NO. 3

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

REQUEST FOR PROPOSAL

URBAN FEDERAL AID PROJECT NO. SU-8-992(040)041 (PCN-21569)

1.180 Miles

GRADING, AGGREGATE BASE, PCC PAVEMENT, STORM SEWER, SIDEWALK, LANDSCAPING, SIGNING, PAVEMENT MARKINGS, TRAFFIC SIGNALS, STREET LIGHTING, WATERMAIN, SANITARY SEWER, FIBER OPTIC

WEST FARGO, SHEYENNE ST FROM 40TH AVE W TO 32ND AVE W

CASS COUNTY

DBE Race Conscious Goal - 7.00%

BID OPENING: The bidder's proposal will be accepted via the Bid Express on-line bidding exchange at www.bidx.com until **09:30AM Central Time on November 09, 2018.**

Prior to submitting a Proposal, the Bidder shall complete all applicable sections and properly execute the Proposal Form in accordance with the specifications.

Proposal Form of:

_____
(Firm Name)

_____
(Address, City, State, Zipcode)

(For official use only)

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Project: SU-8-992(040)041 (PCN-21569)

The company, firm, corporation, or individual hereby acknowledges that it has designated a responsible person or persons as having the authority to obligate the company, firm, or individual, through electronic or paper submittal, to the terms and conditions described herein and in the contract documents. The designated responsible person submitting this proposal shall be hereafter known as the bidder. By submitting this proposal, the bidder fully accepts and agrees to all the provisions of the proposal. The bidder also certifies that the information given in this proposal is true and the certifications made in this proposal are correct.

The bidder acknowledges that they have thoroughly examined the plans, proposal form, specifications, supplemental specifications, special provisions and agrees that they constitute essential parts of this proposal.

The bidder acknowledges that all line items which contain a quantity shall have a unit price bid. Any line item which is bid lump sum shall contain a lump sum bid price.

The bidder acknowledges that they understand that the quantities of work required by the plans and specifications are approximate only and are subject to increases and decreases; the bidder understands that all quantities of work actually required must be performed and that payment therefore shall be at the prices stipulated herein; that the bidder proposes to timely furnish the specified materials in the quantities required and to furnish the machinery, equipment, labor and expertise necessary to competently complete the proposed work in the time specified.

NON-COLLUSION AND DEBARMENT CERTIFICATION

The bidder certifies that neither he/she, nor any official, agent or employee of the bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is in restraint of free competitive bidding in connection with this bid.

By submitting this proposal, the bidder certifies to the best of his/her knowledge and belief that he/she and his/her principles:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal Department or agency;
b. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or perform a public (Federal, State or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records; making false statements; or receiving stolen property

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in paragraph b. of the certification; and
d. Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or Local) terminated for cause or default

Where the prospective bidder is unable to certify to any of the statements in this certification, the bidder shall submit an explanation in the blanks provided herein. The explanation will not necessarily result in denial of participation in a contract:

Explanation:_____
_____
_____
_____

If the prequalified bidder's status changes, he/she shall immediately submit a new fully executed non-collusion affidavit and debarment certification with an explanation of the change to the Contract Office prior to submitting the bid.

Failure to furnish a certification or an explanation will be grounds for rejection of a bid.

BID LIMITATION (Optional)

The bidder who desires to bid on more than one project on which bids are to be opened on the same date, and who also desires to avoid receiving an award of more projects than the bidder is equipped to handle, may bid on multiple projects and limit the total amount of work awarded to the bidder on selected projects by completing the "Bid Limitation".

The Bid Limitation must be filled in on each proposal form for which the Bidder desires protection. Each such proposal must be covered by a proposal guaranty.

The bid limitation can be made by declaring the total dollar value of work OR total number of projects a bidder is willing to perform.

The Bidder desires to disqualify all of his/her bids on this bid opening that exceed a total dollar value of

$_____

OR

that exceed a total number of _____ projects.

The Bidder hereby authorizes the Department to determine which bids shall be disqualified.

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PERMISSIBLE DISCOUNT (optional)

Only when invited to do so in the Request for Proposal by Special Provision, Bidders are permitted to offer a discount on a specific project (discount project) if they are awarded the contract on one or more additional projects bid at the same bid opening time and date. The bidder must present the proposal so that it can be considered with or without the discount. The bid or discount offered on the "discount project" will not affect the determination of the low bid of any other project.

When discounts are offered, they must be presented as a reduction in the unit price for one or more items of work in the specified proposal (discount project).

Space for Offering Discounts:

_____
_____
_____

Item No:_____

Description:_____

Unit:_____

Proposal Quantity:_____ Unit Price Reduction: $_____ Discount: $_____

Item No:_____

Description:_____

Unit:_____

Proposal Quantity:_____ Unit Price Reduction: $_____ Discount: $_____

Item No:_____

Description:_____

Unit:_____

Proposal Quantity:_____ Unit Price Reduction: $_____ Discount: $_____

Item No:_____

Description:_____

Unit:_____

Proposal Quantity:_____ Unit Price Reduction: $_____ Discount: $_____

TOTAL DISCOUNT_____

It is understood that the discount will only apply if awarded under the conditions as listed above and signed by the bidder.

Project: SU-8-992(040)041 (PCN-21569)

RECEIPT OF ADDENDA ACKNOWLEDGEMENT

We hereby acknowledge receipt of the following addenda:

Addendum #_____ Dated_____

Addendum #_____ Dated_____

Addendum #_____ Dated_____

Addendum #_____ Dated_____

Addendum #_____ Dated_____

Addendum #_____ Dated_____

PROPOSAL GUARANTY

A proposal guaranty is required. The proposal guaranty must comply with Section 102.09, "Proposal Guarantee" of the Standard Specifications.

TYPE OF PROPOSAL GUARANTY APPLIED TO THIS PROJECT (Check one):

_____ Annual Bid Bond*

_____ Single Project Bid Bond

_____ Certified or Cashier's Check

*Annual Bid Bond is required when submitting proposals electronically

BID ITEMS

Project: SU-8-992(040)041 (PCN-21569)

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

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
001	103	0100	CONTRACT BOND	L SUM	1.				
002	201	0330	CLEARING & GRUBBING	L SUM	1.				
003	201	0370	REMOVAL OF TREES 10IN	EA	11.				
004	201	0380	REMOVAL OF TREES 18IN	EA	1.				
005	202	0104	REMOVAL OF STRUCTURE	EA	3.				
006	202	0114	REMOVAL OF CONCRETE PAVEMENT	SY	2,635.				
007	202	0130	REMOVAL OF CURB & GUTTER	LF	2,580.				
008	202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	1,657.				
009	202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	1,946.				
010	202	0210	REMOVAL OF MANHOLES	EA	5.				
011	202	0230	REMOVAL OF INLETS	EA	6.				
012	202	0286	REMOVAL OF FOUNDATIONS-ALL SIZES	L SUM	1.				
013	202	0312	REMOVE EXISTING FENCE	LF	596.				
014	203	0101	COMMON EXCAVATION-TYPE A	CY	46,181.				
015	203	0109	TOPSOIL	CY	13,933.100				
016	203	0125	REMOVE & SALVAGE TOPSOIL	CY	1,680.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
017	203	0138	COMMON EXCAVATION-SUBCUT	CY	1,500.				
018	216	0100	WATER	M GAL	4,500.				
019	230	0300	SUBGRADE PREPARATION-TYPE A	STA	78.				
020	251	0300	SEEDING CLASS III	ACRE	16.190				
021	253	0201	HYDRAULIC MULCH	ACRE	34.190				
022	253	0301	BONDED FIBER MATRIX	ACRE	9.950				
023	260	0200	SILT FENCE SUPPORTED	LF	2,085.				
024	260	0201	REMOVE SILT FENCE SUPPORTED	LF	1,035.				
025	261	0112	FIBER ROLLS 12IN	LF	4,000.				
026	261	0113	REMOVE FIBER ROLLS 12IN	LF	4,000.				
027	302	0050	TRAFFIC SERVICE AGGREGATE	TON	1,066.				
028	302	0121	AGGREGATE BASE COURSE CL 5	CY	19,812.				
029	302	9970	TYPE II PIPE BEDDING	CY	965.				
030	306	0510	FULL DEPTH RECLAMATION	SY	37,703.				
031	430	0043	SUPERPAVE FAA 43	TON	2,338.				
032	430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	1,503.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
033	430	1000	CORED SAMPLE	EA	16.				
034	430	5806	PG 58H-28 ASPHALT CEMENT	TON	140.				
035	550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	SY	38,552.				
036	622	6760	STEEL SHEET PILING	SF	6,125.				
037	624	0123	PEDESTRIAN RAILING	LF	141.				
038	702	0100	MOBILIZATION	L SUM	1.				
039	704	0100	FLAGGING	MHR	1,600.				
040	704	1000	TRAFFIC CONTROL SIGNS	UNIT	5,889.				
041	704	1052	TYPE III BARRICADE	EA	55.				
042	704	1054	SIDEWALK BARRICADE	EA	23.				
043	704	1060	DELINEATOR DRUMS	EA	247.				
044	704	1067	TUBULAR MARKERS	EA	100.				
045	704	1080	STACKABLE VERTICAL PANELS	EA	55.				
046	704	3501	PORTABLE PRECAST CONCRETE MED BARRIER	LF	160.				
047	704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	6.				
048	708	1531	INLET PROTECTION-FIBER ROLL 12IN	EA	66.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
049	708	1533	REMOVAL INLET PROTECTION-FIBER ROLL 12IN	EA	66.				
050	708	1540	INLET PROTECTION-SPECIAL	EA	48.				
051	708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	48.				
052	709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	65,768.				
053	714	0210	PIPE CONC REINF 15IN CL III-STORM DRAIN	LF	2,472.				
054	714	0315	PIPE CONC REINF 18IN CL III-STORM DRAIN	LF	1,346.				
055	714	0620	PIPE CONC REINF 24IN CL III-STORM DRAIN	LF	543.				
056	714	0825	PIPE CONC REINF 30IN CL III-STORM DRAIN	LF	971.				
057	714	0910	PIPE CONC REINF 36IN CL III-STORM DRAIN	LF	1,252.				
058	714	1010	PIPE CONC REINF 42IN CL III-STORM DRAIN	LF	1,136.				
059	714	1110	PIPE CONC REINF 48IN CL III-STORM DRAIN	LF	1,541.				
060	714	1212	PIPE CONC REINF 54IN CL III-STORM DRAIN	LF	116.				
061	714	9680	PLUG PIPE-ALL TYPES & SIZES	EA	3.				
062	714	9696	EDGEDRAIN NON PERMEABLE BASE	LF	12,304.				
063	714	9730	UNDERDRAIN PIPE PVC PERFORATED 6IN	LF	1,030.				
064	722	0100	MANHOLE 48IN	EA	5.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
065	722	0110	MANHOLE 60IN	EA	6.				
066	722	0120	MANHOLE 72IN	EA	9.				
067	722	0130	MANHOLE 84IN	EA	6.				
068	722	0200	MANHOLE 108IN	EA	1.				
069	722	0315	MANHOLE CASTING	EA	3.				
070	722	0428	8FT X 6FT RCB CULVERT MANHOLE	EA	3.				
071	722	1100	MANHOLE RISER 48IN	LF	38.				
072	722	1110	MANHOLE RISER 60IN	LF	41.400				
073	722	1120	MANHOLE RISER 72IN	LF	64.600				
074	722	1130	MANHOLE RISER 84IN	LF	82.800				
075	722	1200	MANHOLE RISER 108IN	LF	17.600				
076	722	3410	MANHOLE REPAIR	EA	4.				
077	722	3510	INLET-TYPE 2	EA	12.				
078	722	3520	INLET-TYPE 2 DOUBLE	EA	14.				
079	722	3701	INLET SPECIAL-TYPE 2 48IN	EA	7.				
080	722	3740	INLET SPECIAL CATCH BASIN-TYPE A 48IN	EA	4.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
081	722	3769	INLET SPECIAL-TYPE 2 96IN	EA	1.				
082	722	4000	INLET CATCH BASIN-TYPE A	EA	27.				
083	722	6140	ADJUST GATE VALVE BOX	EA	2.				
084	722	6160	ADJUST INLET	EA	2.				
085	722	6200	ADJUST MANHOLE	EA	1.				
086	722	6248	ADJUST 3IN WATERMAIN	EA	3.				
087	724	0210	FITTINGS-DUCTILE IRON	LBS	4,227.				
088	724	0300	GATE VALVE & BOX 6IN	EA	1.				
089	724	0310	GATE VALVE & BOX 8IN	EA	1.				
090	724	0317	GATE VALVE & BOX 16IN	EA	4.				
091	724	0375	RELOCATE GATE VALVE & BOX	EA	17.				
092	724	0400	HYDRANT-INSTALL 6IN	EA	3.				
093	724	0427	ADJUST HYDRANT	EA	2.				
094	724	0552	TAPPING SLEEVE & VALVE 16IN X 8IN	EA	3.				
095	724	0571	TAPPING SLEEVE & VALVE 20IN X 4IN	EA	1.				
096	724	0611	WATER SERVICE LINE 1IN	LF	157.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
097	724	0621	WATER SERVICE LINE 2IN	LF	76.				
098	724	0810	WATERMAIN 6IN PVC	LF	17.				
099	724	0830	WATERMAIN 8IN PVC	LF	412.				
100	724	0852	WATERMAIN 16IN PVC	LF	715.				
101	724	0860	20IN FORCEMAIN	LF	714.				
102	724	0892	RELOCATE WATERMAIN	EA	11.				
103	724	0955	WATER SERVICE CONNECTION 1IN	EA	2.				
104	724	0960	WATER SERVICE CONNECTION 2IN	EA	1.				
105	724	1035	SPRINKLER RELOCATION	L SUM	1.				
106	724	9018	FORCEMAIN 4IN	LF	112.				
107	724	9022	FORCEMAIN 8IN	LF	483.				
108	724	9024	FORCEMAIN 10IN	LF	46.				
109	724	9028	FORCEMAIN 16IN	LF	147.				
110	744	0050	INSULATION BOARD	CF	42.				
111	748	0190	CURB & GUTTER-TYPE I 30IN	LF	23,465.				
112	750	0030	PIGMENTED IMPRINTED CONCRETE	SY	3,278.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
113	750	0101	SIDEWALK CONCRETE REINF	SY	224.				
114	750	0120	SIDEWALK CONCRETE 5IN REINF	SY	11,327.				
115	750	0210	CONCRETE MEDIAN NOSE PAVING	SY	229.				
116	750	1016	DRIVEWAY CONCRETE 6IN REINFORCED	SY	545.				
117	750	2115	DETECTABLE WARNING PANELS	SF	680.				
118	752	0850	ORNAMENTAL FENCE	LF	456.				
119	752	0911	TEMPORARY SAFETY FENCE	LF	1,635.				
120	754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	473.				
121	754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	98.				
122	754	0170	FLEXIBLE DELINEATORS	EA	29.				
123	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	537.				
124	754	0592	RESET SIGN PANEL	EA	2.				
125	762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	895.				
126	762	0420	SHORT TERM 4IN LINE-TYPE R	LF	825.				
127	762	0426	SHORT TERM 24IN LINE-TYPE R	LF	108.				
128	762	0436	SHORT TERM 24IN LINE-TYPE NR	LF	70.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
129	762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	4,588.				
130	762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	5,232.				
131	762	1325	PREFORMED PATTERNED PVMT MK 24IN LINE-GROOVED	LF	2,050.				
132	762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	LF	2,399.				
133	766	0100	MAILBOX-ALL TYPES	EA	4.				
134	770	0003	LIGHTING SYSTEM A	EA	1.				
135	772	2800	INTERIM TRAFFIC SIGNALS	EA	2.				
136	772	2810	TEMPORARY TRAFFIC SIGNALS	EA	2.				
137	772	9200	IT SYSTEM	EA	1.				
138	772	9811	TRAFFIC SIGNAL SYSTEM - SITE 1	EA	1.				
139	772	9812	TRAFFIC SIGNAL SYSTEM - SITE 2	EA	1.				
140	772	9813	TRAFFIC SIGNAL SYSTEM - SITE 3	EA	1.				
141	970	0001	LANDSCAPING APPURTENANCES	L SUM	1.				
142	970	0002	LANDSCAPE EDGING	LF	1,153.				
143	970	0009	LANDSCAPE PREPARATION	ACRE	151.800				
144	970	0105	HERBICIDE WEED CONTROL	SF	141,500.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
145	970	2014	EMBERS AMUR MAPLE - TREE FORM	EA	9.				
146	970	2050	COMMON HACKBERRY	EA	22.				
147	970	2140	KENTUCKY COFFEETREE	EA	21.				
148	970	2150	NORTHERN ACCLAIM HONEYLOCUST	EA	23.				
149	970	2191	PINK SPIRES CRABAPPLE	EA	18.				
150	970	2192	PRAIRIE FIRE CRABAPPLE	EA	8.				
151	970	2203	GLADIATOR CRABAPPLE	EA	17.				
152	970	2215	PRINCESS KAY PLUM	EA	6.				
153	970	2300	PRAIRIE GEM PEAR	EA	33.				
154	970	2392	IVORY SILK LILAC	EA	36.				
155	970	2436	HARVEST GOLD LINDEN	EA	13.				
156	970	2470	DISCOVERY ELM	EA	22.				
157	970	5050	CRIMSON PYGMY BARBERRY	EA	24.				
158	970	5120	MEADOWLARK FORSYTHIA	EA	26.				
159	970	5167	DIABOLO NINEBARK	EA	26.				
160	970	5196	DAKOTA SUNSPOT POTENTILLA	EA	36.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						$$$$$	000	$$$$$	00
161	970	6016	DAYLILIES-CONTAINER	EA	220.				
162	970	6326	RUSSIAN SAGE	EA	57.				
163	970	7000	LITTLE BLUE STEM	EA	268.				
164	970	7050	KARL FOERSTER	EA	256.				
165	970	7056	MISCANTHUS SINENSIS PURPURASCENS	EA	53.				
			TOTAL SUM BID						

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Type of Work: GRADING, AGGREGATE BASE, PCC PAVEMENT, STORM SEWER, SIDEWALK, LANDSCAPING, SIGNING, PAVEMENT MARKINGS, TRAFFIC SIGNALS, STREET LIGHTING, WATERMAIN, SANITARY SEWER, FIBER OPTIC

County: CASS

Length: 1.1800 Miles

TIME FOR COMPLETION:

The undersigned Bidder agrees, if awarded the contract, to prosecute the work with sufficient forces and equipment to complete the contract work within the allowable time specified as follows:

WORKING DAY CONTRACT: **NA** working days are provided. The Department will begin charging working days beginning **NA** or the date work begins on the project site, whichever is earlier.

CALENDAR DAY CONTRACT: **NA** calendar days are provided. The completion date will be determined by adding **NA** calendar days to **NA** or the date work begins on the project site, whichever is earlier.

COMPLETION DATE CONTRACT The project completion date is **06/15/2020 *** . The Department provides a minimum of **NA** working days. The Department will begin charging working days beginning **NA** or the date work begins on the project site, whichever is earlier.

***THE JUNE 15, 2020 COMPLETION DATE IS FOR ALL WORK.**

REFER TO NOTE 100-P01 CONTRACT COMPLETION TIME AND THE AGREEMENT BETWEEN OWNER AND CONTRACTOR FOR CONSTRUCTION CONTRACT (STIPULATED PRICE) FOR ADDITIONAL TIME AND LIQUIDATED DAMAGE REQUIREMENTS.

Project: SU-8-992(040)041 (PCN-21569)

Type of Work: GRADING, AGGREGATE BASE, PCC PAVEMENT, STORM SEWER, SIDEWALK, LANDSCAPING, SIGNING, PAVEMENT MARKINGS, TRAFFIC SIGNALS, STREET LIGHTING, WATERMAIN, SANITARY SEWER, FIBER OPTIC

County: CASS

Length: 1.1800 Miles

UTILIZATION OF DISADVANTAGED BUSINESS ENTERPRISE (M/WBE):
The undersigned Bidder certifies that the information given on behalf of the Bidder in Special Provision, "Utilization of Disadvantaged Business Enterprise" (M/WBE), is true and correct and that the bidder has met the assigned goals or has met the good faith effort requirements of the Special Provision.

CONTRACT EXECUTION:

The undersigned Bidder agrees, if awarded the contract, to execute the contract form and furnish a contract bond within fifteen calendar days, as determined by NDCC Section 1-02-15, after date of notice of award, in accordance with the provisions of Sections 103.05 and 103.06 of the Standard Specifications.

AFFIDAVIT:

STATE OF _____)
) ss.
COUNTY OF _____)

The undersigned bidder, being duly sworn, does depose and say that they are an authorized representative of _____
CONTRACTOR NAME
of _____ , a
MAILING ADDRESS

☐ Individual ☐ Partnership ☐ Joint Venture ☐ Corporation

and that they have read, understand, acknowledge, and accept the entire proposal form; and that all statements made by said bidder are true and correct.

_____ , TITLE _____
BIDDER MUST SIGN ON THIS LINE

_____
TYPE OR PRINT SIGNATURE ON THIS LINE

Subscribed and sworn to before me this day.

_____
COUNTY

(Seal)

_____ _____
STATE DATE

_____
NOTARY PUBLIC

My commission expires _____

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

Job # 3, Project No. SU-8-992(040)041

Grading, Aggregate Base, PCC Pavement, Storm Sewer, Sidewalk, Landscaping, Signing, Pavement Markings, Traffic Signals, Street Lighting, Watermain, Sanitary Sewer, Fiber Optic

INDEX OF PROVISIONS

INDEX OF PROVISIONS

NOTICE

TO: All prospective bidders on all North Dakota Department of Transportation Highway Construction Projects.

Contractors moving construction equipment to NDDOT highway construction projects are subject to the Road Restriction Policy with the following modifications:

A. The contractor may purchase up to 10 single trip permits for each NDDOT highway construction project at a cost ranging from $20 to $70 each. These permits must be purchased from the Motor Carrier Division of the Highway Patrol at the central office of the NDDOT in Bismarck, North Dakota.

B. The $1 per mile fee will not be charged for Gross Vehicle Weights (GVW) exceeding 105,500 pounds, 105,500 pounds, and 105,000 pounds for highways Restricted by Legal Weights, 8 Ton, and 7 Ton highways respectively.

C. The $5 per ton per mile fee will be charged only for loads exceeding a GVW of 130,000 pounds, 120,000 pounds, 110,000 pounds and 80,000 pounds for highways Restricted by Legal Weights, 8 Ton, 7 Ton, and 6 Ton highways respectively.

D. The maximum weights per axle for each of the class restrictions still apply. If it is shown that more axles cannot be added, movement may be authorized; however, a $1 per ton per mile fee will be charged for all weight in excess of the restricted axle limits.

E. These construction equipment single trip permits apply to State and US Highways only.

F. The District Engineers and Highway Patrol will select the route of travel.

G. Contractors moving equipment to other than NDDOT highway construction projects are subject to all fees as shown in the Road Restriction Permit Policy.

H. Contractors must call the Highway Patrol prior to movement of all overweight loads on all State and US Highways.

NDDOT ROAD AND VEHICLE RESTRICTIONS Date Revised 05-22-10

ROAD RESTRICTION PERMITS

Permits shall be issued for the movement of non-divisible vehicles and loads on state highways which exceed the weight limits during spring road restrictions. The issuance of permits may be stopped or posted weights changed at any time based on the varying conditions of the roadways. Permits can be obtained from the Highway Patrol.

RESTRUCTION CLASSIFICATIONS WITH ALLOWABLE AXLE WEIGHTS AND GROSS VEHICLE WEIGHTS	**PERMIT AND TON/MILE FEES**
Highways Restricted by Legal Weight Single Axle -- 20,000 lbs. Tandem Axle -- 34,000 lbs. Triple Axle -- 48,000 lbs. 4 Axles or more -- 15,000 lbs. per axle Gross Vehicle Weight -- 105,500 lbs. Note: The above weights apply to state highways restricted by legal weights, other than interstate highways, in areas where road restrictions are in force. When the gross weight of an axle grouping exceeds 48,000 pounds, the $1 per ton per mile shall apply to all weight in excess of 15,000 pounds per axle.	Permit Fee: $20-$70 per trip Ton Mile Fee: 105,501 lbs. to 130,000 lbs. GVW -- $1 per mile Over 130,000 lbs. GVW – $1 per mile **plus** $5 per ton per mile for that weight exceeding 130,000 lbs. GVW Exceeding axle limits -- $1 per ton per mile
8-Ton: Single Axle -- 16,000 lbs. Tandem Axle -- 32,000 lbs. 3 Axles or more -- 14,000 lbs. per axle Gross Vehicle Weight -- 105,500 lbs.	Permit Fee: $20-$70 per trip Ton Mile Fee: 105,501 lbs. to 120,000 lbs. GVW -- $1 per mile Over 120,000 lbs. GVW – $1 per mile **plus** $5 per ton per mile for that weight exceeding 120,000 lbs. GVW Exceeding restricted axle limits -- $1 per ton per mile
7-Ton: Single Axle -- 14,000 lbs. Tandem Axle -- 28,000 lbs. 3 Axles or more -- 12,000 lbs. per axle Gross Vehicle Weight -- 105,500 lbs.	Permit Fee: $20-$70 per trip Ton Mile Fee: 105,500 lbs. to 110,000 lbs. GVW -- $1 per mile Over 110,000 lbs. GVW – $1 per mile **plus** $5 per ton per mile for that weight exceeding 110,000 lbs. GVW Exceeding restricted axle limits -- $1 per ton per mile
6-Ton: Single Axle -- 12,000 lbs. Tandem Axle -- 24,000 lbs. 3 Axles or more -- 10,000 lbs. per axle Gross Vehicle Weight -- 80,000 lbs.	Permit Fee: $20-$70 per trip Ton Mile Fee: $5 per ton per mile for all weight exceeding 80,000 lbs. GVW Exceeding restricted axle limits -- $1 per ton per mile
5-Ton: Single Axle -- 10,000 lbs. Tandem Axle -- 20,000 lbs. 3 Axles or more -- 10,000 lbs. per axle Gross Vehicle Weight -- 80,000 lbs.	No overweight movement allowed

SINGLE UNIT FIXED LOAD VEHICLES SUCH AS TRUCK CRANES AND WORKOVER RIGS

A. Permit Fee and Ton Mile Fee for Self-Propelled Fixed Load Vehicles.

1. Permit Fee: $25 per trip

2. $1 per ton per mile for all weight in excess of restricted axle limits or in excess of legal limits on state highways in areas where road restrictions are in force. When the gross weight of an axle grouping exceeds 48,000 pounds, the $1 per ton per mile shall apply to all weight in excess of 15,000 pounds per axle (see weight classification chart in section C.)

3. $5 **per ton per mile** for all movements exceeding the following gross vehicle weight limits:

    a. 105,500 lbs. GVW on unrestricted state highways, other than interstate highways, in areas where road restrictions are in force.
    b. 105,500 lbs. GVW on 8-ton highways.
    c. 105,500 lbs. GVW on 7-ton highways.
    d. 80,000 lbs. GVW on 6-ton highways.
    e. No overweight movement allowed on 5-ton highways

B. Permit Fees for Work-Over Rigs and Special Mobile Equipment Exceeding 650 but not 670 Pounds Per Inch Width of Tire.

1. Permit Fee:
    a. $50 per trip on work-over rigs up to 650 pounds per inch width.
    b. $75 per trip on work-over rigs that exceed 650 but not 670 pounds per inch width of tire.
2. The work-over rig shall be stripped to the most minimum weights.
3. A minimal number of state highway miles shall be used.
4. District engineer approval shall be obtained prior to movement when vehicle exceeds restricted axle weights by more than 5,000 pounds.
5. A validation number ending in TM must be obtained from the Highway Patrol prior to using a self-issue single trip movement approval form.
6. The ton mile shall be waived.

NOTICE

U.S. DEPARTMENT OF TRANSPORTATION

"HOT LINE"

As part of its continuing investigation into Highway Construction Contract Bid Rigging and abuses in the Disadvantaged Business Enterprise Program, the Inspector General for the Department of Transportation (DOT) has established a "HOT LINE" to receive information from contractors, suppliers, or anyone with knowledge of such activities.

The toll-free "HOT LINE' telephone number is 1-800-424-9071 and will be manned during normal working hours (8 a.m. to 5 p.m. EST). This operation is under the direction of DOT's Inspector General. All information will be treated confidentially and anonymity will be respected.

CALL
Inspector General's 'HOT LINE'
Toll Free 1-800-424-9071
Washington, DC Area:
202-366-1461
Fax: 202-366-7749

WRITE
Inspector General
Post Office Box 23178
Washington, DC 20026-0178

Email: hotline@oig.dot.gov

The field office address and telephone number for NORTH DAKOTA is:

CHICAGO REGIONAL OFFICE

Special Agent-in-Charge
Commercial: 312-353-0106
111 N. Canal St., Suite 677
Chicago, Illinois 60606

CERTIFICATION

I hereby certify the attached supplemental specifications effective on October 1, 2018.

/S/ — 5/2/18

Bob Fode, P.E., Director
Office of Project Development

Date

NDDOT
North Dakota
Department of Transportation

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION
REVISIONS

Effective Date: 10/01/2018

The following specifications are supplementary to the 2014 Edition of the *Standard Specifications for Road and Bridge Construction* as they apply to this Contract. Page references in this document apply to the hard bound, printed edition of the specifications (the "blue book") and the "as printed" version of the specifications on the Department's website.

101.03 ABBREVIATIONS **PAGE 8** **10/01/15**

Delete the line for "ACPA American Concrete Precast Association" and replace it with the following:

ACPA American Concrete Pipe Association

Add the following item to Section 101.03:

NPCA National Precast Concrete Association
SWPPP Storm Water Pollution Prevention Plan

101.04 DEFINITIONS **PAGE 10** **10/01/15**

Delete the definition for "Sieve" and replace it with the following:

Sieve. U.S.A. Standard Sieve, as defined in ASTM E 11. The specified percent passing for each sieve is measured by weight.

102.07 B Electronic Proposal **Page 23** **10/1/16**

Replace 102.07 B with the following:

B. Electronic Proposal.

1. Electronic Bidding Credentials.
A Digital ID is required to electronically sign proposals.

If a Bidder does not have a Digital ID, create a Digital ID and set up bidding privileges by following the instructions on the Bid Express website (www.bidx.com). Begin the Digital ID creation process a minimum of 7 business days before the bid opening.

2. Submitting an Electronic Proposal.
Prepare the proposal using Bid Express as follows:

1. Download the most current "Proposal Files" and "DBE Roster File" from the Bid Express website (www.bidx.com).
2. Use the Bid Component for AASHTOWare Project Bids to prepare and submit the proposal forms. Follow the Bid Component software instructions and review the help

screens provided on the Bid Express website to ensure that the bid item list is prepared properly. Provide a unit price for each bid item.

If the proposal forms contain alternate or optional bid items, provide unit prices for those bid items as follows:

a. For alternate bid items, provide a unit price for each bid item included in the Bidder's preferred alternate.
b. For optional bid items, provide a unit price for all bid items under all options.

The user's Digital ID must be on file and enabled by Bid Express. The use of the Digital ID constitutes the Bidder's signature for execution of the proposal. The Department is not responsible for the Bidder's inability to submit a proposal using AASHTOWare.

103.08 A General **PAGE 30** **10/1/16**

Replace the second paragraph with the following:

For subcontracts at any tier equal to or greater than $750,000, obtain from the subcontractor all bid documentation used to prepare the subcontractor's bid for the portion of the work reflected in the subcontract. The subcontractor's bid documentation requirements shall be the same as for the Contractor, except it shall be submitted within 5 days of approval of the Prime Contractor's Request to Sublet. Submit to the Department the bid documentation and affidavit in a separate sealed container, including the subcontractor's name and address on the container.

104.02 C Significant Changes to the Character of Work **PAGE 34** **10/01/15**

Delete the following paragraph in its entirety:

If the Contractor believes an alteration in the work is a significant change that necessitates a contract revision, the Contractor shall notify the Engineer in accordance with Section 104.03, "Contractor Requested Contract Revisions".

104.05 A Submission of the Claim **PAGE 37** **10/01/15**

Replace the fourth paragraph of Section 104.05 with the following:

Provide a claim submittal to the Engineer that contains, at a minimum, the following information for each claim issue included on the *Notice of Intention to File a Claim* (SFN 16743). Failure to supply the following information for each claim issue constitutes a waiver of claim for addional compensation for each submitted claim item.

104.07 C. Conditions **PAGE 42** **10/01/16**

Replace number 5 with the following:

5. Contains revisions to the contract that the Department has previously accepted on another Department project, or is based on or similar to standard specifications, special provisions, or another set of plans.

Delete Section 105.03 COOPERATION WITH UTILITY OWNERS and replace with the following:

105.03 COOPERATION WITH UTILITY OWNERS

A. General.

Utility facilities shown on the plans, if any, are for reference purposes only and may not constitute an exhaustive representation of all utility facilities within the project. Notify the North Dakota One Call System (811) before starting the work, so they may locate and mark all utility facilities within the project.

Comply with Chapter 49-23 of the NDCC in determining the location of underground utilities.

Locate Department-owned, publicly-owned, and privately-owned utility facilities, whether on or off the One Call System.

If the Contractor's operations have the potential to damage utility facilities identified in the contract to remain in place during the work, including operations adjacent to these utility facilities, the Contractor shall account for and protect the utility facilities. Before starting the work, coordinate the protections with the utility owner.

B. Utilities Identified in Plans.

Notify all utility owners of the anticipated project schedule within two weeks of receiving notice to proceed. Coordinate adjustments and relocations with affected utility owners. The Contractor, the Engineer, and the utility owners shall agree to a schedule of the work and the adjustments and relocations before beginning the work.

Cooperate with utility owners in relocating and adjusting utility facilities to minimize interruption to service and duplication of work by utility owners.

The Department will provide utility conflict plans, if available. Utility conflict plans are not part of the contract and are for information purposes only.

C. Utilities Encountered During Work.

If the Engineer determines that adjustment or relocation of utility facilities is necessary to accommodate construction, the Engineer will arrange and coordinate the work with the owner if the contract does not otherwise provide for such work. This does not relieve the Contractor of any liability that may arise under the provisions of the NDCC.

D. Scheduling.

1. General.

In order to minimize interference with traffic operations, the Contractor, Engineer, and utility owner shall agree to a detailed schedule before starting work.

2. Utility Coordination Meeting.

If the contract requires a utility coordination meeting, arrange the meeting with the utility owners and the Engineer to occur no later than two weeks after the notice to proceed. At the meeting, provide an agenda and a tentative construction schedule for planning utility relocations and adjustments; after the meeting, publish minutes and distribute a copy to all meeting attendees.

E. Fire Hydrants.

Before starting work that affects a fire hydrant, coordinate with the local fire authority to determine if provisions need to be in place before starting the work. If provisions are necessary, obtain the approval of the local fire authority before beginning the work affecting the fire hydrant.

F. Damage and Interruptions.
If the Contractor causes damage to utility facilities, the Contractor is responsible for the costs of restoring or repairing the damaged utility facility to a condition equal to or better than the condition existing before the damage occurred. Immediately notify the utility owner of the damage or, if the owner is unknown, the One Call System. Do not conceal, attempt to conceal, or make repairs to the utility facilities until approved by the utility owner. If this damage causes interruption to utility service, continuously coordinate with the utility owner until the service is fully restored.

The Department will not pay the Contractor for the cost to restore or repair damage utility facilities and will consider any delays resulting from this damage to be non-excusable in accordance with Section 108.06, Determination of and Extensions to the Contract Time."

105.08 A.3 Additional Section 600 Work Drawing Submittal Requirements. PAGE 50 10/01/16

Replace the first paragraph with the following:

Provide work drawings on 11 inch × 17 inch sheets generated by a CADD system.

Use the minimum text sizes shown in Table 105-01.

Table 105-01	
Dimensions and Notes	0.08 Inches
Detail Subtitles	0.09 Inches
Detail Titles	0.10 Inches

105.08 B Work Drawings Submittal Requirements PAGE 50 10/1/17

Replace 105.08 B with the following:

B. Work Drawing Submittal Requirements.
Submit work drawings by either of the following methods:

1. **Paper Submittal.**
   Submit a cover letter and two copies of the work drawings to the Engineer.

2. **Electronic Submittal.**
   To submit the work drawings electronically to the Engineer, post a cover letter and one electronic copy of the work drawing to the Department's managed file transfer (MFT) website. Follow the requirements of NDAC Title 28 for all submittals.

   Contact the Engineer to receive instructions describing how to upload files to the MFT website.

105.08 C Engineer's Response to Work Drawings **PAGE 51** **10/1/17**

Replace the Section 105.08 C with the following:

C. Engineer's Response to Work Drawing.
Allow 21 days for the Engineer to review the work drawing. The Engineer will respond in one of the following ways:

- No Exceptions Noted;
- Returned for Correction;
- Not Required for Review; or
- Not Acceptable.

If the work drawing is returned stating "Returned for Correction" or "Not Acceptable", make necessary revisions and resubmit the work drawing as specified in Section 105.08, "Work Drawings".

After the Department has reviewed the work drawings, the Department will return the reviewed work drawing submittal to the Contractor as follows:

- If a paper submittal, the Engineer will return the reviewed drawings to the Contractor.

- If an electronic submittal, the Department will post reviewed work drawings on the MFT site and will send an email notification to the Contractor that the reviewed work drawings are available on the MFT site. Retrieve the reviewed work drawings from the MFT site within 30 calendar days. The Department will delete files from the MFT site after 30 calendar days.

Include the cost of drafting and submitting work drawings in the contract unit price for the relevant contract items.

106.01 C Certificate of Compliance **PAGE 55** **10/01/16**

Replace 106.01 C, "Certificate of Compliance with the following:

C. Certificate of Compliance (CoC).
SP 282(14) Certificate of Compliance (CoC) has replaced this section.

106.02 B.2 Department Owned Sources. **PAGE 57** **10/1/18**

Replace the first paragraph with the following:

If electing to purchase material from a Department owned source, notify the Engineer and Gravel Prospecting Coordinator at Materials and Research Division in writing.

106.02 B.3 Department Optioned Sources. **PAGE 57** **10/1/18**

Replace the second sentence of the first paragraph with the following:

If exercising the Department's option to purchase materials under the terms and conditions provided in the option, notify in writing the surface owner, material owner, the Engineer, and the Gravel Prospecting Coordinator at Materials and Research Division.

106.02 D Aggregate Source Limitations PAGE 58 10/01/15

Delete number 8 and replace it with the following:

8. In Stark County, within the 2-mile radius from the center of Section 30-137-92;

Delete number 11 and replace it with the following:

11. In Hettinger County, within the 1-mile radius from the center of Section 28-135-91;

107.06 Discoveries Page 70 10/1/17

Replace the first paragraph with the following:

If the Contractor encounters one or more of the items included in the following list anywhere the Contractor performs the work, the Contractor shall immediately suspend the work and notify the Engineer of the encounter:

- Threatened or endangered species;
- Prehistoric dwelling sites;
- Human remains;
- Concentrated historic or prehistoric artifacts; or
- Vertebrate, invertebrate, plant and trace fossils.

If encountering one of the following, protect the location from further disturbance:

- Prehistoric dwelling sites;
- Human remains;
- Concentrated historic or prehistoric artifacts; or
- Vertebrate, invertebrate, plant and trace fossils.

Resume work in the location of the encounter only with written approval from the Engineer.

107.07 Responsibility to the Public PAGE 70 10/01/17

Add the following to the end of Section 107.07

F. Crossing Traffic.
Construction vehicles are not allowed to cross lanes of traffic to enter or exit work zones on the interstate. Construction vehicles are required to merge into public traffic.

107.08 Haul Roads PAGE 72 10/01/17

Replace 107.08 with the following:

107.08 HAUL ROADS
SP 453(14) Haul Roads has replaced this section.

107.13 G Railroad Flagging PAGE 78 10/01/17

Delete the last sentence of the first paragraph.

107.17 REMOVED MATERIAL **PAGE 80** **10/01/15**

Replace Section 107.17 with the following:

107.17 REMOVED MATERIAL
Unless otherwise designated in the contract, removed material becomes the property of the Contractor.

If the Contractor determines that the material will be disposed of, the material must be disposed in one of the following ways:

A. Dispose of the material through a beneficial use. Apply for a beneficial use permit from the NDDoH by completing an *NDDOT Projects-Inert Waste Beneficial Use Application* (SFN 58981). Provide the Engineer with copies of all documents submitted to the NDDoH.

B. Dispose of the material at an approved permanent waste management facility.

C. If waste cannot be reasonably managed at a permanent waste management facility, obtain approval from the NDDoH for a variance to dispose of the inert waste at another site. Apply for a variance by completing an *NDDOT Projects-Inert Waste Disposal Variance Application* (SFN 54344). Provide the Engineer with copies of all documents submitted to the NDDoH.

   Obtain locations of permanent waste facilities, applications, and guidelines from the NDDoH, Division of Waste Management. View a list of municipal and inert waste landfills and review guidance on the NDDoH website: http://www.ndhealth.gov.

Include the cost of material disposal in the contract unit price of the relevant contract item.

107.18 High Visibility Clothing. **PAGE 80** **10/1/18**

Replace the first paragraph of 107.18 with the following:

When not enclosed in a truck or equipment cab, require that all workers within the right of way wear retroreflective clothing in accordance with the MUTCD.

108.02 PRECONSTRUCTION CONFERENCE **PAGE 81** **10/01/16**

Delete Section 108.02 and replace with the following:

108.02 CONSTRUCTION MEETINGS

A. Preconstruction Conference.
Before beginning the work, including pit operations specific to the project, and unless waived by the Engineer, coordinate and hold a preconstruction conference with the Engineer at a mutually agreed time and place. Notify subcontractors, utility companies, and other interested parties of the time and place of the preconstruction conference.

Submit the following to the Engineer before or at the preconstruction conference:

1. A company safety plan and the name of the safety officer;

2. An EEO / affirmative action plan and the name of the EEO officer;

3. A list of key project personnel and their phone numbers;

4. The initial or baseline schedule in accordance with Section 108.03, "Progress Schedule";

5. A list of proposed subcontractors requested in accordance with Section 108.01, “Subletting of Contract”;

6. A list of material suppliers;

7. A list of pits to be used (owner and legal description);

8. All COAs in accordance with Section 107.05, “Material Source Approval”;

9. The applicable storm water permits and the SWPPP in accordance with Section 107.02.C, “Storm Water Permits”;

10. The names of Quality Control Personnel and a Quality Control Plan in accordance with Section 430.04 A, “Contractor Quality Control (QC).”

B. Weekly Planning and Reporting Meeting.

The weekly planning and reporting meeting is required when specified in the plans.

Organize a weekly meeting to coordinate efforts between subcontractors, utilities, local authorities, and others. The Engineer will develop a list of parties to be invited to the meeting and will provide the list to the Contractor at the Preconstruction Meeting. The Engineer may provide an updated list with additional attendees at any time.

Send a knowledgeable representative to conduct the meeting. Prepare minutes for each meeting and make the appropriate distribution of the minutes. Distribute the minutes within 48 hours of the meeting conclusion. Allow the Engineer to review and approve the minutes before distribution.

Include in the meeting agenda a discussion of problems encountered since the last meeting, and information of interest to those invited to the meeting. Provide a written schedule of the next week’s work and a tentative schedule for the following week.

108.03 D Measurement and Payment **PAGE 91** **10/01/15**

Replace Table 108-01 with the following:

Table 108-01
CPM Schedule Price Reductions

Days Late Submitting Update Schedule	Percentage Price Reduction to the Prorated Amount[1]
1	20
2	40
3	60
4	80
5	100

[1] The “prorated amount” is equivalent to the amount calculated for each update schedule submission in Section 108.03 D, Item 2.

108.05 Limitation of Operations **PAGE 91** **10/01/17**

Replace 108.05 Limitations of Operations with the following:

108.05 LIMITATION OF OPERATIONS
SP 462(14) “Limitation of Operations” has replaced this section.

108.06 B.1 General **PAGE 93** **10/01/15**

Replace the 6th paragraph of Section 108.06 B.1 with the following:

The Contractor’s plea that the contract time was insufficient is not a valid reason for an extension of time. For calendar day and completion date contracts, the Department will not extend the contract time for delays encountered on holidays and during the period from November 15 to April 15. When the time as extended by the Department falls on a date that is a holiday, the Engineer will extend the contract time to the next business day.

108.06 B.4 Excusable, Non-compensable Delays **PAGE 96** **10/01/16**

Replace letter “f.” with the following:

f. Delays due to utility or railroad work when the Contractor has complied with the requirements of Section 105.03.D, “Scheduling,” but the utility or railroad company failed to perform their work within the time agreed to in the utility coordination meeting**.**

109.01 J.2 Scale Applications **PAGE 103** **10/01/16**

Replace the paragraph with the following:

Use either computerized or non-computerized scales to determine weights for material when the quantity of the material included in the bid item list is 2,000 tons or less.

109.01 J.2.a Computerized Scales **PAGE 103** **10/01/16**

Replace the first paragraph with the following:

Use a computerized scale to determine the weight of material when the quantity included on the bid item list is greater than 2,000 tons.

109.01 J.2.b Computerized Loader Bucket Scales **PAGE 103** **10/01/15**

Delete the first paragraph and replace with the following:

Loader bucket scales may be used to weigh materials when the quantity of material included in the bid item list is less than 10,000 tons and for aggregates specified under Sections 420 “Bituminous Seal Coat”, 421 “Microsurfacing”, and 422 “Slurry Seal” regardless of quantity.

109.01 J.4.b(2) Hopper or Batch Scales **PAGE 105** **10/01/15**

Replace Section 109.01 J.4.b(2) with the following:

After the material has been weighed on the project scale and placed in a truck, weigh the loaded truck on a certified scale owned and operated by an entity other than the Contractor. Provide the tare weight of the truck along with the comparison weigh ticket.

109.01 J.6.a General **PAGE 106** **10/01/15**

Delete the second paragraph and replace with the following:

Document the weight of each load on a separate, sequentially numbered weigh ticket that has a maximum size of 5.5 × 8.5 inches. Provide one copy to the driver of the truck. The truck driver shall deliver the weigh ticket to the Engineer at the location where the material is incorporated into the work. The Engineer will reject loads that are not accompanied by a legible weigh ticket.

109.05 Payment for Material on Hand. **PAGE 121** **10/1/18**

Replace the 12th paragraph of Section 109.05 with the following:

For material not produced or manufactured by the Contractor, within 35 calendar days after the date the Department released payment for the material on hand, the Contractor shall submit to the Engineer paid invoices for the material on hand covered by the payment. With each paid invoice, include a signed statement from the supplier or fabricator acknowledging receipt of payment. If the Contractor fails to submit paid invoices, the Department will deduct the amount paid the Contractor for the material on hand from future payments and will not pay for the material on hand until the Contractor incorporates it into the work.

152.01 D Bituminous Trucks. **PAGE 133** **10/1/18**

Add the following sentence to the first paragraph:

Install tarps free of holes larger than 0.5 inches in diameter and of sufficient size to completely cover the opening above the asphalt.

155.02 A General **PAGE 140** **10/01/17**

Add the following paragraph to Section 155.02 A:

Provide a NRMCA Certified plant for concrete used in Sections 550, “Concrete Pavement”, 570 “Concrete Pavement Repair”, 602 “Concrete Structures”, and 622 “Pilings”.

155.03 A.3 Water Measuring **PAGE 143** **10/01/15**

Replace the second paragraph in Section 155.03 A.3 with the following:

Use a water measuring system that:

- Delivers the designated quantity of water for each batch within the tolerance specified in Section 802.03 B.4, “Batching Water”;

- Automatically stops the water flow when the designated quantity has been delivered; and
- Is adjustable and has a calibrated indicator showing the quantity of water measured for each batch.

155.07 D Bridge Deck Overlay Finishing Machines **PAGE 147** **10/01/15**

Replace Section 155.07 D with the following:

D. Bridge Deck Overlays Finishing Equipment.
Use a finishing machine that is:

- Equipped with an oscillating screed or screeds with an effective weight of at least 75 pounds for each square foot of bottom face area, and provided with positive control of vertical position, the angle of tilt, and the shape of the crown. At least one oscillating screed shall be capable of consolidating the concrete to the specified density;
- Long enough to uniformly strike off and consolidate the width of lane to be paved
- Capable of forward and reverse motion under positive control;
- Travelling on rails with fully-adjustable and stable supports;
- Supported without the use of shims; and
- Not anchored to the concrete using powder actuated fasteners, unless that concrete will be subsequently overlaid.

202.04 A General **PAGE 161** **10/01/16**

Replace the second paragraph with the following:

Remove existing bituminous and concrete surfaces to a joint or create a smooth, vertical plane along the entire length of the remaining surface.

202.04 B Removal of Bridges and Box Culverts **PAGE 161** **10/01/16**

Replace Section 202.04 B with the following:

B. Removal of Structures and Box Culverts.
When the removal is of a bridge, perform asbestos inspection and testing and submit SFN 17987 “Asbestos Notification of Demolition and Renovation” to NDDoH at least 10 working days before conducting any demolition. If asbestos is discovered, the Engineer will issue a contract revision for work related to the asbestos.

Remove existing substructures to one foot below the existing stream bottom, and remove those parts outside the stream to one foot below final ground surface.

If bridge elements are designated for salvage, match mark the elements and transport them to the location specified in the contract.

202.06 BASIS OF PAYMENT **PAGE 162** **10/01/16**

Delete the “Saw Concrete, Linear Foot” and “Saw Bituminous Surfacing-Full Depth, Linear Foot” from the “Pay Item List”.

203.02 EQUIPMENT **PAGE 163** **10/01/15**

Replace the equipment list in Section 203.02 with the following:

Equipment	Section
Vibratory Sheepsfoot/Pad Foot/Extended Pad Foot Rollers	151.01 E

203.04 B Topsoil **PAGE 164** **10/01/17**

Replace 203.04 B with the following:

B. Topsoil.

1. General.
Remove topsoil to its full depth or a depth up to 6 inches, whichever is less, from all excavation and embankment areas. Do not remove the subsoil or other deleterious material with topsoil. Stockpile the removed topsoil.

