.88	97+79 to 99+59	1.80	112+74 to 114+54	1.80	136+32 to 138+14	1.82	139+00 to 140+00	1.00
				122+78 to 124+58	1.80						
		Total =	2.88	Total =	3.60	Total =	1.80	Total =	1.82	Total =	1.00
Material	**Unit**	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station
302 0100 SALVAGED BASE COURSE @ 1.875 Ton/CY	Ton	28.02	194.58	8.50	59.03	8.50	59.03	-	-	-	-
302 0356 AGGREGATE SURFACE COURSE CL 13	Ton	-		-		-		-		-	
401 0050 TACK COAT @ 0.05 Gal/SY	Gal	3.85	8.56	15.70	34.89	18.70	41.56	13.40	29.78	22.05	49.00
401 0060 PRIME COAT @ 0.25 Gal/SY	Gal	-	-	6.45	17.92	6.45	17.92	-	-	-	-
411 0132 RELAYING MILLED MATERIAL @ 2.0 Ton/CY	Ton	0.50	3.70	0.50	3.70	0.50	3.70	0.50	3.70	-	-
430 0145 RAP - SUPERPAVE FAA 45 @ 2 Ton/CY	Ton	1.99	14.74	8.84	65.48	10.95	81.11	7.37	54.59	12.71	94.15
430 5809 PG 58V-28 ASPHALT CEMENT @ 4.3%	Ton	-	0.63	-	2.82	-	3.49	-	2.35	-	4.05
550 0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	19.60	217.78	-		-		-		-	
550 0355 CONCRETE OVERLAY	CY	19.20	71.11	19.20	71.11	19.20	71.11	19.20	71.11	19.20	71.11
550 0365 CONCRETE PLACEMENT - DOWELED	SY	28.80	320.00	28.80	320.00	28.80	320.00	28.80	320.00	28.80	320.00

Mainline Paving Table 6 of 7

		US Hwy 2 Transitions									
		Transition from Typical 2 to 7		Transition from Typical 2 to 8		Transition from Typical 2 to 9		Transition from Typical 10 to 11		Transition from Typical 10 to 12	
		Stations	# of Sta	Stations	# of Sta	Stations	# of Sta	Stations	# of Sta	Stations	# of Sta
		162+80 to 164+60	1.80	177+73 to 179+20	1.47	190+42 to 191+89	1.47	268+50 to 271+07	2.57	320+10 to 321+32	1.22
								480+35 to 482+50	2.15		
								533+57 to 535+57	2.00		
		Total =	1.80	Total =	1.47	Total =	1.47	Total =	6.72	Total =	1.22
Material	**Unit**	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station
302 0100 SALVAGED BASE COURSE @ 1.875 Ton/CY	Ton	20.93	145.35	9.79	67.99	9.79	67.99	-	-	-	-
302 0356 AGGREGATE SURFACE COURSE CL 13	Ton	-		-		-		-		-	
401 0050 TACK COAT @ 0.05 Gal/SY	Gal	3.85	8.56	12.30	27.33	3.85	8.56	40.40	67.33	41.50	69.17
401 0060 PRIME COAT @ 0.25 Gal/SY	Gal	-	-	6.45	17.92	-	-	-	-	-	-
411 0132 RELAYING MILLED MATERIAL @ 2.0 Ton/CY	Ton	1.00	7.41	1.00	7.41	1.00	7.41	-	-	-	-
430 0145 RAP - SUPERPAVE FAA 45 @ 2 Ton/CY	Ton	1.99	14.74	7.14	52.89	1.99	14.74	25.17	186.44	22.23	164.67
430 5809 PG 58V-28 ASPHALT CEMENT @ 4.3%	Ton	-	0.63	-	2.27	-	0.63	-	8.02	-	7.08
550 0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	13.60	151.11	-	-	7.00	77.78	-	-	-	-
550 0355 CONCRETE OVERLAY	CY	19.20	71.11	19.20	71.11	19.20	71.11	-	-	-	-
550 0365 CONCRETE PLACEMENT - DOWELED	SY	28.80	320.00	28.80	320.00	28.80	320.00	-	-	-	-

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Basis of Estimate

US 2

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	10	5

Mainline Paving Table 7 of 7

		US Hwy 2 Transitions											
		Transition from Typical 10 to 13		Transition from Typical 10 to 14		Transition from Typical 10 to 15		Transition from Typical 16 to 0		Transition from Typical 17 to 0		Transition from Typical 18 to 0	
		Stations	# of Sta	Stations	# of Sta	Stations	# of Sta	Stations	# of Sta	Stations	# of Sta	Stations	# of Sta
		371+67 to 374+16	2.49	357+36 to 359+25	1.89	507+30 to 509+40	2.10	2065+72 to 2068+60	2.88	2174+44 to 2176+24	1.80	2200+89 to 2202+69	1.80
				524+45 to 526+00	1.55								
		Total =	2.49	Total =	3.44	Total =	2.10	Total =	2.88	Total =	1.80	Total =	1.80
Material	**Unit**	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station	Area (SF) or Width (FT)	Quantity per Station
302 0100 SALVAGED BASE COURSE @ 1.875 Ton/CY	Ton	-	-	-	-	-	-	28.21	195.90	12.91	89.62	13.84	96.11
302 0356 AGGREGATE SURFACE COURSE CL 13	Ton	-		-		-		-		-		-	
401 0050 TACK COAT @ 0.05 Gal/SY	Gal	45.05	75.08	42.90	71.50	41.10	68.50	-	-	-	-	-	-
401 0060 PRIME COAT @ 0.25 Gal/SY	Gal	-	-	-	-	-	-	-	-	-	-	-	-
411 0132 RELAYING MILLED MATERIAL @ 2.0 Ton/CY	Ton	-	-	-	-	-	-	-	-	-	-	-	-
430 0145 RAP - SUPERPAVE FAA 45 @ 2 Ton/CY	Ton	24.33	180.22	22.58	167.26	21.66	160.44	-	-	-	-	-	-
430 5809 PG 58V-28 ASPHALT CEMENT @ 4.3%	Ton	-	7.75	-	7.19	-	6.90	-	-	-	-	-	-
550 0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	-	-	-	-	-	-	20.50	227.78	7.50	83.33	8.25	91.67
550 0355 CONCRETE OVERLAY	CY	-	-	-	-	-	-	-	-	-	-	-	-
550 0365 CONCRETE PLACEMENT - DOWELED	SY	-	-	-	-	-	-	-	-	-	-	-	-

Summary Table (1 of 5): Subtotals from Mainline Paving Tables 1-7

Material	Unit	Total
302 0100 SALVAGED BASE COURSE @ 1.875 Ton/CY	Ton	12,835
302 0356 AGGREGATE SURFACE COURSE CL 13	Ton	625
401 0050 TACK COAT @ 0.05 Gal/SY	Gal	24,512
401 0060 PRIME COAT @ 0.25 Gal/SY	Gal	1,908
411 0132 RELAYING MILLED MATERIAL @ 2.0 Ton/CY	Ton	1,056
430 0145 RAP - SUPERPAVE FAA 45 @ 2 Ton/CY	Ton	55,994
430 5809 PG 58V-28 ASPHALT CEMENT @ 4.3%	Ton	2,407
550 0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	8,025
550 0355 CONCRETE OVERLAY	CY	12,203
550 0365 CONCRETE PLACEMENT - DOWELED	SY	54,915

Summary Table (2 of 5): Subtotals from Approach Paving Tables 1-2

Material	Unit	Total
302 0100 SALVAGED BASE COURSE @ 1.875 Ton/CY	Ton	2,313
401 0050 TACK COAT @ 0.05 Gal/SY	Gal	284
430 0145 RAP - SUPERPAVE FAA 45 @ 2 Ton/CY	Ton	1,264
430 5809 PG 58V-28 ASPHALT CEMENT @ 4.3%	Ton	55
550 0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	2184
750 0020 PIGMENTED CONCRETE	SY	579

Summary Table (3 of 5): Additional Material required for Guard Rail

Material	Unit	Total
302 0100 SALVAGED BASE COURSE @ 1.875 Ton/CY	Ton	315
401 0060 PRIME COAT @ 0.25 Gal/SY	Gal	213
430 0145 RAP - SUPERPAVE FAA 45 @ 2 Ton/CY	Ton	103
430 5809 PG 58V-28 ASPHALT CEMENT @ 4.3%	Ton	4

Summary Table (4 of 5): Transition Sta 55+16.3 to 57+66.3

Material	Unit	Total
401 0050 TACK COAT @ 0.05 Gal/SY	Gal	69
430 0145 RAP - SUPERPAVE FAA 45 @ 2 Ton/CY	Ton	191
430 5809 PG 58V-28 ASPHALT CEMENT @ 4.3%	Ton	8

Summary Table (5 of 5): Additional Material Requied for variations in profile and surface irregularities

Material	Unit	Total
550 0355 CONCRETE OVERLAY (Surface Irregularities)	CY	610
550 0355 CONCRETE OVERLAY (Variation in profile)	CY	610

Cumulative Paving Summary Table: Summation of Summary Tables 1-5

Material	Unit	Total
302 0100 SALVAGED BASE COURSE @ 1.875 Ton/CY	Ton	15,463
302 0356 AGGREGATE SURFACE COURSE CL 13	Ton	625
401 0050 TACK COAT @ 0.05 Gal/SY	Gal	24,865
401 0060 PRIME COAT @ 0.25 Gal/SY	Gal	2,121
411 0132 RELAYING MILLED MATERIAL @ 2.0 Ton/CY	Ton	1,056
430 0145 RAP - SUPERPAVE FAA 45 @ 2 Ton/CY	Ton	57,552
430 5809 PG 58V-28 ASPHALT CEMENT @ 4.3%	Ton	2,474
550 0300 8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	10,208
550 0355 CONCRETE OVERLAY	CY	12,813
550 0365 CONCRETE PLACEMENT - DOWELED	SY	54,915
750 0020 PIGMENTED CONCRETE	SY	579

Notes: Additional Material for Crossovers included in Section 20

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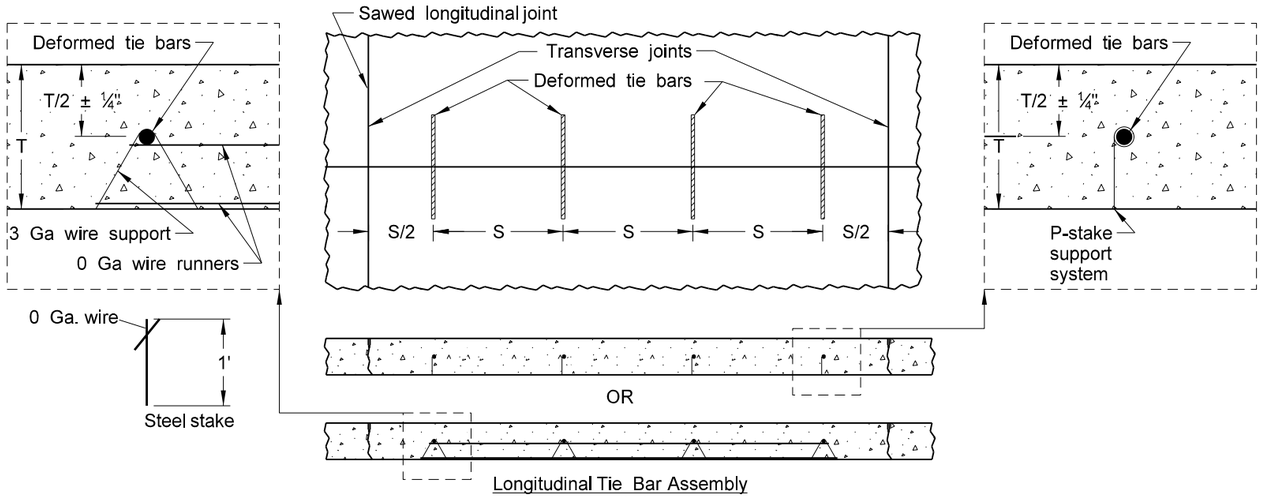
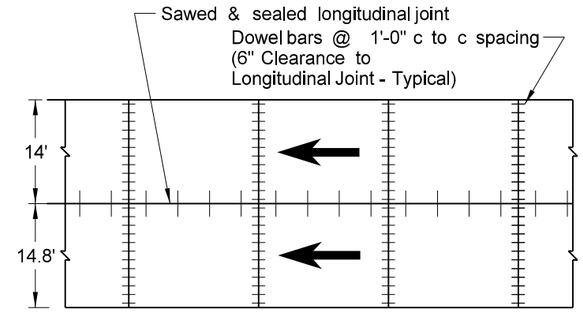
Basis of Estimate