Place topsoil piles at acceptable locations outside of the grading limits or, if necessary, outside the right of way at no additional cost to the Department. If stockpiling topsoil outside the right of way, submit a copy of the agreement negotiated with the landowner 10 days before constructing topsoil stockpiles.

When stockpiling topsoil within the clear zone, construct topsoil stockpiles with foreslopes of 4:1 or flatter and approach slopes of 10:1 or flatter.

Scarify the surface to a depth of 2 inches before replacing topsoil.

Uniformly spread the stockpiled topsoil over the disturbed areas within the right of way.

2. Topsoil – Imported.
Provide imported topsoil consisting of friable, fertile soil of loamy character, containing an amount of organic matter normal to the region, capable of sustaining healthy plant life, and reasonably free from subsoil, roots, heavy or stiff clay, stones larger than two inch in greatest dimension, noxious weeds, sticks, brush, litter, and other deleterious matter. Provide the topsoil from a site outside the right of way. Spread the topsoil uniformly to a minimum depth of 6 inches. Use all existing stockpiled topsoil before importing topsoil.

203.04 C Subcut **PAGE 165** **10/01/15**

Add the following paragraph to the end of Section 203.04 C:

Dispose of material removed from the subcut area as specified in Section 107.17, “Removed Material”.

203.05 B Borrow Excavation **PAGE 169** **10/01/16**

Replace the third paragraph of Section 203.05 with the following:

If the borrow source is a Department option, the Engineer will measure the topsoil stripped from the borrow area. Provide a minimum of two working days’ notice to allow the Engineer to complete the

preliminary cross sectioning before removing topsoil. Remove and stockpile topsoil, as specified in Section 203.04 B, “Topsoil”, before excavation. Provide notice and allow one working day for the Engineer to complete the topsoil measurement before beginning borrow excavation.

203.05 C Topsoil **PAGE 170** **10/01/17**

Add the following to 203.05 C:

The agreement will be in writing and signed by the both the Contractor and the Engineer.

203.05 D Topsoil – Wetland **PAGE 170** **10/01/16**

Replace 203.05 D Topsoil – Wetland with the following:

D. Reserved.
Reserved.

203.06 BASIS OF PAYMENT **PAGE 171** **10/01/16 & 10/1/17**

Delete “Topsoil Borrow Area, Cubic Yard” from the Pay Item List and replace with “Topsoil – Dept Option Borrow Area, Cubic Yard”.

Delete “Topsoil – Wetland, Cubic Yard” from the Pay Item List.

203.06 C Department Optioned Borrow **PAGE 171** **10/01/16**

Add the following to the end of Section 203.06 C:

Include the removal and replacement of topsoil in Department optioned borrow areas in the contract unit price for “Topsoil – Dept Option Borrow Area”.

216.06 Basis of Payment **PAGE 175** **10/01/15**

Replace Section 216.06 with the following:

Pay Item	Pay Unit
Water	M Gal

An “M Gal” is equivalent to 1,000 gallons.

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

230.05 B Reshaping Inslopes **PAGE 179** **10/01/16**

Replace Section 230.05 Reshaping Inslopes with the following:

B. Reshaping Foreslopes.
The Engineer will measure each foreslope on each side of the roadway separately.

251.03 D Seed Class. **PAGE 182** **10/01/18**

Replace Table 251-01 with the following:

TABLE 251-01
Seed Class Mix Requirements

Grass Species	Variety	Pounds Pure Live Seed Per Acre
Class I		
Kentucky Blue Grass	Park	4.0
Perennial Rye Grass	--	5.4
Blue Grama	Bad River	2.4
Sideoats Grama	Killdeer, Pierre, Butte	7.2
	TOTAL	**19.0**
Class II – Early Season		
Western Wheatgrass	Rodan, Rosana, Walsh, Flintlock, W.R. Poole, Recovery	9.6
Switchgrass	Dacotah, Forestburg, or Sunburst, Summer	3.2
Green Needlegrass	Lodorm, AC Mallard, Fowler	2.4
Sideoats Grama	Killdeer, Pierre, Butte	3.6
Slender Wheatgrass	Revenue, Primar, Adanac, Pryor, Firstrike	5.0
Oats	--	10.0
	TOTAL	**33.8**
Class II – Late Season		
Western Wheatgrass	Rodan, Rosana, Walsh, Flintlock, W.R. Poole, Recovery	9.6
Switchgrass	Dacotah, Forestburg, or Sunburst, Summer	1.6
Green Needlegrass	Lodorm, AC Mallard, Fowler	3.6
Canada Wild-rye	Mandan	5.2
Slender Wheatgrass	Revenue, Primar, Adanac, Pryor, Firstrike	5.0
Oats	--	10.0
	TOTAL	**35.0**

253.02 A Hydraulic Mulch **PAGE 188** **10/01/16**

Replace the first paragraph with the following:

When applying hydraulic mulch and seed together, use hydraulic spraying equipment that mixes the seed and mulch in water.

253.03 B Hydraulic Mulch **PAGE 188** **10/01/16**

Delete the third paragraph.

253.03 C Straw Mulch **PAGE 188** **10/01/15**

Delete the following sentence from this section:

At least 50 percent of the mulch by weight must be at least 8 inches in length.

260.03 C Silt Fence Backing. **PAGE 197** **10/01/18**

Replace the title of 260.03 C with the following:

Silt Fence Supported.

Add the following to the beginning of 260.03 C:

Use wire backing or monofilament silt fence when installing supported silt fence.

262.04 A Installation **PAGE 201** **10/01/15**

Replace the first paragraph of Section 262.04 A with the following:

Attach anchor lines to the flotation device.

265.06 Basis of Payment **PAGE 204** **10/01/15**

Replace the first paragraph after the list of pay items with the following:

Include the cost for pipe, geosynthetic material, topsoil, and seed in the price bid for “Stabilized Construction Access”.

302.03 MATERIALS **PAGE 209** **10/01/15**

Replace table in Section 302.03 with the following:

Material	Section
Aggregates	816
Salvaged Base Course	817
Traffic Service Aggregate	816 Class 5; or 817

302.04 A.2 Gradation **PAGE 209** **10/01/15**

Replace the first paragraph in Section 302.04 A.2 with the following:

The Engineer will collect three samples for each 1,000 tons of material placed, except when more than 1,000 tons are placed in a day. If more than 1,000 tons are placed in a day, the Engineer will collect three samples for that day's placement. If the aggregate fails to meet the specified gradation, the Engineer will apply a price reduction as specified in Section 302.06 B, "Contract Price Adjustments".

302.04 B Placement and Compaction **PAGE 210** **10/01/17**

Replace the third paragraph with the following:

Compact aggregate, utilizing pneumatic-tired rollers, until the surface is tightly bound and shows no rutting or displacement occurs under the roller operation. The Engineer may allow other compaction methods, when placing aggregate under sidewalks, driveways, or medians.

302.04 B Placement and Compaction. **PAGE 210** **10/01/18**

Replace the last paragraph of 302.04 B with the following:

Compact material over geosynthetic fabric or geogrid as specified in Section 709.04 D. "Geosynthetic Reinforcement (Type R)".

302.04 C Surface Tolerance **PAGE 210** **10/01/15**

Replace Section 302.04 C with the following:

C. Surface Tolerance.
Unless one of the following surface tolerances is specified, construct the surface to within 0.08 feet of the proposed elevation.

1. Surface Tolerance Type B.
Use trimming equipment, including motor graders, equipped with automatic grade control to adjust for the cross slope and longitudinal profile. Construct the finished surface to within 0.04 feet of the proposed elevation.

Reincorporate material removed from high points during trimming into other portions of the base.

2. Surface Tolerance Type C.
Use roadbed planers to construct the finished surface. The Engineer will allow the base or surface course to be used as the grade reference when trimming shoulders. Construct the finished surface to within 0.04 feet of the proposed elevation.

Reincorporate material removed from high points during trimming into other portions of the base.

306.04 A.1 Gradation **PAGE 213** **10/01/15**

Replace the first paragraph in Section 306.04 A.1 with the following:

The Engineer will collect three samples for each 1,000 tons of material placed, except when more than 1,000 tons are placed in a day. If more than 1,000 tons are placed in a day, the Engineer will collect three samples for that day's placement. If the aggregate fails to meet the specified gradation, the Engineer will apply a price reduction as specified in Section 306.06 B, "Contract Price Adjustments".

401.03 MATERIAL **PAGE 221** **10/01/16**

Replace the last paragraph in Section 401.03 with the following:

Obtain samples of the bitumen under the observation of the Engineer. The Engineer will take immediate possession of the samples.

401.03 B Tack Coat and Fog Seal. **PAGE 221** **10/01/15**

Delete Section 401.03 B and add the following:

B. Tack Coat.
Use a material from Table 401-01.

Table 401-01

Material	Section
SS-1h	818.02 F
MS-1	818.02 F
CSS-1h	818.02 E.1

When MS-1 is used it may be diluted by the supplier or the Contractor.

C. Fog Seal.
Use a material from Table 401-02.

Table 401-02

Material	Section
SS-1h	818.02 F
CSS-1h	818.02 E.1

401.04 A Application of Bitumen **PAGE 221** **10/01/15**

Delete Section 401.04 A and add the following:

A. Application of Bitumen.

1. General.
Prepare the surface by removing loose dirt and deleterious material.

Provide the Engineer with the manufacturer recommended application temperature ranges. During application, maintain the temperature of bitumen within the ranges recommended by the manufacturer.

Apply bitumen with a distributor on a compacted and stable surface. Use hand sprayers to cover irregular areas. Completely cover the area receiving the bitumen application.

If applying bitumen in multiple passes, overlap the bitumen along adjoining edges of the passes.

Protect the surfaces of structures and other roadway appurtenances against tracking and splattering.

2. Prime Coat.
Apply prime coat when the ambient air temperature is at least 40°F.

Allow the prime coat to cure a minimum of 48 hours before placing pavement.

3. Tack Coat.
Apply tack coat when the air temperature and existing mat temperature are at least 35°F.

Apply tack coat to a dry surface.

Allow tack coat to cure before applying surfacing material.

4. Fog Coat.
Apply fog coat when the ambient air temperature is at least 40°F.

Apply fog coat to a dry surface.

411.04 Construction Requirements **PAGE 223** **10/01/17**

Replace the sixth paragraph with the following:

Coordinate milling and paving operations so that no section of milled roadway has public or construction traffic operating on it for more than 5 days. If public or construction traffic operates on the milled surface for more than 5 days, repair the roadway as directed by the Engineer at no additional cost to the Department.

420.04 A General **PAGE 224** **10/01/15**

Replace Section 420.04 A with the following:

A. General.
Do not start seal work after September 1.

Allow material to cure as shown in Table 420-01 before applying seal coat materials.

Table 420-01
Curing Period

Material Type	Curing Period
Prime Coat	4 days
Asphalt Cement Pavements	7 days
Emulsion Pavements	15 days

Schedule the work so that the last bitumen application of the day is sufficiently cured to allow installation of the short-term pavement marking before sunset.

420.04 D Cover Coat Material Application **PAGE 225** **10/01/15**

Replace the third paragraph with the following:

Within one minute following the application of the bitumen, spread the cover coat material uniformly over the bituminous material with an aggregate spreader. Apply cover material by hand to areas that are inaccessible to the aggregate spreader.

420.04 D Cover Coat Material Application **PAGE 225** **10/01/15**

Delete the eighth paragraph in its entirety.

420.04 H.1 Bitumen **PAGE 226** **10/01/16**

Replace Section 420.04 H.1 with the following:

1. **Bitumen.**
   Obtain samples of this material under the observation of the Engineer. The Engineer will take immediate possession of the samples.

421.03 MATERIALS **PAGE 228** **10/01/16**

Add the paragraph following to the end of Section 421.03:

Obtain samples of the bitumen under the observation of the Engineer. The Engineer will take immediate possession of the samples.

422.03 MATERIALS **PAGE 232** **10/01/16**

Add the paragraph following to the end of Section 422.03:

Obtain samples of the bitumen under the observation of the Engineer. The Engineer will take immediate possession of the samples.

430.02 Equipment. **PAGE 236** **10/01/18**

Add the following to the end of 430.02:

When air temperatures fall below 50˚ F at any place along the haul route of the mix, deploy the tarps installed on the bituminous trucks.

430.03 F Commercial Grade Hot Mix Asphalt **PAGE 238** **10/01/17**

Delete Section 430.03 F “Commercial Grade Hot Mix Asphalt” from Section “430.03 Material”.

430.04 D.1 General **PAGE 241** **10/01/15**

Replace the third paragraph of Section 430.04 D.1 with the following:

Submit the mix design a minimum of 10 calendar days before beginning paving operations. The Engineer will review the mix design. If the Engineer does not approve the mix design, revise the mix design and submit the revised mix design. Allow 10 calendar days for the Engineer to review a revised mix design before beginning paving operations.

430.04 D.2 Items to be Submitted **PAGE 242** **10/01/15**

Add the following item to Section 430.04 D.2:

e. If the mix contains RAP, submit a 50 pound sample of the milled material.

430.04 E.5 Control Limits **PAGE 245** **10/01/17**

Replace “Percent Air Voids” values in Table 430-07 with the following:

Test/Assessment	Single Test Target Value Control Limit	Moving Average Target Value Control Limit
Percent Air Voids	2.0% to 6.0%	2.5% to 5.0%

430.04 F Surface Preparation **PAGE 246** **10/01/15**

Replace the second paragraph of Section 430.04 F with the following:

Correct local irregularities in the existing surface before placing the first lift of bituminous material. If milling is specified, correct local irregularities after milling. Apply a tack coat to the surface before correcting the irregularities. Use the same type of mix that is required for the subsequent lift. Use a pneumatic roller as specified in Section 151.01 A.3. “Self-Propelled Pneumatic-Tired Roller” to compact the mix.

430.04 G Patching **PAGE 247** **10/01/15**

Replace Section 430.04 G with the following:

G. Patching.
Remove existing broken or unstable surface material and replace that material with the same mixture specified for the next course.

Place the bituminous material in lifts not to exceed 3 inches and compact the material. Allow the patch material to cool to 130°F before placing additional material. If patching is required during the paving operation, allow the patch material to cool to 185°F before placing additional material.

430.04 H.1 General **PAGE 248** **10/01/15**

Delete the ninth paragraph of Section 430.04 H.1

430.04 I.3.c Intermediate Rolling **PAGE 250** **10/01/15**

Replace the second paragraph of Section 430.04 I.3.c with the following:

If roller tires pick up the bituminous material or there are excessive roller marks in the mat, the Engineer may allow the removal of the intermediate rolling operation if it appears to the Engineer that compaction is being achieved.

430.04 J Joints **PAGE 250** **10/01/15 & 10/01/18**

Replace Section 430.04 J with the following:

J. Joints.

1. General.
Place pavement against the surface of curbing, gutters, manholes, and similar structures uniformly near the contact surfaces so the pavement is slightly higher than the edge of the structure after compaction. Do not construct a joint on top of a joint from a previous lift or in a wheel path.

2. Longitudinal Joints.
Construct longitudinal joints on successive lifts between 6 and 12 inches from the previous longitudinal joint.

Place and follow markings to guide the paver. Construct joints in a uniform line. Correct pavement edges that deviate from the uniform line and correct areas of the joint that vary from the intended location of the joint by more than 2 inches. Construct joints with tight seams and no visible segregation.

3. Transverse Joints.
Construct transverse joints on successive lifts a minimum of 12 feet from the previous transverse joint.

430.06 A General **PAGE 253** **10/01/17**

Delete “Commercial Grade Asphalt, Ton” from the Pay Item List

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550.03 Materials **PAGE 261** **10/01/15**

Add the following to Section 550.03:

Develop a mix design with a maximum water-cement ratio of 0.40 when placing concrete with a slip form paving machine. Use the water-cement ratio shown in Section 802.01 B.2, “Concrete Class Designation” for all other paving methods.

550.04 D.1 General **PAGE 263** **10/01/16**

Replace the fourth paragraph with the following:

Adjacent concrete may be used as a side form after the concrete has attained a minimum compressive strength of 3,000 psi or a minimum flexural strength of 450 psi.

550.04 H.1.d Final Surface Finish **PAGE 268** **10/01/15**

Replace Section 550.04 H.1.d with the following:

d. Final Surface Finish.

(1) General.
Uniformly texture the surface by dragging a seamless strip of stiff-fiber artificial grass carpet longitudinally along the full width of the pavement in a single pass.

Use and maintain a taut string line for operating the carpet drag. Attach the leading edge of the carpet drag to a bridge. If the Engineer determines it is not feasible to use a bridge or string line, other texturing methods will be allowed.

Maintain a clean carpet free of encrusted concrete.

Provide a minimum texture depth of 0.031 inches.

(2) Roadways with Speed Limits Less than 45 MPH.
The Engineer will test the texture achieved by the carpet drag in accordance with ASTM E 965 and the Field Sampling and Testing Manual. The Engineer will determine the test location.

If three or more lots have texture depths less than 0.031 inches but greater than or equal to 0.025 inches, perform diamond grinding on those lots.

Perform diamond grinding any lot having a texture depth of less than 0.025 inches.

Perform grinding as specified in Section 550.04 M.4, “Grinding.”

The Engineer will determine the limits of any failing test by running additional tests at 100 foot intervals before and after the failing test. The Engineer will determine the location of the additional tests.

(3) Roadways with Speed Limits 45 MPH or Greater.
Run a clean, metal tine longitudinally along the surface immediately following the carpet drag. Exclude areas within 3 inches of the edge of the slab and longitudinal joints. Run the tine continuously across transverse joints.

Use a tine that provides:
- 1/8 inch ±1/64 inch groove width;
- 3/16 inch ±1/16 inch groove depth; and
- 3/4 inch spacing of between grooves.

If the concrete has becomes too stiff to receive the metal tine finish, use diamond bladed equipment to produce the longitudinal grooves.

550.04 I.3 Impervious Membrane Cure **PAGE 271** **10/01/15 & 10/1/17**

Replace the first paragraph of Section 550.04 I.3 with the following:

Use a curing compound that meets the requirements of Section 810.01 B.2, “Type 2, Class B”.

Replace the title of “Impervious Membrane Cure” with “Concrete Curing Compound”.

550.04 M.3.a General **PAGE 273** **10/01/16**

Replace the first sentence of the first paragraph with the following:

The Engineer will determine the pavement smoothness by profiling the finished surface of the mainline pavement.

550.04 M.3.b Operation **PAGE 273** **10/01/16 & 10/1/17**

Replace the second paragraph with the following:

The Engineer will apply a liquidated damage of $1,500 per trip for each profile collected after the second profile.

Replace the third paragraph with the following:

The Engineer will use an inertial profiler to collect the profile in each wheel path of each lane.

550.04 M.3.c(1) General **PAGE 274** **10/1/17**

Replace the second bullet with the following:

- Use ProVal, http://www.roadprofile.com, to calculate the IRI for the Pavement Profile (PPF);

Replace all instances of “ERD” with “PPF”.

550.04 M.3.c(1)(b) Corrective Action Plan **PAGE 275** **10/1/17**

Replace all instances of “ERD with “PPF”.

550.04 N.1 Contractor Coring **PAGE 276** **10/01/17**

Add the following to the end of the first paragraph of 550.04 N.1:

Fill the core hole with fresh concrete mix and use a vibrator to consolidate the concrete in the holes. Screed the new concrete off and apply curing compound to the new concrete.

570.03 A General **PAGE 281** **10/01/15**

Add the following item to the table:

Impervious Membrane Cure	810.01 B.1

570.03 B Concrete for Repairs **PAGE 281** **10/01/18**

Replace all occurrences of AASHTO M 85, Type I or Type IA in section 570.03 B with the following:

Section 804.01, “Cement”,

570.03 B.2.a Concrete **PAGE 281** **10/01/15 & 10/1/18**

Replace Section 570.03 B.2.a with the following:

a. Concrete.
Use Class AE concrete with cement that meets the requirements of Section 804.01, “Cement”, for spall repairs.

570.03 D Curing Compound **PAGE 281** **10/01/15**

Delete Section 570.03 D.

570.04 A.1.b Full Depth Repairs **PAGE 282** **10/01/15**

Replace Section 570.04 A.1.b with the following:

b. Full Depth Repairs.
Use the lift out method to remove concrete in full depth repair areas with minimal disruption to the subgrade and without damage to the remaining concrete. Do not operate equipment, other than compaction equipment, in areas where concrete has been removed. Fill voids deeper than 1 inch with aggregate and compact the material to the level of the existing subgrade.

Place concrete for repairs less than 100 feet long the same day that removals are initiated. Place concrete for repairs longer than 100 feet within 48 hours of initiating removals. Dampen the faces of existing concrete before placing new concrete.

Place, consolidate, finish, and cure concrete according to the following portions of Section 550.04, “Construction Requirements”:

- 550.04 C, “Roadbed Condition”;
- 550.04 D, “Placing and Spreading Concrete”;
- 550.04 E, “Placing Reinforcing Steel and Tie Bars”;
- 550.04 F, “Uncontrolled Cracking”;
- 550.04 G, “Joints”;
- 550.04 H, “Finishing Concrete”, except parts 1.d, “Final Surface Finish” and 1.e, “Imprinting Pavement”;
- 550.04 J, “Removing Forms”;
- 550.04 K, “Sealing Joints”; and

- 550.04 L, “Opening to Traffic”.

Provide finished concrete that is flush with all adjacent pavement surfaces. Before the concrete sets, check the repair utilizing a 10 foot straight edge and correct areas that deviate by 1/8 inch or greater.

Texture the repair by dragging a carpet of artificial grass longitudinally over the repaired area.

If repairs involve multiple lanes, fill the gap between the lane under repair and the existing concrete with cold bituminous material. Remove this material before making the repair to the adjacent lane.

(1) Repairs One Lane Wide.
Use a bond breaker along the centerline joint. Tie bars are not required on repairs that are one lane wide.

When the repair falls in a ramp, restore the longitudinal joints crossing the repair, but do not use tie bars.

(2) Repairs Wider Than One Lane.
Before placing the concrete in the second lane, install 30 inch #5 tie bars in the longitudianl joint using the original tie bar pattern. Drill holes for the bars and secure the bars in the holes using epoxy.

(3) Impervious Membrane Cure.
Use a curing compound that meets the requirements of Section 810.01 B.1, “Type 2”.

Apply the cure at a minimum rate of 1 gallon per 150 square feet of pavement in one or two applications. If applying two coats, apply the second application within 30 minutes of the first application.

Protect joints that require sealing from infiltration of the curing compound.

Immediately cover the exposed sides of the concrete pavement with curing compound if removing forms exposes curing concrete before the expiration of the curing period.

Immediately reapply curing compound to damaged areas within the curing period.

570.04 A.2.c Dowel Bars **PAGE 284** **10/01/15**

Replace the first paragraph of Section 570.04 A.2.c with the following:

Drill 1-3/8 inch diameter holes using a rigid frame-mounted drill. Clean the hole, inject epoxy into the hole, and insert dowels.

570.04 A.3.a Concrete Removal **PAGE 285** **10/01/15**

Replace the third paragraph of Section 570.04 A.3.a with the following:

If existing reinforcing steel is damaged or bent within the 18 inch lap area, replace the damaged reinforcing steel.

570.04 A.3.b Full-Width, Full Depth Repairs. **PAGE 285** **10/01/18**

Replace the second and third bullet of 570.04 A.3.b with the following:

- Use Class ASE concrete.
- Place concrete between 4 p.m. and 8 p.m. Tie one rebar end and tie the other end less than 20 minutes before placing concrete.

570.04 C Grinding **PAGE 285** **10/01/15**

Replace the first paragraph of Section 570.04 C with the following:

Allow new concrete and dowel bar retrofit patch material to cure for a minimum of 24 hours before grinding.

570.04 C.6 Slurry Removal **PAGE 286** **10/01/15**

Replace Section 570.04 C.6 with the following:

6. Slurry Removal.
Continuously collect all slurry or residue resulting from the grinding operation.

In areas with speed limits of 45 mph or less and in areas with curb and gutter, dispose of slurry as specified in Section 107.17, “Removed Material”.

In areas with speeds greater than 45 mph and without curb and gutter, slurry may be place on the foreslope of the roadway. Prevent slurry from entering pipes, culverts, storm drains, ravines, streams, waterways, wetlands, and all other water conveyances. Install erosion control features as necessary to prevent contamination, or dispose of slurry as specified in Section 107.17, “Removed Material”.

570.04 D.1 General **PAGE 286** **10/01/16**

Replace the first sentence of the first paragraph with the following:

The Engineer will determine the pavement smoothness by profiling the finished surface of the mainline pavement.

570.04 D.2 Operation **PAGE 286** **10/01/16**

Replace the second paragraph with the following:

The Engineer will apply a liquidated damage of $1,500 per trip for each profile collected after the second profile.

570.04 E.1 Transverse Joint Cleaning and Sealing. **PAGE 288** **10/1/18**

Replace the content of 570.04 E.1 with the following:

Clean and reseal the portion of the transverse joint that were ground.

Remove foreign material from vertical edges of the joint. Clean the joint using compressed air removing any incompressible material.

Install backer rod before applying the silicon sealant.

570.05 METHOD OF MEASUREMENT **PAGE 289** **10/01/16**

Add the following to Section 570.05:

E. Full-Depth Doweled.
Include the cost of the end dowel bars in the contract unit price "___-Inch Concrete Pavement Repair – Full-Depth Doweled". The cost for intermediate dowel bar assemblies is paid by "Doweled Contraction Joint Assembly".

570.06 BASIS OF PAYMENT **PAGE 289** **10/01/15**

Delete the following paragraph from Section 570.06:

Include all costs for saw cuts, steel reinforcing, bar supports, tie bars, and joint sealing in the unit price bid for "__Inch Concrete Pavement Repair - Full-Depth _____".

602.02 EQUIPMENT **PAGE 299** **10/01/16 & 10/1/17**

Add the following to Section 602.02.

E. Curing Concrete.
Use a fogging machine as specified in Section 156.02, "Fogger" for exposed surfaces.

F. Shot Blasting Equipment.
Use centrifugal or wheel type shot blasting equipment that is designed to clean concrete surfaces and leave no oil or other foreign material on concrete surfaces. Use a shot blaster capable of collecting blast media and dust.

602.02 A General **PAGE 299** **10/01/17**

Add the following sentence to the end of 602.02 A:

Use a plant and equipment as specified in Section 155, "Concrete Equipment".

602.03 A General **PAGE 299** **10/01/16**

Delete the last paragraph.

602.04 D Deck Finishing **PAGE 303** **10/01/16**

Replace Section 602.04 D with the following:

D. Deck and Bridge Approach Slab Finishing.
Following the screed operations, obtain the final surfacing with a 10 foot long scraping straightedge with a suitable handle. Ensure the final surface has the required crown and does not vary more than 1/8 inch from a 10 foot straightedge laid longitudinally thereon.

Pull a burlap or artificial grass drag over the surface in a longitudinal direction while the concrete is plastic.

Immediately following the artificial grass drag, run a clean metal tine transversely across the deck. Stop the tine 18 inches from the face of the barrier or curb and 6 inches from the beginning and end of the deck or approach slab. The tine may be hand-operated. Use a tine that provides:

- 1/8 inch ±1/64 inch groove width;
- 3/16 inch ±1/16 inch groove depth; and
- 3/4 inch spacing between grooves.

602.04 F.1 General **PAGE 304** **10/01/17**

Add the following to the end of the third paragraph of Section 602.04 F.1:

Do not use a waterproof material to cover the wet burlap during the curing period.

602.04 F.2 Deck Slab Concrete **PAGE 304** **10/01/16**

Delete Section 602.04 F.2 and replace with the following:

2. Deck and Bridge Approach Slab Concrete.
Cure the concrete surface by covering with a double thickness of burlap. Moisten the concrete surface using a light fog spray if the surface begins to dry after finishing and before placement of the wet cure. Keep the burlap continuously moist at all times.

During the curing process do not allow vehicles and equipment on the deck or approach slab and do not perform work on the deck or approach slab.

For deck slab concrete, place the wet cure burlap and start the wet cure within 15 minutes of the passing of the finishing machine.

602.04 G Barriers **PAGE 305** **10/01/16**

Delete Section 602.04 G and add the following:

G. Barriers.

1. General.
Use Class AAE-3 concrete for barriers.

Perform corrective actions of any surface that deviates by 3/8 inches or more when measured with a 10 foot straightedge. Make corrections by grinding, filling with an approved epoxy mortar, or replacing.

Except at expansion joints, construct V-grooves that are 3/4 inch wide and 3/4 inch deep in all faces of the barriers at each pier and at equal spaces between piers and abutments at approximately 10 foot spacing.

2. Conventional Forming.
Adequately tie forms to avoid any shifting during concrete placement.

If concrete inserts in the deck slab are holding the barrier forms in place, remove the inserts. Clean and fill the cavities flush with the deck slab using an epoxy resin adhesive.

3. Slipforming.
Conventional form a minimum distance of 4 feet on each side of expansion joints before slip forming.

After the reinforcement is installed, check the clear distance between the reinforcement and the slipform for the entire length of the pour.

The Engineer will allow slab overhang distance to be increased up to 1 inch provided the specified gutterline is maintained.

The Engineer will allow a radius to be used instead of a bevel on all edges of the barrier.

602.04 J Penetrating Water Repellent Treatment of Concrete Surfaces **PAGE 307**
10/01/17

Replace section 602.04 J with the following:

J. Penetrating Water Repellent Treatment.
Apply penetrating water repellent solution a minimum of 21 days after placement of the concrete bridge deck and approach slabs.

Apply penetrating water repellent solution to the following surfaces:

- Driving surfaces of bridge deck;
- Approach slabs;
- Concrete medians;
- Front faces and tops of curbs; and
- Front faces and tops of barriers.

Remove the barrier forms before applying treatment to surfaces. Clean all surfaces receiving treatment using either sandblasting, shot blasting, or water-washing equipment. Remove dirt, dust, grease, oil, laitance, asphalt, or other materials that may inhibit the coverage and penetration of the solution. Use hand tools and penetrating water repellent solution manufacturer's approved solvents to remove any bonded foreign materials. Do not remove or alter the existing surface finish or expose the coarse aggregate.

Allow any wet concrete surfaces to dry a minimum of 48 hours or longer if required by the solution manufacturer.

Apply the penetrating water repellent solution when the following conditions are met:

- The air temperature is within the following:
    - 40 °F and rising; or
    - 95 °F and falling;

- Wind is less than 25 mph; and
- Rain is not expected within 4 hours.

Use airless equipment that has a pressure range between 15 to 40 psi. Apply the repellent treatment solution uniformly so that one gallon of material does not spread over more than 200 sf. If the repellent solution manufacturer recommends a coverage of an area less than 200 sf per gallon, use the manufacturer's recommended rate. Squeegee or broom excess material to avoid ponding.

602.04 K.1 General **PAGE 307** **10/01/15**

Replace Section 602.04 K.1 with the following:

1. **General.**
   When shown in the plans, apply membrane and primer in dry weather and when the air temperature is above 40°F. Apply to surfaces that are dry, clean, free of sharp protrusions and above 40°F.

602.06 B Surface Tolerance. **PAGE 308** **10/01/18**

Replace the last sentence with the following:

The amount of the contract price adjustment will be determined by multiplying the contract unit price for the deck concrete contract item by the area that is out of tolerance, measured in square yards, and the appropriate Contract Price Reduction Factor in Table 602-02.

604.03 B.1 General **PAGE 309** **10/01/16**

Replace Section 604.03 B.1 with the following:

1. **General.**
   Develop a mix design that produces concrete that will achieve a minimum compressive strength of 5,000 psi within 28 days.

   Section 802.01 H, "Air Content" will not apply.

   Obtain the Engineer's approval for admixtures before developing the mix design. Include approved ad mixtures in the mix design.

   Perform tests to determine the concrete's compressive strength using 6 inch by 12 inch cylinders.

604.03 B.3 Trial Mix **PAGE 310** **10/01/15**

Replace the "AASHTO T 23" test requirement with "ND T 23"

604.03 E.1 Concrete **PAGE 310** **10/01/15**

Replace the "AASHTO T 23" test requirement with "ND T 23"

604.04 B Work Drawings **PAGE 311** **10/01/16**

Replace Section 604.04 B with the following:

B. Work Drawings.

Provide work drawings that include:

- Beam dimensions;
- Size and location of all reinforcing and prestressing steel including;
    - Strand layout;
    - Pull down locations;
    - Tensioning forces;
    - Elongation; and
    - Proposed changes in the reinforcing steel;
- Initial prestress forces;
- Location of handling hooks or devices; and
- Losses in the prestress due to:
    - Elastic shortening;
    - Shrinking or creeping of concrete; and
    - Relaxation of steel stress as determined by the Contractor method of stressing.

Submit calculations and work drawings that are signed, sealed, and dated by a Professional Engineer registered in the State of North Dakota as set forth in NDCC Title 43.

604.04 D Placing Concrete **PAGE 312** **10/01/16**

Replace Section 604.04 D with the following:

D. Placing Concrete.

Place concrete in forms made entirely of steel.

Vibrate concrete for the beams. Vibrate without displacement of reinforcing, conduits, voids, or wire. Vibrate for a sufficient duration and intensity to thoroughly consolidate the concrete without causing segregation.

Rough float and transversely broom the top of the beams.

606.04 A Design and Manufacture **PAGE 314** **10/01/15**

Replace the second paragraph in Section 606.04 A with the following:

Use an ACPA or NPCA certified plant in the construction.

616.04 G Assembling Steel. **PAGE 322** **10/01/18**

Replace all occurrences of “AASHTO M 164” with the “ASTM F 3125 Grade A 325”.

Replace all occurrences of “ASTM A 325” with “ASTM F 3125 Grade A 325”.

624.03 Materials. **PAGE 336** **10/01/18**

Replace all occurrences of “ASTM A 325” with “ASTM F 3125 Grade A 325”.

624.03 B E-Rail Retrofit **PAGE 336** **10/01/16**

Replace ASTM A 307, Grade C with ASTM F 1554, Grade 36.

624.03 C Free Standing Rail Retrofit **PAGE 336** **10/01/16**

Replace ASTM A 307, Grade C with ASTM F 1554, Grade 36.

650.02 EQUIPMENT **PAGE 341** **10/01/16**

Replace the Equipment list with the following:

Equipment	Section
Mobile Mixer	155.03 C
Bridge Deck Overlays Finishing Equipment	155.07 D
Sawing	155.09
Grinding	155.11
Concrete Buggy	155.12
Fogger	156.02
Milling Machine	156.03

650.03 A Concrete **PAGE 342** **10/01/16**

Delete the last paragraph in its entirety.

650.03 B Low Slump Concrete **PAGE 342** **10/01/17**

Replace Section 650.03 B with the following:

B. Low Slump Concrete.

1. General.

Item	Section
Fine Aggregate	802.01 C.3
Coarse Aggregate – Size 5	802.01 C.2
Concrete Admixtures	808
Burlap Cloth	810.01 A
Water	812

Use cement that meets the requirements of AASHTO M 85, Type I or Type IA.

Mix low slump concrete using 8.75 bags of cement per cubic yard and a maximum water-cement ration of 0.42.

Use coarse aggregate composed of crushed stone. Use crushed stone that has at least one fractured face on 75 percent of the particles retained on the number 4 sieve.

Entrain air within the concrete as specified in Section 802.01 H, “Air Content”, except supply concrete with an air content between 5.0 and 7.0 percent of the volume of the concrete at the time of placement.

Produce concrete that has a slump of 1 inch or less, when determined according to ND T 119.

Use a mobile mixer to produce low slump concrete.

2. Mix Design.
Use a mix design that has the percentages shown in Table 650-01.

Table 650-01	
Coarse Aggregate	31%
Fine Aggregate	31%
Air	6%
Water	16%
Cement	16%

650.04 C Removals with Hydrodemolition Equipment **PAGE 343** **10/01/16**

Add the following to 650.04 C:

In areas inaccessible for using hydrodemolition equipment, remove concrete using hand held hydrodemolition equipment or mechanical equipment.

650.04 C.1 Class 1H **PAGE 343** **10/01/16**

Delete the last paragraph in 650.04 C.1.

650.04 G Finishing **PAGE 345** **10/01/16**

Remove and replace the last paragraph of 650.04 G with the following:

Pull a burlap or artificial grass drag over the surface in a longitudinal direction while the concrete is plastic. Immediately follow the drag with a metal tine finish as specified in Section 602.04 D, “Deck and Approach Slab Finishing”.

650.04 I Curing **PAGE 345** **10/01/16**

Replace all instances of Section 602.04 F.2, “Deck Slab Concrete” with the following:

Section 602.04 F.2, “Deck and Bridge Approach Slab Concrete”.

650.05 Method of Measurement **PAGE 346** **10/01/17**

Add the following to the end of Section 650.05:

C. Hydrodemolition Removals.
Removals made beyond the designated limits stated in Sections 650.04 C.1, “Class 1H”, and 650.04 C.2, “Class 2H” will not be paid for under any classification of removal.

650.06 B Surface Tolerance. **PAGE 346** **10/01/18**

Replace the last sentence with the following:

The amount of the contract price adjustment will be determined by multiplying the contract unit price for ”Class AAE-3 Concrete” by the area, measured in square yards, that is out of tolerance and the appropriate Contract Price Reduction Factor in Table 650-02.

Table 650-02	
Deviation	Contract Price Reduction Factor
> 1/8 inch and ≤ 1/4 inch	0.6%
> 1/4 inch and ≤ 1/2 inch	1.8 %

702.06 Basis of Payment **PAGE 355** **10/01/15**

Replace the Table 702-01 with the following:

Table 702-01
Payment for Mobilization

Original Contract Amount Earned	**Payment will be the Lesser of:**	
	Mobilization Bid Amount	**Original Contract Amount**
5%	25%	2.5%
10%	50%	5.0%
50%	100%	7.5%
75%	100%	10.0%

704.03 A General **PAGE 356** **10/01/17**

Add the following to the end of 704.03 A:

Provide traffic control devices that meet the crash testing requirements of the appropriate classification under NCHRP 350. The Engineer will accept devices that meet the requirements of MASH.

Submit a Certificate of Compliance for all temporary traffic control materials before installation.

704.04 A.1 Requirements Before Sign Installation **PAGE 358** **10/1/17**

Replace 704.04 A.1 with the following:

1. **Requirements Before Device Installation.**
   Before beginning work, coordinate and hold a meeting with the Engineer to review the traffic control plans.

704.04 B Traffic Control Device Condition Classifications **PAGE 359** **10/01/15**

Replace all instances of “ATSAA” in Section 704.04 B with “ATSSA”.

704.04 C.3 Traffic Signal Maintenance Person. **PAGE 362** **10/01/18**

Replace the first sentence with the following:

If permanent or temporary traffic signals are being installed, designate a traffic signal maintenance person.

704.04 C.5 Flaggers **PAGE 362** **10/01/17**

Replace the web address in the first paragraph with http://www.ndsc.org.

Replace the last sentence of the second paragraph with the following:

The handbook is available for download at www.ndltap.org and at http://www.ndsc.org.

704.04 M Protection Vehicle with Truck Mounted Attenuation Device (TMA) **PAGE 366** **10/01/15**

Replace the last paragraph of 704.04 M with the following:

Equip the protection vehicle with an advance warning flashing or sequencing arrow panel conforming to Section 704.03 M, “Advance Warning Flasher or Sequencing Arrow Panel” and the MUTCD.

704.04 O Traffic Control for Uneven Pavement **PAGE 367** **10/01/15** **10/01/17**

Replace all instances of “Sign W20-52-24” in Section 704.04 O with “W20-52-54”.

Change the title of Section 704.04 O.3.b to “Uneven Pavement Greater Than 2 Inches.”

Add the following to 704.04 O:

4. **Uneven Shoulder and Adjacent Lane.**
   If the shoulder and adjacent driving lane are not even at the end of the day, the following criteria will apply:

   Install “Shoulder Drop Off” signs (Sign W8-9a-48) at the following locations:
   - In advance of the drop off;

- Spaced at each mile from the advance sign; and
- At major intersections (CMC routes, state and US highways, and Interstate ramps).

If the difference in elevation between the shoulder and the driving lane is 2” or greater, construct a slough at the edge of the driving lane that is 4:1 or flatter.

If the difference in elevation between the shoulder and the driving lane is less than 2”, no slough is required.

704.04 O.1 General. **Page 367** **10/01/17**

Replace 704.04 O.1 with the following:

1. General.
If pavement in adjacent lanes or the shoulder adjacent to an open lane is uneven at the completion of a day’s work, install traffic control devices as specified in this section.

Leave these devices in place until the pavement surface in the adjacent lanes or shoulder are even.

706.02 A General **PAGE 372** **10/01/16**

Add the following to the end of Section 706.02 A:

Furnish Aggregate and Bituminous labs with DSL broadband internet and a router that broadcasts Wi-Fi and will allow for hard wiring of a computer.

706.02 B Aggregate Laboratory **PAGE 372** **10/01/15**

Replace Section 706.02 B with the following:

B. Aggregate Laboratory.
Place the laboratory at a location acceptable to the Engineer. The Engineer will have the full control and the exclusive use of the laboratory.

Provide a laboratory with a minimum floor area of 230 square feet, minimum exterior width of 8 feet, and a minimum ceiling height of 7 feet.

Partition the building into a minimum of two rooms, a smaller room having a floor area of approximately 70 square feet.

Provide a workbench with a length of 7 feet in the smaller room.

Provide the following equipment in the larger room:

1. Mechanical shaker capable of receiving 6 trays that have a screen size of 14 inches by 14 inches and the following compatible sieves:
   - 1-1/2 inch;
   - 1-1/4 inch;
   - 1 inch;
   - 3/4 inch;
   - 1/2 inch;
   - 3/8 inch;
   - No. 4; and

- An enclosed dust pan.

2. Mary Ann shaker capable of being adjusted to receive 8 and 12 inch diameter sieves;
3. Splitter with a maximum hopper capacity of 0.6 cubic feet;
4. Splitter with a minimum hopper capacity of 1.0 cubic feet; and
5. An exhaust fan capable of changing the air in the room every minute.

706.04 A. General. **PAGE 373** **10/01/18**

Add the following sentence to the first paragraph of 706.04 A:

Level, block, and tie down the lab when placing.

709.04 C Geosynthetic Geogrid (Type G) **PAGE 376** **10/01/15**

Replace Section 709.04 C with the following:

C. Geosynthetic Geogrid (Type G).

Unroll geogrid parallel to the centerline of the road. Do not drag the geogrid across the underlying material. Use geogrid widths that produce overlaps of parallel rolls at the centerline and at the shoulders and so that no overlaps are required along wheel paths.

Overlap geogrid a minimum of 30 inches at all splices and joints when placing on subgrade. Overlap geogrid a minimum of 12 inches at all splices and joints when placing on base.

Construct overlaps at the end of a roll so the previous roll laps over the subsequent roll in the direction of the cover material placement. Mechanically tie transverse joints to maintain the minimum overlap. Place pins, staples, or small piles of aggregate to maintain the geogrid position before placement of cover material.

Stagger end overlaps at least 10 feet from other end overlaps in parallel rolls. Cut or increase overlaps to conform to curves.

Patch damaged areas of geogrid. Place a patch that overlaps the damaged area by 36 inches on all sides. Mechanically tie the patch to the underlying grid.

Place the first lift of material over geogrid installed on subgrade to a depth of 10 inches of loose material. Place the first lift of material over geogrid installed on base to a depth of 6 inches of loose material.

Use low ground pressure equipment to spread the initial lift of material. If rutting occurs, fill the ruts with additional material before placing the subsequent lift. Do not blade out ruts. Do not turn construction equipment on the first layer of material.

714.03 A Culverts and Storm Drains **PAGE 378** **10/01/16 & 10/1/17**

Replace the last paragraph of Section 714.03 A with the following:

Provide mortar consisting of a mixture of one part Portland Cement to two parts mortar sand, and sufficient water to furnish proper consistency.

Where placing new end sections on existing pipe, identify whether the type of end section needed is male or female.

Add the following to the end of Section 714.03 A:

If using polymer coated corrugated steel pipe, install end sections that meet the requirements of Section 830.02 C “Polymer Coated Corrugated Steel Pipes” or 830.02 B, “Metallic (Zinc or Aluminum) Coated Corrugated Steel Culverts, Storm Drains, and Underdrains”.

714.04 A.1 Bedding **PAGE 379** **10/01/15**

Delete the first paragraph from Section 714.04 A.1.

714.04 A.3 Joining Pipe **PAGE 380** **10/01/17**

Delete the last paragraph.

714.04 A.5 Deflection Testing **PAGE 380** **10/01/16**

Replace the second paragraph of 714.04 A.5 with the following;

The Engineer will visually inspect all metal and thermoplastic pipe under unpaved approaches for deflection. If the Engineer sees any deflection, the Engineer will require the Contractor to pass a nine point mandrel or other approved object through the pipe to check for deflection. Use a mandrel with a diameter not less than 95 percent of the inside diameter of the pipe. If the mandrel cannot be passed through the pipe, replace the pipe.

714.04 A.6 Connection to Manholes, Inlets, and Pipes **PAGE 380** **10/01/15**

Replace Section 714.04 A.6 with the following:

6. **Connection to Manholes, Inlets, and Pipes.**
   If connections are required to a manhole, inlet barrel, or pipe entrance; connect pipe by cutting the opening and grouting in the connecting pipe.

714.04 A.7 Compaction Control for Aggregate **PAGE 380** **10/01/15**

Replace Section 714.04 A.7 with the following:

7. **Compaction Control for Aggregate.**
   Compact aggregate according to Section 203.04 E.2, “Compaction Control, Type A”. The moisture content of the aggregate at the time of compaction shall be not less than 2.0 percentage points below, nor more than 3.0 percentage points above the optimum moisture content.

   Compact aggregate for approach pipes according to the conduit manufacturer’s recommendation

   Use a maximum lift thickness of 6 inches.

714.04 A.8 Compaction Control for Non-Aggregate Material **PAGE 380** **10/01/15**

Replace Section 714.04 A.8 with the following:

8. Compaction Control for Non-Aggregate Material.
If Common Excavation Type A is specified, follow the compaction requirements in Section 203.04 E.2, "Compaction Control, Type A". If Common Excavation Type B is specified, follow the compaction requirements in Section 203.04 E.3, "Compaction Control, Type B".

Compact material for approach pipes according to the conduit manufacturer's recommendations.

714.06 Basis of Payment. **PAGE 383** **10/01/18**

Replace the first sentence of 714.06 with the following:

Include the cost of end sections in the price bid for pipe conduit

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748.03 MATERIALS **PAGE 393** **10/01/15**

Add the following item to the table:

Impervious Membrane Cure	810.01 B.1 or 810.01 B.2

748.04 D Curing. **PAGE 393** **10/1/18**

Replace the 6th paragraph with the following:

If Class ASE concrete is used, maintain the surface temperature between 50°F and 90°F

750.03 MATERIALS **PAGE 395** **10/01/15**

Add the following item to the table:

Impervious Membrane Cure	810.01 B

Replace the paragraph directly after the table with the following:

For imprinted concrete use any size coarse aggregate specified in Section 802.01 C.2, "Coarse Aggregate". Produce a mix that consists of 60 percent fine aggregate and 40 percent coarse aggregate

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750.04 G Curing. **PAGE 396** **10/1/18**

Replace the 6th paragraph with the following:

If Class ASE concrete is used, maintain the surface temperature between 50°F and 90°F.

752.04 E Temporary Safety Fence. **PAGE 399** **10/1/18**

Add the following paragraph to the end of 752.04 E:

Maintain the temporary safety fence for the duration of the project. Remove the temporary safety fence when it is no longer needed.

752.05 Method of Measurement **PAGE 399** **10/01/17**

Remove the last paragraph from 752.05:

752.06 Basis of Payment **PAGE 400** **10/01/17**

Replace “Fence Terminal – Wood Posts” in the Pay Item List with “Fence Terminal”.

754.03 Materials **PAGE 401** **10/01/17**

Replace Concrete Class AAE with Concrete Class AE.

754.04 D.2 Anchor for Telescoping Perforated Tubes Supports **PAGE 403** **10/01/15**

Replace the last two paragraphs in Section 754.04 D.2 with the following:

If installation is in either concrete or bituminous material, omit the soil plate or use a surface mount anchor base.

Core concrete and bituminous surfacing before installing the anchor unit and fill the cored area with like material that matches the surrounding surfacing.

754.04 F Removing and Resetting Signs and Supports **PAGE 407** **10/01/15**
10/01/16

Replace the Section 754.04 F with the following:

F. Removing and Resetting Signs and Supports.

1. General.
Remove and reset existing signs and supports as specified. Stockpile all signs and supports not to be reset at designated locations within the project limits. The Engineer will arrange to have stockpiled signs removed from the project limits and delivered to the Department’s facility.

Replace removed or reset signs and supports that are damaged during removing, resetting, or stockpiling at no additional cost to the Department.

Remove existing signs and supports as construction progresses, and immediately reset or install new signs.

The Engineer will allow the temporary reset of existing signs, or the temporary installation of new signs. Include the cost of installing and resetting signs temporarily in the price bid for other items.

2. **Reset Sign Panel.**
   Remove sign panels from existing supports. Reinstall sign panels, angles, stringers, and steel channels on new supports.

   Provide all necessary brackets and hardware to attach sign panels, angles, stringers, and steel channels on new supports.

3. **Reset Sign Support.**
   Remove sign panels from existing supports. Reinstall support and install new sign panels, angles, stringers, and steel channels.

   Provide all necessary brackets and hardware to attach sign panels, angles, stringers, and steel channels on supports.

754.04 I Overlay Panel Sign Refacing **PAGE 407** **10/01/15**

Replace the second paragraph of Section 754.04 I with the following:

Remove the legend, border, and symbol on those signs that have demountable copy and remove any existing sign overlays and place overlay panels on the signs. Do not remove direct applied sheeting legends, borders, and symbols. Direct apply the new legends, borders, and symbols to the overlay panels and install on the existing signs.