US 2

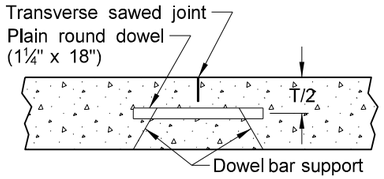
Added 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	20	19



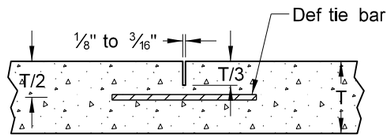
Longitudinal Tie Bar Assembly
(One unit shown)



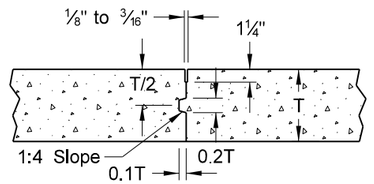
Mainline Joints



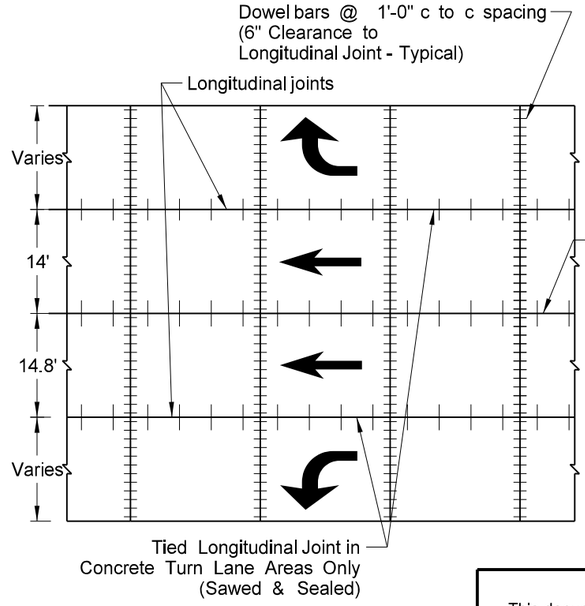
Doweled Transverse Joint



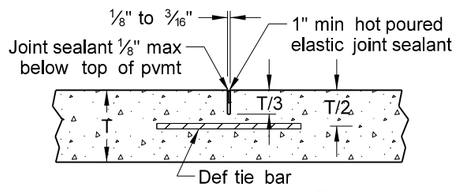
Longitudinal Joint Sawing Detail
(sawed and tied joints)



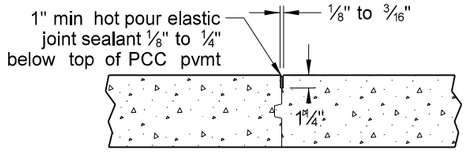
Longitudinal Joint Sawing Detail
(non-tied keyed joints)



Turnlane Joints



Longitudinal Joint Sealing Detail
(sawed and tied joints)



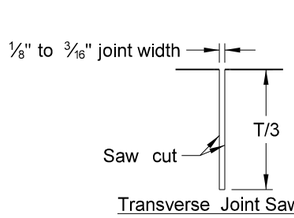
Longitudinal Joint Sealing Detail
(non-tied keyed joints)

Notes:

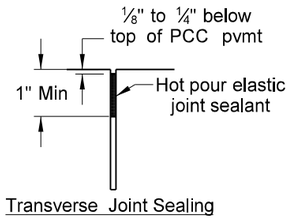
1. S = Tiebar spacing
2. T = Pavement thickness
3. Place no tie bar within 15" of a transverse joint.

Grade 40 Longitudinal Joint Tie Bars		
Pavement Depth (8.0")	Max Spacing "S"	Size and Length
Mainline		
Grade 40 Steel	30"	#5 Bar 30"
Grade 40 Steel	45"	#6 Bar 36"
Grade 60 Steel	30"	#4 Bar 36"
Grade 60 Steel	45"	#5 Bar 42"
Curb & Gutter tie to Mainline		
	48"	#3 Bar 18"

"S" is maximum spacing. Contractor shall adjust spacing to actual panel length.



Transverse Joint Sawing



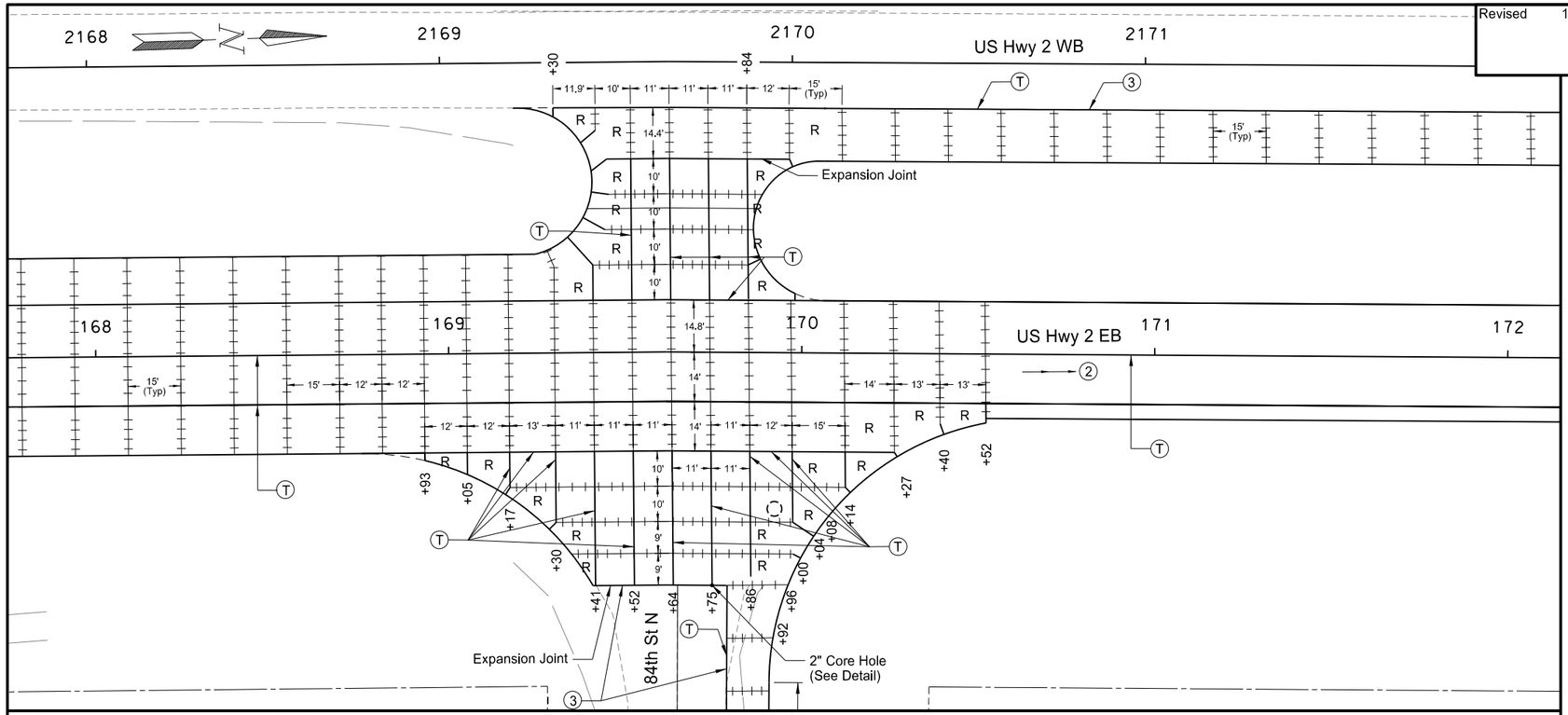
Transverse Joint Sealing

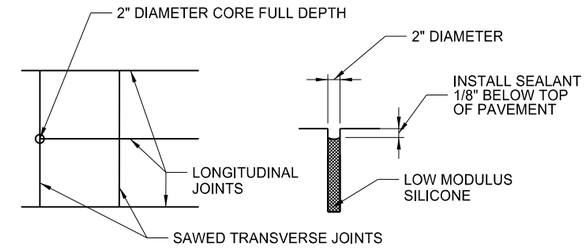
This document was originally issued and sealed by Derek Anderson, Registration Number PE- 7107, on 10/30/17 and the original document is stored at the North Dakota Department of Transportation

PCC Pavement - Joint Details

US 2

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	90	3





CORE DETAIL

NOTES:

1. Stationing is based on Alignment "PR_US2" unless otherwise noted.
2. Continue 15' typical spacing on mainline.
3. Match existing joints.
4. Tie bars will be drilled and epoxied into place where existing pavement abuts new pavement or curb and gutter. All costs to be included in price bid for concrete pavement.

LEGEND

R	PAVEMENT REINFORCEMENT - SEE DETAIL
T	TIED JOINT WITH HOT POUR SEAL - SEE DETAIL
	DOWELED JOINT AT TRANSVERSE JOINTS JOINT SPACING - 15' TYPICAL
	CURB & GUTTER / PIGMENTED CONCRETE

This document was originally issued and sealed by Joshua C. Olson, Registration Number PE- 5593, on 10/30/17 and the original document is stored at the North Dakota Department of Transportation

Paving Layout

US 2

84th St W Intersection

Revised 10/30/2017

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	NH-NHU-7-002(156)022	100	1

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 1	2	3	4		TOTAL 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							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**	**16**	**2**	**11**			**16**	**19**	**304**
G20-4-36	36"x18"	PILOT CAR FOLLOW ME (Mounted to back of pilot car)							18	
G20-10-108	**108"x48"**	**CONTRACTOR SIGN**	**2**		**2**			**2**	**64**	**128**
G20-50a-72	**72"x36"**	**ROAD WORK NEXT __ MILES RT & LT ARROWS**		**17**				**17**	**37**	**629**
G20-52a-72	72"x24"	ROAD WORK NEXT __ MILES RT or LT ARROW							30	
G20-55-96	**96"x48"**	**SPEED LIMIT ENFORCED - MINIMUM FEE $80 WHEN WORKERS PRESENT**	**16**	**4**	**12**			**16**	**59**	**944**
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**	**8**		**5**			**8**	**5**	**40**
R1-2-60	**60"x60"**	**YIELD**		**1**				**1**	**29**	**29**
R2-1-48	**48"x60"**	**SPEED LIMIT __**	**56**	**11**	**40**			**56**	**39**	**2184**
R2-1a-24	**24"x18"**	**MINIMUM FEE $80 (Mounted on Speed Limit post)**			**10**			**10**	**10**	**100**
R2-1aP-24	**24"x18"**	**MINIMUM FEE $80 (Mounted on Speed Limit post)**	**16**		**2**			**16**	**10**	**160**
R3-2-24	24"x24"	LEFT TURN PROHIBITION							10	
R3-6L-36	**30"x36"**	**MANDATORY MOVEMENT LANE CONTROL**		**1**				**1**	**16**	**16**
R3-7-48	**48"x48"**	**LEFT or RIGHT LANE MUST TURN LEFT or RIGHT**		**1**				**1**	**35**	**35**
R4-1-48	**48"x60"**	**DO NOT PASS**	**16**	**18**	**10**			**18**	**39**	**702**
R4-7-48	**48"x60"**	**KEEP RIGHT SYMBOL**		**2**				**2**	**39**	**78**
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**		**5**		**7**		**7**	**28**	**196**
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**		**3**				**3**	**35**	**105**
W1-4b-48	48"x48"	DOUBLE RIGHT or LEFT REVERSE CURVE ARROW							35	
W1-6-48	**48"x24"**	**LARGE ARROW**		**2**				**2**	**26**	**52**
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**	**16**	**2**	**12**			**16**	**35**	**560**
W4-1L-48	**48"x48"**	**MERGING TRAFFIC**		**1**				**1**	**35**	**35**
W4-2-48	**48"x48"**	**RIGHT or LEFT LANE TRANSITION SYMBOL**	**16**	**4**	**12**			**16**	**35**	**560**
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**		**19**				**19**	**35**	**665**
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)**		**2**				**2**	**11**	**22**
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**	**16**	**28**	**12**			**28**	**35**	**980**
W20-2-48	48"x48"	DETOUR AHEAD or __FT							35	
W20-3-48	**48"x48"**	**ROAD or STREET CLOSED AHEAD or __ FT.**				**3**		**3**	**35**	**105**
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.**	**16**	**6**	**12**			**16**	**35**	**560**
W20-7a-48	**48"x48"**	**FLAGGING SYMBOL**	**8**		**5**			**8**	**35**	**280**
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	