754.04 J Auxiliary Signs **PAGE 408** **10/01/15**

Replace the Section 754.04 J with the following:

J. Auxiliary Signs.
Install auxiliary signs used with route markers with the same background color as the route markers:
- Interstate, Blue;
- Interstate Business Loop, Green;
- State, White;
- US, White; and
- County, Blue.

754.05 METHOD OF MEASUREMENT **PAGE 408** **10/01/15**

Add the following to Section 754.05:

D. Reset Sign Panel.
The Engineer will measure the item “Reset Sign Panel” by the number of locations a sign or sign assembly has been reset.

E. Reset Sign Support.
The Engineer will measure the item “Reset Sign Support” by each leg of a sign support that has been reset.

760.03 Materials **PAGE 410** **10/01/15**

Replace Section 760.03 with the following:

760.03 MATERIALS
Use one of the following materials when applying a fog coat to rumple strips:

- SS-1h, Section 818.02 F, “Anionic Emulsified Asphalt”;
- MS-1 Section 818.02 F, “Anionic Emulsified Asphalt”; or
- CSS-1h Section 818.02 E.1 “Cationic Emulsified Asphalt”.

When MS-1 is used it may be diluted by the supplier or the Contractor.

760.04 F Traffic Control **PAGE 411** **10/01/15**

Replace Section 760.04 F with the following:

F. Traffic Control.

1. General.
Use a TMA as specified in Section 704.04 M, “Protection Vehicle with Truck Mounted Attenuation Device (TMA)”.

2. Centerline Rumble Strip Installation.
Provide flaggers and 2 sets of the required flagger signing for each direction of travel. Ensure that at least one set of the required flagger signing is in place in each direction of travel whenever work centerline installation is performed. Limit the work area to a maximum of 3 miles.

760.05 METHOD OF MEASUREMENT **PAGE 411** **10/01/15**
10/01/16

Add the following to the end of Section 760.05:

The Engineer will measure flagging and traffic control signs as specified in Section 704.05, “Method of Measurement.

The Engineer will count each leg of an intersection receiving rumbles strips as one “Set”.

760.06 BASIS OF PAYMENT **PAGE 411** **10/01/15**
10/01/16

Delete “Rumble Strips – Intersection, Each” and replace with “Rumble Strips – Intersection, Set”.

Add the following paragraph after the list of pay items in Section 760.06:

Flagging and traffic control signs will be paid for as specified in Section 704.06, “Basis of Payment”.

762.04 A.4 Grooved Pavement Markings **PAGE 413** **10/01/16**

Replace Section 762.04 A.4 with the following:

4. Grooved Pavement Markings.

a. General.
For messages, groove the same area as the messages. Do not groove a rectangular area to contain the message.

After grinding, blow the grooved slot clean to remove any residue and loose material before the installation of the pavement marking. When wet-grinding, immediately pressure wash the grooved slot to remove residue.

b. Grooves for Preformed Patterned Pavement Marking Film.
If specified in the plans, groove a recess into the pavement surface for each stripe that meets the tolerances specified in Table 762-01.

Table 762-01
Preformed Patterned Pavement Marking Film Grooves

Parameter	Tolerance
Depth	90 to 110 mils
Smoothness	Ridges, within the groove, shall be no more than 6 mils higher than either adjacent valley
Width	line width plus 1/2 inch
Length	line length plus 3 inches per end of line
Line End Tapers	3 inches

If pavement marking installation does not occur within 24 hours of grinding, sandblast the groove and install the pavement markings the same day the sandblasting occurs.

c. Grooves for Epoxy Paint.
If specified in the plans, groove a recess into the pavement surface for each stripe that meets the tolerances specified in Table 762-02.

Table 762-02
Epoxy Paint Grooves

Parameter	Tolerance
Depth	45 to 55 mils
Smoothness	Ridges, within the groove, shall be no more than 6 mils higher than either adjacent valley
Width	line width plus 1 inch
Length (skips)	line length plus 3 inches per end of line
Line End Tapers	3 inches

After creating the groove, prepare the surface in accordance with the manufacturer's instruction.

762.04 C.1.a Application **PAGE 415** **10/1/16**

Delete the last paragraph of Section 762.04 C.1.a.

762.04 C.1.b. Data Logging System (DLS) **PAGE 415** **10/1/16**

Replace the first paragraph of Section 762.04 C.1.b with the following:

The use of a computerized DLS is required for monitoring the application of water based paint and epoxy pavement markings when the plan quantity of long lines for liquid pavement marking is 30,000 linear feet or greater.

762.04 C.2.a Method of Application **PAGE 416** **10/1/16**

Replace Section 762.04 C.2.a with the following:

a. Method of Application.
Allow new bituminous treatment to cool to a temperature below 125°F and cure for a period of 72 hours before applying permanent pavement marking.

Apply pavement marking paint and glass beads separately by machine. Use hand application where machine application is not feasible.

Apply water based paint when the air and pavement surface temperatures are 45°F or warmer. Do not apply paint when the air or pavement surface temperatures are forecasted to be colder than the minimum application temperature during the curing period of the paint. Apply pavement marking paint and beads only during daylight hours.

762.04 C.2.c Tolerances **PAGE 416** **10/1/18**

Replace the content of 762.04 C.2.c with the following:

(1) Surface Applied.
Place surface applied markings within the following tolerances:

- 3 inches of the specified length;
- 1/4 inch of the specified width;
- 6 inches in a 40 foot cycle;
- 2 inches from the proper alignment; and
- Begin dashed lines placed over existing dashed lines within 6 inches of the beginning of the existing line.

(2) Grooved.
Apply the grooved markings in the groove and within the following tolerances:

- 2 inches of the specified length; and
- 1/4 inch of the specified width.

762.04 C.3.a General **PAGE 417** **10/1/16**

Replace the last paragraph of Section 762.04 C.3.a with the following:

Place epoxy material after bituminous material has been in place for a minimum of 14 days.

762.04 D.2 Short-Term Pavement Marking – Type NR (Non-Removable) **PAGE 418** **10/01/15**

Replace the second paragraph of Section 762.04 D.2 with the following:

Place the short term pavement markings at the rate specified in Section 762.04 C.2.b, “Rate of Application” with the following exception:

Exception: When the permanent pavement marking is specified as epoxy paint, apply the short term pavement marking at a thickness of 10 mils.

762.04 D.3 Short-Term Pavement Marking – Type R (Removable) **PAGE 419** **10/01/15**

Replace Section 762.04 D.3 with the following:

3. **Short-Term Pavement Marking – Type R (Removable).**
   Install Type R markings when the air and pavement temperatures are at a minimum of 50°F and expected to remain above 50°F.

   If the air or pavement temperature falls below 50°F during installation, Type NR markings may be installed as specified in Section 762.04 D.2, “Short-Term Pavement Markings – Type NR (Non-Removable)”. Install Type R markings once the specified temperatures exist.

   Remove Type R markings once they are no longer necessary for traffic control operations. If Type NR markings were substituted for Type R markings, remove the Type NR markings using a method that does not leave a scar on the pavement.

762.06 Basis of Payment **PAGE 419** **10/01/15**

Add the following to the end of the first paragraph:

If Type NR markings are substituted for Type R markings due to temperature requirements, the markings will be paid for at the contract unit price for Type R markings.

764.04 A General **PAGE 421** **10/01/17**

Replace section 764.04 A with the following:

A. General.

1. **Installation Requirements.**
   Before guardrail removal, installation, and extension, develop a written construction schedule for work at the guardrail location, and have the schedule reviewed by the Engineer. Include a sequence of controlling items and the timing of each in the schedule of work. Do not stop work between controlling items for more than four working days at any individual run.

   Install the guardrail to produce a smooth continuous line with uniform height.

   Set posts plumb with the front faces uniformly aligned.

   Backfill posts with approved material placed and compacted in 6 inch layers, using a mechanical tamper.

Place hot bituminous pavement before guardrail post installation. Drill post holes for the new or reset guardrail through the hot bituminous pavement. Install the post in the remaining material by augured holes or driving.

When posts are installed in augured holes, backfill the holes with approved material without displacing the post alignment. Remove surplus excavated material.

When posts are driven, make the diameter of the hole in the bituminous pavement sufficient so when the soil around a post heaves up while the post is driven, the remaining asphalt will not move. If driving causes damage to posts, replace the post and install the replacement post by auguring the hole. Use a post cap if making minor vertical adjustments with a sledgehammer or maul.

Place a maximum thickness of 2 inches of bituminous material around each post to blend the post hole into the surrounding bituminous material.

Do not burn or weld after the material has been galvanized. All holes shall be machined drilled.

Repair areas exposed by cutting or drilling and any damaged galvanized coating according to Section 854.02, “Damaged Galvanized Coatings”.

Hang guardrail and end terminals for individual runs in a single day.

2. Installation on Roadways Open to Public Traffic.

At locations of guardrail installation where the roadway is open to traffic, complete the installation of each individual run within 10 working days from the date all controlling items allow guardrail installation to begin.

Install delineator drums, as specified in Section 704, “Temporary Traffic Control”, at 25-foot intervals adjacent to areas meeting one of the following conditions:

- Existing guardrail was removed and new guardrail will be installed;
- Where no guardrail previously existed but will be installed; or
- At guardrail extensions.

Leave the drums in place until guardrail installation at that location is complete and accepted by the Engineer.

3. Failure to Comply with Installation Requirements.

Provide temporary protection according to the plans at an object if unable to complete the required work in the specified time. Do not use material installed for this purpose in the final guardrail installation. The Department will not make separate payment for attenuation provided due to the Contractor’s inability to complete the work in the specified time.

If the Contractor fails to comply with all requirements of Section 764.04 A.2, “Installation on Roadways Open to Public Traffic”, the Engineer will perform one or both of the following:

1. The Engineer will apply a contract price reduction of $1000 per day if the deficiency is not remedied within 24 hours of notification to correct the item.

2. The Engineer will have the temporary protection installed by other forces and deduct the costs from monies due or that become due to the Contractor.

If the Engineer uses other forces to install temporary protections, remove and dispose of the materials installed by the other forces at no additional cost to the Department.

764.04 D Removal of Guardrail **PAGE 422** **10/1/17**

Replace section 764.04 D with the following:

D. Removal of Guardrail.

1. General.
If the Engineer determines that the concrete anchors do not interfere with other construction, cut off concrete anchors one foot below ground level. When concrete anchors are removed, backfill the holes with approved material in 6 inch layers. Thoroughly tamp each layer using a mechanical tamper. If concrete anchors are cut off or removed, shape the surface to match the surrounding area and dispose of the removed concrete.

When removing guardrail posts and not replacing the posts in the same hole, backfill the hole with approved material. When the existing surrounding surface is bituminous, place 2 inches of bituminous material at the top of the hole to match existing surrounding surface.

2. Removed Guardrail in Locations Where There will be no permanent guardrail.
At locations where guardrail is to be removed and no guardrail will exist upon completion of the work, leave the guardrail in place until the hazard associated with the guardrail is no longer present and all work is complete except for that which requires the guardrail to be removed.

764.04 G Completion Requirements **PAGE 423** **10/1/17**

Replace section 764.04 G Completion Requirements with the following:

G. Reserved.
Reserved.

764.04 H Attenuation Devices **PAGE 423** **10/1/17**

Replace the first paragraph with the following:

Install attenuating devices that meet the appropriate MASH testing Requirements and have an eligibility letter from FHWA.

766.04 CONSTRUCTION REQUIREMENTS **PAGE 425** **10/01/15 & 10/1/17**

Replace Section 766.04 with the following:

766.04 CONSTRUCTION REQUIREMENTS

A. General.
The mailbox owner will furnish a postal service approved mailbox. Install the furnished mailbox on the new support system.

B. Temporary Relocation.

If construction activities require the removal of the support system and delayed installation of the new support system, reset the existing support system at a location approved by the Engineer and postal service.

If construction activities require the removal of the support system and delayed installation of the new support system, relocate mailboxes to a location approved by the Engineer and postal service.

If existing mailboxes meet NCHRP 350 or MASH requirements, they may be reset temporarily during construction. If the existing support does not meet NCHRP 350 or MASH, place temporarily located mailboxes on supports that meet MASH requirements. If there is no support that meets MASH requirements, perform one of the following actions:

- Place them outside the clear zone;
- Place them on a 4 × 4 inch wood post; or
- Reset them using assemblies shown in the plans.

After construction has progressed to allow permanent installation, install the mailbox assemblies and mailboxes at the specified locations.

770.03 A General **PAGE 426** **10/01/17 & 10/1/18**

Replace Concrete Class AAE-3 with Concrete Class AE-3.

Add the following to the Table:

Item	Section
Galvanizing	854

770.04 C. Concrete Foundation **PAGE 428** **10/01/17**

Replace Section 770.04 C with the following:

C. Concrete Foundation.

Cast concrete foundations in place. Place the concrete in one continuous operation with no construction joints. Consolidate the concrete according to Section 602.04 C.2 “Vibration”.

Allow the concrete foundation to cure for 7 days before placing poles on the foundation.

Do not grout between the foundation and the pole base.

Install anchor bolts according to Section 754.04 D.5.b, “Anchor Bolt Installation”.

770.04 D.1 General **PAGE 428** **10/01/15 & 10/1/18**

Replace the 10th paragraph with the following:

Seal conduit ends with steel wool immediately after installation and reinstall after each phase of construction.

Install conduit plugs in each conduit end after the conductor is installed. Provide conduit plugs which create an air and water tight seal, and are removable and reusable. Provide plugs that can be split to permit installation or removal of the plugs without removing the conductor. Provide conduit plugs that seal using an adjustable filler of neoprene or silicone rubber compressed with stainless steel hardware.

Add the following to the end of Section 770.04 D.1:

Install duct seal on all conduits containing cables at controller cabinets, traffic signal bases, and pull boxes.

770.04 G Light Standards **PAGE 430** **10/01/16**

Replace the first paragraph of Section 770.04 G with the following:

Plumb the light standard with leveling nuts. Adjust the leveling nuts on assembled light standards before 10:00 am. Tighten anchor nuts according to Section 754.04 D.5.c “Anchor Bolt Tightening”.

772.03 A General **PAGE 433** **10/01/18**

Replace the table with the following:

Item	Section
Concrete, Class AE	802
Rapid-Hardening Cementitious Materials	806.01
Galvanizing	854
Highway Traffic Signals	896

772.03 D Wiring Diagrams **PAGE 434** **10/01/15**

Replace the first paragraph with the following:

At the time the cabinet and control equipment is accepted, furnish a traffic signal cabinet wiring diagrams showing all circuits and parts in detail. Place the wiring diagram in the signal cabinet and submit one PDF copy to the Engineer.

772.04 A General **PAGE 435** **10/01/15**

Replace the second paragraph with the following:

Provide and bear all costs for the electrical service necessary to operate and maintain the traffic signal system until the system is accepted as specified in Section 772.04 N.3, “Supplemental Inspections and Final Acceptance”.

772.04 E.8 Final Testing **PAGE 439** **10/01/15**

Replace Section 772.04 E.8 with the following:

After installing sealer, perform the tests specified in Section 772.04 E.6, “Initial Testing”. Record the test results on SFN 60844 *Traffic Signal Loop Detector Test Report* and submit the form to the Engineer.

772.04 G Traffic Signal Standards and Combination Signal and Light Standards **PAGE 439** **10/01/18**

Replace the content of 772.04 G with the following:

1. Use leveling nuts to plumb standards. Adjust the leveling nuts on assembled standards before 10:00 am.

2. Install and tighten the anchor bolts as specified in Section 754.04 D.5, “Overhead Sign Structures”.

3. Provide a rigidly-mounted terminal block in the base of each standard for the connection of control circuits. Install the luminaire fuses in the base of combination signal and light standards.

4. Provide rodent protection using wire mesh with a maximum size opening of 1/4 inch for all anchor base installations. Place the wire mesh continuously around the inside of the lower plate to prevent rodents from entering the base through the space between the concrete foundation and the lower plate. Secure the mesh to the anchor bolts and lower plate.

772.04 M Signal Painting **PAGE 441** **10/01/18**

Replace 772.04 M with the following:

M. Reserved.
Reserved.

772.04 N Tests and Acceptance **PAGE 442** **10/01/15**

Replace 772.04 N with the following:

1. General.
Furnish all instruments and personnel required for testing and record test results. If a subcontractor performed electrical work, ensure the subcontractor is present during testing and inspection.

The Engineer will perform the initial and final inspections when:
- Winds are 30 mph or less;
- Ambient temperature is 15°F or greater; and
- It is not raining or snowing.

a. Malfunction Management Unit Test.
Before uncovering the signal heads, perform a malfunction management unit test. Record the test results on SFN 60836 *Traffic Signal Malfunction Management Unit Test* and submit the results to the Engineer.

b. Ground Test.
Before opening to traffic, perform a ground test. The maximum allowable resistance at the controller cabinet is 10 Ohms. The maximum allowable resistance at each traffic signal standard is 25 Ohms. Record and submit the test results on SFN 60834, *Traffic Signal Ground Test*.

2. Initial Inspection.
After the signal system is operational and open to traffic, submit a request to schedule the initial inspection. The system must be fully operational for a minimum of 15 days before the Engineer will perform the initial inspection. The Engineer will record the inspection results on form SFN 59867, *Traffic Signal Inspection* Checklist or SFN 60845 *Flashing Beacon Inspection Checklist*. Copies of completed forms will be sent to the Contractor.

3. Supplemental Inspections and Final Acceptance.
After performing corrections, submit a request for a supplemental inspection. The Engineer will perform a supplemental inspection within 30 days of receiving the request.

If this inspection discloses any unsatisfactory items, the Engineer will provide the Contractor with a written list of items that require correction. After correcting the items, request another supplemental inspection.

If the Engineer determines that the work is complete, the signal system must operate for 14 consecutive days without interruption from defective equipment or improper workmanship.

If the signal system fails within the 14 days, make necessary repairs. After repairs are complete, request another supplemental inspection.

If the signal system operates for 14 consecutive days without interruption from defective equipment or improper workmanship, the Engineer will consider the last supplemental inspection as the final inspection and will accept the signal system.

802.01 A General. **PAGE 453** **10/01/18**

Replace the content of 802.01 A with the following:

1. Development.
Develop a mix design based on the requirements of this section. Perform the specified aggregate and strength tests and submit the results with the mix design. Submit the completed mix design a minimum of 14 days before beginning concrete placement operations.

Use materials slated for use on the project when developing and testing the mix design. If any material or material source changes, develop and submit a revised mix design and test results.

Provide concrete that is air entrained.

Concrete is divided into classifications as shown in Table 802-01.

Table 802-01

Concrete Class Designation	Cementitious Material Content (lbs) per CY	Water-Cement Ratio (Max)
AAE	600 – 650	0.44
AE	550 – 600	0.47
ASE	575 – 625	0.40

A numeral following the alphabetical designation for the class of concrete indicates the gradation of coarse aggregate to be used in the mix, based on Table 802-03. If a specific gradation is not designated, use any gradation from Table 802-03. For ASE concrete, use aggregate that meets the requirements of Section 802.01 C.4, “Well Graded Aggregate”.

2. Class AE and AAE Mixes.
Design a mix that will attain a compressive strength of 3,000 psi after 7 days or a flexural strength of 450 psi after 7 days.

Mix designs used for Section 550, “Concrete Pavement” will be required to attain both a compressive strength of 3,000 psi and a flexural strength of 450 psi after 7 days.

Measure compressive strength according to AASHTO T 22 and flexural strength according to AASHTO T 97. Apply a correction factor of 0.92 when using 4 inch x 8 inch concrete cylinders.

3. Class ASE Mix.
Design a mix that will attain a minimum compressive strength of 3,000 psi after 30 hours or a minimum flexural strength of 450 psi after 30 hours.

Develop a maturity curve according to ASTM 1074. Use 6 inch x 12 inch cylinders or flexural beams for strength determination.

4. Certificate of Compliance.
Submit a certificate of compliance for non-aggregate materials.

802.01 B Cement. **PAGE 453** **10/01/18**

Replace the content of 802.01 B with the following:

Provide cement as specified in Section 804.01, “Cement”.

802.01 C.2 Coarse Aggregate **PAGE 454** **10/01/15 & 10/1/18**

Replace the first paragraph with the following:

Provide coarse aggregate that meets requirements of Table 802-02 and the appropriate numerical designation from Table 802-03.

Delete the second paragraph.

Replace Table 802-02 with the following:

Table 802-02
Miscellaneous Coarse Aggregate Properties

Test	Method	Max. Percent by Weight of the Plus No. 4 fraction
Shale	NDDOT 3	0.7
Iron oxide particles	NDDOT 3	4.0[1]
Lignite and other coal	NDDOT 3	0.5
Soft Particles (Excluding Shale, Iron oxide particles and Lignite and other coal)	NDDOT 3	2.5
Thin or Elongated Pieces	NDDOT 3	15
L.A. Abrasion	AASHTO T 96	40.0
Soundness (Sodium Sulfate)	AASHTO T 104	12

[1] For concrete for spall repairs and bridge deck overlays, the maximum iron oxide particles shall be 2.0 percent.

802.01 C.3 Fine Aggregate **PAGE 454** **10/01/15**

Replace the second paragraph of Section 802.01 C.3 with the following:

Test fine aggregates in accordance with AASHTO T 21. If the results of the analysis are darker than the standard color, determine the compressive strength of mortar mixed using the aggregate in accordance with AASHTO T 71. If the results of the AASHTO T 71 test result in a relative strength less than 95 percent, do not use the fine aggregate.

802.01 F Admixtures. **PAGE 456** **10/01/18**

Replace the content of 802.01 F with the following:

1. **General.**
   Use admixtures as specified in Section 808 “Concrete Admixtures”.

2. **Bridge Deck Concrete.**
   Use a retarding admixture in Class AAE-3 concrete in bridge decks when the temperature of the concrete or the ambient air temperature at the time of placement exceeds 75°F. Provide a retarding admixture that meets the requirements of AASHTO M 194 and that are classified as Type B or D under ASTM C 494.

3. **ASE Concrete.**
   A non-calcium chloride accelerator may be used, but must meet the requirements of AASHTO M 194 and be classified as Type C under ASTM C 494. Accelerating admixtures are limited to a maximum of 2.0% by weight of cement.

802.01 G Fly Ash. **PAGE 456** **10/01/18**

Replace the content of 802.01 G with the following:

1. **General.**
   Fly ash, meeting the requirements of Section 820, “Fly Ash”, may replace cement on a 1:1 ratio, up to a maximum of 29 percent by weight.

2. **ASE Concrete.**
   Include fly ash in the mix at a rate between 10 percent and 20 percent, by weight, of the cementitious material in the mix.

802.01 H Air Content **PAGE 456** **10/01/17**

Replace the last paragraph with the following:

Supply concrete with an air content between 5.0 and 8.0 percent of the volume of the concrete at the time of placement.

802.01 I High-Early-Strength Concrete. **PAGE 457** **10/01/18**

Replace 802.01 I with the following:

I. Reserved.
Reserved.

802.01 J Tests on Concrete **PAGE 457** **10/01/16**

Delete 802.01 J “Tests on Concrete” and replace with the following:

J. Tests on Concrete.
Furnish the concrete necessary for the tests.

Near the site of concrete placement, provide a level area protected from construction activities near the site of placement for the Engineer to conduct tests.

804.01 Cement. **PAGE 461** **10/01/18**

Replace the content of 804.01 with the following:

Use one of the following materials:
- Portland Cement that meets the requirements of AASHTO M 85, Type II; or
- Blended Hydraulic Cement that meets the requirements of AASHTO M 240, Type IL(MS).

810.01 B Liquid-Membrane-Forming Compounds **PAGE 464** **10/01/15**

Add the following to the end of Section 810.01 B:

3. Curing Compound for Pigmented Concrete.
Use a curing compound when curing pigmented concrete that meets the requirements of ASTM C 309 Type 1-D.

816.03 AGGREGATES FOR BLOTTER AND SEAL COATS **PAGE 467** **10/01/16**

Replace Table 816-02 with the following:

Table 816-02
Aggregates for Blotter and Seal coats

Sieve Size Or Testing Method	Aggregate Class					
	41	41M	42	43	44	45
	Percent Passing or Testing Requirement					
5/8 inch					100	
3/8 inch	100					100
No. 4	20-70				90-100	85-100
No. 8	0-17		2-20	0-17		
No. 16						45-80
No. 50						10-30
No. 200	0-1.5		0-5	0-2	0-20	0-3
ND T 113, Shale (max %)	8.0%					3.0%
AASHTO T 96, L.A. Abrasion (max %)	40%					
NDDOT 4, Fractured Faces[1]		50%				

[1] Minimum weight percentage allowable for the portion of the aggregate retained on a No. 4 sieve having at least 1 fractured face for Class 41M.

816.04 AGGREGATE FOR MICRO SURFACING **PAGE 467** **10/01/15**

Replace Section 816.04 with the following:

816.04 AGGREGATE FOR MICRO SURFACING

A. General.
Use aggregate that is manufactured crushed stone such as granite, slag, limestone, or other high quality aggregate or combination thereof.

Before stockpiling aggregate, perform the tests specified in Table 816-03.

Table 816-03

Test	Test Method	Requirement
Soundness of Aggregates by Use of Sodium Sulfate	AASHTO T 104	15% Max
Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine[1]	AASHTO T 96	30% Max
Deleterious Substances	ND T 176	60 or Higher

[1] Perform the AASHTO T 96 test on the parent aggregate

B. Mix Design.

Develop a mix design using aggregate that meets the requirements of Table 816-04. Establish mix design target values for each sieve and submit the mix design before beginning placement operations.

Table 816-04
Aggregate Gradation for Development of Mix Design

SIEVE SIZE	TYPE II %PASSING	TYPE III %PASSING
3/8”	100	100
#4	90 – 100	70 – 90
#8	65 – 90	45 – 70
#16	45 – 70	28 – 50
#30	30 – 50	19 – 34
#50	18 – 30	12 – 25
#100	10 – 21	7 – 18
#200	5 – 15	5 – 15

C. Stockpile Tolerances.

The mix design target values will be used for acceptance of material. Gradation tests may vary from the mix design target values based on the stockpile tolerance shown in Table 816-05. The percent passing each sieve for gradation tests may not fall outside the gradation limits specified in Table 816-04.

Table 816-05

SIEVE SIZE	STOCKPILE TOLERANCE
3/8”	-
#4	± 5%
#8	±5%
#16	±5%
#30	±5%
#50	±4%
#100	±3%
#200	±2%

D. Acceptance.

1. Stockpile Testing.

Perform a gradation test in accordance with ND T 11 and ND T 27 for every 500 tons of material produced and placed in the stockpile. Also perform test ND T 176 when performing gradation tests. Submit the test results to the Engineer.

The Engineer will perform acceptance testing. If the result of the Engineer’s testing lead to rejection of the stockpile, additional material may be blended with the stockpiled material so that

the stockpile meets the requirements. The Engineer will resample and retest for both gradation and deleterious substances to determine if the stockpiled material will be accepted.

If choosing to blend additional material into the stockpile, use additional material that meets the requirements of Table 816-06. After blending, develop and submit a new mix design.

2. Gradation.
The Engineer will obtain 5 independent samples from the stockpile and perform a gradation analysis in accordance with ND T 11 and ND T 27. If the average gradation for each sieve is within the stockpile tolerance of the mix design target values, the Engineer will accept the material.

If the stockpile is rejected, additional material may be blended with the stockpiled material to obtain the required gradation. The Engineer will resample and retest to determine if the stockpiled material will be accepted.

If choosing to blend additional material into the stockpile, use additional material that meets the requirements of Table 816-03. After blending, develop and submit a new mix design.

3. Deleterious Substances.
The Engineer will determine the amount of deleterious substances in the aggregate using the same samples obtained in Section 816.04 D.2, “Gradation”. If the average of the test results is 60 or higher, the Engineer will accept the material.

816.05 AGGREGATE FOR SLURRY SEAL PAGE 469 10/01/15

Replace Section 816.05 with the following:

816.05 AGGREGATE FOR SLURRY SEAL

A. General.
Use aggregate that is manufactured crushed stone such as granite, slag, limestone, or other high quality aggregate or combination thereof. Use aggregate with 100 percent of the parent aggregate larger than the largest stone in the specified gradation.

Before stockpiling aggregate, perform the tests specified in Table 816-06.

Table 816-06

Test	Test Method	Requirement
Soundness of Aggregates by Use of Sodium Sulfate	AASHTO T 104	15% Max
Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine[1]	AASHTO T 96	35% Max
Deleterious Substances	ND T 176	60 or Higher

[1] Perform the AASHTO T 96 test on the parent aggregate

B. Mix Design.
Develop a mix design using aggregate that meets the requirements of Table 816-07. Establish mix design target values for each sieve and submit the mix design before beginning placement operations.

Table 816-07
Aggregate Gradation for Development of Mix Design

SIEVE SIZE	TYPE II %PASSING	TYPE III %PASSING
3/8”	100	100
#4	90 – 100	70 – 90
#8	65 – 90	45 – 70
#16	45 – 70	28 – 50
#30	30 – 50	19 – 34
#50	18 – 30	12 – 25
#100	10 – 21	7 – 18
#200	5 – 15	5 – 15

C. Stockpile Tolerances.

The mix design target values will be used for acceptance of material. Gradation tests may vary from the mix design target values based on the stockpile tolerance shown in Table 816-08. The percent passing each sieve for gradation tests may not fall outside the gradation limits specified in Table 816-07.

Table 816-08

SIEVE SIZE	STOCKPILE TOLERANCE
3/8”	-
#4	± 5%
#8	±5%
#16	±5%
#30	±5%
#50	±4%
#100	±3%
#200	±2%

D. Acceptance.

1. Stockpile Testing.

Perform a gradation test in accordance with ND T 11 and ND T 27 for every 500 tons of material produced and placed in the stockpile. Also perform test ND T 176 when performing gradation tests. Submit the test results to the Engineer.

The Engineer will perform acceptance testing. If the result of the Engineer’s testing lead to rejection of the stockpile, additional material may be blended with the stockpiled material so that the stockpile meets the requirements. The Engineer will resample and retest for both gradation and deleterious substances to determine if the stockpiled material will be accepted.

If choosing to blend additional material into the stockpile, use additional material that meets the requirements of Table 816-06. After blending, develop and submit a new mix design.

2. Gradation.

The Engineer will obtain 5 independent samples from the stockpile and perform a gradation analysis in accordance with ND T 11 and ND T 27. If the average gradation for each sieve is within the stockpile tolerance of the mix design target values, the Engineer will accept the material.

3. **Deleterious Substances.**
   The Engineer will determine the amount of deleterious substances in the aggregate using the same samples obtained in Section 816.05 D.2, “Gradation”. If the average of the test results is 60 or higher, the Engineer will accept the material.

817.01 D Salvage Base Course Containing Bituminous Material **PAGE 472** **10/01/17**

Replace the last paragraph with the following:

If salvaged base course is to be placed beneath a bituminous asphalt roadway or used as a final surfacing, the following specifications apply.

817.01 D.2.a Extraction Test Method **PAGE 472** **10/01/15**

Replace the second paragraph of Section 817.01 D.2.a with the following:

The Engineer will determine the percentage of asphalt binder in the stockpile in accordance with AASHTO T 164 and average the results obtained from the three samples. The material will be rejected if any single sample has a value greater than 4.0 percent or the average extraction is greater than 3.5 percent. If the stockpile is rejected, the stockpiled material may be blended with other material.

818.02 A Performance Graded (PG) Asphalt Cement **PAGE 474** **10/01/17 & 10/1/18**

Replace the first and second paragraph with the following:

If the Performance Graded (PG) asphalt cement called for in the plans contains an S, H, V, or E designation, use PG asphalt cement that meets AASHTO M 332.

Base asphalt may be modified with Polyphosphoric Acid (PPA). PPA may make up no more than 0.50 percent of the finished binder, by weight.

818.02 E.2 Modified Cationic Emulsified Asphalt **PAGE 474** **10/01/16**

Replace the second paragraph of Section 818.02 E.2 with the following:

Use asphalt with a maximum 3.0 percent oil distillate by volume of emulsified asphalt when tested according to AASHTO T 59, Residue and Oil Distillate by Distillation on Emulsified Asphalt. Use the manufacturer’s recommended distillation temperature when using CRS-2P emulsion.

818.03 Bituminous Materials for Micro Surfacing **PAGE 475** **10/01/15**

Replace Table 818-01 with the following:

Table 818-01

Test	Specification	Requirement
Settlement and Storage Stability of Emulsified Asphalts, 24-h	AASHTO T 59	1% Minimum
Distillation of Emulsified Asphalt[1]	AASHTO T 59	62% Minimum
Tests on Emulsified Asphalt Residue		
Softening Point of Bitumen (Ring and Ball Apparatus)	AASHTO T 53	135°F Minimum

[1] Hold the temperature for this test at 350°F for 20 minutes.

820.01 Material. **PAGE 476** **10/01/18**

Replace 820.01 with the following:

A. General.

If using fly ash, use fly ash from an electrical generating plant using a single coal source not using limestone injection.

Use fly ash that meets the requirements of AASHTO M 295, Class F, with the following modifications:

A. Revise "Silicon Dioxide (SiO_2) plus aluminum oxide (Al_2O_3) plus iron oxide (Fe_2O_3), min percent" to 66.0.
B. Revise "Loss on ignition, max percent" to 2.0.
C. The silicon dioxide (SiO_2) shall be at least 40.0 percent by dry weight of the total fly ash composition.

Before developing the concrete mix design, submit fly ash test data prepared by an independent lab. Include a chemical and physical analysis report with the test data.

B. Available Alkalies.

The available alkalies, or equivalent, as Na_2O, max percentage is 2.0. If the available alkalies percentage is above 2.0 percent, determine the alkali-silica reactivity according to ASTM C 1567. If the expansion is less than 0.10 percent at 16 days, the material will be accepted.

Submit results of the ASTM C 1567 test with the Certificate of Compliance for cement. Provide results from tests performed no more than one year before the date of certificate submission.

C. Certificate of Compliance.

At the time of delivery, submit a certificate of compliance for each car and tank truck of material. In addition to the requirements of Section 106.01 C "Certificate of Compliance", provide the following information on each certificate of compliance:

A. Fly ash source by name of company and location of plant.
B. Gross, tare, and net weight if shipped by truck.
C. Car initials and number or tank truck number.
D. Date of shipment.

822.01 General **PAGE 477** **10/01/17**

Replace the second paragraph with the following:

Use an Alkyl-Alkoxysilane organosilicon compound.

Replace the second bullet in the third paragraph with the following:

- Contains 100 percent active solids;

Replace the last bullet in the third paragraph with the following:

- Treated concrete is surface dry a maximum of 4 hours after application.

822.02 TESTING **PAGE 477** **10/01/16 & 10/1/17**

Replace the first sentence of Section 822.02 with the following:

Provide a repellent that, when applied to concrete, meets the following requirements:

Add the following to Section 822.02:

C. Scaling Resistance to Deicing Chemicals.

Test	Duration	Visual Rating	Method
Salt Water Ponding	50 Cycles	0 at 25 cycles	ASTM C 672
		≤ 3 at 50 cycles	ASTM C 672

826.02 B.1 Sealant **Page 479** **10/01/16**

Replace Section 826.02 B.1 with the following:

1. Sealant.
Provide a one-part silicone joint sealant that meets the requirements of ASTM D 5893, Type NS and the following:
- Low modulus; and
- Is capable of withstanding repeated joint movement between 50 percent shrinkage and 100 percent expansion without losing adhesion to the concrete and without cohesion failure.

826.02 B.2 Backer Rod **PAGE 479** **10/01/16**

Replace the first paragraph of Section 826.02 B.2 with the following:

Use backer rod that meets the requirements of ASTM D 5249, Type 1 or Type 3.

830.01 CONCRETE PIPE AND DRAINAGE STRUCTURES PAGE 480 10/01/16

Replace Section 830.01 with the following:

830.01 CONCRETE PIPE AND DRAINAGE STRUCTURES
The Department will evaluate the fabricator's concrete pipe plant according to Department procedures described in Field Sampling and Testing Manual, Quality Assurance Program for Prestressed and Precast Concrete Products. The results of this evaluation will determine if the material may be accepted by certificate of compliance as specified in Section 106.01 C "Certificate of Compliance."

Use an ACPA or NPCA certified plant in the construction.

A. Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
Provide pipe that meets AASHTO M 170, M 206, or M 207 for the specified diameters and strength class except use aggregates that meet the requirements in:
- Table 802-02 of Section 802.01 C.2 "Course Aggregate"
- Table 802-05 of Section 802.01 C.3 "Fine Aggregate"

B. Work Drawings.
Provide work drawings for Class IV and V Pipes that include:
- Reinforcing steel layouts;
- Type and strength of concrete and reinforcing steel;
- All concrete and reinforcing dimensions;
- Installation and handling instructions; and
- Design calculations.

Submit calculations and work drawings that are signed, sealed, and dated by a Professional Engineer registered in the State of North Dakota as set forth in NDCC Title 43.

C. Fasteners and Tie Bolts.
Provide tie bolts and nuts that are of steel meeting ASTM A 307 Grade A. Provide steel washers that meet ASTM A 1008 or ASTM A 1011. Provide fastener castings that are gray iron castings that meet ASTM A 48 Class 20.

834.03 Bolts, Nuts, and Washers PAGE 483 10/01/18

Replace all instances of "ASTM A 325" with "ASTM F 3125 Grade A 325".

834.03 A.2 Rotational Capacity Testing of Assemblies PAGE 483 10/01/16

Replace Section 834.03 A.2 with the following:

2. Rotational Capacity Testing of Assemblies.
Perform the rotational capacity test according to ASTM F 3125 Grade A 325, except as modified by this specification.

a. General.
Perform rotational capacity tests on all bolt, nut, and washer assemblies before shipping.

If galvanized parts are required, perform the rotational capacity test after galvanization.

Washers are required as part of the tests even if the final assembly does not require washers.

b. Assemblies.
Test each combination of bolt lot, nut lot, and washer lot as an assembly.

c. Rotational Capacity Lot Numbers.
Assign each combination of lots a rotational capacity lot number. Washers do not need to be identified as part of the assembly lot if they are not required in the final assembly.

d. Testing Frequency.
Test a minimum of two assemblies per rotational capacity lot.

e. Testing Device.
Use a Skidmore-Wilhelm Calibrator, or an approved alternate, to perform the rotational capacity tests.

Test bolts that are too short for the Skidmore-Wilhelm Calibrator in a steel joint. The tension requirements of Table 834-02 do not apply. Compute the maximum torque required in Section 834.03 A.2.g, “Results” using a value of “P” equal to the Turn Test Tension in Table 834-02.

f. Performance of the Test.
The minimum rotation from initial tightening (10 percent of the specified proof load) shall be as specified in Table 834-01.

Table 834-01

Bolt Length	Amount of Turn
Length ≥ 4 diameters	240 degrees (2/3 turn)
4 diameters < Length ≤ 8 diameters	360 degrees (1 turn)
Length > 8 diameters	480 degrees (1-1/3 turn)

The tension reached at the rotation specified in Table 834-01 shall be equal to values for the Turn Test Tension shown in Table 834-02.

Table 834-02

Diameter (in)	**1/2**	**5/8**	**3/4**	**7/8**	**1**	**1-1/8**	**1-1/4**	**1-3/8**	**1-1/2**
Installation Tension (kips)	12	19	28	39	51	56	71	85	103
Turn Test Tension (kips)	12	22	32	45	59	64	82	98	118

g. Results.
After exceeding the Installation Tension specified in Table 834-02, obtain and record a reading of the tension and torque.

The maximum torque (T) shall be equal to 0.25 the measured bolt tension (P) and the bolt diameter (D):

$$T \text{ (foot pounds)} \leq 0.25 \times P\text{(pounds)} \times D\text{(feet)}$$

856.01 A General **PAGE 495** **10/01/15**

Replace the “Slope Gradient” row in Table 856-01 with the following:

Slope Gradient Application	≤ 3H:1V	< 3H:1V - 2H:1V	≤ 2H:1V	< 2H:1 - 1.5H:1V

858.01 Geosynthetic **PAGE 498** **10/01/18**

Replace the “AOS” line of Table 858-01 with the following:

Geosynthetic Material Property	Test Method	Separation[2]		Riprap RR	Reinforcement R1
		S1	S2		
AOS less than mm, (greater than US STD. Sieve)	ASTM D 4751	0.212 (70)	0.15 (100)	0.3 (50)	0.6 (30)

Replace the “AOS” line of Table 858-02 with the following:

Geosynthetic Material Property	Test Method	D1	D2	D3[2]	D4[2]
AOS less than mm, (greater than US STD. Sieve)	ASTM D 4751	0.3 (50)	0.15 (100)	0.125-0.600 (30 - 120)	0.125-0.600 (30-120)

860.02 A Barbed Wire **PAGE 501** **10/01/15**

Replace Section 860.02 A with the following:

A. Barbed Wire.
Provide barbed wire that meets the requirements of AASHTO M 280. Provide wire that has a minimum gage of 12½ and at least 2 point barbs.

860.02 B Woven Wire **PAGE 501** **10/01/15**

Replace Section 860.02 B with the following:

Provide woven wire that meets the requirement of AASHTO M 279, Design Number 939-6-12½.

862.03 E W-Beam Guardrail End Treatments **PAGE 504** **10/1/17**

Replace the first paragraph with the following:

Provide W-beam guardrail end treatments that meet the requirements of MASH TL-3.

862.04 C 3-Cable **PAGE 505** **10/01/15**

Replace the Section 862.04 C with the following:

C. 3-Cable.
Provide round treated timber posts used for three-cable guardrail that are between 4.5 and 6.5 inches in diameter.

880.01 Water Based Pavement Marking Paint **PAGE 506** **10/01/18**

Replace 880.01 with the following:

A. Material Requirements.

1. General.
Use acrylic emulsion polymer or modified acrylic polymer in the manufacture of the water-based pavement marking paint.

Provide paint capable of receiving and holding glass beads for producing retroreflective pavement marking.

Provide paint that is free of heavy metals as defined by the EPA.

Provide finished paint that is:
- Fast-drying;
- Capable of withstanding air and roadway temperatures without:
  - Bleeding;
  - Staining;
  - Discoloring; or
  - Deforming;
- Smooth;
- Free of:
  - Coarse particles;
  - Skins; or
  - Any other deleterious materials that are detrimental to its use or appearance;
- Homogeneous; and
- Will not have detrimental interactions with common roadway chemicals.

Provide paint film that is capable of maintaining the original dimensions and placement during the curing period without:
- Chipping;
- Spalling; or
- Cracking.

2. Physical Properties

a. General
Provide paint with the physical properties specified in Table 880-01.

Table 880-01

Characteristic	Requirement	Test
Volatile Organic Compounds	1.25 lbs/gal Max	ASTM D 3960
Viscosity	83-98 Krebs units	ASTM D 562

Table 880-01

Characteristic	Requirement	Test
Grind	3 Hegman Units Minimum	ASTM D 1210
No-Pick-Up Time	10 Minutes Max	ASTM D 711

b. Dry Through Time.
Provide paint with a maximum dry through time of 150 minutes. Dry through is when a twisting thumb action, without pressure, does not distort the paint film. Apply the paint to a non-absorbent substrate at a wet film thickness of 15 mils, with a tolerance of 1 mil. Place the substrate, with the film applied, in a humidity chamber controlled at 90 percent relative humidity with a tolerance of 5 percent and at 72.5°F with a tolerance of 2.5°F.

c. Water Resistance.
Prepare a 15 mil wet film thickness sample on a non-absorbent substrate; allow to dry at 25°C ±1 for 72 hours. Immerse the sample in distilled water without circulation at 25°C ±1. After 18 hours, remove the sample and allow the panels to dry for two hours. Examine the sample for paint softening, blistering, wrinkling, and loss of adhesion.

d. Freeze-Thaw Stability.
Place 1 pint of paint in chamber maintained at -10±1°C for 16 hours. Remove the paint from the chamber and place in ambient conditions (25±1°C) for eight hours. Repeat for a total of five cycles. Acceptable paint shall show no coagulation and no change in viscosity greater than 5 Krebs Units after completion of the freeze thaw cycles.

e. Color.
Provide paint with pigment that falls within CIE Chromaticity coordinate limits specified in Table 880-02. Make color determinations for liquid marking material over the black portion of a 2A or 5C Leneta Chart or equal a minimum of 24 hours after application of a 15-mil wet film. Determine color readings in accordance with the requirements of ASTM E 1349 using CIE 1931 2-degree standard observer and CIE standard illuminant D65.

Table 880-02

	1		2		3		4	
Color	**x**	**y**	**x**	**y**	**x**	**y**	**x**	**y**
White	0.355	0.355	0.305	0.305	0.285	0.325	0.335	0.375
Yellow	0.560	0.440	0.490	0.510	0.420	0.440	0.460	0.400

f. Contrast Ratio.
Provide paint that when tested according to ASTM D 2805 has a minimum contrast ratio (hiding power) that is 0.96 when drawn down with a 0.005 bird film applicator on a 2A or 5C Leneta Chart and air-dried for 24 hours. Calculate the contrast ratio as black/white.

g. Reflectance.
Determine the daylight directional reflectance of paint according to ASTM E 1349. Apply a 15-mil wet film to a 2A or 5C Leneta Chart and allow the paint to air dry for 24 hours. Provide white paint with a minimum of 84 percent reflectance and yellow paint with a minimum of 50 percent reflectance.

h. Durability.
Provide paint with a minimum durability rating of 7 on both concrete and asphalt pavement, when tested in the skip line area of a Northern NTPEP Test Deck.

i. Retroreflectivity.
The minimum retroreflectivity of beaded lines, on both concrete and asphalt pavement, after 12 months of exposure on a Northern NTPEP Test Deck shall be 75 milicandelas per foot candle per square foot, when measured in the skip line area according to ASTM E 1710.

B. Manufacturing and Packaging.
If the project quantities are more than 1,000 gallons, manufacture the paint in lot sizes of 1,000 gallons or more. If the project quantities are less than 1,000 gallons, manufacture the entire project quantity in one lot.

Store paint at a temperature of at least 32°F.

Use paint within 12 months from the time of manufacture.

C. Acceptance.

1. General.
The Department will determine conformance to this Specification using the evaluation of test data from NTPEP or other Department-approved facilities, however, the Department reserves the right to utilize additional methods when determining conformance.

Use preapproved pavement marking paint. A list of preapproved pavement marking paint lots is available at the Department's website: www.dot.nd.gov.

Materials will be added to the list based on successful completion and submission of the information listed below. Failure to fully comply with either section will result in the rejection of the material and the lot will be rejected for inclusion.

2. NTPEP Testing.
Submit paint to the National Transportation Product Evaluation Program. Include a reference to the specific NTPEP Test Deck to which the paint formulation was applied, including NTPEP identification numbers and report numbers.

Provide test results from laboratory testing and field evaluation from a Northern NTPEP test deck from within the previous 6 years.

> October 1, 2020: Provide test results from laboratory testing and field evaluation from a Northern NTPEP Test Deck from within the previous 4 years.

3. Laboratory Verification Testing.
Samples of each lot manufactured for NDDOT projects must be tested for verification of compliance with this specification. Obtain two, 1-pint samples of paint from each lot. Use epoxy lined cans for sampling and shipping. Obtain samples in the presence of the Engineer. Submit the samples a minimum of 30 days before the scheduled use of the marking paint.

D. Glass Beads.

1. General.
Use glass beads for pavement marking that meet AASHTO M 247, Type I except use beads that have a minimum of 80 percent true spheres. Use beads that have a dual surface treatment consisting of a moisture resistant silicone treatment and a silane adherence surface treatment.

Furnish beads in moisture proof containers or moisture proof bags. Mark each container or bag with name of contents, manufacturer, lot or batch number, ton number, coating type, date of manufacture and the net weight.

2. Acceptance.
Use preapproved glass beads for pavement marking. A list of preapproved glass bead lots is available at the Department's website: www.dot.nd.gov.

Materials will be added to the list based on successful sampling and testing according to the NDDOT *Materials Sampling and Testing Manual*

Provide a certificate for each lot of the material furnished, giving the properties of the beads and certifying that they meet the required specifications. In addition to the certificate of compliance specified in Section 106.01 C, "Certificate of Compliance" include the date of manufacture.

880.02 B.2 Epoxy Resin Material **PAGE 509** **10/01/15 & 10/1/18**

Replace Section 880.02 B.2 with the following:

2. Color.
Provide material that meets the requirements of Table 880-03 and 880-04 when tested in accordance with ASTM D 2805.

Table 880-03
CIE Chromaticity limits using illuminant "C" for Epoxy

Color	1		2		3		4	
	x	y	x	y	x	y	x	y
White	0.355	0.355	0.305	0.305	0.285	0.325	0.335	0.375
Yellow	0.510	0.490	0.473	0.453	0.490	0.432	0.537	0462

Table 880-04
Daylight Directional Reflectance (Y)

Color	Minimum Value
White	83
Yellow	50

885.01 E.1 Cast Iron **PAGE 514** **10/01/16**

Replace Section 885.01 E.1 with the following:

1. Cast Iron.
Provide cast iron panels with a minimum thickness of 0.2 inches. Use either grey cast iron that meets AASHTO M 105, Class 35 B or use ductile cast iron that meets ASTM A 536, Grade 65-45-12. Provide panels without a surface coating and allow the panels to transition to the iron's natural patina.

894.03 A Hardware for Signs. **PAGE 517** **10/01/18**

Replace all instances of "ASTM A 325" with "ASTM F 3125 Grade A 325".

894.03 A.1 General **PAGE 517** **10/01/16**

Delete the second paragraph from Section 894.03 A.1:

894.05 Structures for Overhead Signs. **PAGE 522** **10/01/18**

Replace all instances of “ASTM A 325” with “ASTM F 3125 Grade A 325”.

894.05 A General **PAGE 522** **10/01/16**

Replace Section 894.05 A with the following:

A. General.
Galvanize all materials requiring galvanization according to Section 854, “Galvanizing” after fabrication.

Submit work drawings for all structures for overhead signs according to Sections 105.08 A.3, “Additional Section 600 Work Drawing Submittal Requirements”.