SIGN NUMBER	SIGN SIZE	DESCRIPTION	AMOUNT REQUIRED BY PHASE NO. 1	2	3	4		TOTAL AMOUNT REQUIRED	UNITS PER AMOUNT	UNITS SUB TOTAL
W20-52-54	54"x12"	NEXT __ MILES (Mounted on warning sign post)							12	
W20-52P-54	**54"x12"**	**NEXT __ MILES (Mounted on warning sign post)**		**18**				**18**	**12**	**216**
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	
W21-5-48	**48"x48"**	**SHOULDER WORK**				**3**		**3**	**35**	**105**
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	
W24-1L-48	**48"x48"**	**RIGHT or LEFT DOUBLE REVERSE CURVE**		**2**				**2**	**35**	**70**
	24"x24"	TAKE TURNS (6" D letters) (Mounted on stop sign post)							11	

SPECIAL SIGNS

SPEC & CODE

704-1000	**TRAFFIC CONTROL SIGNS**	**TOTAL UNITS 9860**

SPEC & CODE	DESCRIPTION	UNIT	QUANTITY BY PHASE NO. 1	2	3	4		TOTAL QUANTITY
704-0100	**FLAGGING**	MHR	**250**	**1750**	**250**	**100**		**2350**
704-1041	**ATTENUATION DEVICE-TYPE B-55**	EACH		**1**				**1**
704-1043	**ATTENUATION DEVICE-TYPE B-65**	EACH		**1**				**1**
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	**8**	**42**	**4**	**19**		**42**
704-1060	**DELINEATOR DRUMS**	EACH	**170**	**347**	**85**	**110**		**347**
704-1065	**TRAFFIC CONES**	EACH			**118**			**118**
704-1067	**TUBULAR MARKERS**	EACH	**130**		**74**			**130**
704-1070	DELINEATOR	EACH						
704-1072	**FLEXIBLE DELINEATORS**	EACH		**795**				**795**
704-1080	**STACKABLE VERTICAL PANELS**	EACH	**50**					**50**
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	**8**		**5**			**8**
704-1088	**SEQUENCING ARROW PANEL - TYPE C - CROSSOVER**	EACH		**2**				**2**
704-1095	TYPE B FLASHERS	EACH						
704-1500	**OBLITERATION OF PVMT MK**	SF		**5050**				**5050**
704-3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF						
704-3510	**PRECAST CONCRETE MED BARRIER - STATE FURNISHED**	EACH		**69**				**69**
762-0200	**RAISED PAVEMENT MARKERS**	EACH		**21385**				**21385**
762-0420	SHORT TERM 4IN LINE - TYPE R	LF						
762-0426	**SHORT TERM 24 IN LINE - TYPE R (LF)**	LF		**29**				**29**
762-0430	**SHORT TERM 4IN LINE - TYPE NR**	LF		**50037**				**50037**
762-1361	**PAVEMENT MARKING 6IN LINE-MASKING**	LF		**1500**				**1500**
772-2110	**FLASHING BEACON - POST MOUNTED**	EACH		**2**				**2**

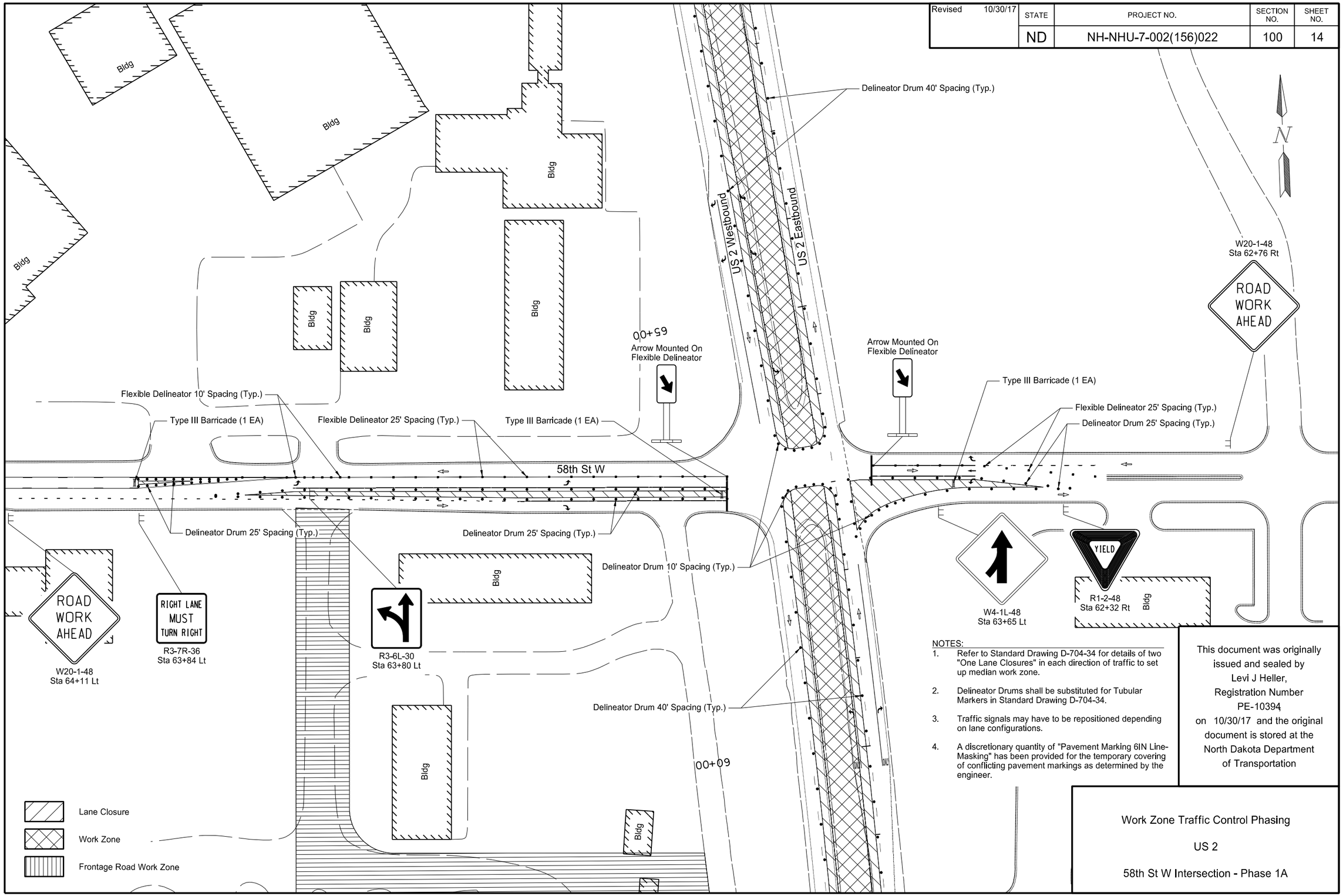
NOTE:
If additional signs are required, units will be calculated using the formula from Section III-19.06 of the Design Manual.
http://www.dot.nd.gov/

This document was originally issued and sealed by Levi J Heller, Registration Number PE-10394, on 10/30/17 and the original document is stored at the North Dakota Department of Transportation.