1. Welding.

a. General.
Perform all steel welding according to the specifications for welding of steel structures in the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

b. Treatment of Welded Areas.
Punch a minimum 3/4 inch hole into chords to facilitate galvanizing the struts and diagonal tubes. Provide two 1/2 inch holes at the top and bottom of the chords on the capped end to facilitate galvanizing. Provide on the end tower vertical columns two 1/4 inch holes in the base plate and two 3/4 inch holes at the top of each column to facilitate galvanizing.

c. Repair Galvanization.
Repair damaged galvanization according to Section 854, “Galvanizing”.

894.05 B.2 Round-Tapered or Octagonal-Tapered Tubes **PAGE 523** **10/1/16**

Replace the second paragraph of 894.05 B.2 with the following

Retain major dimensions, such as truss cross section and length, and end towers vertical dimensions. If this option is chosen, furnish to the Engineer all necessary calculations and drawings used in designing these structures. Design the structures according to the latest issue of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. Use a wind velocity of 90 mph to compute the wind pressures on the signs and structures.

895.05 A General **PAGE 528** **10/01/16**

Replace Section 895.05 A with the following:

A. General.
Design lighting poles to meet the requirements of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

When a breakaway base is required, provide a manufacturer certification that the light standard base meets the AASHTO requirements for both breakaway and structural adequacy.

Use a wind velocity of 90 mph with the following height and exposure correction factor:

- If the traffic signal is less than 33 feet use a $K_z{}^a$ of 1.00; or
- If the traffic signal is greater than 33 feet use the $K_z{}^a$ found in Table 3.8.4-1 “Height and Exposure Factors, $K_z{}^a$”.

Apply different wind pressures to the structure at different heights rather than using an average wind pressure for the entire height of the structure.

Design each structural component on light standards 55 feet or greater for fatigue using the requirements of Table 11.6-2, “Fatigue Importance Categories for HMLT’s”.

Furnish all the necessary calculations and drawings used in the design of poles with the shop drawing submittal. A Professional Engineer duly registered in the State of North Dakota must sign, seal, and date the calculations and work drawings used in the design of lighting standards.

895.05 D Base. **PAGE 529** **10/01/18**

Replace all instances of “ASTM A 325” with “ASTM F 3125 Grade A 325”.

896.02 C Traffic Signal and Flashing Beacon Control Circuits **PAGE 547** **10/01/17**

Replace the first paragraph with the following:

Use cables that are rated for 600 volts and meet IMSA 19-1 or 20-1.

Delete the fifth paragraph.

896.05 A GENERAL **Page 549** **10/01/16**

Replace Section 896.05 A with the following:

A. Design.

Design traffic signal standards to meet the requirements of AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

Use a wind velocity of 90 mph with the following height and exposure correction factor:

- If the traffic signal is less than 33 feet use a $K_z{}^a$ of 1.00; or
- If the traffic signal is greater than 33 feet use the $K_z{}^a$ found in Table 3.8.4-1 “Height and Exposure Factors, $K_z{}^a$”.

Apply different wind pressures to the structure at different heights rather than using an average wind pressure for the entire height of the structure.

Design each structure component using the requirements of Table 11.6-1, “Fatigue Importance Factors, I_F.”

Design the components for the total deflection, with galloping, at the free end of the traffic signal arm is limited to less than 8 Inches.

Furnish all the necessary calculations and drawings used in the design of poles with the shop drawing submittal. A Professional Engineer duly registered in the State of North Dakota must sign, seal, and date the calculations and work drawings used in the design of lighting standards.

896.05 C.4 Transformer Base. **PAGE 550** **10/01/18**

Replace all instances of “AASHTO M 164” with “ASTM F 3125 Grade A 325”.

896.10 Controller Cabinet **PAGE 557** **10/01/15**

Replace the 3 with the following:

3. Provide a metal weatherproof cover that blocks air flow in cold weather, and adequately covers the fan vent assembly and the louver on the door. Install a gasket to the cover and attach the cover to the inside of the cabinet. Construct the cover of the same material as the cabinet.

   Provide a weep hole in the bottom loop on each end of the cabinet full-size door.

   Build the cabinet to contain the following items:

   - All items of control equipment specified in these Specifications.

   - Provide a thermostatically-controlled minimum 250 watt strip-type heater mounted on the full-size door cover with a protective wire-mesh shield installed around the heater. Use a heavy-duty thermostat capable of being set within a temperature range of 30°F to 90°F. Activate the power to the fan and to the heater using a three-position toggle switch located on the auxiliary switch panel.

     Use a switch that operates vertically up and down with the:

     - Up position being FAN (power to the fan on and power to the heater off);
     - Center position being OFF (power to both the fan and the heater off); and
     - Down position being HEATER (power to the heater on and power to the fan off).

     Provide an electrical three-prong twist lock-type plug between the switch and the heater. Mount the heater thermostat on the auxiliary switch panel. Make the connection to the heater with stranded copper wire having 200°C insulation and non-insulated, solderless terminals.

   - Provide three duplex receptacles with ground fault interrupter. Fuse the receptacles ahead of the main circuit breaker.

   - Provide a switched lamp socket, fuse the lamp socket ahead of the main circuit breaker.

   - Include the following in the maintenance switches inside the cabinet:
     - Stop time control.
     - Timer power.
     - Flash.
     - Vehicle detector input for each phase in use and all future phases.
     - Pedestrian input for each phase in use and all future phases.

10/1/2014

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
PRICE SCHEDULE FOR MISCELLANEOUS ITEMS (PS-1)

The Contractor agrees to accept the following unit prices for each listed item of work and or material when no project contract unit price exists for that item. Each price listed will be full compensation for the cost of labor, material and equipment necessary to provide the item of work and/or material, complete in place, including (but not limited to) royalty, disposal of unsuitable material, equipment rental, sales tax, use tax, overhead, profit, and incidentals.

Each listed item is referenced to the Standard Specifications by Section number and Section name.

SECTION NO.	SECTION NAME	ITEM NAME	PRICE PER ITEM
107.08	Haul Roads	Water	$27 per M Gal
107.08	Haul Roads	Bitumen for Mix	Invoice Price [1] + 10%
107.08	Haul Roads	Bituminous Mix	$42 per Ton [2]
107.08	Haul Roads	Aggregate Base	$17 per Ton [2]
203.01 B	Rock Excavation	Rock Excavation	$11 per CY
203.01 C	Shale Excavation	Shale Excavation	Common Excavation Price + $1.00 per CY
203.01 D	Muck Excavation	Muck Excavation	$9 per CY
203.05 H.3	Embankment	Overhaul	$1.40 per CY - Mile
260	Silt Fence	Mucking Silt Fence	$3.90 per LF
260	Silt Fence	Removal of Silt Fence [3]	$4.25 per LF
261	Fiber Rolls	Mucking of Fiber Rolls	$3.90 per LF
261	Fiber Rolls	Removal of Fiber Rolls [3]	$4.25 per LF
420.04 E	Bituminous Seal Coat	Blotter Sand	$27 per Ton [2]
430.04 G	Hot Mix Asphalt (Exc. Material Hauled to Disposal Area)	Bituminous Mixture	Machine Placed: Bid or Invoice Price + $31 per ton Hand Placed: Bid or Invoice Price + $48 per Ton
704	Temporary Traffic Control	Flagging	$32 per MHR

[1] Price paid for bituminous material will be invoice price plus freight costs.

[2] Price Includes haul up to 10 miles. Payment for haul exceeding 10 miles will be according to Section 109.03 E, “Force Account.” The haul distance for aggregate base and bituminous mix will be based on the average haul. The haul distance for blotter sand will be from the point where the haul begins to the point where it enters the project.

[3] This is only for pre-existing items that were not installed under the Contract.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION: DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM

PROJECT SU-8-992(040)041 (PCN-21569)

RACE/GENDER CONSCIOUS GOAL The DBE goal for this project is: **7.00%**

NDDOT Contact Information	
Contractor Sign In & Submit Advertisements at: https://apps.nd.gov/dot/cr/csi/login.htm	Amy Conklin, DBE Program Administrator 701-328-3116 - or - aconklin@nd.gov
Submit quotes and post bid documentation to: subquotes@nd.gov or Fax: 701-328-0343	Ramona Bernard, Civil Rights Division Director 701-328-2576 - or - rbernard@nd.gov
Search DBE Directory https://dotnd.diversitycompliance.com/	All times are stated in Central Time. **The day of the bid opening is not counted as one of the business days.**

PURPOSE

These provisions:

1. Provide an explanation of the federal law and outline the obligations to comply with the Federal DBE requirements applicable to this contract,
2. Explain the process NDDOT will follow to evaluate bidders' efforts to obtain DBE participation
3. Provide the standards NDDOT will use to measure compliance with the requirements
4. Identify sanctions for failing to comply with DBE program requirements.

This Special Provision is written per 49 CFR Part 26 and Appendix A – Guidance Concerning Good Faith Efforts.

Contract award will be made to the lowest responsive bidder whose proposal substantially complies with the requirements prescribed herein, has submitted all required documentation and who has met the goal for DBE participation, or has demonstrated, to the satisfaction of the Department, adequate good faith efforts to do so.

QUOTES:

All bidders and all subcontractors over $500,000 (regardless of whether they are apparent low bidder or their quote was used on a project in this bid opening) should submit a completed SFN 52013-List of Businesses Submitting Quotes (Form B), or a spreadsheet containing all the information on Form B by 4:00 pm CST within 5 business days after the bid opening. (**Copies of quotes are no longer accepted**) This process is necessary in identifying "ready, willing, and able" contractors upon which to base the NDDOT Triennial DBE Goal. The number of contractors and the types of work they have bid/quoted will be used in the calculation of the DBE goal for each goal setting period.

All subcontractors, suppliers, manufacturers, regular dealers, vendors, and brokers should fax or email quotes to the Department no later than 9 PM the day before each bid opening.

All DBEs quoting on this project MUST submit all quotes and a list of contractors they quoted to NDDOT no later than 9 PM the day before each bid opening.

Prime contractors preparing to bid on NDDOT highway projects have requested that quotes be sent to them the day before the bid opening by:

2 PM Central - Suppliers (brokers/regular dealers), vendors, & manufacturers
5 PM Central - Subcontractors under $500,000
8 PM Central - Subcontractors over $500,000

REQUIREMENTS FOR ALL BIDDERS:

- ALL BIDDERS are strongly encouraged to submit all documentation at the time of bid opening.
- Must submit Form A with bid package at the time of bid opening.
- Completed Form B, or a spreadsheet containing all the information on Form B, should be submitted by 4:00 pm CST within 5 business days after the bid opening.
- Prime contractors are strongly encouraged to submit their bid documentation in one electronic file. Forms incorrectly submitted could result in a technicality, forcing the Department to award to the next responsive bidder.

REQUIREMENTS FOR ALB WHEN THE PROJECT DBE GOAL IS MET AT THE TIME OF BID OPENING:

- Follow REQUIREMENTS FOR ALL BIDDERS above, and in addition, include:
- Must submit SFN 52160 Notification of Intent to use (Form C) for DBE's used in all tiers of subcontracting by 4:00 pm CST 2 business days after the bid opening.

REQUIREMENTS FOR ALB WHEN THE PROJECT DBE GOAL IS NOT MET AT THE TIME OF BID OPENING:

- Follow REQUIREMENTS FOR ALL BIDDERS above, and in addition, include:
- A cover letter, submitted with SFN 60829 explaining actions taken attempting to meet the project goal. See Page 3, questions # 1-8 to help explain your actions in the cover letter. Cover letter must be submitted by 4:00 pm CST 2 business days of the bid opening.
- SFN 60829, Contractor Good Faith Efforts Documentation, (GFE) **and** supporting documentation must be submitted by 4:00 pm CST 2 business days of the bid opening. Failure to demonstrate GFE may cause the Department to "Not Award".
- If a non-DBE is used over a DBE, or a prime wants to self-perform, a bid differential table in SFN 60829 should be completed, showing a comparison of like items, (apples to apples) along with the reason for not using the DBE. (Primes may need to supplement the DBE or Non-DBE quote to get an apples to apples comparison). Any Bid Differential (BD) that does not clearly address all items quoted by the DBE, the non-DBE, prime or combination of quotes, will not be considered.
- Must submit Form C for DBE's used in all tiers of subcontracting & non-DBE's used in a bid differential by 4:00 pm CST 2 business days after the bid opening.

GOOD FAITH EFFORTS

The bidder is responsible for taking actions toward achieving the project goal as required by 49 CFR Appendix A to Part 26 – Guidance Concerning Good Faith Efforts. Therefore, it is a bidder's responsibility to either achieve the project goal at the time of bid opening, or to follow a course of actions that would, by their scope, intensity, and appropriateness, reasonably be expected to obtain sufficient DBE participation, even if they were not fully successful.

NDDOT will measure the bidder's efforts by actions demonstrated/taken prior to submitting their bid. The description and documentation of these efforts must adequately show NDDOT that the bidder took all necessary and reasonable steps to achieve the DBE goal.

The efforts employed by the bidder should be those that one could reasonably expect if the bidder were actively and aggressively trying to obtain DBE participation sufficient to meet the DBE contract goal.

The following questions are not intended to be a checklist or an exhaustive list of what is considered in evaluating GFE, but will help organize your explanation of your efforts to obtain DBE participation in your cover letter.

1) Did you use the DBE Directory to solicit DBEs who are certified to perform the work on the project?
2) Did you send timely written (fax, e-mail, etc.) solicitation notices to certified DBE's?
3) Did you maintain a follow-up log to track responses to your initial solicitations?
4) Did you provide DBEs with information about the plans, specifications, and requirements of the contract so they are able to respond to your solicitation in a timely manner?
5) Did you solicit DBE participation for work you could have self-performed?
    a. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. The fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable.
6) Did you ask your firm's subcontractors to solicit DBE work for the subcontractors' portion of the project?
7) Did you receive and evaluate all quotes given? If not, what are your reasons?
    a. The quotes **must be** converted to an acceptable format, whether the quotes are calculated by ton-mile, hour, acre or square mile.
8) **Did you advertise** using one or both of the following options? Submit a copy with your Good Faith Efforts documentation.

    OPTION 1: Place an advertisement soliciting DBE participation using the electronic DBE Advertisement System.

    - Submit the required information online at https://apps.nd.gov/dot/cr/csi/login.htm no later than noon, 15 calendar days before the bid opening.

    OPTION 2: Directly contact by email or fax, all DBEs certified in the specific work type (NAICS) required for the job.

    - Make contact with DBEs no later than 5 pm 7 calendar days before the bid opening.
    - Use the DBE Directory to determine the DBE firms certified in the work to be subcontracted.

    Either method of advertisement must:
    - Provide the name, email address, telephone, and fax number of the company contact who will be available to discuss and/or receive quotes.
    - Offer assistance to DBEs in interpreting plans; quantities; expected overtime; project scheduling; pit and batch plan locations, length of haul, type of road; method of measurement (seeding by the mile or acre, hauling by hour or by ton-mile) or other issues that may affect a price quote.

Indicate your intention to bid and/or receive quotes on specific jobs by using the Department's Bid Opening Sign in System

- The **Bid Opening Sign-In** web application located at https://apps.nd.gov/dot/cr/csi/login.htm.

  Sign-In opens at 8 am 7 calendar days prior to the bid opening and closes at 11 AM the day before the bid opening.
- Fill in the online form fields as required.
- Log in to download the "Bid Opening Contact Report" at https://apps.nd.gov/dot/cr/csi/public/listBidOpenings.htm

EVALUATION OF GOOD FAITH EFFORTS

Proposals may be considered irregular and may be rejected by the Department if there is non-compliance with the DBE requirements, or submitted documentation is incorrect or received after 4:00 pm CST 2 business days after the bid opening. The Department reserves the right to waive minor irregularities and/or certain elements of this special provision.

Federal regulations require the Department to scrutinize a bidder's documented good faith efforts (see appropriate actions on pages 3-4).

If the Committee determines the ALB has adequately demonstrated GFE, the committee will recommend "Award".

If the Committee determines the ALB has not adequately demonstrated GFE, the committee may recommend "Not Award". Some of the factors considered are:

1. Whether the ALB fails to meet the contract goal, but others meet it
2. If the ALB fails to meet or exceed the average DBE participation of other bidders
3. If the ALB fails to submit adequate GFE documentation by 4:00 pm CST 2 business days after the bid opening
4. If the ALB submits no documentation of its good faith efforts (GFE)
5. If the ALB submits incorrect forms

Upon notification of a recommendation for a Not Award determination, the Director's designee(s) will consider the Committee's recommendation. If the Designee(s) agrees with the Committee's recommendation, the Designee(s) will contact the ALB to inform them of the determination, the reasons for it, and that administrative reconsideration is available.

Administrative Reconsideration 49 CFR § 26.53 (d)

- An in-person reconsideration meeting is available at the ALB's request.
- The Director's designee(s) will consider any information submitted prior to or presented at the hearing as to whether the ALB met the goal or made adequate efforts to do so.
- The NDDOT reconsideration decision will be made by the Director's designee(s), who will not have taken part in the original determination.
    - If the Director's designee(s) determines the ALB made adequate good faith efforts to meet the goal, the job will be recommended for award.
    - If the Director's designee(s) determines that the ALB has failed to sway the decision from "Not Award", the ALB will receive written notice of the decision.
- Director will make the final decision and may exercise such discretion as deemed appropriate.
- The decision is not subject to administrative appeal to the U.S. Department of Transportation (49 CFR § 26.53(d)(5)).

POST-AWARD REQUIREMENTS

FEDERAL AUTHORITY

The following paragraph must be included in all subcontracts of all tiers in accordance with 49 CFR § 26.13(b):

> The contactor or all tiers of subcontractors shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR § 26.13 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as NDDOT deems appropriate which may include, but is not limited to:
>
> (1) Withholding monthly progress payments;
> (2) Assessing sanctions;
> (3) Liquidated damages; and/or
> (4) Disqualifying the contractor from future bidding as non-responsible

It is the prime contractors' responsibility to ensure all tiers of subcontractors, brokers, manufacturers, suppliers, vendors, and regular dealers comply with the requirements of this special provision. In addition, the prime contractor has the responsibility to monitor DBE performance on the project, and to ensure that the DBE performs a commercially useful function (CUF).

PRIME CONTRACTOR'S MONITORING, RESPONSIBILITIES, REPORTING

For the life of the project, the prime contractor is responsible for the DBEs listed on Form C and for the specific spec/code items or products that the prime committed to during the award process.

The prime is responsible to:

- Report payments to DBEs used to meet the project goal. **Payments on the contract must be entered and stored in the CCS. Use of CCS on the project eliminates the requirement to submit SFN 60638 and SFN 14268.**
- Invite and encourage all subcontractors and all DBEs listed on Form C to the pre-construction conference.
- Provide minutes to any DBE not in attendance at the pre-construction conference.
- Ensure their firm as well as any subcontractors, manufacturers, and regular dealers/suppliers comply with the requirements of this special provision.
- Provide all subcontractors with Proposed Project Schedules and any necessary updates.
- Monitor DBE performance on the project.
    - Submit SFN 60597, DBE Performance – Commercially Useful Function (CUF) Certification to the project engineer with SFN 5682- Prime Contractor's Request to Sublet. Project engineers will not approve Requests to Sublet without the CUF Certification.
- Maintain project records and documentation of payments to DBEs for three years following acceptance of the final payment from NDDOT (per FHWA-1273, Section II Nondiscrimination #11).
    - This reporting requirement also applies to any certified DBE.
    - NDDOT may perform interim audits of contract payments to DBEs to ensure that the actual amount paid to DBEs equals or exceeds the dollar amount stated on Form C.
    - Make these records available for inspection, upon request, by an authorized representative of the NDDOT or USDOT.

If SFN 60597, and reports of payment are not received in a timely manner, progress payments will be withheld from the prime until submitted.

If award of the contract is made based on the contractor's good faith efforts, the goal will not be waived; the contractor must make good faith efforts throughout the duration of the project.

The prime contractor shall not terminate or replace a DBE subcontractor without the Department's prior written consent. 49 CFR 26.53(f) (1) i.

The Department's contract includes a provision stating:

(A) That the contractor shall utilize the specific DBEs listed to perform the work and/or supply the materials unless the contractor obtains written consent; and

(B) That, unless the Department's consent is provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE.

SFN 60595 - Replacement Approval Request must be submitted and approved prior to replacement of each DBE firm(s), or Non-DBE/BD(s), or any work the prime originally intended to self-perform prior to the commencement of any replacement work. No payment will be made if work commences without written approval. The form may be accessed at the Department's website: http://www.dot.nd.gov/forms/sfn60595.pdf

If the prime has not achieved the goal and additional work becomes available, the prime must follow the replacement approval request process using SFN 60595.

EXCEPTION FOR REPLACEMENTS DUE TO PUBLIC NECESSITY

When replacement work is required as a matter of public necessity, (e.g., safety, storm water issues), the contractor must immediately notify the project engineer and the DBE or Non-DBE/BD intended at the time of award. If the DBE or Non-DBE/BD is unable to perform the work within the time specified by permit or administrative rule, the DBE or Non-DBE/BD must notify the prime immediately; and, within one business day, a written explanation must be submitted to the prime with a copy to the project engineer. The project engineer refers all replacement approval requests to the Assistant District Engineer (ADE). In a case of public necessity, the ADE has the authority to allow the contractor to self-perform the replacement work or to find another contractor to complete it.

TERMINATION FOR CAUSE

A DBE or Non-DBE/BD may not be terminated without the Department's prior written consent. (49 CFR 26.53(f)(1)(I))

The Department will provide such written consent if the Department agrees that the contractor or subcontractor has good cause to terminate the DBE firm or Non-DBE/BD.

Circumstances which may be considered good cause for termination include when the listed DBE or Non-DBE/BD:

- Fails or refuses to execute a written contract
- Fails or refuses to perform the work of its subcontract in a way consistent with the contract and/or with normal industry standards, provided, that good cause does not exist if the failure or refusal of the listed DBE or Non-DBE/BD to perform its work on the subcontract results from the bad faith or discriminatory action of the prime or subcontractor
- Fails or refuses to meet the prime contractor's reasonable nondiscriminatory bond requirements
- Becomes bankrupt, insolvent, or exhibits credit unworthiness
- Is ineligible to work on public works projects because of Federal Highway Administration suspension and debarment proceedings.
- Is ineligible to receive DBE credit for the type of work required
- Dies or becomes disabled with the result that the listed DBE or Non-DBE/BD is unable to complete its work on the contract
- Other documented good cause that the Department determines compels the termination of the listed DBE or Non-DBE/BD

Good cause does not exist if the prime contractor or subcontractor seeks to terminate a DBE or Non-DBE/BD which was relied upon to obtain the contract so that the contractor can self-perform the work for which the DBE or Non-DBE/BD was engaged or so that the contractor can substitute another DBE or Non-DBE contractor after contract award.

The contractor must immediately give written termination notice to DBE or the Non-DBE/BD. At the same time, SFN 60595 and its supporting documentation must be provided to the project engineer for review and analysis of the reasons for the intended termination.

The contractor must give the DBE or Non-DBE/BD 5 business days to respond to the termination notice. Within that time, the DBE or Non-DBE/BD should respond with a written explanation of their reasons and/or objections to the proposed termination and specifically address why the Department should deny the contractor's request. This explanation should be submitted in reply to the contractor with a copy to the project engineer.

The project engineer will send the contractor's SFN 60595, the DBE or Non-DBE/BD's written response(s) and any other accompanying documentation to the Civil Rights Division (CRD). If the CRD concurs that a termination is warranted, the contractor must seek a DBE to perform the work.

All DBEs currently certified in the specific area of work to be performed, must be contacted in writing or by phone, and quotes solicited. If available, a DBE will be selected to perform a dollar value of work, equal to the value of the commitment not achieved, unless the contractor can demonstrate the DBE quote is unreasonable, using the same comparison in section "Good Faith Efforts Documentation."

Upon receipt of appropriate written GFE documentation, and prior to commencement of any replacement work, CRD will consider the contractor's efforts and provide a final written decision to the project engineer.

In instances where trucking replacements are sought, DBEs and/or Non-DBEs as allowed by regulation must be selected to cover all the trucking required until sufficient participation is met.

UNFULFILLED OBLIGATIONS

The Department requires SFN 60595 and its supporting documentation when a contractor, DBE, or Non-DBE/BD does not fulfill her or his obligations in any of the following situations:

- The prime contractor is unable to perform the full amount of work committed to be completed, by the prime's workforce and equipment, at the time of award, or
- The DBE or Non-DBE/BD to which the prime contractor committed using at the time of award, is unable to perform the full amount of work, or
- The DBE or Non-DBE/BD withdraws voluntarily from the project and provides to the prime written notice of its withdrawal.

SFN 60595 and its supporting documentation must be provided to the project engineer for review and analysis. If the DBE or Non-DBE/BD is not able to perform, the prime contractor must provide written documentation from the DBE or Non-DBE/BD as to the reasons. The project engineer refers all replacement approval requests to the ADE. The Civil Rights Division will provide a written final determination to the project engineer.

If the Department concurs that a substitution is warranted, the prime contractor will seek a DBE to perform the work. All DBEs currently certified in the specific area of work to be performed, must be contacted in writing or by phone, and quotes solicited. If available, a DBE will be selected to perform a dollar value of work, equal to the value of the commitment not achieved, unless the contractor can demonstrate the DBE quote is unreasonable, using the same bid differential comparison in section "Good Faith Efforts Documentation."

In instances where trucking replacements are sought, DBEs and/or Non-DBEs as allowed by regulation must be selected to cover all the trucking required until sufficient participation is met.

The prime contractor is responsible for any additional costs incurred as a result of the prime contractor's failure or the subcontractor quoting over $500,000 to fulfill the original commitment or the DBE or Non-DBE/BD's failure to perform.

NON-COMPLIANCE, FAILURE TO PERFORM, AND SANCTIONS

If the Department determines that a contractor should be sanctioned, the Department will provide written notice to the contractor informing them of the sanction for the following:

- Not submitting required documentation in a timely manner
- Not paying a DBE or non-DBE subcontractor in a timely manner
- Not having a DBE perform the specified dollar amount of work (subject to plan quantity changes) tasks or bid items
- For otherwise not fulfilling the requirements of this DBE special provision
- Repeated instances of failure to perform the contract requirements
- Repeated instances of late contract-related payments
- documented fraudulent practices

If the Department determines that a DBE should be sanctioned, the Department will provide written notice to the DBE informing them of the sanction for the following:

- Failure to perform work as specified in the contract
- Failure to pay contract-related bills in a timely manner
- Failure to perform a commercially useful function
- Failure to notify the prime contractor orally and in writing if they are unable to perform a commercially useful function
- Otherwise not fulfilling the requirements of this DBE special provision

If sanctions are applied, the contractor or the DBE may make a written request to the Department for reconsideration. The contractor or the DBE must provide a written statement defending their actions within 3 business days.

If the Department does not receive a written request for reconsideration, or if the contractor or DBE does not provide sufficient evidence that the provisions have been met, the Department may suspend the contractor or the DBE

bidding or quoting privileges and not allow the contractor or the DBE to participate in one or more scheduled bid openings after the date the sanction is imposed.

Further sanctions which may be imposed by the Department for failure on the part of the contractor may include, but are not limited to:

- Withhold the contractor's progress payment until the contractor complies with all DBE contract provisions
- Deduct, from the contractor's progress payments, the dollar amount of DBE participation committed to but not achieved by the contractor
- Find the contractor in default
- Liquidated damages
- Disqualifying the contractor from future bidding
- Take other corrective action determined by the Department to be appropriate
- Any combination of the above.

NDDOT MONITORING AND ENFORCEMENT MECHANISMS

The Department will bring any false, fraudulent, or dishonest conduct in connection with the DBE program to the attention of USDOT. USDOT may pursue action as provided in 49 CFR § 26.107. Actions include referral to the Department of Justice for criminal prosecution or referral to the USDOT Office of Inspector General for action under suspension and debarment, or Program Fraud and Civil Remedies rules. The Department will also consider similar action under its own legal authority, including responsibility determination in future contracts.

COMMERCIALLY USEFUL FUNCTION

DBEs are required to perform a commercially useful function (CUF). CUF refers to those services the DBE is certified to perform. Certified services for each DBE are listed in the online DBE Directory. It is a DBE's responsibility to immediately notify the prime contractor in writing if the DBE is unable to perform a CUF or the services indicated on Form C.

The contractor must certify that DBEs working on the prime's contract are performing a commercially useful function. Submit SFN 60597, DBE Performance – Commercially Useful Function Certification to the project engineer with SFN 5682 - Contractor's Request to Sublet. Project engineers will not approve the Requests to Sublet without the CUF Certification. A review of the certification must be performed by the project engineer to determine whether the contract dollar value of the DBE's work may be counted toward the project goal.

The Department counts participation to a DBE contractor toward DBE goals only if the DBE is performing a CUF on that contract.

A. A DBE performs a CUF when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a CUF, the DBE must also be responsible, with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material, installation and paying for the material itself. 49 CFR § 26.55(c)(1)

B. A DBE does not perform a CUF if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation. 49 CFR § 26.55(c)(2)

C. If a DBE does not perform or exercise responsibility for at least 30 percent of the total cost of its contract with its own work force, the Department must presume that it is not performing a CUF. 49 CFR § 26.55(c)(3)

D. When a DBE is presumed not to be performing a CUF as provided in paragraph C (above), the DBE may present evidence to rebut this presumption. 49 CFR § 26.55(c)(4)

E. The Department's decisions on CUF matters are subject to review by Federal Highway Administration, but are not administratively appealable to USDOT. 49 CFR § 26.55(c)(5)

COUNTING RACE/GENDER CONSCIOUS DBE PARTICIPATION - 49 CFR § 26.55

The Department does not count the participation of a DBE subcontractor toward a contractor's final compliance with its DBE obligations on a contract until the amount being counted has actually been paid to the DBE. 49 CFR § 26.55 (h)

The Department will count DBE participation toward our overall annual goal as provided in 49 CFR § 26.55 as noted below.

1. The Department will use the following factors in counting DBE trucking participation.

   A. For purposes of this section, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE. 49 § 26.55(d)(7)

   B. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract. 49 CFR § 26.55(d)(1)

   C. The DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract and receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs. 49 CFR § 26.55(d)(2-3)

   D. The DBE may lease trucks and drivers from another DBE firm and receives credit for the total value of the transportation services the lessee DBE provides. 49 CFR § 26.55(d)(4)

   E. The DBE may also lease trucks with drivers and is entitled to credit for the total value of transportation services provided by non-DBE leased trucks equipped with drivers not to exceed the services under items 1C and 1D. Additional participation by non-DBE owned trucks equipped with drivers receives credit only for the fee or commission it receives as a result of the lease arrangement. 49 CFR § 26.55(d)(5)

      Example to 1D: DBE Firm X uses two of its own trucks on a contract. It leases two trucks with drivers from DBE Firm Y and six trucks **with drivers** from non-DBE Firm Z. DBE credit would be awarded for the total value of transportation services provided by Firm X and Firm Y, and may also be awarded for the total value of transportation services provided by four of the six trucks provided by Firm Z. In all, full credit would be allowed for the participation of eight trucks. DBE credit could be awarded only for the fees or commissions pertaining to the remaining trucks Firm X receives as a result of the lease with Firm Z.

   F. The DBE may lease trucks without drivers from a non-DBE truck leasing company and if the DBE uses its own employees as drivers, it is entitled to credit for the total value of these hauling services.

      Example to paragraph 1F: DBE Firm X uses two of its own trucks and drivers on a contract. It leases two additional trucks and drivers from non-DBE Firm Z. Firm X uses its own employees to drive the trucks leased from Firm Z. DBE credit would be awarded for the total value of the transportation services provided by all four trucks. 49 § 26.55(d)(6)

2. Only the value of the work actually performed by the DBE counts toward the project goal when a DBE participates in a contract provided the DBE is certified in this work.

   A. The Department counts the entire amount of that portion of a construction contract, or other contract not covered by item 2. B, that is performed by the DBE's own forces. Included are the cost of supplies and materials obtained by the DBE for the work of the contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate). 49 CFR § 26.55 (a)(1)

   B. The Department counts the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service for which they are certified, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a USDOT-assisted contract, toward DBE goals, if the Department determines the fee to be reasonable and not excessive. 49 CFR § 26.55 (a)(2)

   C. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is also a DBE. 49 CFR § 26.55 (a)(3)

3. The Department counts expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:
   A. If the materials or supplies are obtained from a DBE manufacturer, count 100% of the cost of the materials or supplies toward DBE goals. 49 CFR § 26.55 (e)(1)(i)
   B. If the materials or supplies are purchased from a DBE regular dealer, count 60 percent of the cost of the materials or supplies toward DBE goals. 49 CFR § 26.55 (e)(2)(i)
   C. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers within the meaning of 3B (above) 49 CFR § 26.55 (e) (2) (ii) (C)
   D. With respect to materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, if the Department determines the fees to be reasonable and not excessive. Do not count any portion of the cost of the materials and supplies themselves toward DBE goals. 49 CFR § 26.55 (e) (3)
   E. The Department determines the amount of credit awarded to a firm for the provisions of materials and supplies (e.g., whether a firm is acting as a regular dealer or a transaction expediter) on a contract-by-contract basis. 49 CFR § 26.55 (e)(4)
4. If a firm is not currently certified in ND at the time of the execution of the contract, the Department does not count the firm's participation toward any DBE goal. 49 CFR § 26.55 (f)
5. The Department does not count the dollar value of work performed under a contract with a firm after it has ceased to be certified toward the Department's overall annual goal. 49 CFR § 26.55 (g)

DEFINITIONS

The definitions specified below apply only to this Special Provision and may contain differences from NDDOT Standard Specifications.

Achievement means any DBE certified service dollar amount committed to at the time of award. Any achievement must be supported by a request to sublet and Monthly DBE Payment Records for each DBE.
Aggregate providers are considered subcontractors rather than regular dealers/suppliers, regardless of the amount of their quote.
Apparent low bidder (ALB) means the bidder whose bid is read as low bid at the bid opening.
Bid differential (BD) means written documentation provided by the low bidder comparing a Non-DBE quote to a DBE quote.
Bid Opening Sign-In System means the Department's online system to which all prime contractors and subcontractors must register to indicate their interest in quoting or bidding prior to each bid opening.
Bidder/prime contractor means bidders who are submitting proposals on this project, regardless of the size of the highway construction projects; a contractor intending to serve as the prime contractor.
Blanket quote means when a business provides the same quote, for all projects, at a bid opening, using the same price, at one rate, not project specific. Blanket quotes for the construction season are not allowed, i.e. trucking, striping, signing, construction supplies, etc.
Commercially Useful Function describes a DBE's responsibilities and involvement in a project, see section Commercially Useful Function of this SP.
Commitment means the dollar amount of work the DBE will complete according to the bidder's submitted proposal.
Contractor means all DBE and Non-DBE firms, including prime contractors, subcontractors (under/over $500,000), brokers, vendors, regular dealers/suppliers, and manufacturers at any tier.
DBE Goal means a percentage of the total contract targeted for the hiring of DBE subcontractors to do specific bid items for which the DBE has been certified to perform. Project goals are set by assessing the project's bid items, location, whether DBEs are available to do the work.
DBE Participation means the percentage achieved when the dollar amount committed to the DBE is divided by the dollar amount of all contract items.
DBE Participation Review summarizes the prime's participation at the time of award. A replacement approval request must be submitted to substitute a firm for any DBEs reported as being used at the time of award.
Department means the project owner regardless of whether the owner is NDDOT, a city or a county project.

Disadvantaged business enterprise or DBE means a for-profit small business concern that is certified by the Department and listed in the DBE Directory available on the Department's web site. DBEs must first be certified in the work intended before any DBE achievement may be counted toward the project goal.
Equipment supplier is a firm which provides equipment for sale or lease, without operators, and whose primary business function is equipment sales or leasing.
Good Faith Efforts (GFE) means efforts made by the prime contractor to achieve a DBE goal. This includes but is not limited to providing assistance to DBEs in preparing their quotes, advertise, sign in, etc.
Manufacturer means a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications. 49 CFR § 26.55 (e) (1) (ii)
Materials means aggregate, steel, petroleum products, concrete, asphalt, and other construction supplies.
NAICS Codes means industry codes assigned by North American Industry Classification System. When certified, DBE businesses are assigned NAICS codes which are identified in the DBE Directory.
NDDOT Certification & Compliance System (CCS) refers to the online compliance reporting system whereby contractors report/submit job related payments, commitments, and Utilization Plan documentation.
Non-DBE means a contractor, subcontractor, supplier (broker or regular dealer), vendor, or manufacturer that has not been certified as a DBE by the NDDOT Uniform Certification Program.
Non-DBE used in bid differential (Non-DBE/BD) means a Non-DBE which, at the time of award, was approved for use due to a price comparison with a DBE. A Form C with the Non-DBE/BD must be included in the DBE Good Faith Efforts Review documentation. A replacement approval request must be submitted when the Non-DBE/BD is unable to complete the work.
Positive Contact means active and documented solicitation of DBE and other subcontractors. Advertising the prime's intention to bid or contacting individual DBEs is deemed a positive contact.
Project owner means any political subdivision such as a city or county which provides match to federal highway funds and uses NDDOT's electronic bidding system to let their projects to bid. The Department "owns" state projects.
Quoter means a DBE or a Non-DBE subcontractor (under/over $500,000), brokers, vendors, regular dealers/suppliers, and manufacturers at any tier who submits quotes to another contractor.
Race/Gender Conscious (RGC) goals are those focused specifically on assisting DBEs.
Responsible Bid Proposal means a bidder's proposal in which the project goal has been achieved, or the bidder demonstrates Good Faith Efforts (GFE) as outlined in this Special Provision.
Subcontractor means any firm intending to perform work, or intending to perform work and supply the materials, which were intended for their work on the project. All subcontractors must attach a list of DBE subcontractors intended for use to their quote when submitting it to the prime contractor.
Subcontractor quoting over $500,000 means a subcontractor whose quote is over $500,000 on any project and who is not a supplier, broker, vendor, regular dealer, or manufacturer. All aggregate providers are considered subcontractors, regardless of the amount of their quote.
Supplier means a party providing goods, services, and supplies on the project.
Broker means an agent who, without having custody of the property, a) negotiates contracts of purchase, work, lease, or sale; b) buys and sells goods; or c) negotiates between buyers and sellers. See Counting DBE Participation section.
Regular Dealer means a DBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials supplies, articles, or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. See Counting DBE Participation section.
Tier means various levels of contractors on the job. For example a prime contractor's subcontractor (B) is referred to as the second tier. When B subcontracts with C, C becomes the third tier, etc.
Tied quote means the quote will be considered only if all of the bid items are included.
Untied quote means that any item or group of items quoted may be used for price noted on the quote whether one or all are used.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
EEO AFFIRMATIVE ACTION REQUIREMENTS

March 15, 2014

Bidders shall become familiar with the following requirements and be prepared to comply in good faith with all of them:

APPENDIX A

Notice or Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246).

1. The Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

   a. Goals for Female Participation in Each Trade – Statewide 6.9%

   b. Goals for Minority Participation in Each Trade by County:
   Barnes, Cass, Dickey, Eddy, Foster, Griggs, LaMoure, Logan,
   McIntosh, Ransom, Richland, Sargent, Steele, Stutsman, Traill 0.7%

   Grand Forks 1.2%

   Benson, Cavalier, Nelson, Pembina, Ramsey, Towner, Walsh 2.0%

   Burleigh, Morton 0.4%

   Adams, Billings, Bowman, Dunn, Emmons, Golden Valley, Grant,
   Hettinger, Kidder, Mercer, Oliver, Sheridan, Sioux, Slope, Stark, Wells . . .1.3%

   Bottineau, Burke, Divide, McHenry, McKenzie, McLean, Mountrail,
   Pierce, Renville, Rolette, Ward, Williams 4.4%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR 60-4 shall be based on its implementation of the Equal Opportunity Clause specific a - firmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a)

and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall notify the Office of Fe eral Contract Compliance Programs, in writing, within ten working days of award of any subcontract in excess of $10,000. The notification shall include the name, address, and telephone number of the su - contractor and their employer identification number; dollar amount of the contract, estimated starting and completion dates of the contract; the contract number; and geographical area in which the contract is to be performed.

   Notification should be sent to

   U.S. Department of Labor/ESA
   OFCCP
   Denver District Offic
   1244 Speer Boulevard
   Denver, Colorado 80202
   Phone: 720-264-3200
   Fax: 720-264-3211

4. As used in this "Notice" and in the contract for this project, the "covered area" is the State of North Dakota.

APPENDIX B

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications

   a. "Covered area" means the geographical area described in the proposal from which this contract resulted.

   b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.

   c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

   d. "Minority" includes:

(1) Black (all persons having origins in any of the Black African racial groups, not of Hispanic origin);

(2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish Culture or origin, regardless of race);

(3) Asian and Pacific Islander (all persons havi g origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); an

(4) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affil - tions through membership and participation of community identification)

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the proposal from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 1246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted

in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor. (Training programs approved by the North Dakota Department of Transportation are recognized by the U.S. Department of Labor.)

7. The Contractor shall take specific affirmati actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

    a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all Foremen, Superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

    b. Establish and maintain a current list of minority and female recruitment sources; provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and maintain a record of the organization's responses.

    c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union, or if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

    d. Provide immediate written notification to the Director when the union with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

    e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to

the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the Company newspaper, annual report, etc., by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the Company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the Company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with on- site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing it with the Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students, and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minorities and women, and where reasonable, provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of the Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring

all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and Company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractors and Suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

p. Conduct a review, at least annually, of all Supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligation

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p) The efforts of a Contractor association, joint Contractor- union, Contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contracto 's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. Goals for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minorities, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action sta - dards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any subcontract with any person or firm d - barred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termin -

tion, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations u der these specifications, shall impl - ment specific affirmative action steps, at least as extensive as those standards p - scribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60 4.8.

14. The Contractor shall designate a responsible official to monitor all employment-r - lated activity to ensure that the Company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation, if an , employee identification number when assigned, social security numbe , race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form, however, to the degree that existing records satisfy this requirement, Contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
APPENDIX A OF THE TITLE VI ASSURANCES

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the Contractor) agrees as follows:

1. Compliance with Regulations: The Contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, the Federal Highway Administration, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

2. Non-discrimination: The Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

3. Solicitations for Subcontracts, Including Procurements of Materials and Equipment: In all solicitations, either by competitive bidding, or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the Contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.

4. Information and Reports: The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the Federal Highway Administration to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the Recipient or the Federal Highway Administration as appropriate, and will set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:

a. withholding payments to the Contractor under the contract until the Contractor complies; and/or
b. cancelling, terminating, or suspending a contract, in whole or in part.

6. Incorporation of Provisions: The Contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the Recipient or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
APPENDIX E OF THE TITLE VI ASSURANCES

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the Contractor) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.,* 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.),* (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.),* as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.),* (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

CARGO PREFERENCE ACT (CPA)

DESCRIPTION

The Federal Highway Administration (FHWA) in partnership with the Federal Maritime Administration (MARAD) has mandated the implementation of 46 CFR 381 making the cargo preference requirements applicable to the Federal Aid Highway Program.

The requirements of this Special Provision apply to items transported by ocean vessel.

CONTRACT REQUIREMENTS

A. General

Utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. Gross tonnage is computed separately for dry bulk carriers, dry cargo liners, and tankers.

Furnish a legible, English language copy of a rated 'on-board' commercial ocean bill-of-lading for each shipment of cargo described in the previous paragraph. Furnish the bill-of-lading within 20 days following the date of loading for shipments originating in the United States and within 30 working days following the date of loading from shipments originating outside the United States.

Furnish bills-of-lading to the Engineer and to the following:

Division of National Cargo
Office of Market Development
Maritime Administration
Washington, DC 20590

B. Subcontracts

Include the language in Section "A, General" of this Special Provision in all subcontracts issued pursuant to this contract.

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 “Contract provisions and related matters” with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1**. Instructions for Certification – First Tier Participants:**

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. **Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS ROAD CONTRACTS

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

CONTRACT SPECIAL PROVISION
MANDATORY USE OF
AUTOMATED CERTIFIED
PAYROLL

All contractors on NDDOT federal-aid projects, including city/county projects, must file weekly Certified Payrolls, as required under Davis-Bacon and Related Acts (DBRA). **The NDDOT requires the use of LCPtracker, a paperless online system for entering and filing these certified payrolls. Certified payrolls in paper form will no longer be accepted, and all contractors must file their payroll electronically.**

After award, the Prime Contractor (Prime) must:

1. Designate an individual as Prime Approver for the project. The Prime Approver will oversee DBRA payroll for all subcontractors of all tiers on the project. A contractor may inform the NDDOT Civil Rights Division (CRD) that the same individual will be Prime Approver on all projects. CRD will set up the Prime Approver Account for the project. Thereafter, the Prime Approver will have the responsibility to use the Account to approve all payroll on the project. Until payroll is approved by the Prime Approver, it cannot be viewed by the NDDOT and it is not deemed submitted to the NDDOT.

2. The prime contractor has the responsibility to assign subcontractors within the LCPtracker system to the project and to ensure that all subcontractors are aware of the necessity to file payrolls electronically and are set up within the system. Any subcontractor not on Approved Subcontractor List or the Qualified Contractor List must register and be placed one of these lists before entry of the subcontractor into LCPtracker. These lists may be found at https://www.dot.nd.gov/pacer/qualified.htm and https://www.dot.nd.gov/pacer/registered.htm. Only Prime Approvers or the CRD may enter subcontractors into LCPtracker.

3. The prime contractor has the responsibility to see that all required payrolls are filed by subcontractors of all tiers. If payroll is rejected or project staff otherwise requests a correction of payroll by any subcontractor on the project, the prime contractor has a responsibility to see that corrected payroll is submitted.

4. For further information on certified payroll, go to the NDDOT Labor Compliance/LCPtracker page at https://www.dot.nd.gov/divisions/civilrights/laborcompliance.htm. On this page, contractors will find a Getting Started on LCPtracker Guide and a Prime Approver Guide. Recorded trainings are also available on this page for both contractors and prime approvers. Contractors can obtain an LCPtracker user name and password by calling the NDDOT Civil Rights Division at (701) 328-2605 or (701) 328-2576.

09/06/2017

CONTRACT SPECIAL PROVISION
MANDATORY USE OF ONLINE
DBE PROJECT PAYMENT REPORTING

Payments made to all tiers of subcontractors must be reported electronically using the B2GNow system. Paper forms (Monthly Record of DBE Project Payments – SFN 60638) will no longer be accepted.

After award, the Prime Contractor (Prime) must:

1. Create a new account if not already in the system. Create a user for each employee who will use the system. If there is no account already set up, you can email Customer Support directly from the Account Lookup page. Your email address will be your user ID. Customer Support will email you with the information you need to log in.

2. Once the project has been awarded and the Utilization Plan (UP) has been created in the system and assigned to the contractor it must be filled out and submitted. An automated email message will be sent to a designated individual within the company alerting them that a UP is pending. Log into the system using the link provided in the email. For each contract the Prime must add all DBE and non-DBE subs being used on the project. When all information has been provided submit the UP. Civil Rights will review the UP and if everything is in order it will be approved. If changes need to be made the UP will be returned to the contractor and they will have 7 days to make the necessary adjustments and resubmit. If DBE or non-DBE subcontractors are added after the initial UP is set up the Prime can submit a request for them to be added.

3. Once the UP is submitted the project is "locked in" after Financial Management has processed the project in their system. After a UP is locked in payments from NDDOT to the Prime are reported through the system. The Prime must start reporting DBE and non-DBE subcontractor payments through the system in accordance with prompt pay guidelines outlined in the contract.

4. A user manual for UP's and recording project payments is available to the contractors within the system. After login they can go to View>>My Utilization Plans and they will find the guide on the top of the Utilization Plan screen. They do not have to have a current UP assigned to them to see this guide. The guide is also on the actual UP page when a UP is assigned to them.