Traffic Control Devices List

US 2

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	100	14



NOTES:

1. Refer to Standard Drawing D-704-34 for details of two "One Lane Closures" in each direction of traffic to set up median work zone.
2. Delineator Drums shall be substituted for Tubular Markers in Standard Drawing D-704-34.
3. Traffic signals may have to be repositioned depending on lane configurations.
4. A discretionary quantity of "Pavement Marking 6IN Line-Masking" has been provided for the temporary covering of conflicting pavement markings as determined by the engineer.

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Work Zone Traffic Control Phasing

US 2

58th St W Intersection - Phase 1A

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Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	100	15

Inset A

Delineator Drum 25' Spacing (Typ.)

ROAD WORK AHEAD

W20-1-48
Sta 65+00 Lt

Bldg

W4-1L-48
Sta 63+65 Lt

R1-2-48
Sta 63+88 Lt

YIELD

65+00

Delineator Drum 40' Spacing (Typ.)

Type III Barricade (1 EA)

R3-2-24
Sta 63+20 Rt

W20-1-48
Sta 62+80 Rt

ROAD WORK AHEAD

Type III Barricade (2 EA)

Delineator Drum 25' Spacing (Typ.)

Delineator Drum 10' Spacing (Typ.)

Type III Barricade (1 EA)

Delineator Drum 25' Spacing (Typ.)

58th St W

Refer to "Inset A" for more details

Delineator Drum 25' Spacing (Typ.)

Flexible Delineator 10' Spacing (Typ.)

Flexible Delineator 25' Spacing (Typ.)

W1-4R-48
Sta 62+50 Rt

Arrow Mounted On Flexible Delineator

Arrow Mounted On Flexible Delineator

US 2 Westbound

US 2 Eastbound

00+09

Delineator Drum 40' Spacing (Typ.)

Lane Closure

Work Zone

Frontage Road Work Zone

NOTES:

1. Refer to Standard Drawing D-704-34 for details of two "One Lane Closures" in each direction of traffic to set up median work zone.
2. Delineator Drums shall be substituted for Tubular Markers in Standard Drawing D-704-34.
3. Traffic signals may have to be repositioned depending on lane configurations.
4. A discretionary quantity of "Pavement Marking 6IN Line-Masking" has been provided for the temporary covering of conflicting pavement markings as determined by the engineer.

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Work Zone Traffic Control Phasing

US 2

58th St W Intersection - Phase 1B

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Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	100	16

Flexible Delineator 100' Spacing (Typ.)

Type III Barricade (1 EA)

Delineator Drum 40' Spacing (Typ.)

Type III Barricade (5 EA)

Flexible Delineator 20' Spacing (Typ.)

R11-2-48
Sta 63+75
Mounted on
Type III Barricade

ROAD CLOSED

W20-1-48
Sta 62+50 Rt

ROAD WORK AHEAD

R3-6L-30
Sta 63+75 Lt

65+00

Arrow Mounted On
Flexible Delineator

Delineator Drum 10' Spacing (Typ.)

Delineator Drum 25' Spacing (Typ.)

Flexible Delineator 25' Spacing (Typ.)

Flexible Delineator 25' Spacing (Typ.)

58th St W

Type III Barricade (1 EA)

Delineator Drum 25' Spacing (Typ.)

RIGHT LANE MUST TURN RIGHT

R3-7R-36
Sta 63+32 Lt

Type III Barricade (1 EA)

Delineator Drum 25' Spacing (Typ.)

Delineator Drum 10' Spacing (Typ.)

ROAD WORK AHEAD

W20-1-48
Sta 63+80 Lt

Flexible Delineator 20' Spacing (Typ.)

Flexible Delineator 100' Spacing (Typ.)

US 2 Westbound

US 2 Eastbound

00+09

Bldg

Lane Closure

Work Zone

Frontage Road Work Zone

NOTES:

1. Refer to Standard Drawing D-704-34 for details of two "One Lane Closures" in each direction of traffic to set up median work zone.
2. Delineator Drums shall be substituted for Tubular Markers in Standard Drawing D-704-34.
3. Traffic signals may have to be repositioned depending on lane configurations.
4. A discretionary quantity of "Pavement Marking 6IN Line-Masking" has been provided for the temporary covering of conflicting pavement markings as determined by the engineer.

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Work Zone Traffic Control Phasing

US 2

58th St W Intersection - Phase 2C

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	100	17

Inset A

Delineator Drum 20' Spacing (Typ.)

Type III Barricade (2 EA)

ROAD WORK AHEAD

W20-1-48
Sta 63+90 Lt

W24-1R-48
Sta 64+10 Lt

Bldg

Bldg

Bldg

Bldg

Bldg

Flexible Delineator 20' Spacing (Typ.)

65+00

Flexible Delineator 100' Spacing (Typ.)

Type III Barricade (1 EA)

Delineator Drum 40' Spacing (Typ.)

Type III Barricade (1 EA)

Delineator Drum 10' Spacing (Typ.)

Delineator Drum 25' Spacing (Typ.)

W24-1L-48
Sta 62+80 Rt

W20-1-48
Sta 62+45 Rt

ROAD WORK AHEAD

N

Type III Barricade (2 EA)

Delineator Drum 10' Spacing (Typ.)

58th St W

Refer to "Inset A" for more details

Delineator Drum 25' Spacing (Typ.)

Bldg

Arrow Mounted On Flexible Delineator

Flexible Delineator 100' Spacing (Typ.)

Flexible Delineator 100' Spacing (Typ.)

00+09

US 2 Westbound

US 2 Eastbound

ROAD CLOSED

R11-2-48
Sta 62+30
Mounted on
Type III Barricade

Flexible Delineator 20' Spacing (Typ.)