5. For further information on the Certification and Compliance System, go to the NDDOT Civil Rights page at https://www.dot.nd.gov/divisions/civilrights/civilrights.htm. There is various training available on a regular basis, to sign up for training go to the main Certification and Compliance System page and click the "Training and Events" box. Contractors that need to obtain an account or need subcontractors set up within the system should call the NDDOT Civil Rights Division at (701) 328-3116 or email civilrights@nd.gov

10/3/2017

LABOR RATES FROM U.S.DEPARTMENT OF LABOR

NDDOT's *Davis-Bacon Wage and Payroll Requirements Handbook* is available at:
www.dot.nd.gov/manuals/civilrights/davisbacon.pdf

U.S.DEPARTMENT OF LABOR

STATE	COUNTY	DECISION NO.	PAGE
NORTH DAKOTA	STATEWIDE	ND180002	1
		DATE OF DECISION 1-5-18	

Revised 1-12-18 (Mod.No.1)
Revised 3-2-18 (Mod. No.2)
Revised 8-17-18 (Mod. No. 3)
Revised 10-5-18 (Mod. No. 4)

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W/Pensions	Vacation	App. Tr.	Others
CARPENTERS	$28.85	$ 7.10			
CEMENT MASONS/FINISHERS	28.85	7.10			
LINE CONSTRUCTION:					
Lineman	42.50	5.75 + 29%			
Cable Splicer	42.50	5.75 + 29%			
Line Equipment Operator	36.10	5.75 + 29%			
Groundman	24.14	5.75 + 19%			
ELECTRICIANS:					
Electrician	42.50	5.75 + 29%			
Cable Splicer	42.50	5.75 + 29%			
(Adams, Billings, Bottineau, Bowman, Burke, Burleigh, Divide, Dunn, Emmons, Golden Valley, Grant, Hettinger, McHenry, McKenzie, Mclean, Mercer, Morton, Mountrail, Oliver, Pierce, Renville, Rolette, Sheridan, Sioux, Slope, Stark, Ward and Williams Counties)					
Electrician	30.50	12.71			
Cable Splicer	28.30	11.26			
(Barnes, Benson, Cavalier, Dickey, Eddy, Foster, Grand Forks, Griggs, Kidder, La-Moure, Logan, Mcintosh, Nelson, Pembina, Ramsey, Ransom, Richland, Sargent, Steele, Stutsman, Towner, Traill, Walsh, and Wells Counties)					
Electrician (Cass County)	14.72	3.40			
WELDERS: Receive rate prescribed for craft performing operation to which welding is incidental					
LABORERS:					
Group 1 Drill Runner Tender; Flaggers and Pilot Car Drivers; General Construction Laborer; Light Truck and Pickup Driver; Pipe Handler; Sack Shaker (cement and mineral filler); Salamander Heater and Blower Tender	20.90	2.90			

1-5-18
Revised 1-12-18 (Mod. No. **1)**
Revised 3-2-18 (Mod. No. 2)
Revised 8-17-18 (Mod. No. 3)
Revised 10-5-18 (Mod. No. 4)

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W/Pensions	Vacation	App. Tr.	Others
LABORERS: (CONT.)					
Group 2 Bituminous Worker (Shoveler, Dumper, Raker, and Floater); Brick and Mason Tender; Bulk Cement Handler; Carpenter Tender; Chain Saw Operator; Chipping Hammer, Grinders, and Paving Brakers (tamper-dirt); Concrete Bucket Signalman; Concrete Curing Man (not water); Concrete Saw Operator; Concrete Vibrator Operator; Conduit Layer, telephone or electrical; Culvert Pipe Layer; Form Seller (pavement); Gas, Electric, or Pneumatic Tool Operator; Kettleman (bilum. or lead); Multiplate Pipe Layer; Power Buggy Operator, Semi-Skilled Laborer	$21.15	$ 2.90			
Group 3 Bottom Man (sanitary sewer, storm sewer, water, and gas lines); Caisson Worker; Concrete Mixer Operator (one bag capacity); Mortar Mixer	21.30	2.90			
Group 4 Drill Runner (includes Wagon Chum or Air Track); Pipe Layers (sanitary sewer, storm sewer, water, and gas lines); Powdernan, gunite and sandblast; Nozzleman; Reinforcing Steel Sellers/Tiers: Concrete Finisher Tender	22.05	2.90			
POWER EQUIPMENT OPERATORS:					
Group 1 All Cranes, 60 tons and over; Cranes doing piling, sheeting, dragline/clam work; Derrick (Guy and Stiff); Gentry Crane Operator; Helicopter Operator; Mole Operator or Tunne Mucking Machine; Power Shovel, 3-112 cy and over; Traveling Tower Crane	29.15	16.60			
Group 2 All Cranes, 211ons and up to 59 tons; Backhoe Operator, 3 cy and over; Crater Crane; Dredge Operator, 12" and over; Equipment Dispatcher; Equipment Foreman, Finish Dozer Finish Motor Grader; Front End Loader Operator, 8 cy and over; Master Mechanic (when super-vising 5 or more Mechanics); Mon-O-Rail Hoist Operator, Power Shovel, up to and including 3-112 cy; Tugboat	28.25	16.60			

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W/Pensions	Vacation	App. Tr.	Others
POWER EQUIP.OPERATORS: (CONT.)					
Group 3 All Cranes, 20 tons and under; Asphalt Paving Machine Operator; Asphalt Plant Operator; Automated Grade Trimmer; Backhoe Operator, 1 cy up to and including 2-112 cy; Boom Truck, Hydraulic, 8 Ions and over; Cableway Operator; Concrete Batch Plant Operator (electronic or manual); Concrete Mixer Paving Machine Operator; Concrete Paver, Bridge Decks; Concrete Pump; Concrete Spreader Operator and Belt Placar; Crushing Plant Operator; Dozer Operator; Dredge Operator or Engineer, 11" and under; Drill Rigs, Heavy Duty Rotary or Churn or Cable Drill; Front End Loader Operator, 3-1/2 cy up to and including 7-1/2 cy; Gravel Washing and Screening Plant Operator; Locomotive, all types; Mechanic or Welder, Heavy Duty; Motor Grader Operator; Pavement Breaker, Non-Hydro Hammer Type: Pipeline Wrapping, Cleaning, and Bending Machine Operator; Power Actuated Auger and Horizontal Boring Machine Operator, 6" and over; Refrigeration Plant Engineer; Rota Milling Machine (Surface Planer), 43" and over; Scraper Operator; Slip Form Concrete Paving Operator; Tandem Pushed Quad 9 or similar; Tractor with Boom Attachment; Trenching Machine Operator, 100 H.P. and over	$28.00	$16.60			
Group 4 Articulated/Off Road Hauler; Asphalt Dump Person; Asphalt Paving Screed Operator; Backhoe, up to and including 1/2 cy; Boring Machine Locator: Con-sole Board Operator; Curb Machine Operator, Distributor Operator (Bituminous); Forklift Operator; Front End Loader, 1-1/2 cy up to and including 3 cy; Grade Person; Gravel Screening Plant Operator (not Crushing or Washing); Greaser Lazar Screed Operator; longitudinal Float and Spray Operator; Micro Surfacer Machine; Motor Grader Operator (Haul Road); Paving Breaker, Hydro Hammer Type; Pugmill Operator; Push Tractor; Roller, Steel and Rubber on Hot Mix Asphalt Paving; Rotomill Machine (Surface Planer), up to and including 42"; Rumble Strip Machine; Sand and Chip Spreader, Self-Propelled Sheepsfoot Packer with or without Blade Attachment; Self-					

1-5-18
Revised 1-12-18 (Mod. No.1)
Revised 3-2-18 (Mod. No.2)
Revised 8-17-18 (Mod. No. 3)
Revised 10-5-18 (Mod. No. 4)

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W/Pensions	Vacation	App. Tr.	Others
POWER EQUIP. OPERATORS: (CONT.)					
Group 4 (cont.) Packer with Dozer Attachment, 100 H.P. and over; Shouldering Machine; Slip Form, Curb and Gutter Operator, Slurry Seal Machine; Tamping Machine Operator; Tie Tamper and Ballast Machine; Trenching Machine Operator, 46 H.P. up to and including 99 H.P.; Truck Mechanic; Tub Grinder; Well Points; Fuel/Lube Operator	$27.85	$16.60			
Group 5 Boom Truck, A-Frame or Hydraulic, 2 tons up to and including 7tons; Broom, Self-Propelled; Concrete Saw (power operated); Cure Bridge Operator; Front End Loader Operator, less than 1-1/2 cy; Mobile Cement Mixer; Oiler; Power Actuated Auger and Horizontal Boring Machine Operator, up to and including 5"; Roller (on other than hot mix asphalt paving); Vibrating Packer Operator (Pad Type) (Self-Propelled); Water Spraying Equipment, Self-Propelled; Skidsteer Operator with attachments	27.00	16.60			
Group 6 Brakeman or Switchman; Curb Machine Operator (Manual); Dredge or Tugboat Deckhand; Drill Truck Gravel/Testing Operator; Form Trench Digger (Power); Gunite Operator Gunall; Paint Machine Striping Operator; Pick-up Sweeper, 1 cy and over Hopper Capacity; Scissor Jack {Se -Propelled) Platform Lift; Straw Mulcher and Blower; Slump Chipper Operator; Tractor Pulling Compaction or Areating Equipment;Trenching Machine Operator, up to and including 45 H.P.; Assistant/Apprentice Operator	25.70	16.60			
TRUCK DRIVERS:					
Single-Axle Truck	28.42	13.25			
Tandem- and Tri-Axle Truck	28.54	13.25			
Tandem- and Tri-Axle Semi	28.85	13.25			
Lowboy	28.85	13.25			
Off Road Heavy Duty End Dumps, 20 Yards and Under	28.85	13.25			
Euclid, Over 20 Yards	30.37	13.25			

Unlisted classifications needed for work not included within the scope of the classifications listed may be added alter award only as provided in the labor standards contract clauses [29 CFR, 5.5 (a) (1) (ii)].

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION (NDDOT)
2017 ON-THE-JOB TRAINING PROGRAM SPECIAL PROVISION

The bidder's signature on the proposal sheet indicates the bidder agrees to take part in the On-the-Job Training (OJT) Program and to follow the OJT Program Manual and Special Provision. Contractors that fail to do so will be subject to suspension of progress payments or sanctions up to and including revocation of bidding privileges.

OJT is training conducted in a highway construction work environment designed to enable minority, female, and economically disadvantaged individuals to learn a bona fide skill and qualify for a specific occupation through demonstration and practice.

After a training program and trainee candidate have been approved, the contractor begins training its regular employee according to the approved program. The goal of this training is to retain the trainee as a permanent employee. OJT involves individuals at the entry level. Training is designed to help participants reach their fullest potential and become self-sufficient in the job.

I. POLICY STATEMENT

The purpose of the OJT Program is to provide training in the highway construction industry for minority, female, and economically disadvantaged individuals, from this time known as the targeted group. Pursuant to 23 Code of Federal Regulations Part 230, Subpart A, Appendix B - Training Special Provisions, this program provides for on-the-job training aimed at developing journey-level workers in skilled trades.

The Contractor shall take all necessary and reasonable steps to ensure that minorities and women have the opportunity to compete for and participate as trainees or apprentices and to develop as journey-level workers employed in the skilled trades.

Contractors should select a training program(s) based on their company's employment/staffing needs as stated in the OJT Program Manual.

II. INTRODUCTION/PROGRAM BACKGROUND

The OJT Program was originally prepared through the cooperative efforts of the Associated General Contractors of North Dakota (AGC); the Federal Highway Administration (FHWA); the North Dakota Department of Transportation (Department); and, other program stakeholders.

Successful operation of the OJT Program requires contractors to follow uniform and basic training procedures, keep records of trainee progress, and report each trainee's completion or termination.

III. ASSIGNED OJT POSITIONS

A. Trainee positions are assigned contractors based only on federal highway dollars awarded from October 1 to September 30. Trainee assignments are not project specific; that means the contractor may train program participants on any project where training opportunities exist.

The number of trainee positions assigned will be determined by formula based on calculations involving particular project specification numbers on applicable projects. The types of projects NOT applicable in the calculation to assign trainee positions are:

- County-only or state-only funded projects
- Emergency relief, concrete pavement repair (CPR), electrical, rest area, signing, striping projects
- Projects subject to Tribal Employment Rights Ordinances (TERO)
- Projects not let through NDDOT bid openings

B. Contractors will receive the number of positions assigned and links to resources necessary for completion of program requirements via email.

C. The number of trainee positions assigned to each contractor will increase proportionately, as shown below, for any applicable federally funded projects awarded to them.

For all federal highway dollars awarded from October 1 to September 30:

6,000,000	to 15,000,000	1	trainee
15,000,001	to 23,000,000	2	trainees
22,000,001	to 31,000,000	3	trainees
31,000,001	and above	4	trainees

A maximum of four (4) trainee positions in a federal fiscal year will be assigned to any prime contractor regardless of dollar amount. Carryover positions from a prior construction season are not included in the four trainee maximum, e.g., a contractor with one carryover and four assigned positions may have a total five trainees.

Failure to follow this OJT Special Provision and the accompanying OJT Program Manual may result in suspension of progress payments or sanctions up to and including revocation of bidding privileges.

IV. FUNDING

The Department will establish an OJT fund annually from which contractors may bill the Department directly for eligible trainee hours. The funds for payment of trainee hours on federal-aid projects will be made available based on 23 USC 504(e) to a maximum of $100,000. The funds for payment of trainee hours on state-aid only projects will be allocated to a maximum of $10,000.

V. ONLINE RESOURCES

OJT Program Manual: Includes program requirements, wage rates, and curriculum:
https://www.dot.nd.gov/divisions/civilrights/docs/ojtprogram.pdf

SFN 60226 Request for On-the-Job Training Program and Trainee Approval:
http://www.dot.nd.gov/forms/sfn60226.pdf

SFN 51023 Voucher for On-the-Job Training Program Hourly Reimbursement:
http://www.dot.nd.gov/forms/sfn51023.pdf

Davis-Bacon and Related Acts (DBRA) Handbook: https://www.dot.nd.gov/manuals/civilrights/davisbacon.pdf

VI. APPROVALS REQUIRED

A. Requests for Training Programs and Trainee Approvals must be submitted to Civil Rights Division (CRD). Contractors must request and receive program and trainee candidate approval in order to pay trainees less than the established Davis-Bacon wage for the job classification concerned. No training program hours will count toward the fulfillment of an assigned trainee position or be eligible for reimbursement without prior approval. No retroactive approval will be granted.

1. Submit SFN 60226 *Request for On-the-Job Training Program and Trainee Approval* with each trainee's employment application. http://www.dot.nd.gov/forms/sfn60226.pdf and the pre-approved training curriculum for each trainee position assigned by April 1 or within fifteen (15) calendar days of notification of any additional position assignments.

2. Submit *SFN 7857 Application for Eligibility,* Job Service North Dakota (JSND) approval of an economically disadvantaged individual for participation in the OJT Program.

B. Pre-approved curriculum: NDDOT's OJT Program Manual contains pre-approved training curriculum for a number of skilled trade positions. Contractors should select a training program(s) based on their company's employment/staffing needs.

C. Customized curriculum: To request a training curriculum not included in the pre-approved curriculum, submit a written request for approval by NDDOT and FHWA.

The request must include:

- A training curriculum, including the classification requested, minimum number of hours required, and type of training the individual will receive to achieve journey-level worker status.
- A minimum wage scale.

If approved, each new classification must comply with the provisions specified in the OJT Program Manual. No hours worked prior to approval will be credited toward completion of the customized training program. Training programs for classifications not covered by the Davis-Bacon and Related Acts (DBRA) will be considered on a limited basis.

The contractor may commence its "customized" training as of the date of the written approval.

D. Union apprenticeship and on-the-job training programs registered with the Bureau of Apprenticeship and Training (BAT), U.S. Department of Labor, may be used for trainee positions assigned under the OJT Program, provided the trainees or apprentices are minority, female, or economically disadvantaged. Nonminority males not certified as economically disadvantaged may only be used when the contractor has requested and received approval, from the Department, for additional trainee positions. The apprenticeship indenture agreements serve as the trainee's job application and must be provided prior to any hours being credited toward OJT Program completion.

E. Power Equipment Operators:

The contractor may train an individual on a combination of equipment if each piece of equipment falls within the same groups of power equipment operators identified in the training curricula (groups 1-3 and groups 4-6). These power equipment operator groups are referenced to the federal DBRA wage rates contained in the contract proposal. As an example, a "utility operator" may receive training on a broom, a front-end loader less than 1½ cubic yards, or other piece of equipment that is used around a paver if each piece falls within either groups 1-3 or groups 4-6. When multiple wage rates apply, the trainee's wage will be based on the equipment being operated at the time or on the highest of the applicable wage rates.

Use of the classification "pickup machine operator (asphalt dump-person)" as a group 4 power equipment operator is considered standard industry practice. The classification is defined as: "Operates the controls on the pickup machine that runs in front of the paver, trips the levers on the dump trucks, and balances the loads for the paver. The pickup machine operates on similar principles as a shouldering machine."

F. Contractors not qualifying for the OJT Program, or contractors desiring to train more than the allotted number of trainees, may apply to the Department for additional trainee positions. Approval of additional positions will be at the sole discretion of the Department. The Department will take into consideration whether there is enough work for the trainee to successfully complete the curriculum and whether the contractor will be exceeding the allowable ratio of trainees to journey-workers (generally considered to be one trainee or apprentice to every three to five journey-workers).

The additional positions may be filled by individuals outside of the targeted groups. The contractor may pay the reduced training rates to additional trainees outside of the targeted groups, but will not receive hourly reimbursement for any individuals who are outside the targeted groups.

VII. NDDOT'S RESPONSIBILITIES

A. The NDDOT OJT supportive services (OJTSS) consultant will monitor excerpts from the weekly certified payrolls submitted with the monthly vouchers for reimbursement. This includes weekly payrolls from

contractors working on state funded only projects. On contracts where certified payrolls are not required and not available for supporting documentation, contractors may enter trainee wages, hours in training, and the project control number(s) (PCN) in a spreadsheet to support their reimbursement vouchers. In this case, contractors should work with OJTSS to assure that all information required for payment is provided. The OJTSS consultant will assess when the trainees have completed the specified number of hours and their wages are increased accordingly. The OJTSS consultant will also assure that applicable fringe benefits are paid either directly to the trainees or for the trainee into approved plans, funds, or programs.

B. The OJTSS consultant is charged with visiting trainees and monitoring their progress under the OJT Program. To facilitate the on-site visits, the OJTSS consultant will contact contractors for the location of the trainees weekly.

VIII. CONTRACTOR'S RESPONSIBILITIES

A. Consistently demonstrate efforts to recruit, hire, and train candidates for the OJT Program.

B. Assign each trainee to a particular person–either a supervisor or an employee proficient in the skills to be trained–who shall see that the trainee is given timely, instructional experience. This person must be familiar with the OJT Program, keep proper records, and ensure completion of the required training hours in accordance with the training curriculum.

C. Appoint a company employee who will be available and responsive to weekly contacts by the OJTSS consultant. OJTSS monitors the status of assigned trainee positions (e.g., program and trainee approvals, trainees' progress, etc.). The OJTSS consultant will contact the individual listed on the company's approved SFN 60226 Request for OJT Trainee Approval. This person must reply to communications from the Department and the OJTSS consultant in a timely manner.

D. Make trainees available to the OJTSS consultant for at least two on-site visits during the construction season.

E. Make the trainer and project superintendent available to the OJTSS consultant for at least two on-site visits each construction season.

F. Make trainees aware they are formally enrolled in the OJT program.

G. Identify trainees on the payroll excerpts, for example: "grp. 4 roller operator trainee." This includes trainees in job classifications not covered by DBRA. Handwritten notes are appropriate for identification.

H. Notify the Department when a trainee completes the number of hours required to graduate from the OJT Program. The Department will issue the trainee a certificate of completion and a wallet-sized card as proof of the graduate's successful training program completion.

I. Notify the Department to "propose graduation" or discontinue the training period of a trainee who has completed 90% or more of their hours and thereafter advance the trainee to journey-worker status.

J. Elect to upgrade proficient trainees from one power equipment operator group or truck driver group to another, with the approval of CRD. Fewer hours are required to complete the upgraded position.

Minimum number of hours required:

Power Equipment Operator Groups 4-6 to Groups 1-3 = 400 hrs.
Class C Truck Driver to Class B = 200 hrs.
Class B Truck Driver to Class A = 200 hrs.

Depending on the variety of experience the trainee has gained under the previous curriculum, the difference in the hours may be deducted from the actual operation of the piece of equipment or truck. The contractor will need to review the trainee's past performance in order to make this determination.

K. May hire commercial driver's license (CDL) holders as truck driver trainees. Those having over-the-road driving experience, with little or no highway construction experience, may be considered to have completed

the Class C truck driver training curriculum and, therefore, are eligible to be upgraded to a Class B truck driver trainee, with the approval CRD.

L. May transfer trainees from one project to another in order to complete the OJT Program. If transfers are made, CRD must be notified and provided with the name of the trainer. The training hours will count toward overall OJT Program completion.

M. May train trainees on municipal, private, out-of-state projects or other non-highway work. These training hours must be paid at the OJT minimum wage scale to count toward their OJT Program completion; however, no program reimbursement will be made for those hours.

N. May delegate or reassign trainee positions to subcontractors, with the acceptance of the subcontractors and the approval of CRD. The prime contractor must verify that the trainee will be able to accumulate enough hours to complete his or her training program. If approved, the subcontractor must obtain training program and trainee approval from CRD before the trainee begins work under the OJT program. Program reimbursement will be made directly to the prime contractor. The trainee position will remain the responsibility of the prime contractor.

O. May use trainees on projects subject to TERO requirements as part of the core crew or as part of the skilled labor supplied by the contractor. The training hours will count toward overall OJT Program completion; however, no program reimbursement will be made for those hours unless it is a NDDOT let project.

P. May not use one trainee to simultaneously fill multiple trainee positions

Q. May use a trainee on a piece of equipment in groups 1-3 or groups 4-6 for one assigned trainee position, then once that trainee has completed the program, the trainee may be trained on a different piece of equipment in groups 1-3 or groups 4-6 to fulfill a second assigned trainee position. When a trainee is used for a second time within a group, the contractor must pay that trainee at the higher wage rate as described in paragraph B under Wage Rates (page 8).

IX. CLASSROOM TRAINING

A. Classroom training may be used to train employees. Each classroom training curriculum must be pre-approved by CRD if the contractor wishes to count the classroom hours as training hours and be reimbursed.

Submit a proposed classroom training curriculum to CRD for approval. Define the type of training the individual will receive, classroom training curriculum, and the minimum number of hours required. The Department will determine the number of hours of credit each trainee will receive toward their training. No retroactive approval will be granted.

B. Contractors will be reimbursed for classroom training hours after the trainee has completed 80 hours of work on highway construction projects.

C. Reimbursement for classroom training will be limited to 60 hours per trainee per construction season. Reimbursement for classroom training required under the NDDOT Transportation Technician Qualification Program will be at the NDDOT discretion.

D. The minimum wage scale to be used for classroom training will be that of the first federal-aid highway construction project on which the trainee will be employed. If the trainee is already employed on a federal-aid highway construction project, the trainee will be paid in accordance with the minimum wage scale applicable to that project. However, if the first project on which the trainee will be employed is a state funded only contract, the minimum wage scale to be used for the classroom training will be that of the appropriate DBRA wage in effect at the time of award of the state funded contract.

X. WAGE RATES

A. When the contractor is submitting the trainee's hours toward training program, wages paid shall in no case

be less than that of those stated in the approved curriculum. A trainee working on a state funded only project, must be paid the DBRA wage rate in effect at the time of award for the type of work the trainee is performing as a trainee.

B. The minimum wage rates shall not be less than 80% of the journey-worker rate for the first two quarters of training, 85% of the journey-worker rate for the third quarter, and 90% of the journey-worker rate for the fourth quarter.

- Under the power equipment operator training curricula only, once a trainee has completed a training curriculum in either groups 1-3 or groups 4-6, the contractor may enroll the trainee in another training curriculum on a different piece of equipment in either groups 1-3 or groups 4-6.
- The minimum wage rate under the trainee's second program shall not be less than 85% of the journey-worker rate for the first two quarters of training, 90% of the journey-worker rate for the third quarter, and 95% of the journey-worker rate for the fourth quarter.
- For the purpose of the OJT Program, a quarter is 25% of the hours the trainee works toward completion of their approved program. The first two quarters of a 550-hour training curriculum would end after 275 hours, the third quarter after 138 hours, and the fourth after 137 hours.

C. At any time hours are being attributed toward the completion of the approved training program, trainees shall be paid full fringe benefit amounts, where applicable, in accordance to DBRA requirements.

D. At the completion of the OJT Program, the trainee shall receive the wages of a skilled journey-worker.

XI. RECRUITMENT AND SELECTION

A. Prerequisites:

Trainees must possess basic physical fitness for the work to be performed, dependability, willingness to learn, ability to follow instructions, and an aptitude to maintain a safe work environment.

B. Licenses:

Truck driver trainees must possess appropriate driver permits or licenses for the operation of Class A, B, and C trucks. When an instructional permit is used in lieu of a license, the trainee must be accompanied by an operator who:

1. Holds a license corresponding to the vehicle being operated;
2. Has had at least one year of driving experience; and
3. Is occupying the seat next to the driver.

C. Recruitment:

1. Place notices and posters setting forth the contractor's Equal Employment Opportunity (EEO) Policy and the availability of the OJT Program in areas readily accessible to employees, applicants for employment, and potential employees.
2. Employ members of the targeted group (minority, female, or economically disadvantaged individuals) for all trainee positions assigned in accordance with the OJT Program. Additional positions requested by the contractor may be filled by individuals outside of the targeted groups.
3. Conduct systematic and direct recruitment through public and private employee referral sources.
4. Screen present employees for upgrading to higher skilled crafts. A present employee may qualify as a trainee; however, no work hours will be reimbursed or counted toward program completion prior to training program and trainee approval by CRD.

D. Selection:

1. Hire and enroll OJT trainee candidates who qualify as an individual in the targeted group.

2. Select a training program(s) based on their company's employment/staffing needs.

3. Individuals in the targeted group having experience in the selected curriculum may be eligible to participate in the OJT Program providing they:

    - Are not or have not been journey-workers in the selected curriculum, and/or
    - Have not been previously trained in the selected curriculum.

4. Non-minority males who are economically disadvantaged must obtain written certification from Job Service North Dakota (JSND) to qualify for the OJT Program. Contractors wishing to hire and enroll economically disadvantaged candidates must provide JSND's certification along with SFN 60226 and the employment application when requesting trainee approval.

    - JSND is the only agency that may certify an individual as economically disadvantaged. If JSND refers the candidate to the contractor, written certification under this category will be provided to the contractor at the time of the interview.
    - Any person wishing to obtain this certification must apply to JSND and complete the Workforce Investment Act Program's Application for Eligibility (SFN 7857). A contractor recruiting a candidate who may qualify must contact the Workforce Investment Act Program Manager at JSND. JSND contacts are also online: http://www.dot.nd.gov/divisions/civilrights/docs/jobservice-workforce-invest-contacts.pdf

XII. BASIS OF PAYMENT

A. Contractors will be paid $4.00 for each hour of training in accordance with the OJT Program Manual.

B. Reimbursement will be made directly to the contractor. Complete SFN 51023 Voucher for On-the-Job Training Program Hourly Reimbursement for each trainee. Attach excerpts from the weekly certified payrolls showing the trainee's hours, rate of pay, and how applicable fringe benefits were paid. Excerpts from weekly payrolls are also required for state funded only projects. Vouchers without excerpts from payrolls will not be paid until the excerpts are provided. If the excerpts from the payrolls are not provided within one week, the voucher will not be paid and the trainee's hours will not be credited toward completion. http://www.dot.nd.gov/forms/sfn51023.pdf

C. On contracts where certified payrolls are not required and not available for supporting documentation, contractors may enter trainee wages, hours in training, and the project control number(s) (PCN) in a spreadsheet to support their reimbursement vouchers. In this case, contractors should work with OJTSS to assure that all information required for payment is provided.

D. Submit completed vouchers to CRD for approval and processing by the fifteenth (15^{th}) calendar day of every following month the trainee is employed under the OJT Program.

Regardless, all vouchers for trainee hours worked on state funded only projects from July 1 to June 30 must be received by CRD no later than July 15 in order to be reimbursed. All vouchers for trainee hours worked on federally funded projects from October 1 to September 30 must be received by CRD no later than October 15 in order to be reimbursed. This is due to state and federal end-of-the-year budget fiduciary requirements.

XIII. FAILURE TO PROVIDE THE TRAINING OR HIRE THE TRAINEE AS A JOURNEY-WORKER

A. The contractor is required to consistently demonstrate efforts to recruit, hire, and train candidates for the OJT Program.

B. If the contractor does not show in a timely manner good faith efforts to recruit, hire, and train candidates in the targeted group, the Department may withhold progress payments

C. If payments have been made, the Department will deduct the amount paid from the contractor's progress

payment.

D. No payment shall be made to a contractor for failure to provide the required training or failure to hire the trainee as a journey-worker when such failure is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this OJT Program Special Provision.

E. Hiring a trainee to begin training as soon as feasible after start of work is evidence of a contractor's good faith efforts to comply with the OJT Program requirements. Additional evidence supporting a contractor's good faith efforts would be to keep the trainee employed as long as training opportunities exist in the approved work classification or until the trainee has completed his or her training program.

F. It is not required that all trainees be employed for the entire length of the construction season. A contractor will have fulfilled its responsibilities under this OJT Special Provision if it has provided acceptable training to the number of trainees assigned.

XIV. UNFILLED OR INCOMPLETE TRAINEE POSITIONS

A. By October 1, provide written explanation of the firm's good faith efforts for unfilled or incomplete trainee assignments to CRD. CRD will decide, on a case-by-case basis, whether to carry the assigned positions over to the next construction season.

B. Positions carried over from the previous construction season must be among the first positions filled at season startup. To notify CRD of the trainee's rehiring, submit *SFN 60226 Request for On-the-Job Trainee Approval*, marking 'Check if Carryover Trainee' in the Approved Training Program section of the form. There is no need for the training position or a returning trainee to be re-approved.

C. Sanctions, up to and including revocation of bidding privileges, may be imposed on the contractor for failure to provide sufficient explanation and documentation for reasons assigned trainee positions when unfilled or incomplete.

XV. DEFINITIONS

Carryover Position: Incomplete trainee position carried forward from a prior program year.

Carryover Trainee: Trainee scheduled to continue training hours under prior year's approved program.

CRD: NDDOT's Civil Rights Division administers the NDDOT On-the-Job Training Program.

Good Faith Efforts: Documentation supporting a contractor's efforts to fulfill the program requirements, e.g., new hires list, advertising examples/locations, current employees reviewed for upgrades, etc.

Journey-worker: A worker employed in a trade or craft who has attained a level of skill, abilities, and competencies recognized within the industry.

OJT Supportive Services (OJTSS): Department contractor providing in-person oversight, support, and guidance to contractors and trainees to increase the effectiveness of approved training programs.

Trainee: A person who receives training through an apprenticeship program or other FHWA approved program.

Trainer/Supervisor: Contractor's employee assigned to train, supervise, and support a trainee.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

1. GENERAL

Install, maintain and remove appropriate Temporary Erosion and Sediment Control Measures (ESCMs).

Definitions:

A. Temporary Erosion and Sediment Control Measures are to be installed and maintained before and during the term of the land disturbance activity. These items are removed when permanent erosion and sediment ESCMs are installed.

B. Permanent Erosion and Sediment Control Measures are to be installed and maintained once the project is completed so that the applicable permits can be terminated.

In some instances, individual temporary and permanent erosion and sediment ESCMs for a site may consist of identical ESCMs. In these cases, the temporary erosion and sediment ESCMs may be used as the permanent erosion and sediment ESCMs if they meet the following criteria:

1. The ESCM was installed correctly,
2. Is in a functional condition,
3. Has had all accumulated sediment removed.

C. The Stormwater Pollution Prevention Plan (SWPPP) is the document that identifies potential sources of sediment or other pollution from construction activity and ensures practices are used to reduce the contribution of pollutants from construction site runoff.

D. Contractor Controlled Areas are project areas not included in the contract, but are obtained and solely controlled by the Contractor (e.g., concrete or asphalt batch plants, concrete washout areas, equipment staging yards, material storage areas, excavated material disposal areas, Contractor furnished borrow areas, etc.).

E. Maintenance is any action taken to keep an ESCM in working condition. These actions may consist of repairing failures of the ESCM itself.

F. Noncompliance is any action or inaction that violates the regulations imposed by the applicable permits or the requirements of this special provision and other contract documents. Failure of an ESCM does not necessarily constitute noncompliance as long as the ESCM is repaired, replaced or supplemented within the timelines established in the applicable permits and no sediment is discharged from the site or into a water of the state.

2. CONSTRUCTION REQUIREMENTS

Develop a SWPPP specific to the project. The creation of the SWPPP is a cooperative effort between the NDDOT who creates the project plan sheets and the Contractor who creates a complete SWPPP which incorporates the plan sheets and the Contractor's means and methods. The project plan sheets by themselves do not meet the requirements of a complete SWPPP and should not be considered as such. The Contractor has the flexibility to modify the design and implementation of the temporary erosion and sediment controls to match the Contractor's means and methods and/or field conditions. These changes must be documented in the SWPPP and meet all regulatory requirements.

Obtain appropriate permit coverage for the activities conducted in Contractor Controlled Areas. A permit will be required for these areas regardless of their size. The NDDOT will have no responsibility for these areas. Provide copies of the completed and signed Notice of Intent submitted for permit coverage to the Engineer before activities in these areas commence. Do not commence activities in these areas until after permit coverage has begun. Provide copies of Permit Coverage Letters for these areas to the Engineer within 7 days of receiving them from the regulating agency.

Install perimeter erosion and sediment ESCMs according to the plans/SWPPP prior to site disturbance.

Change the location of temporary erosion and sediment ESCMs to fit the field conditions.

Update the SWPPP as work progresses, or as directed by the Engineer. Update the SWPPP to show changes due to revisions in work schedules or sequence of construction. Update the site map to reflect erosion and sediment ESCMs that have been installed, changed, or removed.

Do not rely on perimeter ESCMs as the sole method of controlling erosion. As the project progresses, install temporary erosion and sediment ESCMs within the perimeter ESCMs to control erosion resulting from the construction of the project.

Use temporary erosion and sediment ESCMs to prevent contamination of adjacent streams or other watercourses, lakes, ponds or other areas of water impoundment.

Coordinate temporary erosion and sediment ESCMs with the construction of permanent erosion and sediment ESCMs to provide continuous erosion control. Do not install temporary erosion and sediment ESCMs when permanent erosion and sediment ESCMs are able to be installed. Once the permit is terminated or transferred to the Department, the maintenance of the permanent erosion and sediment ESCMs becomes the responsibility of the NDDOT.

Install stabilization ESCMs (mulch, seeding and mulch, etc.) in areas that have been disturbed where work has temporarily or permanently ceased following the timelines established in the applicable permits. If implementation of stabilization is precluded by snow cover, undertake such measures as soon as conditions allow.

Maintain the effectiveness of the temporary erosion and sediment ESCMs as long as required to contain sediment runoff. Inspect the temporary erosion and sediment ESCMs and complete the inspection and maintenance reports every 14 days and within 24 hours of a rainfall event of 0.25 inch or more. During prolonged rainfall (more than 1 day), conduct an inspection within 24 hours of the first day of the event and within 24 hours after the end of the event. Inspections are required only during normal business hours. Install a rain gauge to monitor rainfall amounts as required by the appropriate permit.

Correct any deficiencies in the ESCMs within the timelines established in the applicable permits. If conditions do not permit access to the ESCM, corrective actions can be taken by installing additional ESCMs. Correct the original deficiencies as soon as conditions allow access to their location without causing additional damage to the slopes. In the inspection logs, document the conditions that prohibit access.

Provide copies of all inspections, documentation, record keeping, maintenance, remedial actions, and repairs required by the applicable permits to the Engineer. Provide inspection and maintenance reports within 3 working days after an inspection has been conducted.

Provide, at the preconstruction conference, documentation of any Subcontractor hired for erosion control showing that the Subcontractor's on site supervisor is certified through the NDDOT Erosion & Sediment Control Construction Certification Training. This certification must be maintained by the Subcontractor's onsite supervisor through the term of the contract. The Engineer will provide a verification of their certification through the NDDOT Erosion & Sediment Control Construction Certification Training at the preconstruction conference and will maintain that certification through the term of the contract.

Provide immediate written notification to the Engineer of proposed changes to the erosion control plan or SWPPP. The Engineer will review the proposed changes and determine if they are adequate. Documentation of maintenance and inspections that does not affect the erosion control plan or SWPPP does not require approval by the Engineer.

Remove the temporary devices when directed by the Engineer or when permanent erosion and sediment controls are installed.

3. Erosion and Sediment Control Supervisor.

A. General. Designate an erosion and sediment control supervisor. Provide the name and contact information for the supervisor at the preconstruction meeting. If this erosion and sediment control supervisor becomes unavailable on the project, designate a replacement supervisor. Notify the Engineer if this supervisor changes and provide the contact information for the new supervisor.

B. Qualifications. The supervisor shall be:

1. An employee of the Prime Contractor;

2. Familiar with installation, maintenance and removal of ESCMs and the requirements of the erosion and sediment control plans, applicable permit requirements, specifications, plans and this provision; and

3. Competent to supervise personnel in erosion and sediment control operations.

4. Certified through the NDDOT Erosion & Sediment Control Construction Certification Training and maintain that training throughout the term of the contract.

C. Duties. The supervisor shall:

1. Provide erosion and sediment control as required by the SWPPP, Plans, and Specifications.

2. Be on the site to supervise the installation, operation, inspection, maintenance, and removal of the erosion and sediment ESCMs.

3. Update the SWPPP as work progresses to show changes due to revisions in work schedules or sequence of construction, or as directed by the Engineer. Update the site map to reflect erosion and sediment ESCMs that have been installed, changed, or removed.

4. Propose changes to improve erosion and sediment control.

5. Be accessible to the job site within 24-hours.

6. Provide the Engineer with documentation of all erosion and sediment control activities and inspections as required above.

4. PERFORMANCE

Correct all areas of noncompliance within 24 hours after notification of noncompliance. If corrective actions are not taken within 24 hours, the Engineer may:

1. Assess a contract price reduction of $500 per day per instance;

2. Have deficiencies corrected by another Contractor and deduct the cost of the work from the monies due or to become due to the Contractor;

3. Suspend all work; or

4. Withhold payment on other contract items/pay estimates.

These actions will be applied until deficiencies have been corrected.

5. BASIS OF PAYMENT

ESCM installation will be paid for at the contract unit price for erosion and sediment control for the appropriate items and sections. The plans will detail the required ESCMs for temporary and permanent installations. The same bid items may be used for temporary and permanent ESCMs.

ESCM items will be measured as specified in the “Method of Measurement” portion of the appropriate section of the specifications.

ESCM item removal will be paid for at the contract unit price for “Remove _____”in the appropriate section of the specifications.

Include the costs for labor, materials, maintenance, equipment, disposal, adherence to the permit, and SWPPP modifications in the respective pay items.

When the Engineer directs the replacement of temporary erosion and sediment ESCMs that are no longer functional because of deterioration or functional incapacity and those items were installed as specified in the Contract or as directed by the Engineer, the Department will pay for replacement ESCMs

No payment will be made for replacing temporary erosion and sediment ESCMs that the Engineer determines are ineffective because of improper installation, lack of maintenance, or the Contractor’s failure to pursue timely installation of permanent erosion and sediment ESCMs as required in the Contract.

No payment will be made for replacing temporary erosion and sediment ESCMs due to contractor operations. Include the cost to move Flotation Silt Curtain as work progresses in the price bid for “Flotation Silt Curtain”.

Erosion and sediment controls for Contractor Controlled Areas are the responsibility of the Contractor and will not be paid for by the Department.

Removal of sediment from silt fence and fiber rolls will be paid for at the price listed in the “Price Schedule PS-1.”

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

LOCAL AGENCY CONTRACTS

References to NDDOT, Department, Director, or Engineer in the Standard Specifications for Road and Bridge Construction and other portions of the Contract must be construed as referring to the Owner of the project.

If the Contractor intends to file a claim for additional compensation for work or material not covered by the Contract, the Contractor is required to prosecute the claim in accordance with the 2014 Standard Specifications for Road and Bridge Construction, Section 104.05, “Claims for Adjustment”. The provisions of Section 104.05 D, “Conditions Precedent to Contractor’s Demand for Arbitration”, are not applicable to this Contract, nor are the provisions of North Dakota Century Code §24-02-26 et seq. regarding arbitration applicable, as the North Dakota Department of Transportation is not a party to the Contract.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

BUY AMERICA

DESCRIPTION

Replace Section 106.08, "Buy America", with the following:

Buy America.

A. General.

Provide materials from domestic sources when products are permanently incorporated into the work and the products are composed of steel or iron materials.

Ensure all manufacturing processes, including applications of coatings, occur in the United States. A coating includes all processes required to apply the coating to a product to protect or enhance the value of the product.

The requirements of this SP are not applicable to the temporary iron and steel materials, including materials left in place at the Contractor's convenience.

B. Steel and Iron Certification.

1. General.

All certifications are submitted by the prime Contractor. When submitting certifications for materials that are subject to the requirements of this section, the prime Contractor shall include a signed letter stating that the submitted documentation is the documentation that was received by the prime contractor for the material incorporated into the work. The prime Contractor's signature on the Department's Certificate of Compliance form meets this requirement.

2. Bulk Manufactured Materials.

In addition to the requirements of Section 106.01 C, "Certificate of Compliance", submit a contractor's Certificate of Compliance stating that the iron and steel products listed in Table 1 that are permanently incorporated into the work are of domestic origin.

Table 1

Mailbox supports	Cable Fence Materials
Chain Link Fence Materials	Barbed Wire Fence Materials
Guardrail Components	Woven Wire Fence Materials
Culvert Markers	Delineators
Perforated Tube Sign Supports and Related Materials	

3. Other Steel and Iron Products.

For steel and iron products permanently incorporated into the work that are not listed in Table 1, submit a manufacturer's Certificate of Compliance as specified in Section 106.01 C, "Certificate of Compliance" and the following information:

a. A signed mill test report.
b. A signed certification from each fabricator and manufacturer that has handled the steel and iron products affirming that all processes performed on the steel and iron products were conducted in the United States.
c. Material descriptions, quantities, and a means of material identification (lot number, bin number, heat number, or factory identification) for each process performed on the steel and iron products.

Each certification shall contain the material identification from all previous fabricators and manufacturers in the process.

C. Foreign or Uncertified Products.

These requirements allow the use of steel and iron products produced and manufactured outside the United States, or products that cannot be certified as originating in the United States, of a total value less than 0.1 percent of the original contract amount, or $2,500, whichever is greater.

The total value is that shown to be the cost of the steel and iron products as delivered to the project site.

Document the cost of:

- Foreign steel and iron products, plus
- Steel and iron products which cannot be certified as originating in the United States.

Submit the documentation of foreign and uncertified products with the certifications required in Section B, “Steel and Iron Certification” of this SP.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

CERTIFICATE OF COMPLIANCE (CoC)

DESCRIPTION

Section 106.01 C, “Certificate of Compliance” is no longer valid. Use this Special Provision in place of that section.

Certificate of Compliance

A Certificate of Compliance (CoC) states that the materials represented by the CoC comply with the contract requirements.

All materials manufactured off-site require either a Manufacturer or Contractor CoC. Materials listed in Table 1 require a Manufacturer CoC. All other materials require a Contractor CoC.

Submit a CoC before incorporating the material into the work. Submit CoC’s electronically. Some materials require the submission of additional information as part of the CoC. When this is required, the contract documents will state the additional requirements.

The Department will not include quantities of material represented by a CoC on a progressive estimate until the Contractor has fully met the CoC requirements.

The Department may sample, test, and inspect material represented by a CoC at any time before project acceptance, and will accept or reject materials based on inspections or test results.

Retain records and information relating to material compliance with contract requirements. The Engineer may request receipt of records and information before accepting material for installation or payment.

A. Manufacturer Certificate of Compliance.

A Manufacturer CoC requires the signature of a person having the legal authority to act for the material manufacturer. The manufacturer and prime contractor must sign the Manufacturer CoC.

Provide Manufacturer CoC for the products shown in Table 1.

The entity batching Portland Cement Concrete is considered the manufacturer. When submitting CoC for Portland Cement Concrete, include all manufactured items used in batching concrete on the CoC.

Table 1
Manufacturer Certificates of Compliance

Section	Item
604	Prestressed Concrete Beams
606	Precast Reinforced Concrete Box Culverts
802	Portland Cement Concrete
804	Cement and Lime

Table 1
Manufacturer Certificates of Compliance

820	Fly Ash
830	Pipe and Drainage Structures
834	Structural Steel
836	Reinforcing Steel, Dowel Bars, and Tie Bars
840	Piling
846	Preservatives and Pressure Treatment Process for Timber (excluding materials provided under Sections 752 and 764)
858	Geosynthetics

Submit Manufacturer CoC using the form *Manufacturer Certificate of Compliance (SFN 61041)*.

B. Contractor Certificate of Compliance.
A Contractor CoC requires the signature of a person having the legal authority to act for the prime Contractor. The prime Contractor may require the manufacturer, supplier, or subcontractor to sign the Contractor CoC.

Submit Contractor CoC using the form *Contractor Certificate of Compliance (SFN 61040)*.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

Haul Roads

DESCRIPTION

Section 107.08, “Haul Roads” is no longer valid. Use this Special Provision in its place.

107.08 HAUL ROADS

A. General.

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.

Notify the Engineer of each public road proposed for use as a haul road before hauling over that route. The Engineer will designate the most practical route for transporting materials and designate the route as a “haul road,” upon completion of the pre-haul inspection unless deemed unacceptable by a local jurisdiction request.

Change the route of a designated haul road only with the Engineer’s written approval. For route change requests made for the Contractor’s convenience, the Engineer may require an agreement limiting the Department’s liability for the cost of maintenance and restoration of the haul road.

The Engineer will consider the entire haul cycle, loaded and empty, when designating haul routes.

B. Designation of Haul Roads

The Engineer will not designate paved roads off the state system as haul routes.

The Engineer will not designate a road susceptible to severe damage from concentrated heavy hauling as a haul road unless no alternate route is available. Investigate alternate routes before submitting a proposal.

If the Contractor desires to haul on a road that the Engineer determined to be unsuitable for hauling, the Engineer will designate that road as a haul road if the Contractor provides improvements that the Engineer and Contractor agree make the road suitable. Make these improvements at no additional cost to the Department.

If the Engineer determines that pre-haul improvements to a designated haul road will reduce the maintenance or restoration costs, the Department will pay for the materials used to make pre-haul improvements.

A route used to haul material from a commercial pit to the project site is not considered a haul road. A commercial pit is a pit that meets one of the following criteria at the time the project is advertised:

1. The pit has long-term facilities in place and partially derives its annual sales from ongoing operation and sources other than Department or other short-term government contracts;

2. The operator owns the land or has a long-term lease, and did not primarily set up and equip the pit at the location to serve Department contracts; or

3. The operator regularly advertises the availability of material for public sale and has facilities available for effecting public sales at times when there are no government contracted projects utilizing the pit.

C. Pre-Haul Inspection.

Before hauling over a designated haul road, the Engineer, the Contractor, and the agency charged with control and maintenance of the route will make a joint inspection of the haul road. The joint inspection will determine the existing condition of the haul road, including the type, thickness, and width of the surfacing material. The Engineer will record the results in an inspection report. The inspection report will set forth any special conditions for use, maintenance, and restoration of the route. The Contractor, the Engineer, and the agency charged with control and maintenance of the route shall review and sign the report.

D. Use, Maintenance, and Restoration.

Maintain the haul roads used by public traffic in a condition that safely and adequately accommodates public traffic.

If the Contractor damages the haul road by hauling loads in excess of the legal limit, or through negligence or failure to perform maintenance, the Contractor shall repair the damage; the Department will not pay the Contractor for the repairs.

After completing hauling operations over a designated haul road, restore the road to a condition at least equal to the condition existing at the time of the pre-haul inspection. The Engineer will order the type and amount of maintenance and restoration work and the requirements for performing this work.

Maintain and restore the road as required despite the use of the haul road concurrently by other traffic. For haul roads jointly used by multiple contractors on Department contracts, the Engineer will determine the respective obligations for maintenance and restoration.

For haul roads under Department jurisdiction, the Department will only relieve the Contractor of any further obligation for restoration of the road when the Contractor has restored the road to the condition required in the pre-haul inspection report, as accepted in writing by the Engineer. For haul roads under other jurisdiction, obtain a haul road release from the agency charged with control or maintenance of the route and submit a copy of the executed release to the Engineer.

If the Engineer determines that dust from hauling operations on designated haul roads is creating a hazard to traffic or a nuisance to the public, apply water to the haul road as necessary to control the dust.

E. Materials and Construction.

Materials and construction methods used in performing maintenance and restoration work shall meet the requirements of the relevant specifications.

F. Method of Measurement.

The Engineer will measure all approved quantities of material ordered by the Engineer for pre-haul improvements, maintenance, and restoration of designated haul roads as specified in the applicable portions of the contract. The Engineer will measure water used for dust control as specified in Section 216.05, “Method of Measurement”.

G. Basis of Payment.

The Department will pay the Contractor for measured quantities of material ordered by the Engineer for pre-haul improvements, maintenance, and restoration of designated haul roads in accordance with Section 109.03, “Compensation for Contract Revisions.”

The Department will not pay the Contractor for the costs to maintain and restore routes used to haul materials from commercial pits. Include these costs in the contract unit prices of the relevant contract items.

If maintenance and restoration work only requires the use of equipment, the Department will not pay the Contractor for the costs to use the equipment. Include these costs in the contract unit prices of the relevant contract items.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

LIMITATIONS OF OPERATIONS

DESCRIPTION

Section 108.05, “Limitations of Operations” is no longer valid. Use this Special Provision in its place.

108.05 LIMITATION OF OPERATIONS

A. General.

Perform the work in a manner and sequence that minimizes interference to traffic, and with due regard to the location of detours and provisions for handling traffic. Do not begin work to the prejudice or detriment of work already started; the contract may require a section of roadway to be finished before starting additional sections if the opening of the section is essential to public convenience.

If the prosecution of the work is discontinued, provide the Engineer at least 24-hours notice before resuming operations.

B. Holidays.

Unless the contract allows work on holidays, perform work on holidays only with the Engineer’s prior written approval. Submit a written request to the Engineer by noon 2 business days before the requested holiday.

C. Night-time Operations and Extended Hours.

1. General.

When performing work in low light conditions, implement proper safety precautions and provide adequate lighting for the performance and inspection of the work.

2. Nighttime Operations.

Unless the contract allows for nighttime operations, perform work at night only with the Engineer’s prior written approval.

Submit a written request to the Engineer a minimum of 7 calendar days before anticipated nighttime operations. The Engineer may deny the request or delay approval if it would require additional staffing considerations. If nighttime operations requires the Engineer to hire additional forces, nighttime operations may not be allowed for up to 30 days from the receipt of the request.

When requesting to perform nighttime operations, include a plan to ensure the safety of all individuals on the project site, including the Contractor’s and subcontractor’s workers, Department representatives, and the traveling public.

The Department bears no liability for costs or delays resulting from the Engineer’s approval, rejection, or delay for staffing purposes of a request to perform nighttime operations.

3. Extended Hours.

Extended hours are allowed before sunrise with verbal notice given to the Engineer the previous day. Extended hours are allowed after sunset with verbal notice given to the Engineer that same day.

WEST FARGO

SPECIAL PROVISION

COLUMN AESTHETICS

PROJECT
SU-8-992(040)041

1. GENERAL

This work is governed by the most current version of the NDDOT Standard Specifications for Road and Bridge Construction and the additional requirements outlined in this section. The column aesthetic treatment work includes form-lining surfaces and application of concrete stain and anti-graffiti coating.

2. ARCHITECTURAL CONCRETE TEXTURE

A. Construct the columns with an Architectural Concrete Texture as shown in the plans. Use the form-liner pattern shown in the plans to achieve the architectural concrete texture. Use form-liner as follows:

   1. Tollway Ashlar, Pattern #12020 as manufactured by Custom Rock Formliner, 2020 West 7th Street, St. Paul, MN 55116, 1-800-637-2447, or approved equal.

B. Use form-liner molds that are reusable, made of high-strength elastomeric-urethane, and easily attachable to forms. Use molds that are removable without causing deterioration of the surface of the underlying concrete. Store, handle, install and remove form-liners in accordance with the Manufacturer's recommendations.

C. Submit work drawings showing the form-liner placement required to achieve a non-repeating, natural stone masonry pattern, along with installation instructions and product data and specifications.

D. 21 days prior to constructing any columns for this project, build a concrete mock-up using the same materials, methods, and work force that will be used for the project. Build the mock-up column at least 5 feet tall in size or larger if needed to adequately illustrate the pattern and texture required. After the concrete has cured a minimum of 28 days, apply the stain for the special surface finish for the finished wall. After the mock-up is complete, the Engineer will determine if the work represented by the mockup will be incorporated into the project.

3. SPECIAL SURFACE FINISH

A. Apply Special Surface Finish, consisting of a special penetrating stain mix, to all exposed concrete surfaces of the columns as shown in the plans and example below. Apply Special Surface Finish using approved stains in accordance with the Manufacturer's

recommendations. Stain formed concrete surfaces with the AMS-STD-595A colors as follows:

a. Base Color: Federal Standard 30257 (Tan)
b. Accent color: Federal Standard 31090 (Brown/Leather)

B. Apply base coat followed by accent color to column borders and medallion. Apply highlight coloration by hand staining or other suitable antiquing methods.

C. The stain creates a surface finish that is breathable (allowing water vapor transmission), resists deterioration from water, acid, alkali, fungi, sunlight or weathering. Stain mix will be a water-borne, low V.O.C. material and have a mass concentration less than 289 grams/liter. Color pigments for tinted product are derived from synthetic mineral oxides.

Physical and/or Performance Properties of the Stain	
Solids Volume	29-31%
Solids Weight	44-46 %
Viscosity	65-85 KU
Accelerated Weathering	1000 hours min. (ASTM G-26)

4. ANTI-GRAFFITI COATING

A. Apply a sealant to all stained concrete. The sealant should be compatible with the stain used for the wall and the associated anti-graffiti coating. During the mockup demonstration, apply the sealant over the stained concrete on half of the panel. The Engineer will decide on the use of the sealant based on the mockup.

Apply a clear, multi-coat anti-graffiti coating system designed for exterior architectural concrete surfaces. Supply a product that is non-yellowing, UV-resistant and does not require reapplication after graffiti removal. The anti-graffiti coating will be tested on the test panel/mockup. Provide graffiti removal agents that are biodegradable, non-toxic and non-flammable, and will not mar, shadow, or alter the existing appearance of the concrete following application. No traces of graffiti should be present following removal.

B. Clean the concrete surface prior to application of stain materials to assure that surface is free of latency, dirt, dust, grease, efflorescence, paint or other foreign material. Pressure wash with water at 3,000 psi with a rate of 3 to 4 gallons per minute. Use a fan nozzle perpendicular to the surface and at a distance of one to two feet from the surface unless

otherwise directed by the Engineer. The completed surface is to be free of any blemishes, discolorations, voids or other deformities.

5. BASIS OF PAYMENT

The Architectural Concrete Texture, Special Surface Finish, and Anti-Graffiti Coating including the mock-up panel as described will not be paid for directly but should be included in the price bid for “PEDESTRIAN RAILING”.

END OF SECTION

This document was originally issued and sealed by Jordan M. Gerber, Registration Number PE-27167 on 08/10/18 and the original document is stored at the City of West Fargo.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

PAINTING OVER GALVANIZED STEEL

PROJECT SU-8-992(040)041

GENERAL

This work consists of the surface preparation and painting of all galvanized steel pedestrian railing and handrail components as shown in Section 171 and 172 of the plans.

MATERIALS

Use a shop applied two coat paint system consisting of a polyamide epoxy primer and an aliphatic polyurethane finish coat. Provide the system from a single manufacturer. Provide components that are recommended for use as part of a two-coat system.

Use a paint system formulated by the manufacturer for use over galvanized steel.

A. Epoxy Primer.

Use a chemically-curing polyamide epoxy primer that is a two component and chemically-curing.

Use primer capable of being spray applied to the manufacturer's recommended Dry Film Thickness (DFT) in one coat without sagging or mud cracking. After mixing, the primer shall be smooth, uniform, and free of lumps or coarse particles.

Formulate the color of the primer to produce a distinct contrast with the galvanized surface and the finish coat.

Provide an epoxy primer that meets the material properties shown in Table 1.

Table 1 Paint Properties

Total Solids, percent by volume	54% min
Pot life at 77°F	4 hours min
VOC content	3.5 lbs/gal max
Curing Time for Recoating[1]	24 hours max
[1]When applied at the manufactures' recommended thickness at 77°F and 50% relative humidity.	

This document was originally issued and sealed by Jordan M. Gerber, Registration Number PE-27167, on 08/10/18 and the original document is stored at the North Dakota Department of Transportation

B. Finish Coat.

Use a compatible two-component, aliphatic polyurethane finish coat with a weather resistant finish and the gloss and color in accordance with Federal Standard No. 595B as specified herein:

Pedestrian Railing: Color No. 17038 (Black)

Use paint with a finish coat that meets the material properties shown in Table 1.

C. Certification and Acceptance.

Before the use of the paint system, provide a Certificate of Compliance as specified in Section 106.01 C, “Certificate of Compliance” and the following:

1. Manufacturer Contact Information;
2. Product Data Sheets;
3. Manufacturer's Application Instructions;
4. Material Safety Data Sheets;
5. A 3” x 5” Color Chip card for the colors specified; and
6. Compatibility statement.

D. Packaging and Labeling.

Provide a label on each container that contains:

- The name of manufacturer;
- The brand name;
- The lot number of the paint;
- Complete instructions for the use of the paint;
- The shelf life of the components; and
- The post life of the mixture.

CONSTRUCTION REQUIREMENTS

A. Surface Preparation.

Prepare the surface according to ASTM D 6386. Do not quench the surface if the galvanized coating will be applied within 48 hours.

Do not use chromate conversion coatings.

B. Coating Application.

Apply paint when environmental conditions, such as temperature, humidity, and dew point, are within the manufacturer's recommended range.

Apply coating in a uniform, even coat and worked into all corners and crevices. Use a brush on surfaces inaccessible to spray applications.

The DFT of the coating system will be in accordance with the manufacturer’s recommendations. Remove surface coating from areas outside the manufacturer’s specified range in a manner that protects the underlying galvanized coating and also prepares the surface for recoating.

C. Field Repair of Damaged Painted Coating.

1. Surface Preparation.
Remove areas of damaged coating down to the galvanized surface. Take care not to damage the underlying galvanized coating. Feather edges of cleaned repair areas to ensure a smooth finish.

2. Paint System Application.
Do not allow paint materials to come in contact with surfaces not intended to be painted. Provide a means to protect traffic from spattering paint materials if necessary. Prevent deleterious material form adhering to freshly painted surfaces.

Paint may be applied using spray, brush, or roller. Apply paint only when environmental conditions, such as temperature, humidity, and dew point, are within the manufacturer's recommended range.

D. Field Repair of Damaged Galvanized Coating.
Repair damaged galvanized coatings according to Section 854.02, "Damaged Galvanized Coatings".

METHOD OF MEASUREMENT AND BASIS OF PAYMENT
Include the cost of work described in this Special Provision in the contract unit price for "Pedestrian Railing".

This document was originally issued and sealed by Jordan M. Gerber, Registration Number PE-27167, on 08/10/18 and the original document is stored at the North Dakota Department of Transportation

CITY OF WEST FARGO

SPECIAL PROVISION

FIBER OPTIC CABLE (SINGLE MODE)

PROJECT
SU-8-992(040)041

DESCRIPTION
Furnish and install the backbone and breakout cable single mode fiber optic cables as indicated on the project plans.

MATERIALS

A. General.

Provide fiber optic cables that are suitable for outdoor conduit installation.

Provide fiber optic cable with compatible characteristics with other proposed and existing fiber optic cables. Provide optical cables furnished that meet the following fiber optic industry standards:

(1) International Telecommunications Union – Telecommunications Standardization Sector - Recommendation G.652.D
(2) Telecommunications Industry Association (TIA) - 598-D Optical Fiber Cable Color Coding
(3) International Organization for Standardization (ISO) - 9001
(4) Rural Utilities Service (RUS) - Specification for filled fiber optic cables

Only new and unused non-armored outdoor cable consisting of non-dispersion shifted, low water peak single-mode fiber strands free of surface imperfections and inclusions are allowed. Provide single mode fiber in which each strand consists of a doped silica core surrounded by a concentric silica cladding. Provide fiber with a matched clad design.

B. Fiber Strands.

Provide fiber strands that meet the following minimum characteristics:

(1) Typical core diameter of 9.0µm ± 1 µm
(2) Cladding Diameter of 125 µm ± 1 µm
(3) Core concentricity error: ≤ 0.6 µm
(4) Cladding Noncircularity: ≤ 1.0 %
(5) Coating Diameter (Colored): 245 ± 5 µm
(6) Maximum Attenuation (Loose Tube): 0.35 dB//km at 1310 nm wavelength and 0.22 dB/km at 1550 nm wavelength
(7) Mode-Field Diameter: 9.20 ± 0.30 µm at 1310 nm wavelength and 10.40 ± 0.50 µm at 1550 nm wavelength
(8) Attenuation at the Water Peak: 0.32 to 0.34 dB/km at 1383 ± 3 nm wavelength
(9) Cutoff Wavelength: ≤1260 nm
(10) Zero Dispersion Wavelength: 1300 nm to 1324 nm
(11) Zero Dispersion Slope: ≤ 0.092 ps / (nm^2 * km)
(12) Polarization Mode Dispersion: ≤ 0.06 ps/ $\sqrt{}_{km}$
(13) Maximum Polarization Mode Dispersion at 0.01% distribution (PMDq): 0.20 ps/$\sqrt{}_{km}$

(14) Maximum Fiber Dispersion: ≤ 18 ps/(nm*km) at 1550 nm.
(15) Fiber Curl: ≥ 4.0 m
(16) Proof Tensile Test: 100 kpsi (0.69 GN/m^2)
(17) Provide cable with 12 or 48 single mode fiber strands as indicated in the plans.

The fibers shall not adhere to the inside of the buffer tube.

The coating shall be a dual layered, UV cured acrylate applied by the fiber manufacturer. The coating shall be capable of being mechanically stripped with a force of 0.3 to 2.0 lbf.

Each single mode fiber strand shall be color coded with distinct and recognizable colors in accordance with the TIA-598-D *Optical Fiber Cable Color Coding*.

C. Buffer Tubes

Provide fiber optic cable that has buffer tubes containing 12 fiber strands.

Placed optical fibers inside a loose buffer tube.

Color code buffer tube shall be color coded with distinct and recognizable colors in accordance with TIA-598-D

If fillers are required, placed them in the inner layer of the fiber optic cable. Begin the color sequences of the buffer tubes from the inside layer and progress outward.

In buffer tubes containing multiple fibers, the coloring must be stable during temperature cycling and not be subjected to fading or smearing onto each other. Colorings shall not cause fibers to stick together.

The buffer tubes must contain water blocking swellable yarns to prevent water from entering the individual buffer tubes. Swellable water blocking material must be non-nutritive to fungus, electrically non-conductive and homogeneous. It must be free from dirt and foreign matter and not require cleaning prior to splicing and placement into the splice closure tray. Thoroughly cleaned the fiber stands prior to fiber splicing. All water blocking material must be uniformly distributed throughout the buffer tubes.

Provide stranded buffer tubes around a central member of the cable using a reverse oscillation stranding process.

The buffer tubes must be resistant to external forces and meet the buffer tube cold bend and shrinkback requirements of Code of Federal Regulations (CFR) 7 CFR 1755.900 – *RUS Specification for filled fiber optic cables*.

D. Fiber Cable

Fillers may be included in the cable core to lend symmetry to the cable cross-section where needed and must not be placed to interrupt the consecutive positioning of the buffer tubes. Nominally match the fillers to the outer diameter of fiber filled buffer tubes.

Consist the central anti-buckling member of the cable of all dielectric, glass reinforced plastic (GRP) rod.

For single layer cables, apply a water swellable, (blocking) tape longitudinally around the outside of the buffer tubes and fillers. Hold the tape in place by a single polyester binder yarn. The water swellable tape must be non-nutritive to fungus, electrically non-conductive, homogenous and free from dirt and foreign matter. Apply water blocking material uniformly throughout the fiber cable to inhibit the ingress of water into the cable. Gel filled water-blocking compound will not be allowed in the cable core interstices of the fiber optic cables.

When the fiber cable is provided with dual layer buffer tubes, provide both the inner and outer layer with water swellable tape.

Apply binders with sufficient tension to secure the buffer tubes to the central member without crushing the buffer tubes. The binders must be non-hygroscopic, non-wicking (or rendered so by the flooding compound), and dielectric with low shrinkage.

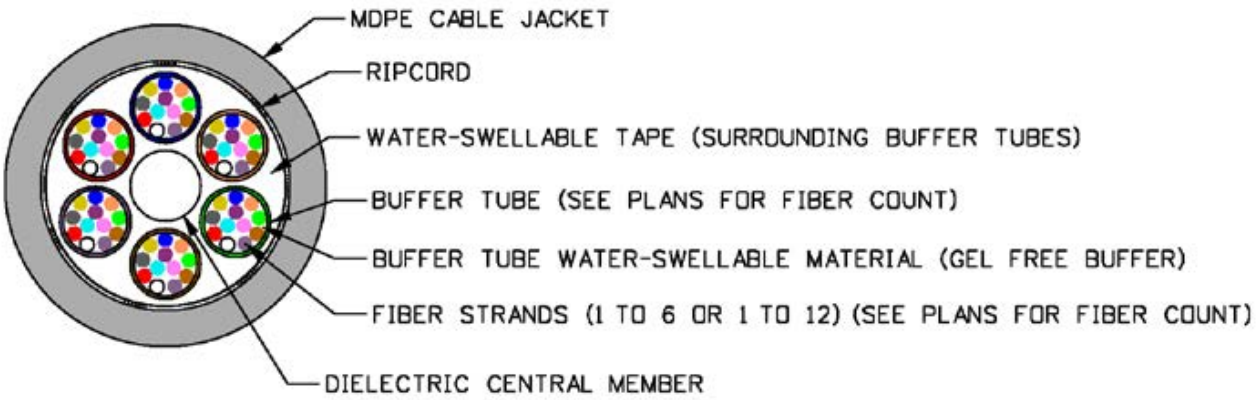
The cable must contain at least one ripcord under the sheath for easy sheath removal.

Outer cable jacket must have a consistent thickness throughout the entire cable length and sheathed with medium density polyethylene (MDPE). Apply jacketing material directly over the tensile strength members and water blocking tape. The MDPE jacket material must be as defined by ASTM D1248, Type II, Class C, Category 4 and Grades J4, E7 and E8 and contain carbon black to provide ultraviolet light protection and must not promote the growth of fungus.

The cable jacket must be free of holes, splits and blisters and be of a consistent thickness.

Mark the cable jackets with the manufacturer’s name, sequential foot markings, fiber type and count, month and year of manufacture and a telecommunication handset symbol, as required by Section 350G of the National Electrical Safety Code (NESC). The actual length of the cable must be within 0 to 1 percent of the length markings. The marking must be in contrasting color to the cable jacket. The height of the marking must be at a minimum of easily readable.

Submit to the Engineer a detailed fiber optic cable specification sheet from the manufacturer for approval. Make note in specification sheet what water blocking material is used for both the cable interstices and buffer tubes, the size of the cable and whether the cable is used for backbone or breakout cable fiber optic cable runs. Failure to fully describe the type of water blocking material, cable size, and cable usage will result in the submittal being rejected. The submittal must be resubmitted with all of the required information.



Specification Detail 1

Typical Cross Section of Fiber Optic Cable to Be Provided Per This Specification

E. Environmental Parameters.

Meet the following minimum environmental parameters:

(1) Shipping, storage and operating temperature range of the cable shall be; -40°F to +158°F (-40°C to +70°C)

(2) Operating temperature range of the cable shall be; -40°F to 158°F (-40°C to +70°C)

(3) Installation temperature range of the cable shall be; -22°F to +140°F (-30°C to +60°C)

F. Quality Assurance.

Meet the following minimum quality assurance requirements:

(1) All optical fibers shall be 100 percent attenuation tested in accordance with Revision of Section 614 – Test Fiber Optic Cable. The attenuation of each fiber shall be provided with each cable reel.

(2) The cable manufacturer shall be ISO 9001or TL 9000 registered.

G. Packaging.

Meet the following minimum packaging parameters:

(1) Package the complete cable on new wooden reels.

(2) Top and bottom ends of the cable must be available for testing.

(3) Seal both ends of the cable to prevent the ingress of moisture.

(4) Attach a weatherproof reel tag to each reel identifying the reel and cable.

(5) Accompany each cable by a cable data sheet that contains significant information on the cable.

(6) Do not store or ship the cable reels on their sides.

CONSTRUCTION REQUIREMENTS

Use fiber optic cable for the main backbone cable and breakout cable cables. Terminate the main backbone cable in a splice closures as shown in the plans. Conduct splicing at cable end splice locations and device splice locations shown on the project plans or as approved by the Engineer.

A minimum of one week prior to fiber optic work, give the Engineer a detailed installation and splicing Method Statement and schedule. List all installation, splicing, termination, and testing

on the schedule and Method Statement and re-submit revisions to the Engineer immediately. Installation of the fiber optic cable will not be permitted until the Method Statement and schedule has been approved by the Engineer.

Keep the Engineer apprised of all coordination activities it performs with third parties as it pertains to this project. The Contractor is responsible for coordinating with third parties when installing and splicing proposed fiber optic cable adjacent to existing third party owned fiber optic infrastructure and when splicing proposed fiber optic cable to existing third party owned fiber optic cable.

Provide the Engineer with two copies of the cable manufacturer's installation instructions for all fiber optic cable. All installations must be in accordance with the manufacturer's recommendations except as otherwise directed by the Engineer. All additional costs including fiber optic cable associated to damages caused by the Contractor's neglect of recommended procedures is the Contractor's responsibility.

Install fiber optic cable including both backbone cables and breakout cable cables in continuous runs as shown on the project plans. If cable end splices are not shown on the project plans, include a detailed installation plan with the Method Statement showing cable installation lengths and cable end splice points. Install the fiber cable in reel lengths that minimize the quantity of cable end splices. Under no conditions cut or splice the fiber optic cable at intermediate points without express written direction from the Engineer.

Install the new fiber cable in a manner which will not interfere with the integrity of existing cable and equipment and in a manner which will not interfere with the maintenance of the traffic signal cable, wiring or equipment.

Blowing cable is an acceptable alternative to pulling cable. If this method is used, submit complete information on fiber installation equipment.

The maximum pulling tension allowed is 600 pounds (2700 N) during installation (short term) and 200 pounds (890 N) long term installed.

Provide cables with a minimum bending radius based on the diameter of the cable and meet the following;
(1) Under max pulling tension – 15 (Fifteen times the cable outside diameter)
(2) Unloaded, not under tension – 10 (Ten times the cable outside diameter)

Install the fiber optic cable in the conduit with a split-mesh cable grip to provide a firm hold on the exterior covering of the cable.

Do not exceed the manufacturer's recommended maximum allowable pull tension for cable pull lengths. Use a pulley system with a numerical readout indicating the cable tension. Use a pulley system that is capable of alerting the installer when the cable pulling tension approaches the manufacturer's maximum allowable tension. The Contractor may supplement this procedure with a breakaway tension limiter set below the lowest recommended tensile limit of the cables being pulled. Use intermediate pulleys at all pull boxes along the installation run to prevent cable damage.

During cable installation, insure no damage to cable occurs due to friction conduit and cable jacket. This may require installing temporary sweeps on the ends of HPDE conduit during cable installation.

If the entire reel length cannot be installed completely from one end of the run, perform the installation from the mid-point of the run. First pull one-half of the cable from the reel at the mid-point through the conduit to one end of the run. Remove the other half of the cable from the reel and carefully place on the ground in a figure eight pattern with a minimum loop diameter of 10 feet. While installing the remaining cable, take care to avoid dragging against the ground resulting in damage or excess bending of the cable. Do not kink, twist or bend the cable during installation coiling and uncoiling.

Continuously lubricated the cable as it enters the conduit. Use pulling lubricants recommended by the cable manufacturer. Do not use liquid detergent.

Furnish and install a pre-lubricated pull tape and 12 Gauge tracer wire in the same conduit as the fiber being installed. Include the cost of the pull tape and tracer wire in the price bid for “IT SYSTEM”.

If an existing fiber optic cable is damaged during construction, removed the cable from both points of termination and replace, at no cost to the project.

The conduit fill ratio of new conduit must not exceed the requirements of the National Electrical Code. It is permitted to encase PVC in concrete pad foundations. Refer to specification sections 770 and 895 for conduit requirements. Provide white, long-style couplings rated for HDPE conduit.

Include in the installation of fiber optic cables slack coil and a minimum of three strain relief locations within all traffic signal controller cabinets. Strain relief shall ensure that the connectors are not subjected to the weight of the breakout cable.

Identify all fiber optic cables with identification labels attached to the cable in each pull box, manhole or communications cabinet.

Coil 160 feet of slack (80’ for each ingress) of fiber cable in a pull boxes. Coil 40 feet of slack fiber cable in all traffic signal controller cabinets.

Label backbone, breakout cable buffer tubes and fiber strands on the splice tray prior to sealing of the closure. Neatly train, lace, and label all cables inside cabinets. At a minimum, label direction of cable and the use of buffer tubes.

Submit a final documentation package. Include in the final documentation package the cable manufacturer’s installation procedures, technical support documentation and material documentation. These documents must match the original submittals provided to the Engineer.

TESTING REQUIREMENTS

Conduct Optical Time Domain Reflectometer (OTDR) tests, and optical power meter tests of all installed fiber. This includes testing the existing fiber optic cable after it is removed and reinstalled in new conduit as shown in the plans. Test single mode segments in one direction at both the 1310 nm and 1550 nm wavelength. Test each fiber of each cable run and provide results of the test and the reel packing label test results from the manufacturer to NDDOT. Include the backbone and breakout cable in the tests. If the individual cable runs do not match the test results of the packing label test results less the connection and splice losses, replace the cable at no cost to the project.

Calculate acceptable attenuation values for each fiber tested. These values represent the maximum acceptable test values. The general attenuation equation for all single mode link segments is as follows:

Acceptable Link Attenuation = Cable Attenuation + Connector Attenuation + Splice Attenuation.

8.3 µm (nominal) Single-mode Attenuation Coefficients:
(1) Cable Attenuation=Cable Length (km) x (0.35 dB/km at1310 nm and 0.22 dB/km at1550 nm)
(2) (No. of Mated Connections x 0.50 dB)
(3) Splice Attenuation = Splices x 0.30 dB

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Include the fiber optic cable, splicing, terminations, identification labels (including in all pull boxes), as-built documentation, testing, and all associated materials in the price bid for “IT SYSTEM” and include all labor, materials and equipment required to complete the work.

This document was originally issued and sealed by Samuel D Trotman, Registration Number PE-10901 on 08/10/18 and the original document is stored at the City of West Fargo.

CITY OF WEST FARGO

SPECIAL PROVISION

FIBER OPTIC SPLICE CLOSURE

PROJECT
SU-8-992(040)041

DESCRIPTION
This item includes installing fiber optic splice closures and performing splicing of fiber optic cables at underground locations (in pull box) as shown on the plans.

MATERIALS
The fiber optic splice closures shall be furnished and installed by the Contractor.
The splice closures shall be dome type and shall meet the following minimum requirements:

(1) The closures shall seal, anchor and protect fiber optic cable splices.
(2) The closures shall have a minimum of six total cable entries.
(3) The closures shall be suitable for underground applications and shall be corrosion resistant, watertight and airtight.
(4) The closure splice trays shall have a hinged design with an upright locking mechanism for all splice trays.
(5) The closures shall have a sealing design that does not require glue, sealant, or new cable seals to re-enter the closure.
(6) The closure shall be bonded inside and outside and have an external ground lug.
(7) The Contractor shall include all necessary accessories to complete splicing.
(8) The Contractor shall include all mounting hardware if not provided with pull box or manhole
(9) The splice closure shall comply with Telcordia Generic Requirement (GR) GR-771

Size the closures to provide a capacity equal to the total number of strands for all cables entering the closure.

CONSTRUCTION REQUIREMENTS
Notify the Engineer of proposed daily splicing locations two business days prior to splicing and also the morning of proposed splicing. Contact the Engineer at least four hours prior to sealing the closure to allow for inspection.

If the Engineer cannot be on site to inspect the open splice closure, take a minimum of eight digital pictures at varying angles of the interior of the splice closure showing all completed work as stated in this specification and shown in the project plans. Include in the pictures the exposed fiber stands (both spliced and uncut) in all splice trays, fiber tray labeling and remaining buffer tubes showing appropriate coiling. Include one picture showing the complete re-assembly of all interior parts prior to final sealing. Once the closure and fiber coils are installed in the pull box or manhole, take two pictures showing the final installation of both the closure and the coiled fiber cable attached to the fiber management hardware. Organize all pictures per location and submit to the Engineer along with all final testing result documentation.

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Provide an installation technician with a minimum certification in IMSA Fiber Optics for ITS, Traffic, Fire Alarm, and Communications Systems or equivalent or better fiber optics certification.

Perform all splices using the fusion splicing method. Use a fusion splicer that has been calibrated and certified at least once within the previous year from this project. Present all certification documentation to the Engineer prior to start of fiber splicing.

Fusion splice all optical fibers as shown in the plan and meets the testing requirements within Special Provision SU-8-992(040)041 (1) Fiber Optic Cable (Single Mode).

Label each individual splice and buffer tube in all splice trays.

Cut and splice only those fiber strands shown to be spliced on the fiber splicing details. Do not cut unused buffer tubes and fiber strand. After the fiber cable and proposed buffer tube is prepped for splicing, clean all fiber strands in the buffer tube of all homogeneous gel, unless gel-free buffer tubes are used. Coil all uncut fiber strands in the tray. Coil, secure and store the remaining buffer tubes in the storage area within the closure under the splice trays per the manufacturer's recommendations. Wrap and secure buffer tubes proposed for splicing to the splice tray with ties per the manufacturer's recommendations.

Do not tape bare fiber strands to the splice tray.

Secure and seal all fiber optic cables at the closure entrances. Plug all unused cable entries.

If the closure requires re-entry, conduct the re-entry per the manufacturer's recommendation for re-entry and resealing. Use caution to prevent damage to the existing fiber strands, splices, and buffer tubes inside the splice closure. When sealing the closure for a second time, the follow all re-entry requirements of the manufacturer.

Ensure that the fiber optic splice closures and associated fiber cable coils fit adequately within the manhole or pull box splice locations shown on the plans.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT
Include the Fiber Optic Splice Closures and all associated materials in the price bid for "IT SYSTEM" and include all labor, materials and equipment required to complete the work.

This document was originally issued and sealed by Samuel D Trotman, Registration Number PE-10901 on 08/10/18 and the original document is stored at the City of West Fargo.

WEST FARGO

SPECIAL PROVISION

BUFFER TUBE FAN-OUT KIT

PROJECT
SU-8-992(040)041

DESCRIPTION
Furnish and install Buffer Tube Fan-out Kits on the single mode fiber optic ends in traffic signal controller cabinets.

MATERIALS
Provide Buffer Tube Fan-Out Kits that match the number of fiber strands in the lateral fiber optic cable. Provide Buffer tube fan-out kits that are compatible with the fiber optic cable being terminated and color-coded to match the lateral fiber strand color. Provide fan out kit buffer tubes that are 900 um. Provide buffer tube fan out kits that have a fiber strand length for routing and placement in the fiber optic termination panel. Provide components of the fan-out kit that are rated for outdoor use.

CONSTRUCTION REQUIREMENTS
Install fiber optic cable buffer tube fan out kits on lateral fiber cable ends within each traffic signal cabinet fiber optic termination panel. Coil and secure the fan out buffer tubes with the fiber management materials provided with the fiber optic termination panels. Taping of buffer tubes or leaving buffer tubes unmanaged is not allowed.

METHOD OF MEASUREMENT
Include that Buffer Tube Fan-Out Kits and all associated materials in the price bid for “IT SYSTEM” and include all labor, materials and equipment required to complete the work.

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CITY OF WEST FARGO

SPECIAL PROVISION

FIBER OPTIC PRE-CONNECTORIZED

PROJECT
SU-8-992(040)041

DESCRIPTION
This work consists of the installation of single mode fiber optic pre-connectorized patch cables between the termination patch panel and the optical ports on the MOXA EDS-P510 ethernet switches in the traffic signal controller cabinets.

MATERIALS
Provide fiber optic cables suitable for outdoor conduit installation.

Provide fiber optic cable that is compatible characteristics with other proposed and existing fiber optic cables. Provide single mode fiber that meets or exceeds the requirements of International Telecommunications Union – Telecommunications Standardization Sector - Recommendation G.652.D.

Provide cables that are new and unused non-armored outdoor cable consisting of non-dispersion shifted, low water peak single-mode fiber strands free of surface imperfections and inclusions. Each single mode fiber strand must be doped silica core surrounded by a concentric silica cladding. Provide fiber of matched clad design.

The measured attenuation of the connector (inclusive of coupler and mated test connector) shall not exceed an average of 0.3 decibel (dB) for all connectors provided. All connectors found in excess of 0.5 dB shall be rejected. Reflectance shall be less than -40 dB from 14ºF to 140ºF (-10ºC to +60ºC). The manufacturer must have a program that periodically tests connectors to ensure that after 1000 re-matings, the attenuation will not change more than 0.2 dB.

The measured insertion loss shall be a maximum of 0.25 dB with a typical loss of 0.15 dB. Return loss shall be a maximum of -65 dB (Angle Physical Contact - APC) and -55 dB (Ultra Physical Contact -UPC) with a typical loss of -68 dB (APC) and -58 dB (UPC). The minimum cable bend radius shall be 15 times the outer diameter of the cable.
The connector shall be able to withstand an axial pull of 25 pounds with no physical damage to the connector and no permanent optical degradation more than 0.3 dB.

Provide pre-connectorized cables that include pre-connectorized connectors on both ends to match the termination patch panel bulkheads (LC) and ethernet switch optical ports (LC). The manufacture must terminate the connectors.

Provide pre-connectorized cables of sufficient length to span from the fiber termination patch panel bulkheads to the ethernet switch optical ports, with a maximum length of 4 feet in all cabinets.

Provide connectors that are nickel-plated with a ceramic ferrule and polished to match the polish of the optical port that the connector will be plugged into.

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Provide bend insensitive pre-connectorized patch cable that meets the following specifications:

Patch Cable Connectors
• EIA, TIA-55 (FOCIS)
• UL94 V-O
• GR-326, Issue 3 Specifications
• Fiber Cable - Telcordia GR-409

Provide cables that contain the exact number of loose tube fibers and bulkhead connectors to connect from the termination patch panel to the ethernet switch optical ports.

CONSTRUCTION REQUIREMENTS
Install pre-connectorized cables from the termination panel bulkheads to the ethernet switch optical ports.

The Installation technician must have a minimum certification in International Municipal Signal Association (IMSA) Fiber Optics for ITS, Traffic, Fire Alarm, and Communications Systems or equivalent or better fiber optics certification.

At the traffic signal cabinets, neatly route pre-connectorized cables between the fiber termination patch panel bulkheads and the ethernet switch optical port. Use appropriate cable management.

Prior to installation, clean all pre-connectorized cable bulkhead connectors with lint-free fiber wipes moistened with Isopropyl Alcohol 99 percent U.S.P. After cleaning with alcohol, clean the bulkhead with an optical connector cleaner to ensure that all residues are removed.

Submit manufacturer testing reports for pre-connectorized cables as part of the as-built documentation. Note the installation location on the test report for future reference.

At all traffic signal cabinets, apply an identification label at each end of each pre-connectorized patch cable. On the identification label, include the termination panel port and the data transmitting description (example: Tx or Rx), device being connected and ethernet switch optical port.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT
The Fiber optic pre-connectorized cables, MOXA EDS-510 ethernet switches and all associated materials in the price bid for “IT SYSTEM” and include all labor, materials and equipment required to complete the work.

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CITY OF WEST FARGO

SPECIAL PROVISION

FIBER OPTIC TERMINATION PANEL

PROJECT
SU-8-992(040)041

DESCRIPTION
This work consists of furnishing and installing fiber optic termination panels in traffic signal cabinets for single mode fiber optic cables.

MATERIALS
Manufacture all termination panels using aluminum and finished with a powder coat. Provide termination panels accommodate lateral fiber optic cables as shown on the plans. Equip all termination panels with 12 port (LC) type bulkheads and be compliant with the Telcordia Technologies Generic Requirement (GR) GR-326 *Generic Requirements for Single-Mode Optical Connectors and Jumper Assemblies, Latest Issue*. Perform acceptance testing for insertion loss and return loss with the test certification provided with each patch panel.

Label the termination panels with labeling scheme that complies with details as shown on the plans.

Provide termination panels that are compatible with the fiber optic cable being terminated.

Provide 12 port panels as indicated in the plans, that have hinged doors that provide access to both the fiber fan out and the termination bulkheads. Size the panel to accommodate the entry of the lateral fiber optic cable, fiber fan out, and bulkheads with the access door closed. Provide patch panels that are suitable to be installed in a traffic signal controller cabinet. Provide fiber optic patch panels that each include a fiber adapter panel, adapters, fiber pig tails, strain relief, grommet tape, zip ties, cable management hardware for fiber strands and fan out kit buffer tubes, and wall mounting bracket. Provide terminations within the patch panel that are polished with a physical contact (PC) finish.

CONSTRUCTION REQUIREMENTS
Provide 12 port termination panels as indicated in the plans for lateral fiber optic cables at each traffic signal controller cabinet.

Fiber terminations are as shown on the plans. Field terminate LC type bulkhead connectors on the ends of the lateral fiber cable strands and install them on the back side of the termination panel. Provide terminated connectors that are nickel-plated with a ceramic ferrule and polished with a physical contact finish.

Use a single mode fiber pigtail buffer tube that is factory terminated on the 12 port LC type bulkhead and fusion splice the pigtail to the lateral fiber optic cable. Size and configure the termination panel to accommodate splicing of the pigtail and shall include a splicing chip attached to the back of the patch panel to hold all individual splices.

This document was originally issued and sealed by Samuel D Trotman, Registration Number PE-10901 on 08/10/18 and the original document is stored at the City of West Fargo.

Use proper strain relief and cable management inside the termination panel for the fiber cable and fiber fan out strands per the manufacturer's recommendations. The use of tape to secure the individual fanned out strands to the bottom of the termination panel is not allowed.

Install all hardware in accordance with manufacturer's recommendations.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT
Include the Fiber Optic Termination Panels and all associated materials in the price bid for "IT SYSTEM" and include all labor, materials and equipment required to complete the work.

This document was originally issued and sealed by Samuel D Trotman, Registration Number PE-10901 on 08/10/18 and the original document is stored at the City of West Fargo.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

CITY OF WEST FARGO STANDARD SPECIFICATIONS

Project: SU-8-992(040)041; PCN 21569

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of North Dakota.

City of West Fargo Standard Specifications	Erik Gilbertson Moore Engineering, Inc.	*This document was originally issued and sealed by Erik Gilbertson, Registration Number PE-5581, on 8/12/2018 and the original document is stored at the City of West Fargo*

1. SUMMARY

A. The City of West Fargo has Standard Specifications to cover the domestic water distribution and sanitary sewage collection portions of the project.

2. GENERAL

A. All related requirements in these portions of the City of West Fargo specifications not included in this special provision will default to the NDDOT Standard Specifications for Road and Bridge Construction. This includes references to legal requirements, quality assurance, product delivery, storage, and handling, submittals, substitutions, and other references omitted from the City of West Fargo Standard Specifications.

B. Payment and measurement for water distribution and sanitary sewage collection items shall be in accordance with the City of West Fargo Standard Specifications for the following items:

SPEC	CODE	NDDOT PAY ITEM	CITY OF WEST FARGO SPECIFICATION
722	0428	8FT X 6FT RCB CULVERT MANHOLE	333123 - Sanitary Sewerage Force Main Piping
722	6140	ADJUST GATE VALVE BOX	331419 - Valves & Hydrants for Water Utility Service
722	6248	ADJUST 3IN WATERMAIN	331413 - Public Water Utility Distribution Piping
724	0210	FITTINGS-DUCTILE IRON	331413 - Public Water Utility Distribution Piping
724	0300	GATE VALVE & BOX 6IN	331419 - Valves & Hydrants for Water Utility Service
724	0310	GATE VALVE & BOX 8IN	331419 - Valves & Hydrants for Water Utility Service
724	0317	GATE VALVE & BOX 16IN	331419 - Valves & Hydrants for Water Utility Service
724	0375	RELOCATE GATE VALVE & BOX	331419 - Valves & Hydrants for Water Utility Service
724	0400	HYDRANT-INSTALL 6IN	331419 - Valves & Hydrants for Water Utility Service
724	0427	ADJUST HYDRANT	331419 - Valves & Hydrants for Water Utility Service
724	0552	TAPPING SLEEVE & VALVE 16IN X 8IN	331413 - Public Water Utility Distribution Piping
724	0571	TAPPING SLEEVE & VALVE 20IN X 4IN	333123 - Sanitary Sewerage Force Main Piping
724	0611	WATER SERVICE LINE 1IN	331417 - Site Water Service Utility Laterals
724	0621	WATER SERVICE LINE 2IN	331417 - Site Water Service Utility Laterals
724	0810	WATERMAIN 6IN PVC	331413 - Public Water Utility Distribution Piping
724	0830	WATERMAIN 8IN PVC	331413 - Public Water Utility Distribution Piping
724	0852	WATERMAIN 16IN PVC	331413 - Public Water Utility Distribution Piping
724	0860	20IN FORCEMAIN	333123 - Sanitary Sewerage Force Main Piping
724	0892	RELOCATE WATERMAIN	331413 - Public Water Utility Distribution Piping
724	0955	WATER SERVICE CONNECTION 1IN	331417 - Site Water Service Utility Laterals
724	0960	WATER SERVICE CONNECTION 2IN	331417 - Site Water Service Utility Laterals
724	9018	FORCEMAIN 4IN	333123 - Sanitary Sewerage Force Main Piping
724	9022	FORCEMAIN 8IN	333123 - Sanitary Sewerage Force Main Piping
724	9024	FORCEMAIN 10IN	333123 - Sanitary Sewerage Force Main Piping
724	9028	FORCEMAIN 16IN	333123 - Sanitary Sewerage Force Main Piping

C. Pay item names comply with standard NDDOT naming conventions as listed above.

3. TABLE OF CONTENTS

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

COMMERCIAL GRADE HOT MIX ASPHALT

PROJECT SU-8-992(040)041 - PCN 21569

DESCRIPTION
This work consists of supplying a Commercial Grade Hot Mix Asphalt that meets the requirements of Section 430, "Hot Mix Asphalt (HMA)", with the following revisions.

MATERIALS
Add the following to the end of Section 430.03 "Materials".

F. Commercial Grade Hot Mix Asphalt.
Provide commercial grade asphalt that meets the requirements of any of the FAA designations in Section 430.03 C, "Superpave Mix Properties".

The requirements of the following sections will not be applied to commercial grade asphalt:
- Section 430.04 B, "Engineer's Quality Assurance Plan";
- Section 430.04 C.2, "Determination of Specific Gravity"; and
- Section 430.04 E, "QC Testing".

Section 430.04 D "Mix Design" is replaced with the following requirements:

Submit a mix design that was previously approved under another Department contract. Include the project number and PCN of the previous project.

If using a stationary plant, use a mix design previously approved by the Department within the last year. Include the date that the mix design was approved.

If a previously approved mix design is not available, submit a new mix design to the Engineer at least 10 calendar days before placement of material. The Engineer will request materials to use in mix design verification before approving the mix design.

CONSTRUCTION REQUIREMENTS

A. Contractor Personnel.
Replace Section 430.04 A "Contractor Quality Control (QC) with the following:

Provide personnel meeting the requirements of NDDOT Technical Certification Program for the following tests:
- ND T 2 – Sampling of Aggregates; and
- NDDOT 5 Sampling and Splitting Field Verification of Hot Mix Asphalt (HMA) Samples.

B. Engineer's Acceptance Testing:
Replace Section 430.04 M "Acceptance" with the following:

The Engineer will perform acceptance tests at the frequency shown in Table 1. At times directed by the Engineer, obtain aggregate samples from the cold feed belt according to ND T 1.

Table 1	
Testing Frequencies	
Test/Assessment	**Minimum Testing Requirements**
ND T 11 Materials Finer than No. 200 Sieve	1 per production day
ND T 27 Sieve Analysis of Fine and Coarse Aggregate	1 per production day
ND T 304 Fine Aggregate Angularity	1 per production day
ND T 166 Bulk Specific Gravity of Compacted Asphalt Mixtures Using Saturated Surface-Dry Specimens	1 per production day
ND T 209 Theoretical Maximum Specific Gravity and Density of Hot Mix Asphalt	1 per production day

The Engineer will determine the percentage of air voids when determining the maximum theoretical density. Provide mix with between 2 and 6 percent air voids, when calculated on the Maximum Density Worksheet (SFN 50289).

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Pay Item	Pay Unit
Commercial Grade Asphalt	Ton

Include the cost of aggregate, asphalt cement, prime coat, and tack coat in the contract unit price for "Commercial Grade Asphalt."

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

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

PERMITS AND ENVIRONMENTAL CONSIDERATIONS

Project: SU-8-992(040)041 - PCN 21569

This Special Provision incorporates the US Army Corps of Engineers (USACE) Section 404 Permit, and the Floodplain Development Permit obtained by the City of West Fargo into the bidder's proposal.

The Contractor is responsible for complying with all the terms and conditions as contained in the permits attached hereto. Bidders will become familiar with all standard conditions and special conditions of the permits and submit their bid for the construction of this project based on the following:

- **Section 404 Permit**
  The 404 Permit authorizes 0.37 acres of temporary and 3.44 acres of permanent jurisdictional wetland impacts resulting from construction activities.
  Temporary impacts were assumed by the designer and will be restored to preconstruction contours.

  See Section 75 of the plans for the permitted impact areas. The Section 404 Permit is attached.

- **Floodplain Permit**
  The Floodplain Development Permit authorizes work within the mapped 100-year floodplain. The Floodplain Development Permit and flood insurance rate maps are attached.

The Contractor is responsible for impacts not authorized by the attached Permits obtained by the City of West Fargo.

Floodplain Development Permit Application

City of West Fargo, NFIP Community No. 380024

PERMIT# 2018-04

Please complete all items on this page

Applicant Chris Brungardt - City of West Fargo Date: August 07, 2018

Address 810 12th Ave NW Telephone 701-433-5400

Location of proposed project: Sheyenne Street from 40th Ave to 32nd Ave

Name of Project: Sheyenne Street – Improvement District 2244

Contractor: _____ Telephone _____

Project Contact Person: _____ Telephone _____

SECTION 1: DEVELOPMENT ACTIVITY

Check all that apply:

- ☐ Fill ☐ Mining ☐ Drilling ☒ Grading
- ☐ Excavation (except for structural development)
- ☐ Watercourse Alterations (including channel modifications)
- ☒ Drainage Improvements (including culvert work)
- ☒ Road, Street or Bridge Construction
- ☐ Subdivision (new or expansion)
- ☐ Other (specify on space below)

Comments or further explanation of work:

Street reconstruction project from a rural 2 lane street to a 4 lane urban street. Expansion of existing stromwater pond south of 40th Ave and just north of Storm Sewer Lift Station SM72. Most of project is within Zone X as defined by FEMA. Proposed construction limits for a small portion of the project in the SE corner of 32nd Ave and Sheyenne Street are close to the FEMA Zone A determination. Floodplain permit is for this portion of the project. See attachments.

Attach/submit plans, description, blueprints, etc., as available to this application.

SECTION 2: FLOODPLAIN DETERMINATION

- [X] Floodplain (Flood Fringe)
- [ ] Floodway
- [ ] Project is not located in a Special Flood Hazard Area

Effective FIRM Panel & Date _38017C 0759G__**January 16, 2015**__ **FIRM Zone** A

BFE at Project Site __903.51 at 32nd Ave_ (NAVD 1988)

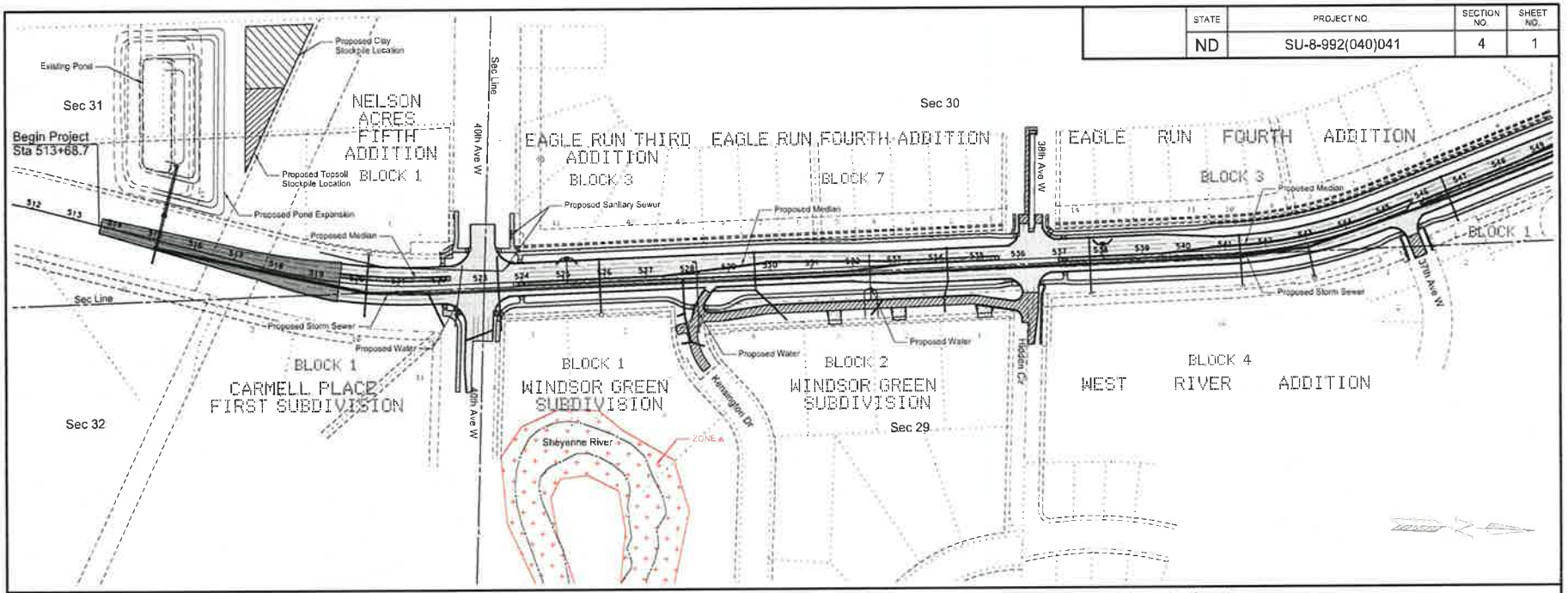
SECTION 3: ACTION / APPROVAL / DENIAL

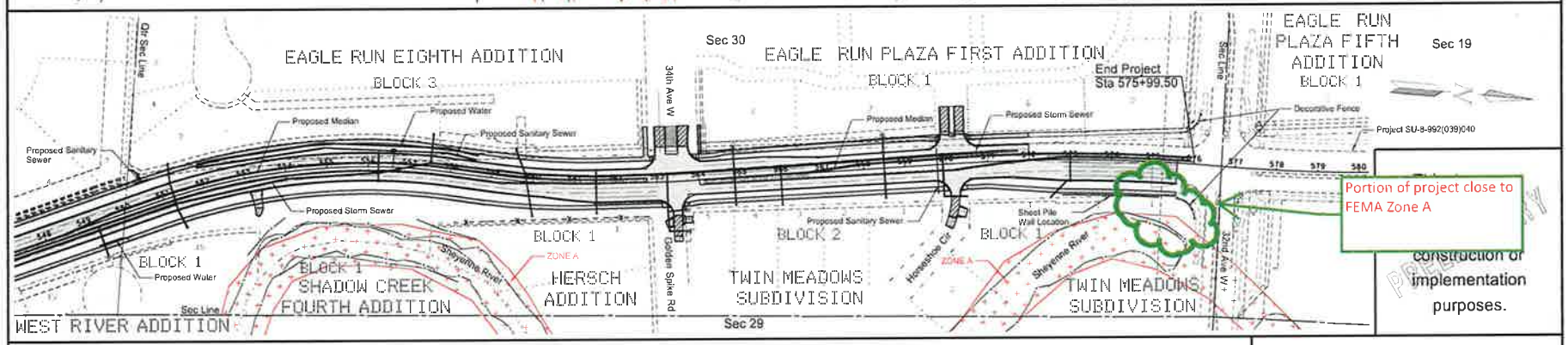
- [X] **Permit is Approved** **Conditions:** _____
- [ ] **Permit is Denied** **Comments:** _____

Mark Hanel
SIGNATURE, Floodplain Administrator

DATE 8/9/18

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	4	1





Portion of project close to FEMA Zone A

construction or implementation purposes.