Bldg

Bldg

Bldg

Lane Closure

Work Zone

Frontage Road Work Zone

NOTES:

1. Refer to Standard Drawing D-704-34 for details of two "One Lane Closures" in each direction of traffic to set up median work zone.
2. Delineator Drums shall be substituted for Tubular Markers in Standard Drawing D-704-34.
3. Traffic signals may have to be repositioned depending on lane configurations.
4. A discretionary quantity of "Pavement Marking 6IN Line-Masking" has been provided for the temporary covering of conflicting pavement markings as determined by the engineer.

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Work Zone Traffic Control Phasing

US 2

58th St W Intersection - Phase 2D

10/31/2017 2:36:33 PM levi.heller \\bis-fs2\Shares\Projects\2016\16.101.0030 NDDOT - US Hwy 2_Williston North_EB\70002156.022\Traffic\Addendum_2\100_Work Zone Traffic Control\100WZ_017_AD-2.dgn

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	120	1

(Table 1) Permanent Pavement Marking Summary

Sheet No.	Begin Station	End Station	Lane	Obliteration of Pavement Marking (SF) 704 1500	EPOXY PAVEMENT MARKING						PREFORMED PATTERNED PAVEMENT MARKING		
					MESSAGE (SF) 762 0112		4IN LINE (LF) 762 0113			8IN LINE (LF) 762 0115	4IN LINE (LF) 762 1305	8IN LINE (LF) 762 1309	24IN LINE (LF) 762 1325
					Lt Arrow	Rt Arrow	White CL Skips	Yellow Edge Line	White Edge Line	White Channel Line	White CL Skips	White Channel Line	Stop Bar
-	50+64	55+16	EB	-	-	-	-	452	452	-	113	-	-
	-		WB	-	-	-	-	-	-	-	-	-	-
3	55+16	69+00	EB	-	48	48	-	1,237	1,370	-	315	1,266	95
			WB	-	48	48	-	1,248	1,202	-	311	1,396	60
-	69+00	97+79	EB	-	-	-	-	2,881	2,876	-	720	-	-
			WB	-	-	-	-	2,895	2,901	-	725	-	-
3	97+79	105+00	EB	-	48	-	-	724	624	-	180	436	-
			WB	-	-	-	-	711	640	-	182	-	-
4	105+00	130+00	EB	-	96	48	-	2,489	2,494	-	625	1,297	-
			WB	-	48	48	-	2,443	2,320	-	623	806	-
-	130+00	135+00	EB	-	-	-	-	499	501	-	125	-	-
			WB	-	-	-	-	494	492	-	123	-	-
5	135+00	148+50	EB	-	48	48	-	1,247	1,351	-	338	723	-
			WB	-	48	-	-	1,297	1,316	-	337	374	-
-	148+50	162+80	EB	-	-	-	-	1,430	1,430	-	358	-	-
			WB	-	-	-	-	1,430	1,430	-	358	-	-
6	162+80	183+77	EB	75	48	128	-	2,086	2,192	-	524	1,309	88
			WB	-	48	-	-	2,085	2,020	-	524	435	36
-	183+77	190+00	EB	-	-	-	-	623	623	-	156	-	-
			WB	-	-	-	-	623	623	-	156	-	-
7	190+00	203+00	EB	-	-	48	-	1,293	1,334	-	325	335	-
			WB	-	48	-	-	1,283	1,300	-	325	435	-
-	203+00	228+00	EB	-	-	-	-	2,500	2,500	-	625	-	-
			WB	-	-	-	-	2,500	2,500	-	625	-	-
8	228+00	247+00	EB	-	-	-	194	901	901	-	32	-	-
			WB	-	48	48	-	1,778	1,669	-	376	1,139	72
-	247+00	269+00	EB	-	-	-	550	2,200	2,200	-	-	-	-
			WB	-	-	-	-	2,200	2,200	-	550	-	-
Part 1 Total				**75**	**576**	**464**	**744**	**41,549**	**41,461**	**-**	**9,651**	**9,951**	**351**

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Permanent Pavement Marking Summary

Sta 50+64 to Sta 269+00

Revised	10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	NH-NHU-7-002(156)022	120	2

(Table 1) Permanent Pavement Marking Summary

Sheet No.	Begin Station	End Station	Lane	Obliteration of Pavement Marking (SF) 704 1500	EPOXY PAVEMENT MARKING						PREFORMED PATTERNED PAVEMENT MARKING		
					MESSAGE (SF) 762 0112		4IN LINE (LF) 762 0113			8IN LINE (LF) 762 0115	4IN LINE (LF) 762 1305	8IN LINE (LF) 762 1309	24IN LINE (LF) 762 1325
					Lt Arrow	Rt Arrow	White CL Skips	Yellow Edge Line	White Edge Line	White Channel Line	White CL Skips	White Channel Line	Stop Bar
9	269+00	281+50	EB	-	-	48	313	1,253	1,151	371	-	-	-
			WB	-	48	-	-	1,248	1,250	-	313	385	-
-	281+50	319+00	EB	-	-	-	938	3,750	3,750	-	-	-	-
			WB	-	-	-	-	3,750	3,750	-	938	-	-
9	319+00	331+00	EB	-	-	48	300	1,207	1,096	618	-	-	-
			WB	-	-	-	-	1,200	1,200	-	300	256	-
10	331+00	338+00	EB	-	-	-	175	700	700	-	-	-	-
			WB	-	48	-	-	700	700	-	175	447	-
-	338+00	357+00	EB	-	-	-	475	1,900	1,900	-	-	-	-
			WB	-	-	-	-	1,900	1,900	-	475	-	-
11	357+00	382+00	EB	-	96	48	625	2,483	2,503	2,093	-	-	-
			WB	-	-	48	-	2,428	2,431	-	625	712	-
12	382+00	390+00	EB	-	-	-	200	800	800	-	-	-	-
			WB	-	48	48	-	800	800	-	200	1,050	-
-	390+00	478+00	EB	-	-	-	2,200	8,800	8,800	-	-	-	-
			WB	-	-	-	-	8,800	8,800	-	2,200	-	-
13	478+00	494+00	EB	-	-	48	400	1,596	1,490	352	-	-	-
			WB	-	48	-	-	1,589	1,506	-	400	451	-
-	494+00	507+00	EB	-	-	-	325	1,300	1,300	-	-	-	-
			WB	-	-	-	-	1,300	1,300	-	325	-	-
14	507+00	513+64	EB	-	48	-	166	684	664	344	-	-	-
			WB	-	-	-	-	655	664	-	166	-	-
-	513+64	524+00	EB	-	-	-	259	1,036	1,036	-	-	-	-
			WB	-	-	-	-	1,036	1,036	-	259	-	-
15	524+00	546+00	EB	-	48	48	550	2,173	2,141	720	-	-	-
			WB	-	48	-	-	2,144	2,001	-	550	449	-
-	546+00	573+00	EB	-	-	-	675	2,702	2,698	-	-	-	-
		566+08	WB	-	-	-	-	2,008	2,008	-	502	-	-
Part 2 Total				-	432	336	7,601	59,942	59,375	4,498	7,428	3,750	-
Overall Total				75	1,008	800	8,345	101,491	100,836	4,498	17,079	13,701	351