PRELIMINARY

LEGEND

- 10IN PCC PAVEMENT
- SUPERPAVE FAA 43
- COMMERCIAL GRADE HOT MIX ASPHALT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- CONCRETE DRIVEWAY 8IN
- SIDEWALK CONCRETE REINF

Sheyenne Street

Scope of Work

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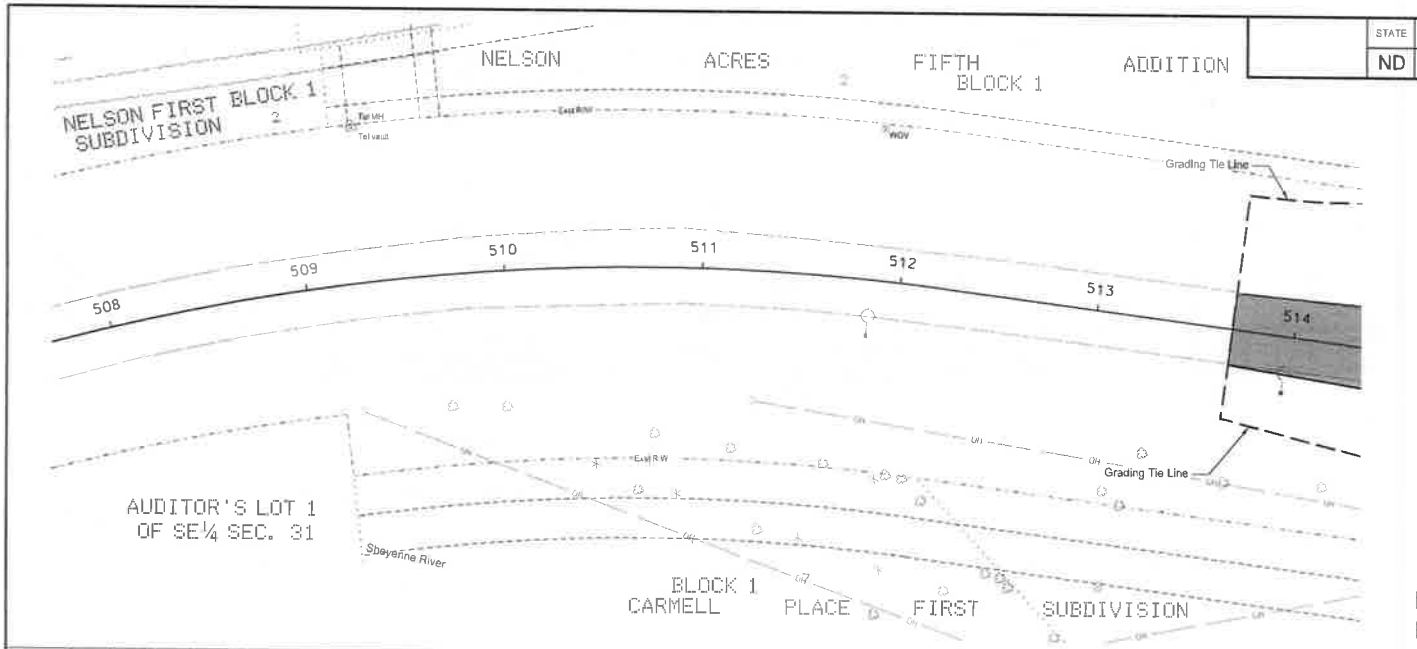
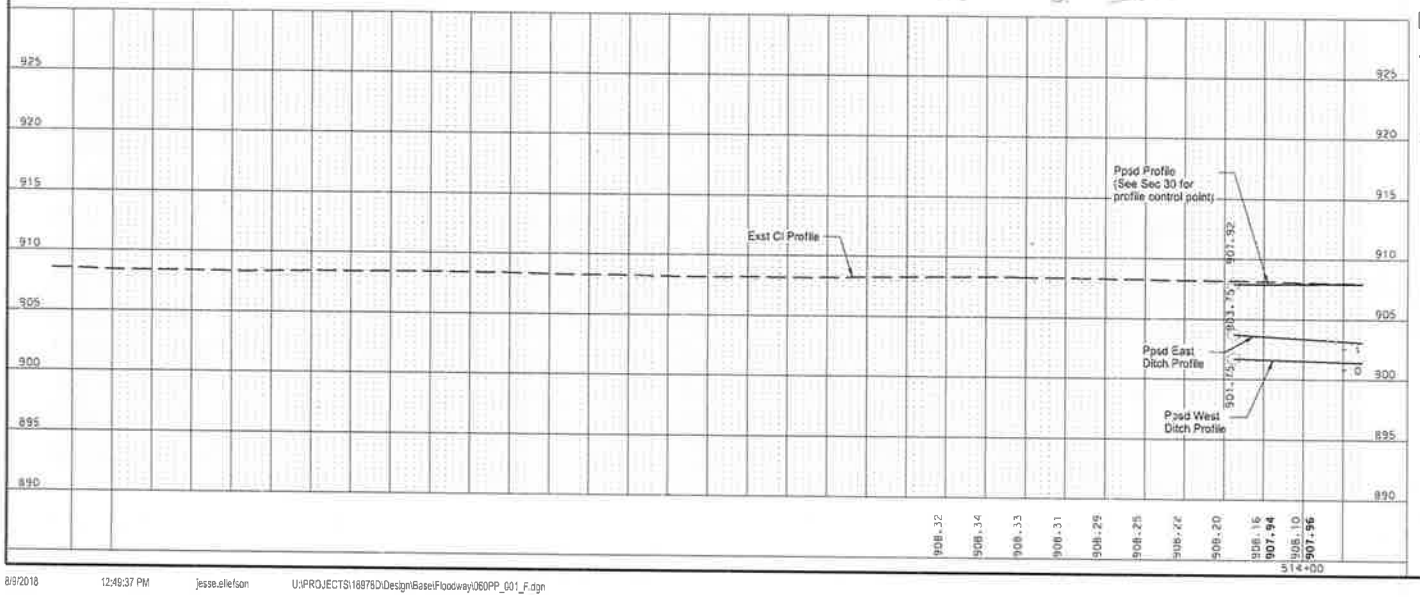
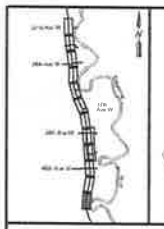
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	1





LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN



This document is preliminary and not for construction or implementation purposes.

PRELIMINARY

Sheyenne Street

Plan & Profile

Sta 508+00 to Sta 514+00 (PR17)

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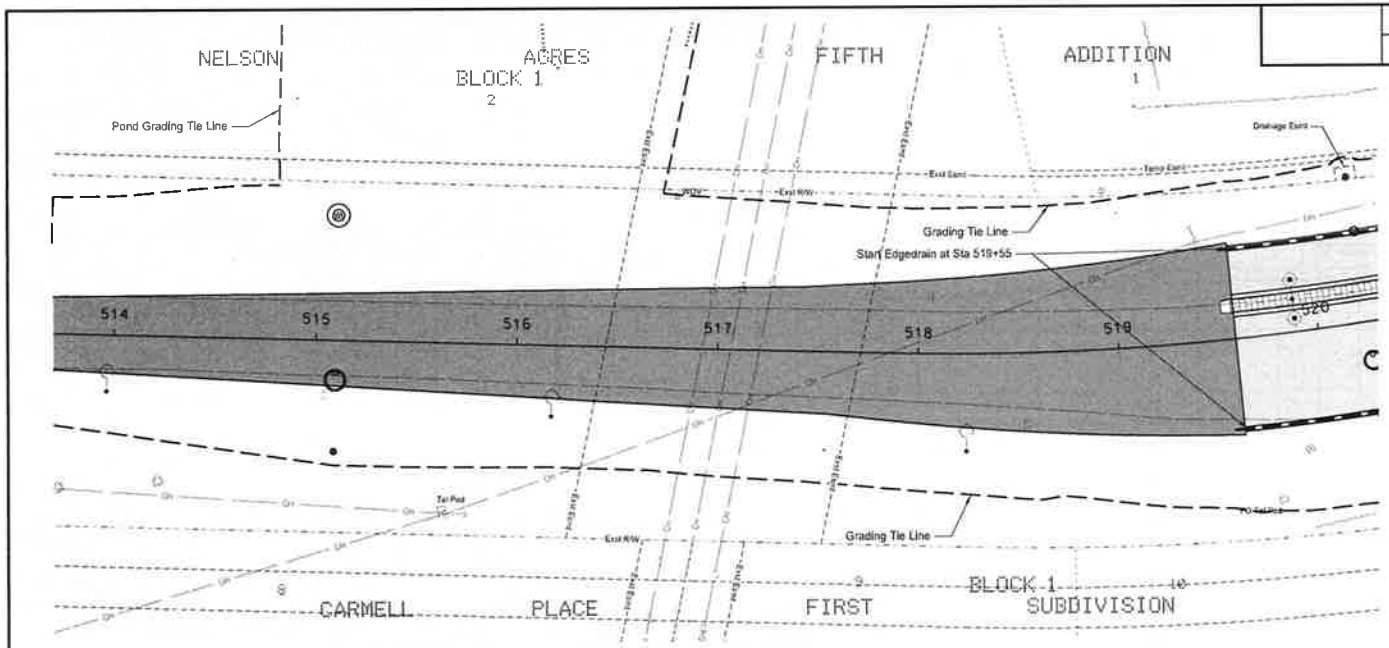
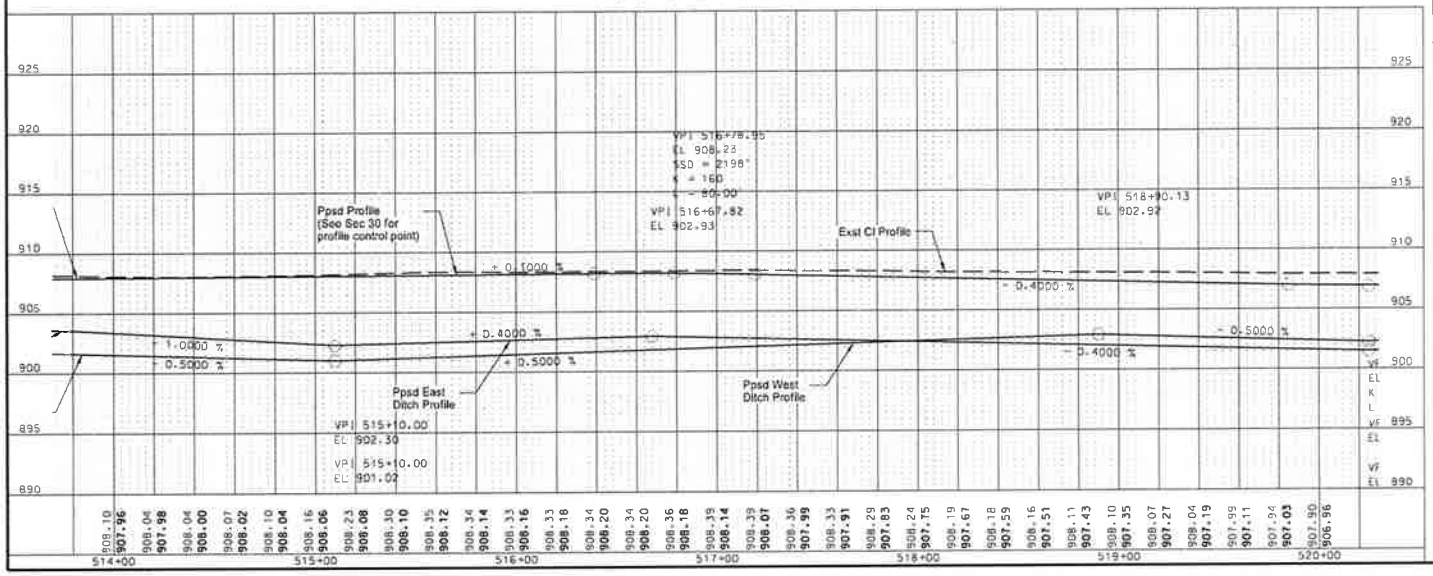
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	2

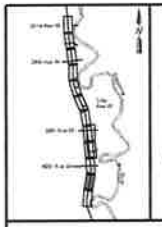
SPEC CODE	BID ITEM		QTY	UNIT
714	9696	EDGEDRAIN NON PERMEABLE BASE Sta. 519+55 to 520+00	90	LF





LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN



This document is preliminary and not for construction or implementation purposes.

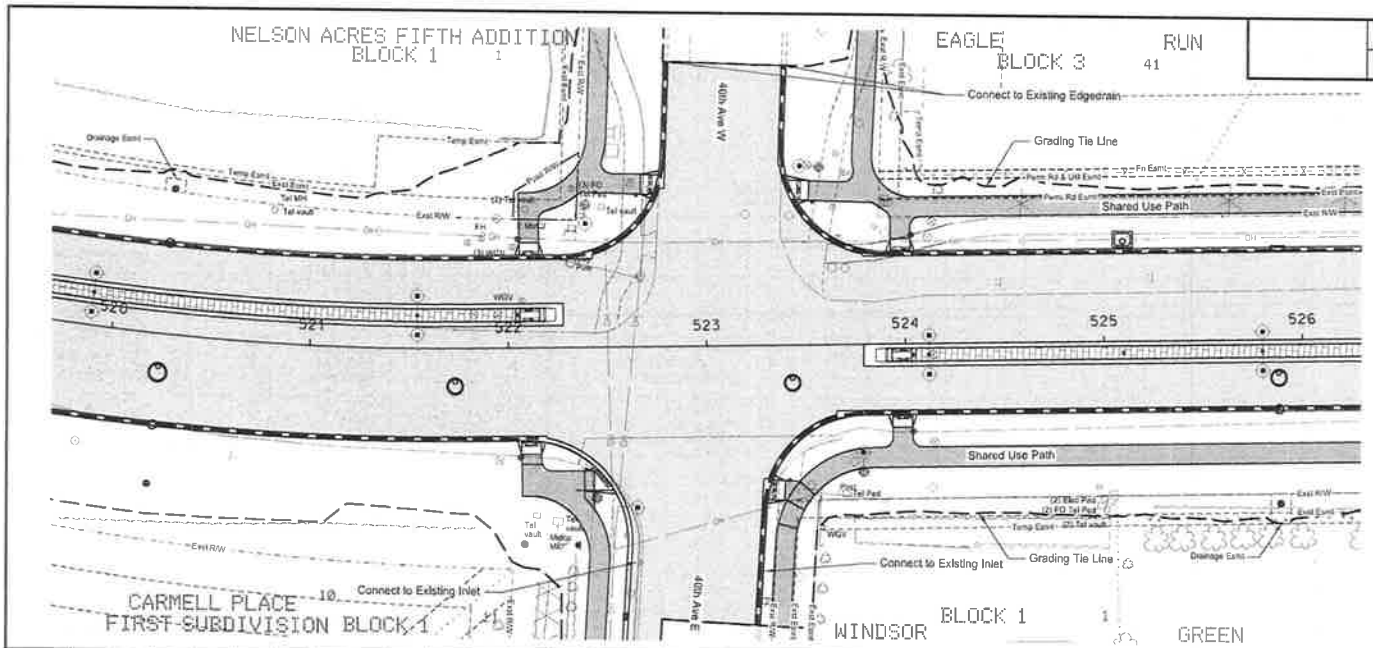
PRELIMINARY

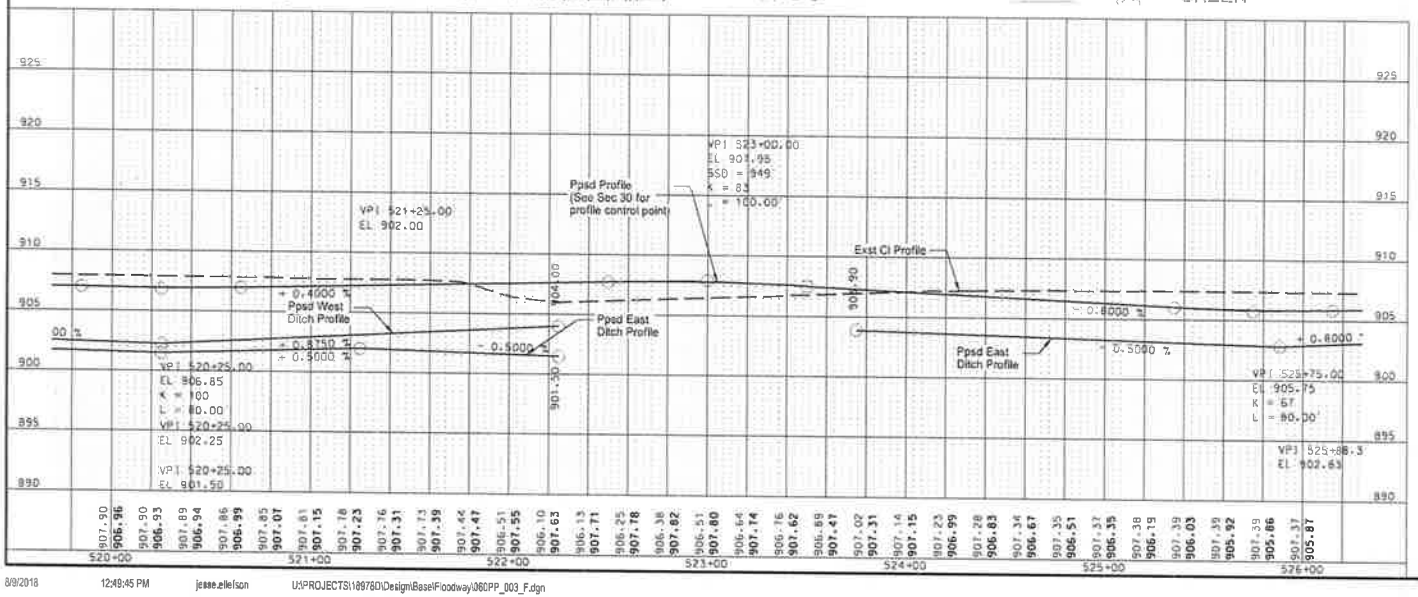
Sheyenne Street

Plan and Profile

Sta 514+00 to Sta 520+00 (PR17)

8/9/2018 12:46:41 PM jesse.ellelson U:\PROJECTS\18978D\Design\Base\Floodway\060PP_002_F.dgn



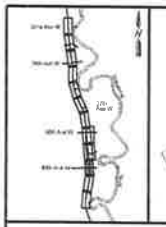


STATE	PROJECT NO.	SECTION NO	SHEET NO.
ND	SU-8-992(040)041	60	3

SPEC CODE	BID ITEM	QTY	UNIT
714 9696	EDGEDRAIN NON PERMEABLE BASE Sta. 520+00 to 526+00	1,322	LF

LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 8IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 8IN



This document is preliminary and not for construction or implementation purposes.

PRELIMINARY

Sheyenne Street

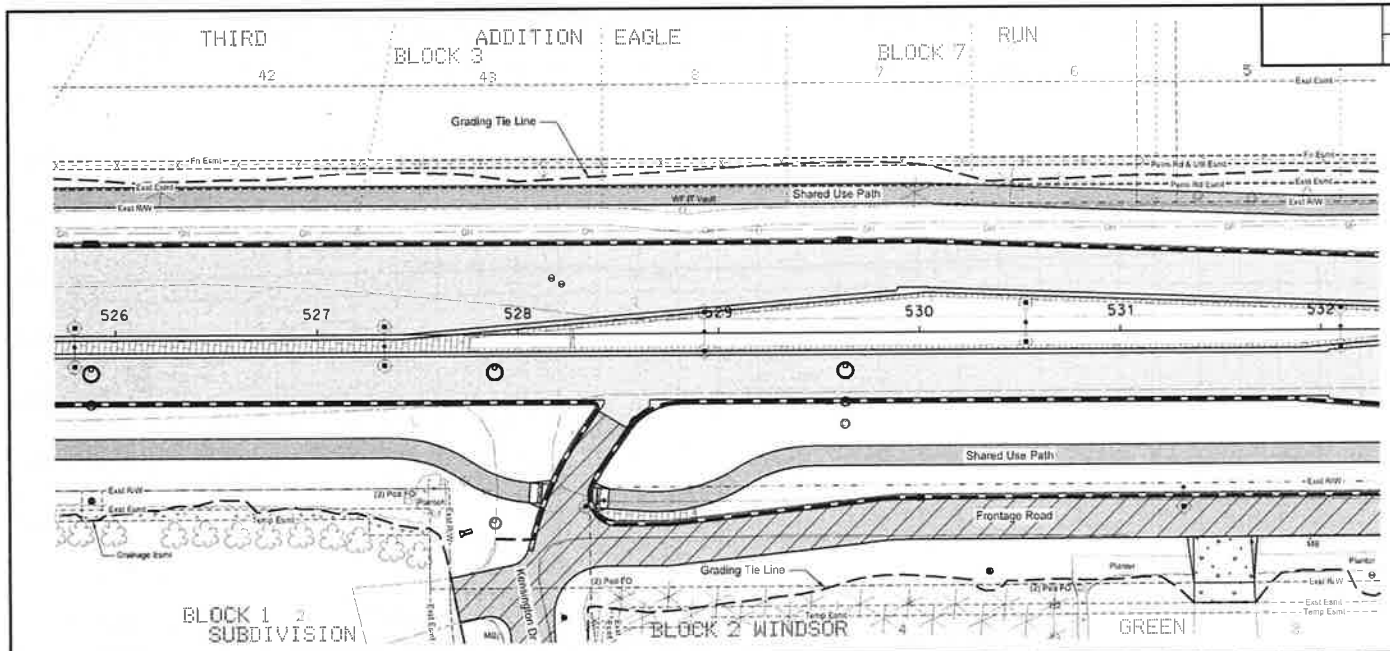
Plan and Profile

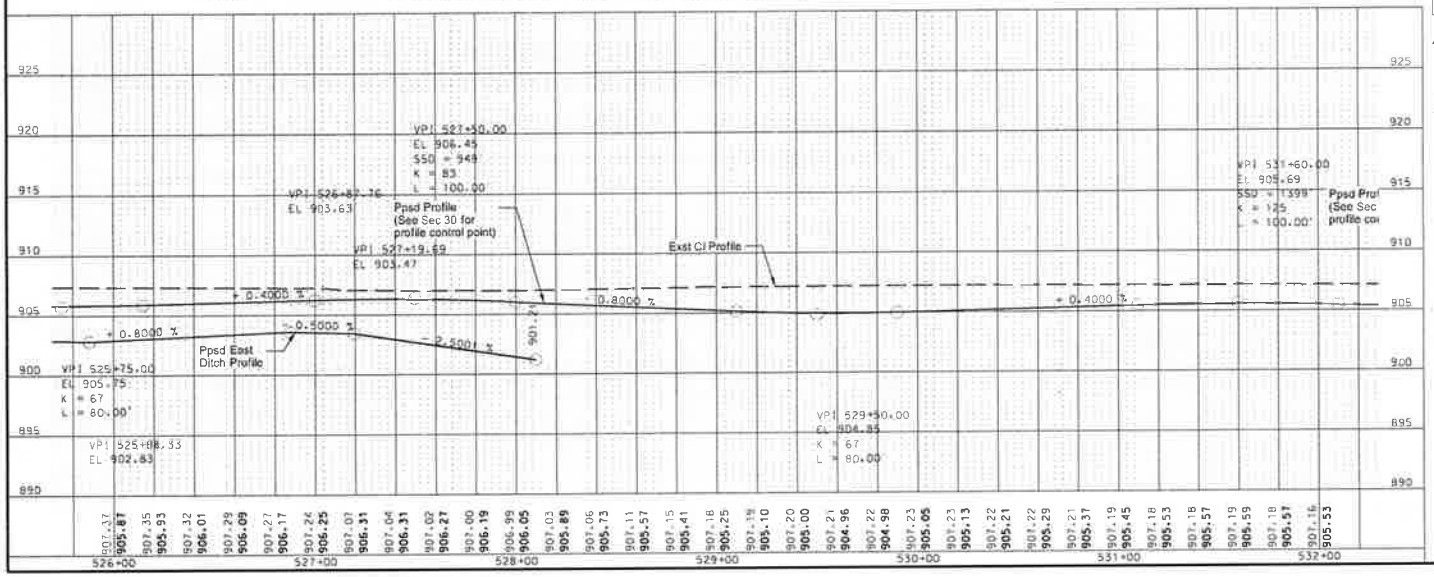
Sta 520+00 to Sta 526+00 (PR17)

8/9/2018 12:49:45 PM jesse.ellelson U:\PROJECTS\18978D\Design\Base\Floodway\060PP_003_F.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	4

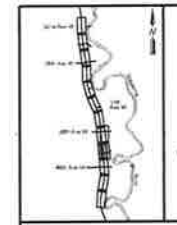
SPEC CODE	BID ITEM		QTY	UNIT
714	9696	EDGEDRAIN NON PERMEABLE BASE Sta. 526+00 to 532+00	1,189	LF





LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN



This document is preliminary and not for construction or implementation purposes.

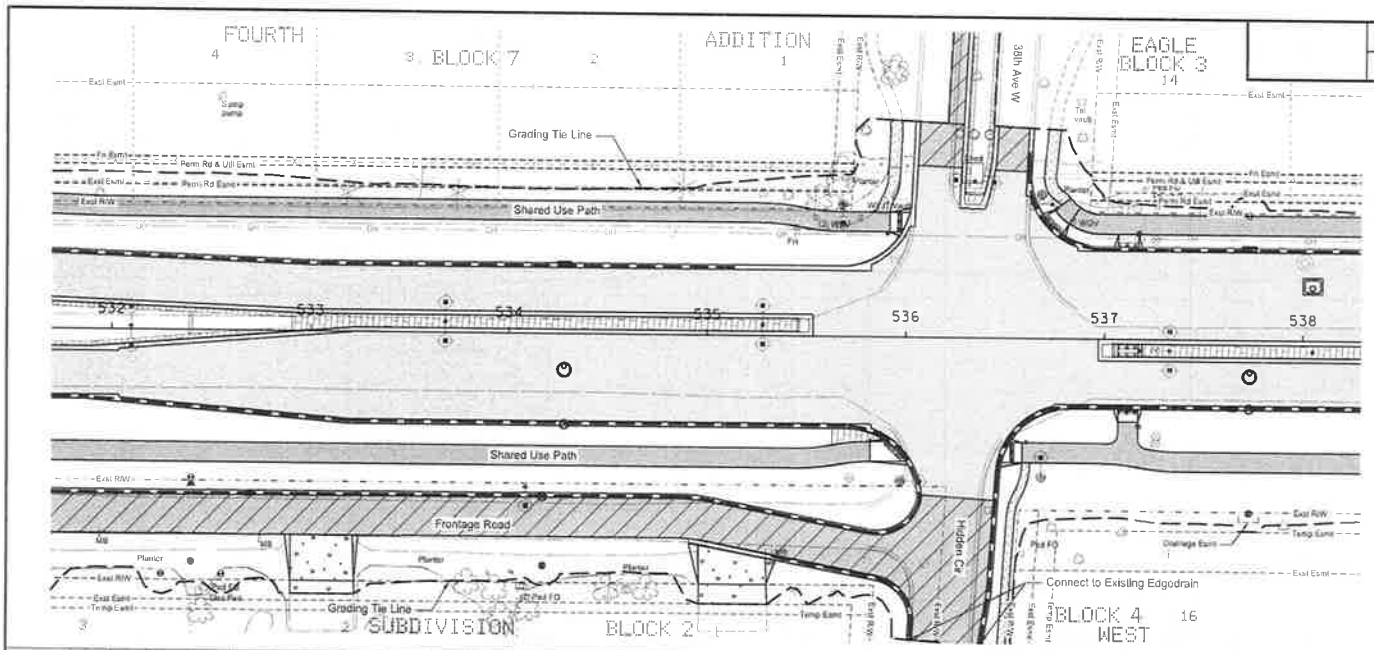
PRELIMINARY

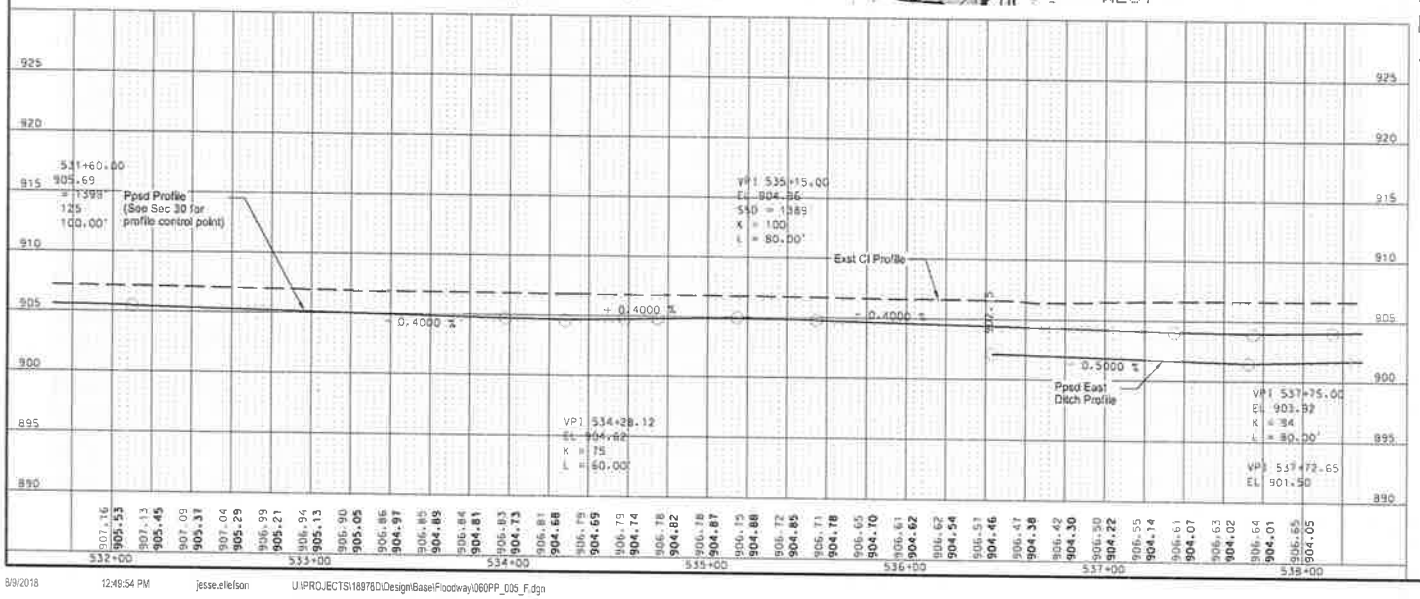
Sheyenne Street

Plan and Profile

Sta 526+00 to Sta 532+00 (PR17)

8/9/2018 12:49:50 PM jesse.eliefson U:\PROJECTS\18978D\Design\Base\Floodway\060PP_004_F.dgn



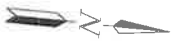


STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	5

SPEC CODE	BID ITEM		QTY	UNIT
714	9696	EDGEDRAIN NON PERMEABLE BASE Sta. 532+00 to 538+00	1,094	LF

LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN



This document is preliminary and not for construction or implementation purposes.

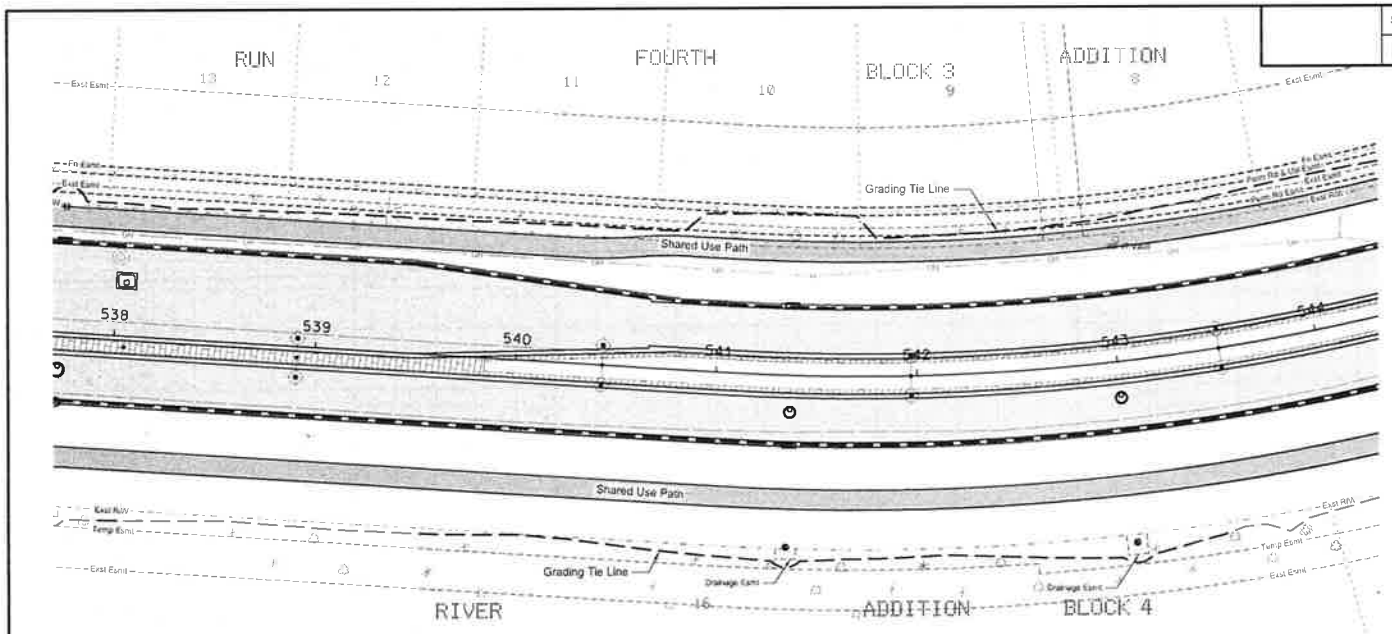
PRELIMINARY

Sheyenne Street

Plan and Profile

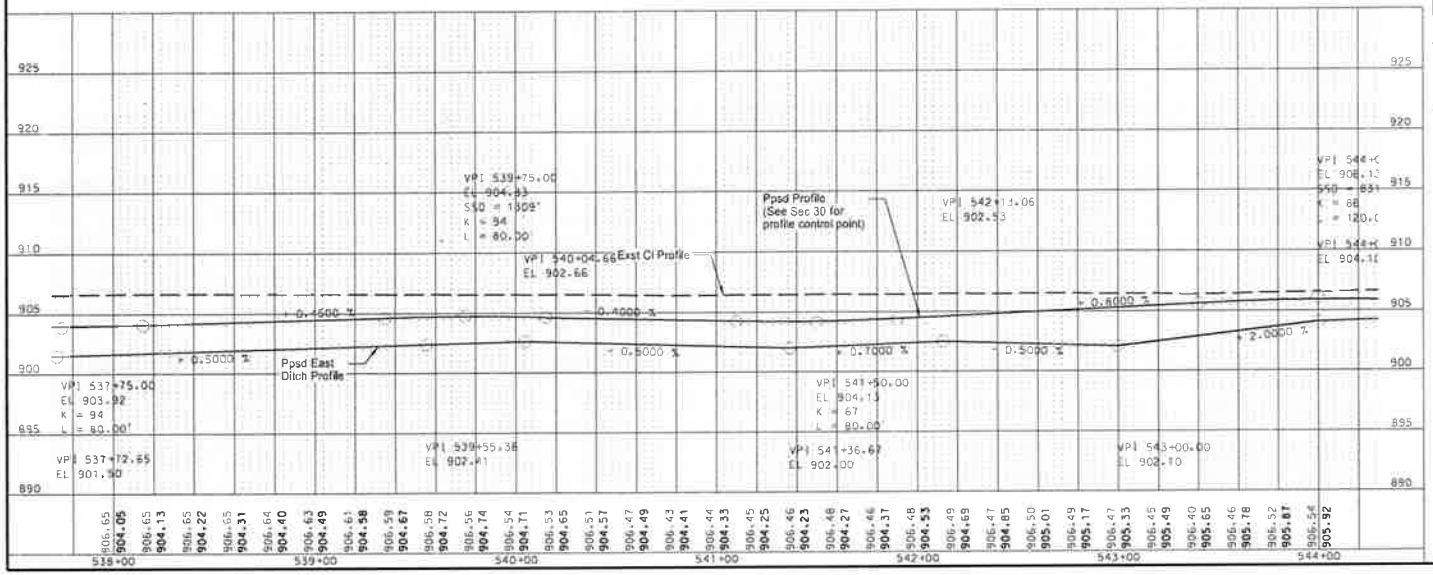
Sta 532+00 to Sta 538+00 (PR17)

8/9/2018 12:49:54 PM jesse.ellefson U:\PROJECTS\18978D\Design\Base\Floodway\060PP_005_F.dgn



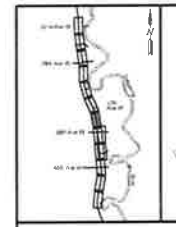
STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	6

SPEC CODE	BID ITEM		QTY UNIT
714	9696	EDGEDRAIN NON PERMEABLE BASE Sta. 538+00 to 544+00	1,201 LF



LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN



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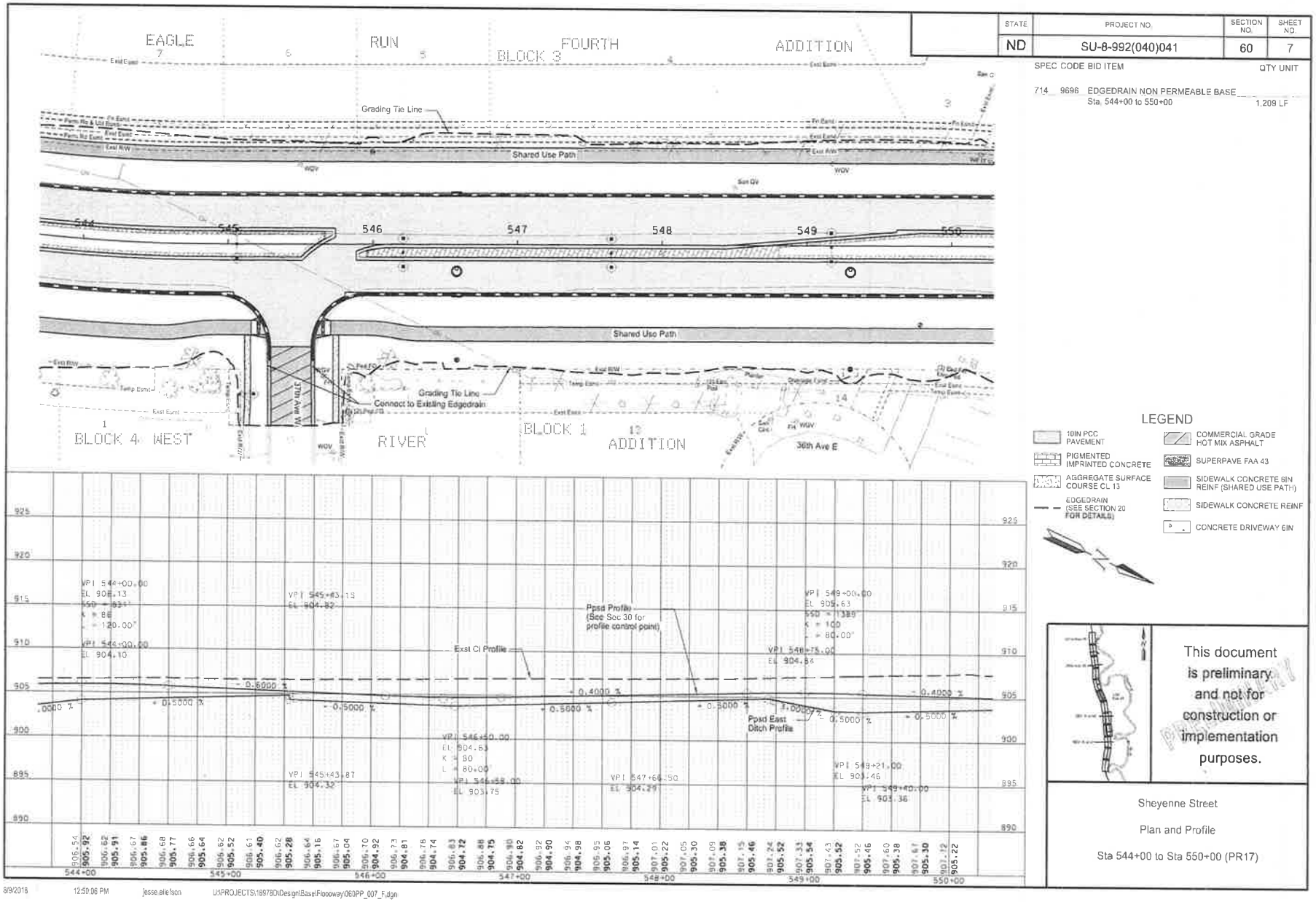
PRELIMINARY

Sheyenne Street

Plan and Profile

Sta 538+00 to Sta 544+00 (PR17)

8/9/2018 12:49:58 PM jesse.ellefson U:\PROJECTS\18978D\Design\Base\Floodway\060PP_006_F.dgn



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	7

SPEC CODE	BID ITEM		QTY	UNIT
714	9696	EDGEDRAIN NON PERMEABLE BASE Sta. 544+00 to 550+00	1,209	LF

LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN

This document is preliminary and not for construction or implementation purposes.

Sheyenne Street

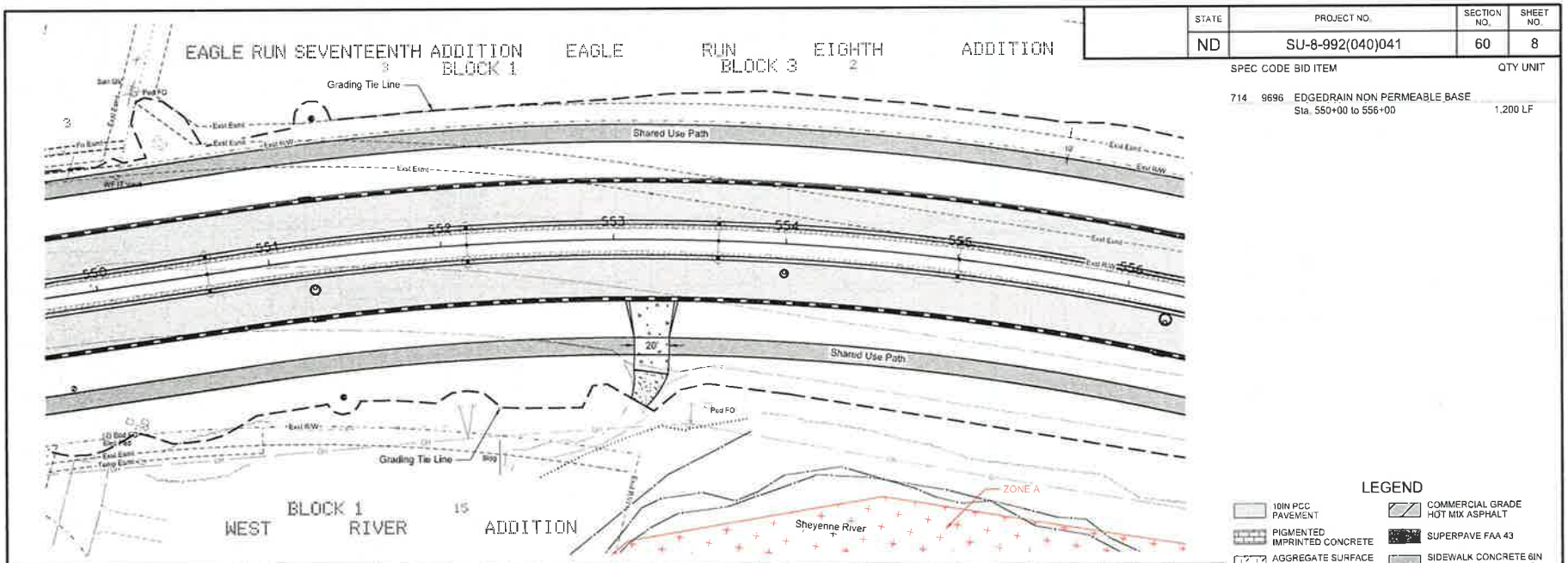
Plan and Profile

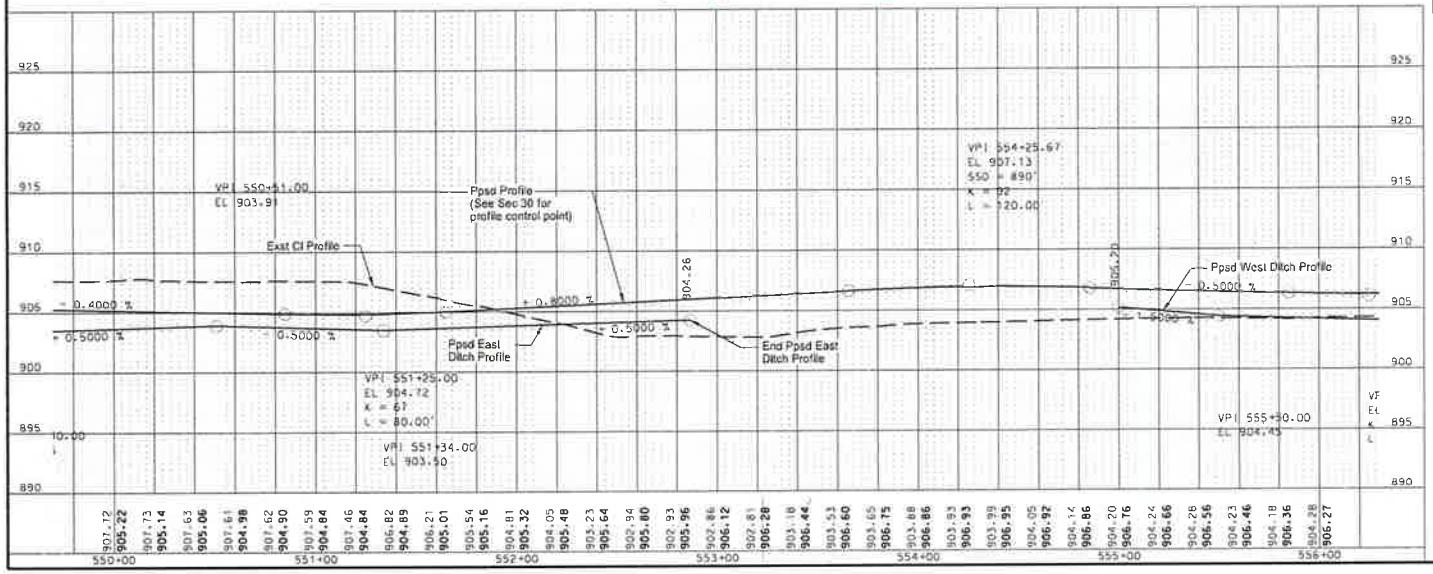
Sta 544+00 to Sta 550+00 (PR17)

8/9/2018 12:50:06 PM jesse.ellefson U:\PROJECTS\18978D\Design\Base\Flooodway\060PP_007_F.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	8

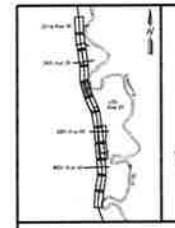
SPEC CODE	BID ITEM	QTY	UNIT
714 9696	EDGEDRAIN NON PERMEABLE BASE Sta. 550+00 to 556+00	1,200	LF





LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN



This document is preliminary and not for construction or implementation purposes.

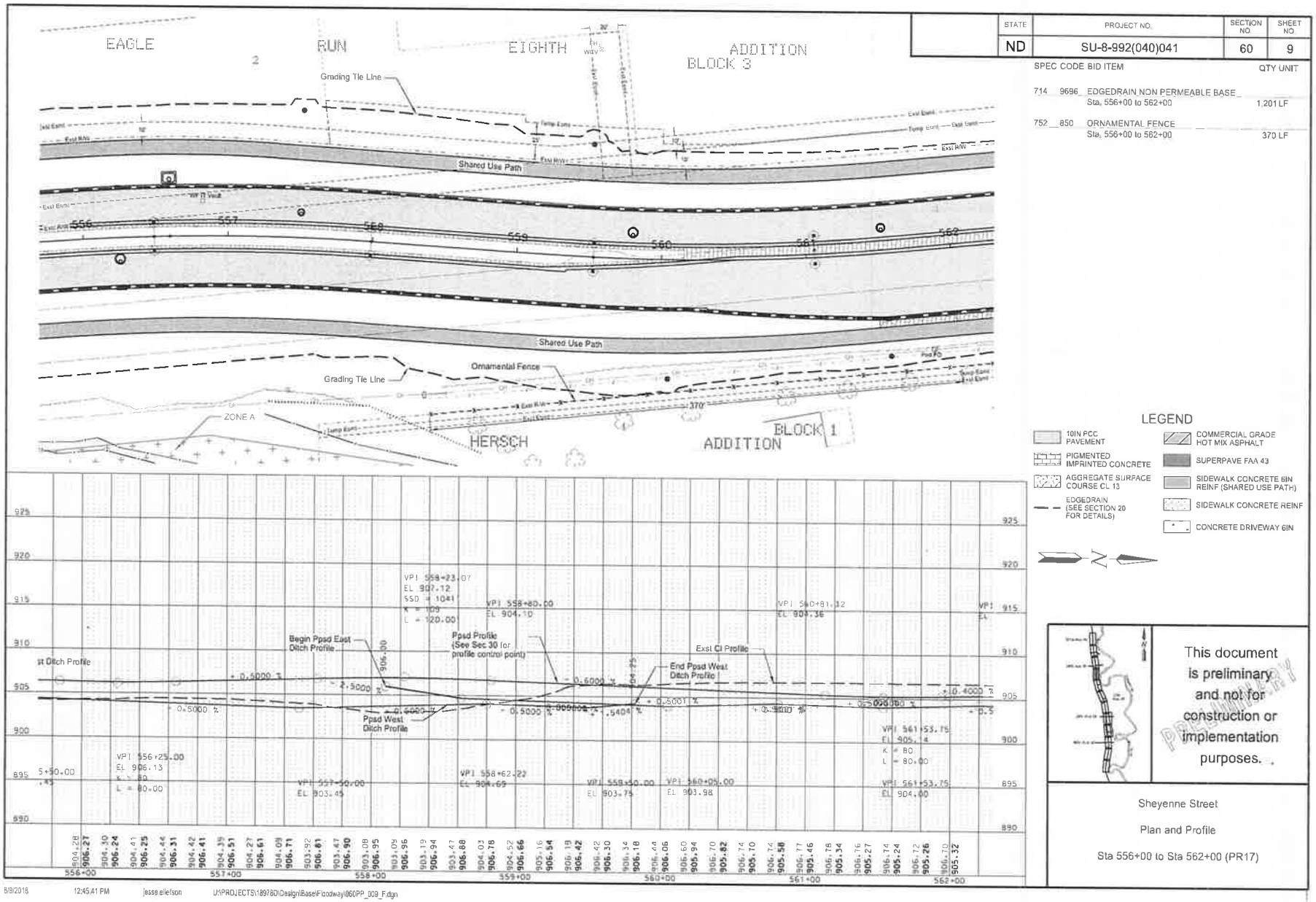
PRELIMINARY

Sheyenne Street

Plan and Profile

Sta 550+00 to Sta 556+00 (PR17)

8/9/2018 12:45:33 PM jesse.ellefson U:\PROJECTS\18976D\Design\Base\Floodway\060PP_008_F.dgn



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	9

SPEC CODE	BID ITEM		QTY	UNIT
714	9696	EDGEDRAIN NON PERMEABLE BASE Sta, 556+00 to 562+00	1,201	LF
752	850	ORNAMENTAL FENCE Sta, 556+00 to 562+00	370	LF

LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 8IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN

This document is preliminary and not for construction or implementation purposes.