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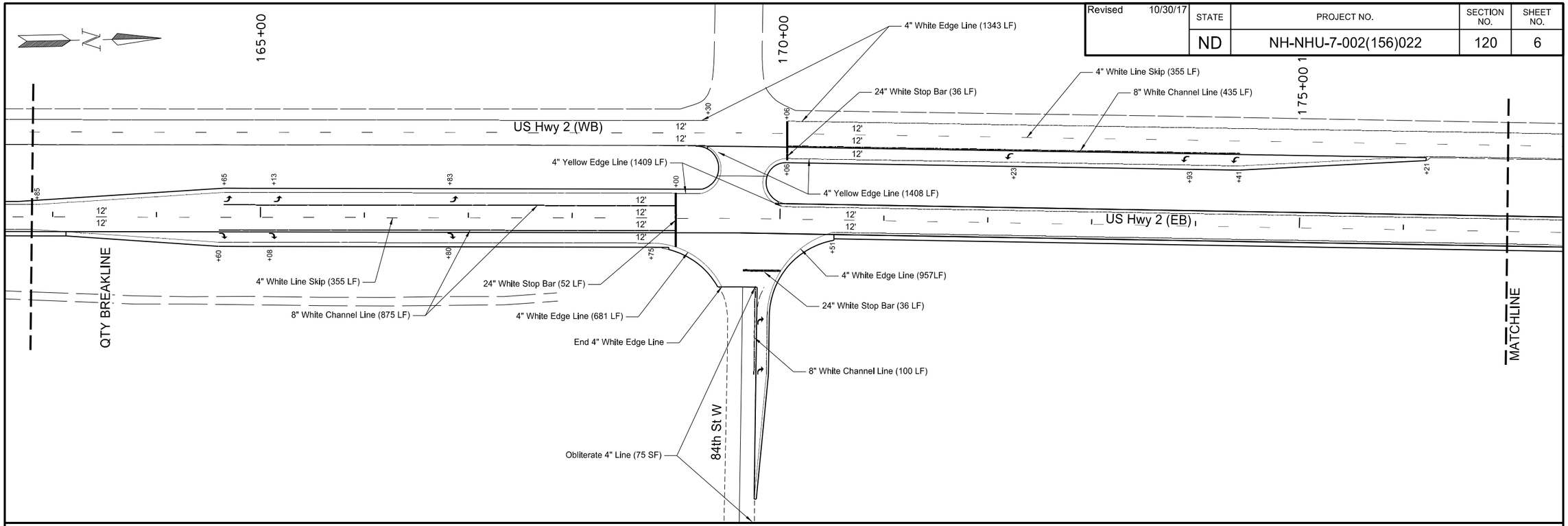
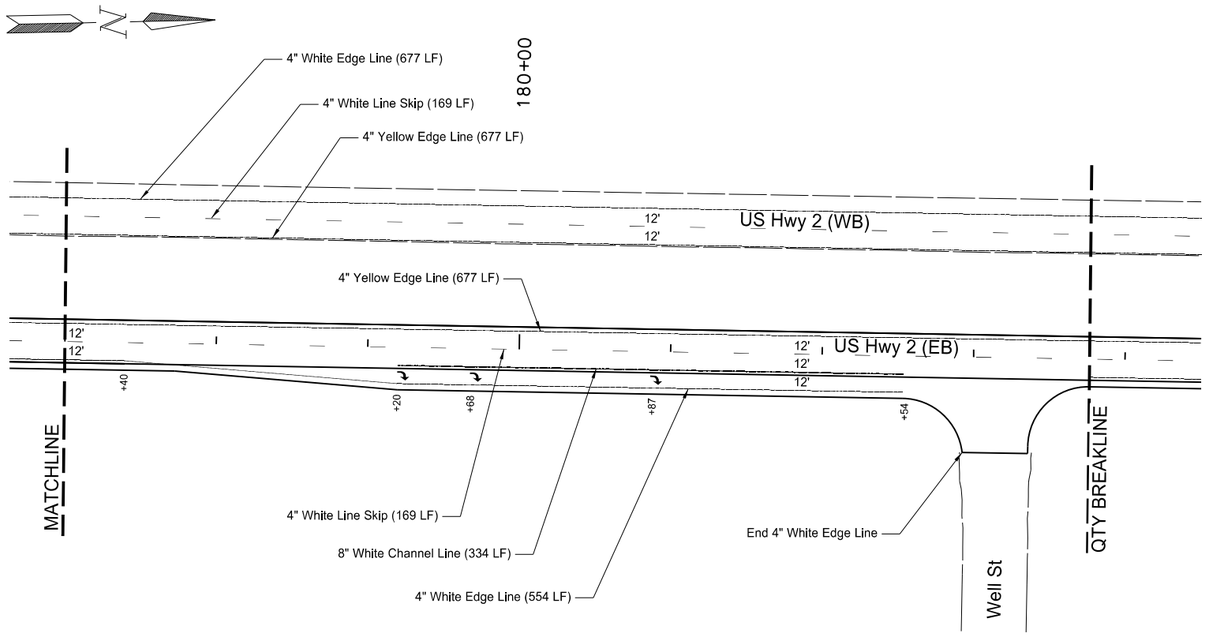
Permanent Pavement Marking Summary

Sta 269+00 to Sta 573+00

Revised 10/30/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	NH-NHU-7-002(156)022	120	6





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Pavement Marking

US 2

Sta 162+80 to 183+77 (84th St W)