PRELIMINARY

Sheyenne Street

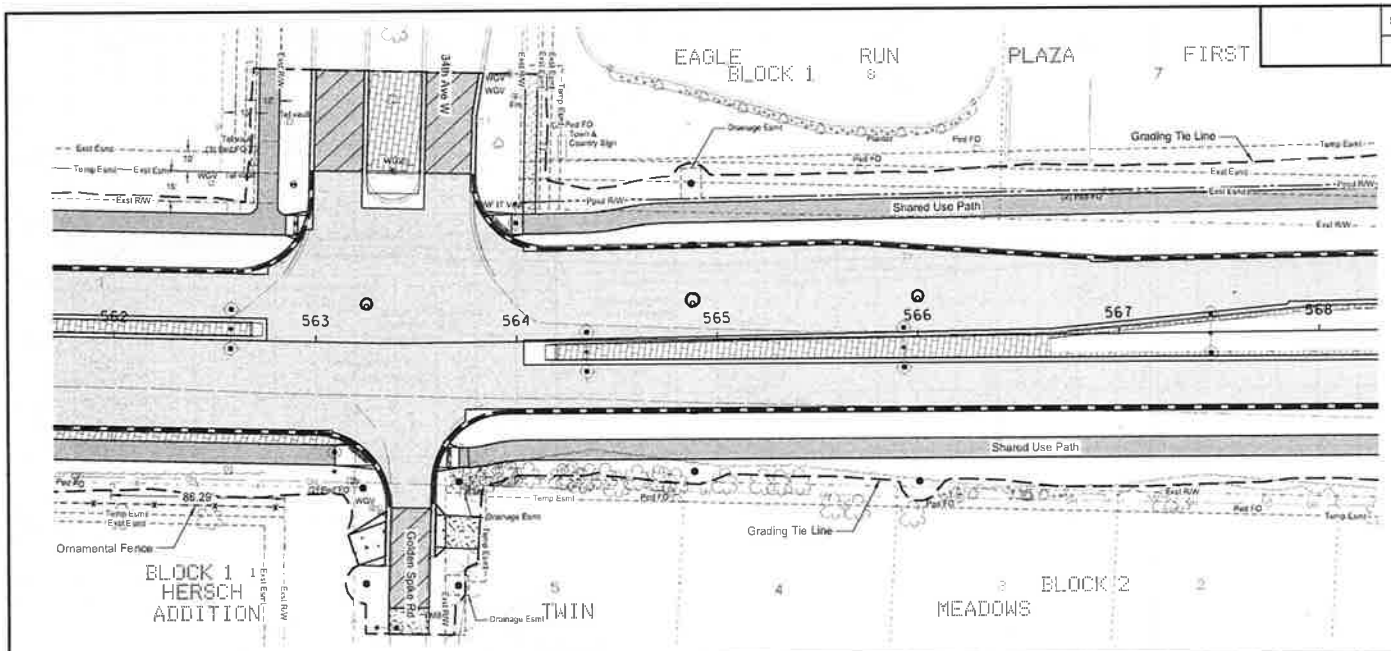
Plan and Profile

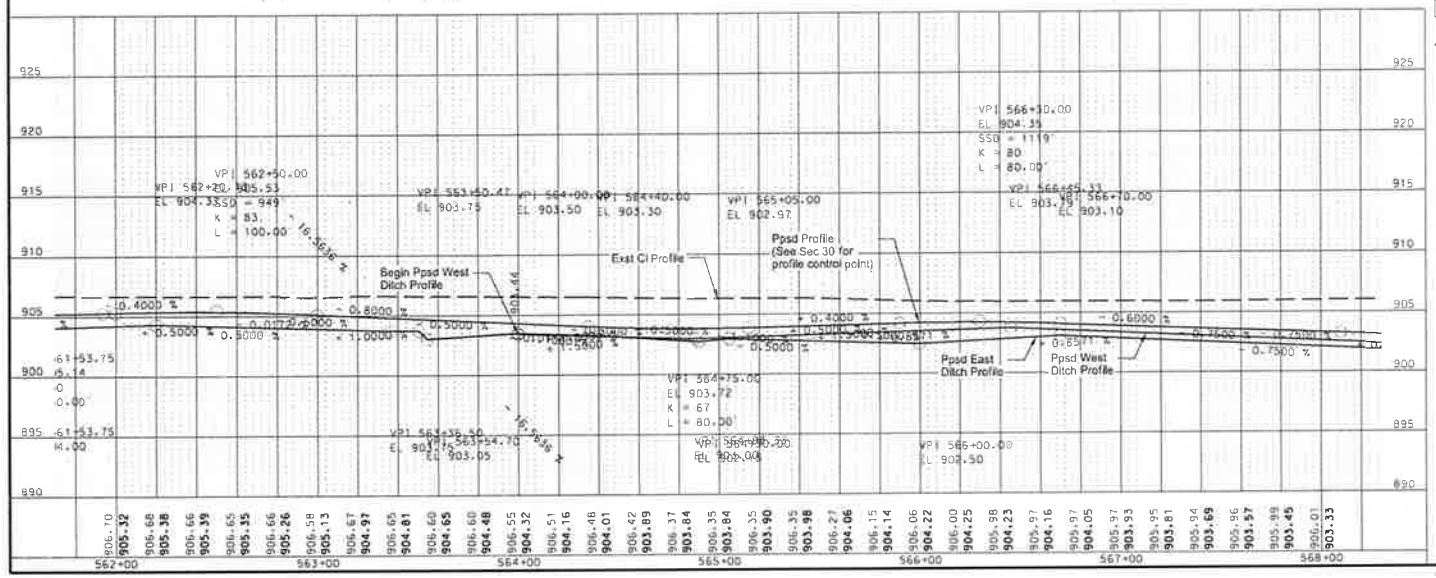
Sta 556+00 to Sta 562+00 (PR17)

8/9/2018 12:45:41 PM jesse.ellefson U:\PROJECTS\18978D\Design\Base\Floodway\060PP_009_F.dgn

STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	10

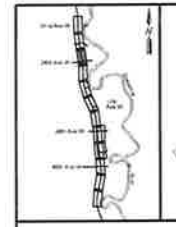
SPEC CODE	BID ITEM		QTY	UNIT
714	9696	EDGEDRAIN NON PERMEABLE BASE Sta. 562+00 to 568+00	1,204	LF
752	850	ORNAMENTAL FENCE Sta. 562+00 to 568+00	86	LF





LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 8IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 8IN



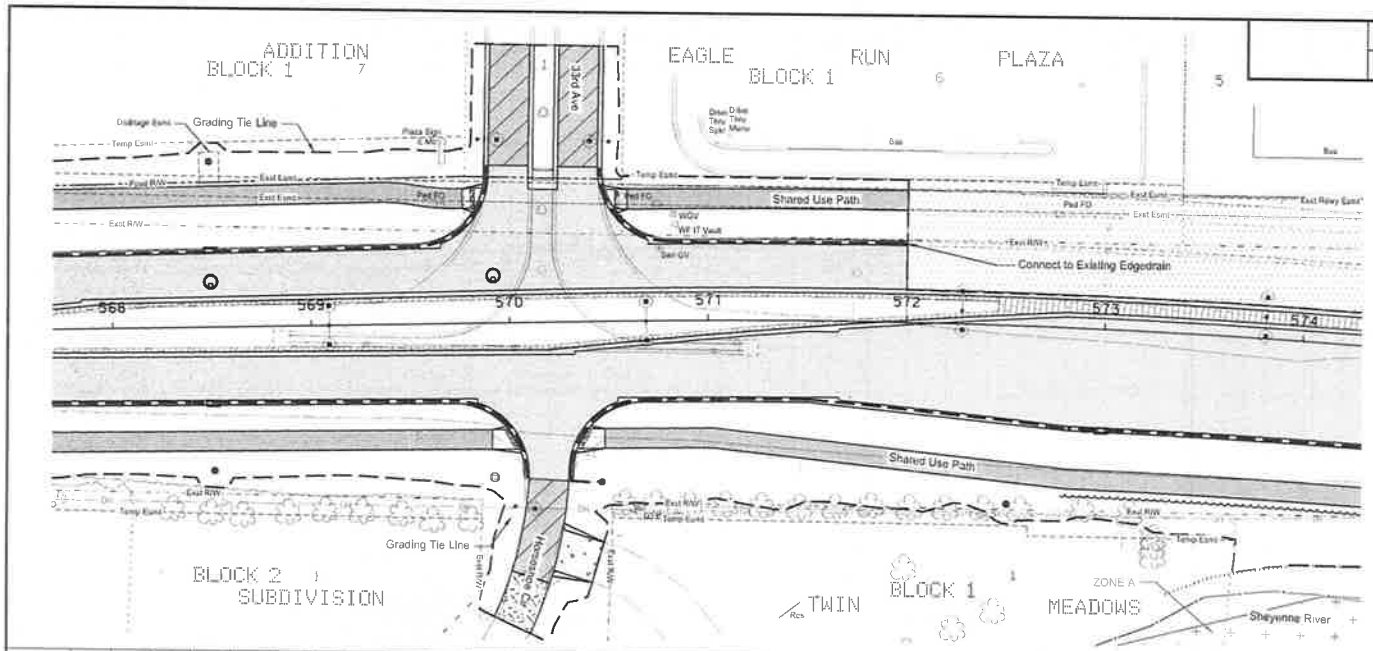
This document is preliminary and not for construction or implementation purposes.

Sheyenne Street

Plan and Profile

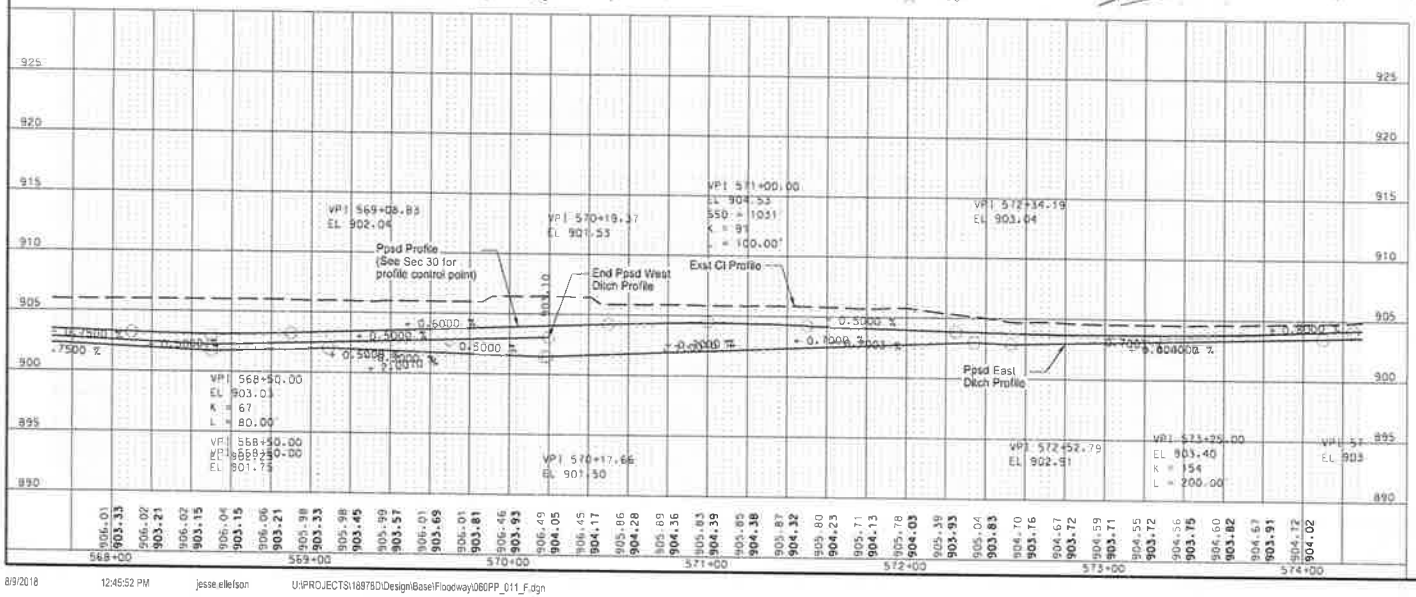
Sta 562+00 to Sta 568+00 (PR17)

8/9/2018 12:50:26 PM jesse.ellefson U:\PROJECTS\18975D\Design\Base\Floodway\060PP_010_F.dgn



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	11

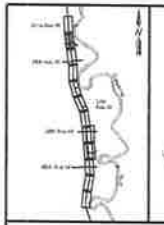
SPEC CODE	BID ITEM	QTY	UNIT
714 _ 9696	EDGEDRAIN NON PERMEABLE BASE Sta. 568+00 to 574+00	1,020	LF



LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 8IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN

NDDOT PROJECT SU-8-992(039)040 (2018)



This document is preliminary and not for construction or implementation purposes.

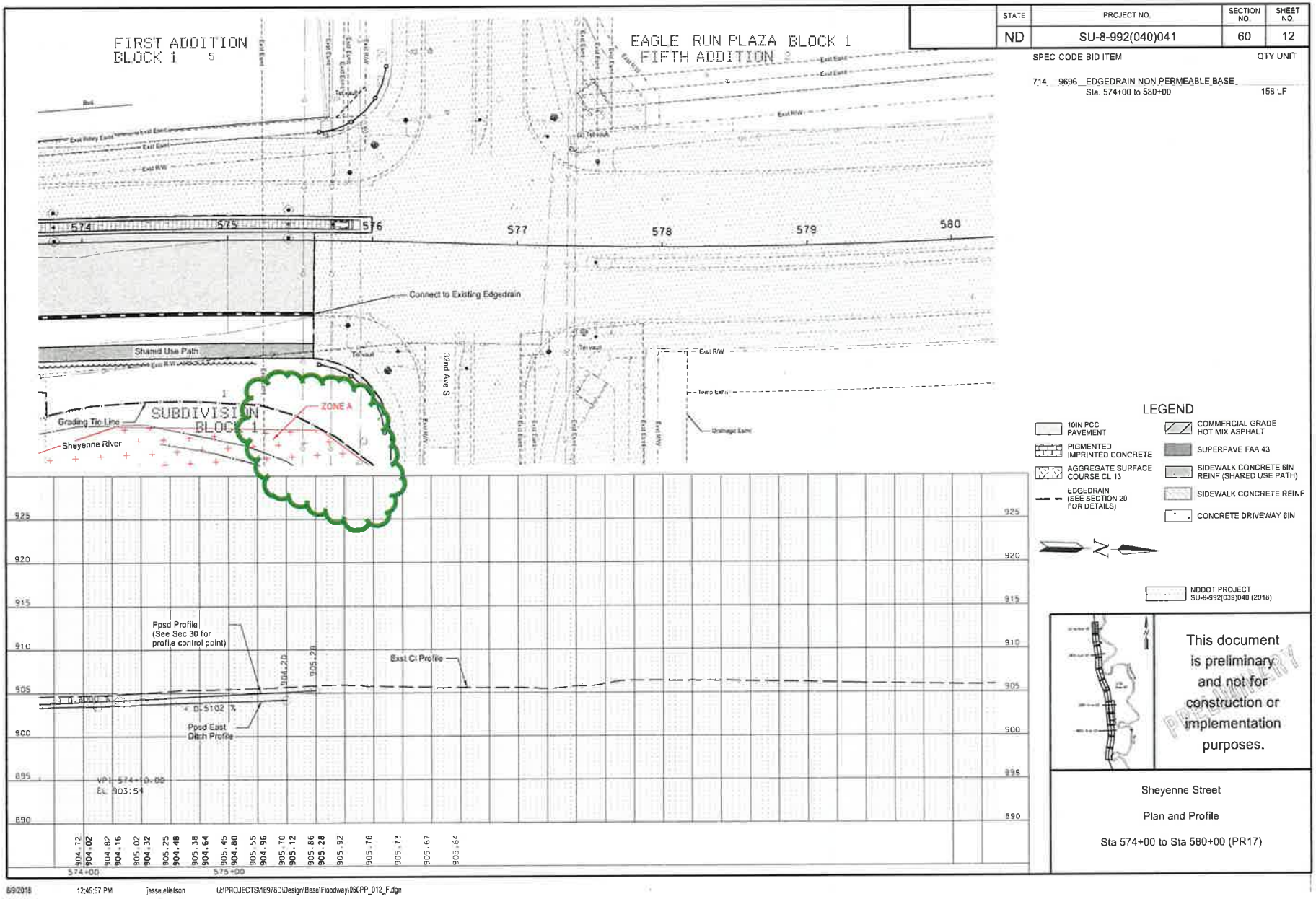
PRELIMINARY

Sheyenne Street

Plan and Profile

Sta 568+00 to Sta 574+00 (PR17)

8/9/2018 12:45:52 PM jesse.ellefson U:\PROJECTS\18978D\Design\Base\Floodway\060PP_011_F.dgn



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-992(040)041	60	12

SPEC CODE	BID ITEM	QTY	UNIT
714	9696 EDGEDRAIN NON PERMEABLE BASE Sta. 574+00 to 580+00	156	LF

LEGEND

- 10IN PCC PAVEMENT
- PIGMENTED IMPRINTED CONCRETE
- AGGREGATE SURFACE COURSE CL 13
- EDGEDRAIN (SEE SECTION 20 FOR DETAILS)
- COMMERCIAL GRADE HOT MIX ASPHALT
- SUPERPAVE FAA 43
- SIDEWALK CONCRETE 6IN REINF (SHARED USE PATH)
- SIDEWALK CONCRETE REINF
- CONCRETE DRIVEWAY 6IN
- NDDOT PROJECT SU-8-992(039)040 (2018)

This document is preliminary and not for construction or implementation purposes.

PRELIMINARY

Sheyenne Street

Plan and Profile

Sta 574+00 to Sta 580+00 (PR17)

6/9/2018 12:45:57 PM jesse.ellefson U:\PROJECTS\18978D\Design\Base\Floodway\060PP_012_F.dgn

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures.** Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 14. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum.** For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242,** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided by the Cass County GIS Department. Transportation data is current as of 2013. Political boundaries are current as of 2012.

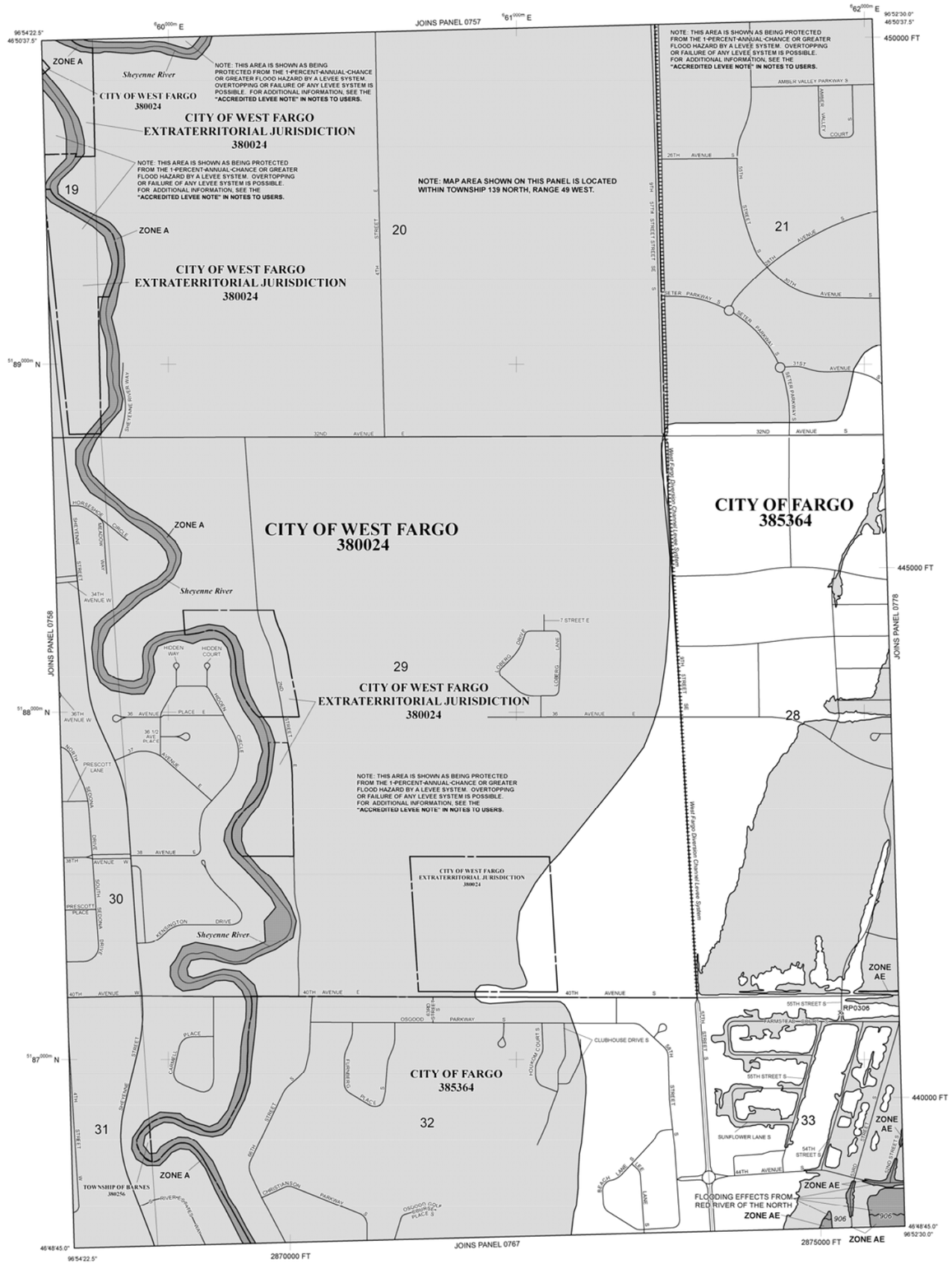
This map may reflect more detailed or up to date stream channel configurations than those shown on the previous FIRM. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations and improved topographic data. The profile baselines depicted on this map represent the hydraulic modeling baselines that match the flood profiles and Floodway Data Tables if applicable, in the FIS report. As a result, the profile baselines may deviate significantly from the new base map channel representation and may appear outside of the floodplain.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the **FEMA Map Service Center** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the **FEMA Map Service Center** website or by calling the FEMA Map Information eXchange.

Accredited Levee Notes to Users: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	Floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A ... A	Cross section line
23 ... 23	Transect line
97°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000mN	1000-meter Universal Transverse Mercator grid ticks, zone 14
6000000 FT	5000-foot grid ticks: North Dakota State Plane coordinate system, south zone (FIPSZONE 3302), Lambert Conformal Conic
DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
January 16, 2015
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0759G

FIRM
FLOOD INSURANCE RATE MAP
CASS COUNTY, NORTH DAKOTA
(ALL JURISDICTIONS)

PANEL 759 OF 995
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BARNES, TOWNSHIP OF	380256	0759	G
FARGO, CITY OF	385364	0759	G
WEST FARGO, CITY OF	380024	0759	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
38017C0759G
EFFECTIVE DATE
JANUARY 16, 2015

Federal Emergency Management Agency

31 - EARTHWORK

SECTION 310513 - SOILS FOR EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Subsoil materials.
2. Topsoil materials.

B. Related Requirements:

1. Section 310516 - Aggregates for Earthwork: Coarse and fine aggregate materials.
2. Section 312316.13 - Trenching: Excavating as required for utilities.
3. Section 329300 - Plants: Preparation of subsoil and topsoil, topsoil bedding, trees, plants, ground cover, mulch, fertilizer, pruning, and maintenance.

1.2 REFERENCE STANDARDS

A. ASTM International:

1. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3).
2. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
3. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit name of imported materials source.

C. Samples: Submit, in airtight containers, 35-lb. sample of each type of fill to testing laboratory.

1.4 QUALITY ASSURANCE

A. Furnish each subsoil and topsoil material from single source throughout Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Subsoil:

1. Type S2:
   a. Excavated and reused material.
   b. Graded.
   c. Free of lumps larger than 3 inches, rocks larger than 6 inches, frost, and debris.
   d. Organic content of less than 3 percent for material placed below structures.
   e. Organic content of less than 5 percent for materials placed within 3 vertical feet of the top of finished pavement subgrades.

B. Topsoil:

1. Type S4:
   a. Excavated and reused material.
   b. Graded.
   c. Free of roots, rocks larger than 1 inch, subsoil, debris, large weeds, and foreign matter.
2. Type S5:
   a. Imported borrow.
   b. Friable loam.
   c. Reasonably free of roots, rocks larger than 1 inch, subsoil, debris, large weeds, and foreign matter.

2.2 SOURCE QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for testing, inspection, and analysis.

B. Testing and Analysis:

1. Subsoil Material: Comply with ASTM D698 and ASTM D6938.
2. If tests indicate materials do not meet specified requirements, replace material or modify in place and retest.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Excavation:

1. Excavate subsoil and topsoil from designated areas.
2. Strip topsoil to full depth of topsoil in designated areas.
3. Remove excess excavated materials, subsoil, and topsoil not intended for reuse from Site.
4. Remove excavated materials not meeting requirements for subsoil and topsoil materials from Site.

B. Stockpiling:

1. Stockpile excavated material meeting requirements for subsoil and topsoil materials.
2. Stockpile materials on Site at locations as designated by Engineer.
3. Stockpile in sufficient quantities to meet Project schedule and requirements.
4. Separate differing materials with dividers or stockpile apart to prevent intermixing of soil types or contamination.
5. Direct surface water away from stockpile to prevent erosion or deterioration of materials.
6. Stockpile hazardous materials on impervious material and cover to prevent erosion and leaching until they are disposed.

3.2 CLEANING

A. Section 017000 - Execution and Closeout Requirements: Requirements for cleaning.

B. Stockpile:

1. Remove stockpile and leave area in clean and neat condition.
2. Grade Site surface to prevent freestanding surface water.
3. If directed by Engineer, leave unused materials in neat, compact stockpile with slopes not to exceed 4:1.

END OF SECTION 310513

SECTION 310516 - AGGREGATES FOR EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Coarse-aggregate materials.
2. Fine-aggregate materials.

B. Related Requirements:

1. Section 310513 - Soils for Earthwork: Fill and grading materials.
2. Section 312316.13 - Trenching: Excavating as required for utilities.
3. Section 331413 – Public Utility Distribution Piping: Pipe materials and fittings.
4. Section 331417 - Site Water Service Utility Laterals: Pipe materials and fittings.
5. Section 333111 – Public Sanitary Sewerage Gravity Piping: Pipe materials and accessories normally encountered with gravity sanitary piping.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Section 012000 - Price and Payment Procedures: Contract Sum/Price modification procedures.

B. Aggregate:

1. Basis of Measurement: By cubic foot yard, except when aggregate is included in other bid items.
2. Basis of Payment: Includes supplying aggregate materials, placing, and compacting.

1.3 REFERENCE STANDARDS

A. American Association of State Highway and Transportation Officials:

1. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base, and Surface Courses.

B. ASTM International:

1. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
2. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3).
3. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
4. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

5. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit name of imported materials source.

C. Samples: Submit, in airtight containers, 35-lb. sample of each type of Type of aggregate to testing laboratory.

1.5 QUALITY ASSURANCE

A. Furnish each aggregate materials from single source throughout Work.

B. Perform Work according to North Dakota Department of Transportation standards.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Coarse Aggregate:

1. Type A1 (base): Conforming to North Dakota Department of Transportation Class 5, see Table 816-01 of the Standard Specifications for Road and Bridge Construction with the following revisions:

Sieve Size	Percent Passing
No. 200	6-10

2. Type A2 (recycled base): Conforming to North Dakota Department of Transportation Salvaged Base Course, see Section 817 of the Standard Specifications for Road and Bridge Construction.
3. Type A3 (surface): Conforming to North Dakota Department of Transportation Class 13, see Table 816-01 of the Standard Specifications for Road and Bridge Construction.
4. Type A4 (drainage): Conforming to North Dakota Department of Transportation Class 7, see Table 816-01 of the Standard Specifications for Road and Bridge Construction.
5. Coarse Aggregate Type A5 (pipe bedding and cover): Conforming to North Dakota Department of Transportation Class 3, see Table 816-01 of the Standard Specifications for Road and Bridge Construction.
6. Coarse Aggregate Type A6 (crushed): Washed, crushed rock with nominal size of 1.25 inches.

B. Fine Aggregate:

1. Type A7 (Sand): Natural river or bank sand; washed; free of silt, clay, loam, friable or soluble materials, and organic matter; graded according to ASTM D2487 Group Symbol SW; within the following limits:

a. Percent Passing per Sieve Size:
   1) No. 4 100.
   2) No. 14 10 to 100.
   3) No. 50 5 to 90.
   4) No. 100 4 to 30.
   5) No. 200 Zero.

2.2 SOURCE QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for testing, inspection, and analysis.

B. Testing and Analysis:

1. Aggregate Material: Comply with AASHTO M 147.
2. If tests indicate materials do not meet specified requirements, change material and retest.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Stockpiling:

1. Stockpile materials on Site at locations as designated by Engineer.
2. Stockpile in sufficient quantities to meet Project schedule and requirements.
3. Separate different aggregate materials with dividers or stockpile apart to prevent intermixing of aggregate types or contamination.
4. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.

3.2 CLEANING

A. Section 017000 - Execution and Closeout Requirements: Requirements for cleaning.

B. Stockpile:

1. Remove stockpile and leave area in clean and neat condition.
2. Grade Site surface to prevent freestanding surface water.

END OF SECTION 310516

SECTION 312316.13 - TRENCHING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavating trenches for utilities.
2. Compacted fill from top of utility bedding to subgrade elevations.
3. Backfilling and compaction.

B. Related Sections:
1. Section 310513 - Soils for Earthwork: Soils for fill.
2. Section 310516 - Aggregates for Earthwork: Aggregates for fill.
3. Section 331413 - Public Water Utility Distribution Piping: Water piping and bedding.
4. Section 331417 - Site Water Service Utility Laterals: Pipe materials and fittings.
5. Section 333111 – Public Sanitary Sewerage Gravity Piping: Pipe materials and accessories normally encountered with gravity sanitary piping.

1.2 REFERENCES

A. ASTM International:

1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3).
2. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

1.3 DEFINITIONS

A. Utility: Any buried pipe, duct, conduit, or cable.

1.4 QUALIFICATIONS

A. Prepare excavation under the direction of a Competent Person in accordance with OSHA standards and comply with requirements of OSHA 29 CFR, Part 1926, Subpart P, requirements for excavation and trenching operations.

B. OSHA requires a Registered Professional Engineer to evaluate slopes or excavations over 20 feet in depth.

1.5 COORDINATION

A. Section 013000 - Administrative Requirements: Coordination and project conditions.

B. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.

PART 2 - PRODUCTS - Not Used

2.1 FILL MATERIALS

A. Subsoil Fill: Type S2 as specified in Section 310513 - Soils for Earthwork.

B. Structural Fill: Type A1 as specified in Section 310516 - Aggregates for Earthwork.

C. Granular Fill: Type A5 as specified in Section 310516 – Aggregates for Earthwork.

PART 3 - EXECUTION

3.1 LINES AND GRADES

A. Lay pipes to lines and grades indicated on Drawings.

1. Engineer reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.

B. Use laser-beam instrument with qualified operator to establish lines and grades.

3.2 PREPARATION

A. Call Local Utility Line Information service North Dakota One Call at 800-795-0555 or 811 within the statutory timelines before performing Work.

1. Request underground utilities to be located and marked within and surrounding construction areas.

B. Identify required lines, levels, contours, and datum locations.

C. Protect plant life, lawns, rock outcropping and other features remaining as portion of final landscaping.

D. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

E. Maintain and protect above and below grade utilities indicated to remain.

F. Establish temporary traffic control and detours when trenching is performed in public right-of-way. Relocate controls and reroute traffic as required during progress of Work.

3.3 TRENCHING

A. Excavate subsoil required for utilities.

B. Remove lumped subsoil, boulders, and rock up to 1/6 cubic yard, measured by volume.

C. Perform excavation within 24 inches of existing utility service in accordance with utility's requirements.

D. Do not advance open trench more than 100 feet ahead of installed pipe.

E. Cut trenches sufficiently wide to enable installation, meet requirements of compaction equipment, and allow inspection. Remove water or materials that interfere with Work.

F. Excavate bottom of trenches maximum 24 inches wider than outside diameter of pipe.

G. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and pipe.

H. Do not interfere with 45 degree bearing splay of foundations or structures.

I. When Project conditions permit, slope side walls of excavation starting 2 feet above top of pipe. When side walls cannot be sloped, provide sheeting and shoring to protect excavation as specified in this section.

J. When subsurface materials at bottom of trench are loose or soft, excavate to greater depth as directed by Engineer until suitable material is encountered.

K. Cut out soft areas of subgrade not capable of compaction in place. Backfill with Fill Type S2 and compact to density equal to or greater than requirements for subsequent backfill material.

L. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.

M. Correct over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as directed by Engineer.

N. Remove excess subsoil not intended for reuse, from site.
   1. If directed by Engineer, stockpile excess subsoil in area designated on site in accordance with Section 310513.

3.4 SHEETING AND SHORING

A. Sheet, shore, and brace excavations to prevent danger to persons, structures and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.

B. Support trenches more than 5 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.

C. Design sheeting and shoring to be removed at completion of excavation work.

D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.

E. Repair damage to new and existing Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.

3.5 BACKFILLING

A. Backfill trenches to contours and elevations with unfrozen fill materials.

B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, frozen, or spongy subgrade surfaces.

C. Place material in continuous layers as follows:

1. Subsoil Fill: Maximum 12 inches loose depth.
2. Structural Fill: Maximum 6 inches compacted depth.
3. Granular Fill: Maximum 6 inches compacted depth.

D. Employ placement method that does not disturb or damage utilities in trench, and surrounding structures.

E. Maintain moisture content of fill materials to attain required relative compaction.

F. Do not leave more than 50 feet of trench open at end of working day, unless determined by the Engineer that site conditions are unsatisfactory.

G. Protect open trench to prevent danger to Owner and the public.

3.6 TOLERANCES

A. Section 014000 - Quality Requirements: Tolerances.

B. Top Surface of Backfilling Under Paved Areas: Plus or minus 0.04 feet from required elevations.

C. Top Surface of General Backfilling: Plus or minus 0.08 feet from required elevations.

3.7 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements and 017000 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Perform laboratory material tests in accordance with ASTM D698.

C. Perform in place compaction tests in accordance with the following:

1. Density and Moisture Tests: ASTM D6938

D. When tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

E. Frequency of Tests:

1. One test along Utility trenches at maximum 500 foot intervals per 2 feet of vertical lift.
2. Two tests per structure (manhole) at ⅓ and ⅔ depth.
3. One test per service trench.

3.8 PROTECTION OF FINISHED WORK

A. Section 017000 - Execution and Closeout Requirements: Protecting finished work.

B. Reshape and re-compact fills subjected to vehicular traffic during construction.

3.9 SCHEDULE

A. Water and Sanitary Piping:

1. Cover pipe and bedding with Fill Type S2: To subgrade elevation.
2. Compact uniformly to minimum 95 percent of Standard Proctor (ASTM 698) maximum dry density. Moisture shall be not less than 1 percentage point below, nor more than 5 percentage points above optimum moisture content.

END OF SECTION 312316.13

33 - UTILITIES

40 - PROCESS INTERCONNECTIONS

SECTION 330110.58 - DISINFECTION OF WATER UTILITY PIPING SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Disinfection of potable water distribution system.
2. Testing and reporting of results.

B. Related Requirements:

1. Section 331413 - Public Water Utility Distribution Piping: Product and execution requirements for installation and testing of site domestic water distribution piping.
2. Section 331417 - Site Water Service Utility Laterals: Pipe materials and fittings.

1.2 REFERENCE STANDARDS

A. American Water Works Association:

1. AWWA B300 - Hypochlorites.
2. AWWA B302 - Ammonium Sulfate.
3. AWWA B303 - Sodium Chlorite.
4. AWWA C651 - Disinfecting Water Mains.

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Disinfection Procedure:

1. Submit description of procedure, including type of disinfectant and calculations indicating quantities of disinfectants required to produce specified chlorine concentration.

C. Product Data: Submit manufacturer information for proposed chemicals and treatment doses.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Certify that final water complies with disinfectant quality standards of the North Dakota Department of Health.

F. Test and Evaluation Reports: Indicate testing results comparative to specified requirements.

G. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

H. Qualifications Statements:

1. Submit qualifications for manufacturer and applicator.

1.4 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

B. Disinfection Report:

1. Type and form of disinfectant used.
2. Date and time of disinfectant injection start and completion.
3. Test locations.
4. Name of person collecting samples.
5. Initial and 24-hour disinfectant residuals in treated water in ppm for each outlet tested.
6. Date and time of flushing start and completion.
7. Disinfectant residual after flushing in ppm for each outlet tested.

C. Bacteriological Report:

1. Date issued, project name, and testing laboratory name, address, and telephone number.
2. Time and date of water sample collection.
3. Name of person collecting samples.
4. Test locations.
5. Initial and 24-hour disinfectant residuals in ppm for each outlet tested.
6. Coliform bacteria test results for each outlet tested.
7. Submit bacteriologist's signature and authority associated with testing.

1.5 QUALITY ASSURANCE

A. Perform Work according to AWWA C651.

B. Perform Work according to North Dakota Department of Health standards.

C. Testing Laboratory
Fargo Cass Public Health
435 14th Avenue S
Fargo, ND 58103
701-298-6986

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

PART 2 - PRODUCTS

2.1 DISINFECTION CHEMICALS

A. All products that may come into contact with water intended for use in a public water system shall meet American National Standards Institute (ANSI)/National Sanitation Foundation International

(NSF) Standards 60 and 61. A product will be considered as meeting these standards if so certified by NSF, the Underwriters Laboratories, or other organization accredited by ANSI to test and certify such products.

B. Chemicals:

1. Hypochlorite: Comply with AWWA B300.
2. Ammonium Sulfate: Comply with AWWA B302.
3. Sodium Chlorite: Comply with AWWA B303.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that piping system has been cleaned, inspected, and pressure tested.

C. Perform scheduling and disinfecting activity with startup, water pressure testing, adjusting and balancing, and demonstration procedures, including coordination with related systems.

3.2 INSTALLATION

A. Provide required equipment to perform Work of this Section.

B. Introduce treatment into piping system.

C. Maintain disinfectant in system for 24 hours.

D. Flush, circulate, and clean until required disinfectant quality standard has been achieved using municipal domestic water.

E. Replace permanent system devices that were removed for disinfection.

3.3 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Disinfection, Flushing, and Sampling:

1. Disinfect pipeline installation according to AWWA C651.
2. Use of liquid chlorine is not permitted.
3. Upon completion of retention period required for disinfection, flush pipeline until chlorine concentration in water leaving pipeline is no higher than that generally prevailing in existing system or is acceptable for domestic use.
4. Disposal:

a. Legally dispose of chlorinated water.
b. If chlorinated discharge may cause damage to environment, apply neutralizing chemical to chlorinated water to neutralize chlorine residual remaining in water.

5. After final flushing and before pipeline is connected to existing system or placed in service, certify that disinfectant level meets quality standards of the North Dakota Department of Health.
6. Provide sampling in accordance with the latest AWWA C651 standard with the frequency of one of the following options:
   a. Option A: Take an initial sample and then resample again after a minimum of 16 hours per 1,200 feet of new water main, plus one set from the end of the line and at least one set from each branch greater than one pipe length. All sets of samples must pass for the main to be approved for release.
   b. Options B: Let the water main site for a minimum of 16 hours without any water use. Collect two sets of samples a minimum of 15 minutes apart while the sampling taps are left running and without flushing the main. Sets of samples shall be collected every 1,200 feet of the new water main plus one set from the end of the line and at least one set from each branch greater than one pipe length. All sets of samples must pass for the main to be approved for release.

END OF SECTION 330110.58

SECTION 330130.11 - TELEVISION INSPECTION OF SEWERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pipeline flushing and cleaning.
2. Television inspection of sewer pipelines.
3. Audio-video recording of pipeline interior.

B. Related Requirements:

1. Section 015000 - Temporary Facilities and Controls: Safety requirements when bypassing sewage flow.
2. Section 333111 - Public Sanitary Sewerage Gravity Piping: Pipe materials, manholes, and accessories normally encountered with gravity sewerage piping.

1.2 DEFINITIONS

A. DVD: An optical disc storage format, offering higher storage capacity than compact discs (CDs) while having the same dimensions.

1.3 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with Owner.

1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. DVDs:

1. Submit three copies of completed narrated color DVDs identified by Project name, street name, right-of-way property name, and manhole numbers.
2. DVDs become property of Owner.

C. Inspection Logs:

1. Submit cleaning and television inspection logs for each section of sewer line to be rehabilitated.
2. Include following minimum information:

a. Stationing and location of lateral services, wyes, or tees.
b. Date and clock time references.
c. Pipe joints.
d. Flow direction.
e. Footage readings in feet.
f. Screenshots of all defects (thumbnails).
g. Infiltration/inflow defects.
h. Cracks.
i. Leaks.
j. Offset joints.
k. Other information to access condition of sewer.

D. Submit specific detailed description of proposed bypass pumping system, including written description of plan addressing schedule, quantity, capacity, and location of pumping equipment.

E. Submit spill plan to address any spills that might occur.

1.5 QUALITY ASSURANCE

A. Perform Work according to NASSCO standards.

PART 2 - PRODUCTS

2.1 DVDs

A. Description: Digital video formatted discs.

B. Audio track containing simultaneously recorded narrative commentary and evaluations of videographer, describing in detail condition of pipeline interior.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for application examination.

B. Verify location of sewer pipelines to be inspected.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for application preparation.

B. Cleaning:

1. Notify the Owner if the Contractor believes that the integrity of the existing pipe is not adequate for the cleaning operation to take place.
2. Flush and clean pipeline to remove sludge, dirt, sand, stone, grease, and other materials to ensure clear view of interior condition.

C. Obstruction:

1. Complete a reverse setup and perform inspection of the pipeline from the other end if an obstruction is encountered that impedes inspection of the pipeline.
2. Notify the Engineer immediately for resolution if additional obstruction is encountered after the reserve setup.

D. Roots:

1. Remove roots as necessary to complete inspection and televising of pipeline. Roots shall not be a reason for reverse set-up.

E. Protruding Tap Connection:

1. Notify Engineer of protruding tap connections that impede inspection and televising of the pipe.
2. Record shall be taken of protruding taps to be removed both before and after removal.
3. Remove protruding tap to within one-half inch of the mainline pipe wall.
4. Notify the Engineer if the Contractor believes that the integrity of the existing pipe is not adequate to complete removal of the protruding tap.

F. Debris:

1. Intercept flushed debris at next downstream manhole using weir or screening device.
2. Remove and dispose of debris off site.

G. Bypassing:

1. Furnish temporary bypass pumping system around Work area for time required to complete television inspection.
2. Provide standby pump of equal or greater capacity at bypass location.
3. Provide safety precautions, including barricades, lights, and flaggers..

H. Flow Control:

1. Provide temporary flow control as needed during televising operation.

3.3 APPLICATION

A. Closed-Circuit Television (CCTV) Camera System:

1. Use cameras specifically designed and constructed for closed-circuit sewer line inspection.
2. Use camera equipment with pan-and-tilt capability to view each lateral connection at multiple angles.

3. Produce a clear, in-focus picture of the entire periphery of the inside of the pipe for a minimum distance of six feet.
4. Use camera capable of moving both upstream and downstream with minimum 1,000 feet horizontal distance within one setup and using direct-reading cable position meter.

3.4 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Pipeline Inspection:

1. Audio-video record sections of sewer pipeline between designated manholes.
2. Tilt camera up to view interior of manholes at the beginning and end of each segment televised.
3. Maintain accurate footage counter which shall display on the monitor at all times.
4. Begin footage measurements in at the interior face of the manhole wall.
5. Center camera inside pipe keeping it above the flow as reasonably possible.
6. Identify and record locations of flat grades, dips, deflected joints, open joints, broken pipe, protrusions into pipeline, and points of infiltration.
7. Locate and record service connections.
8. Record locations of pipeline defects, connection horizontal distance in feet, and direction from manholes.
9. Video record with pipe section plugged, as to view 100 percent of inside pipe diameter; use flow-control methods as specified for bypass pumping system to eliminate surcharging and reduce flow.
10. Notify the Engineer of the time and date of proposed work if nighttime work is necessary.
11. Use flow-control methods as specified for bypass pumping system to eliminate surcharging and to reduce flow.
12. Re-televise the sewer and provide a new recording of good quality, if recording are of such poor quality that the Engineer is unable to evaluate the condition of the sewer, locate sewer service connections, or verify cleaning.

C. Site Cleaning:

1. Clean and restore the work areas prior to leaving the site.

D. Retrieval of Materials and Equipment:

1. Remove materials and equipment that may have become lodged in the sewer from the cleaning and televising operation.

END OF SECTION 330130.11

SECTION 330505.31 - HYDROSTATIC TESTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Hydrostatic testing of pressure piping.

B. Related Requirements:
   1. Section 331413 - Public Water Utility Distribution Piping: Pipe materials and accessories normally encountered with pressurized water distribution systems.

1.2 REFERENCE STANDARDS

A. American Water Works Association:

   1. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Submit following items prior to start of testing:

   1. Testing procedures.
   2. List of test equipment.
   3. Testing sequence schedule.
   4. Provisions for disposal of flushing and test water.
   5. Certification of test gage calibration.

C. Test and Evaluation Reports: Indicate results of piping tests.

1.4 QUALITY ASSURANCE

A. Perform Work according to North Dakota Department of Health standards.

PART 2 - PRODUCTS

2.1 HYDROSTATIC TESTING

A. Equipment:

   1. Pressure pump.
   2. Pressure hose.

3. Water meter.
4. Test connections.
5. Pressure relief valve.
6. Pressure Gage: Calibrated to 0.1 psi.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that piping is ready for testing.

C. Verify that trenches are backfilled.

D. Verify that pressure piping thrust restraints have been installed.

3.2 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Testing of Pressure Piping:

1. Test system according to AWWA C600 and following:

a. Hydrostatically test each portion of pressure pipe, including valved section, at not less than 150 psi. Do not test at a pressure that exceeds the design pressure of the pipe however.
b. Conduct hydrostatic testing for at least two hours.
c. Slowly fill with water portion of piping to be tested, expelling air from piping at high points.
d. Install corporation cocks at high points.
e. Close air vents and corporation cocks after air is expelled.
f. Raise pressure to specified test pressure.
g. Observe joints, fittings, and valves undergoing testing.
h. Remove and renew cracked pipes, joints, fittings, and valves that show visible leakage.
i. Retest.
j. Correct visible deficiencies and continue testing at same test pressure for additional two hours to determine leakage rate.
k. Maintain pressure within plus or minus 5.0 psi of test pressure.
l. Leakage is defined as quantity of water supplied to piping necessary to maintain test pressure during period of testing.
m. Compute maximum allowable leakage using following formula:

1) $L = [SD \times \sqrt{P}]/C$.
2) L = testing allowance, gph.

3) S = length of pipe tested, feet.
4) D = nominal diameter of pipe, inches.
5) P = average test pressure during hydrostatic testing, psig.
6) C = 148,000.
7) If pipe undergoing testing contains sections of various diameters, calculate allowable leakage from sum of computed leakage for each pipe size.

2. If testing of piping indicates leakage greater than that allowed, locate source of leakage, make corrections, and retest until leakage is within acceptable limits.
3. Correct visible leaks regardless of quantity of leakage.

END OF SECTION 330505.31

SECTION 330505.41 - AIR TESTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Low-pressure air testing of gravity sewer piping.

B. Related Requirements:

1. Section 333111 - Public Sanitary Sewerage Gravity Piping: Pipe materials, manholes, and accessories normally encountered with gravity sewerage piping.

1.2 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Submit following items prior to start of testing:

1. Testing procedures.
2. List of test equipment.
3. Testing sequence schedule.
4. Provisions for disposal of flushing and test water.
5. Certification of test gage calibration.

C. Test and Evaluation Reports: Indicate results of piping tests.

1.3 QUALITY ASSURANCE

A. Perform Work according to North Dakota Department of Health standards.

PART 2 - PRODUCTS

2.1 AIR TESTING

A. Equipment:

1. Air compressor.
2. Air supply line.
3. Shutoff valves.
4. Pressure regulator.
5. Pressure relief valve.
6. Stopwatch.
7. Plugs.
8. Pressure Gage: Calibrated to 0.1 psi.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that piping is ready for testing.

C. Verify that trenches are backfilled.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for preparation.

B. Lamping:

1. Lamp gravity piping after flushing and cleaning.
2. Perform lamping operation by shining light at one end of each pipe section between manholes.
3. Observe light at other end.
4. Pipe not installed with uniform line and grade will be rejected.
5. Remove and reinstall rejected pipe sections.
6. Clean and lamp until pipe section is installed to uniform line and grade.

C. Plugs:

1. Plug outlets, wye branches, and laterals.
2. Brace plugs to resist test pressures.

3.3 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Low-Pressure Air Testing:

1. Test each reach of gravity sewer piping between manholes.
2. Introduce air pressure slowly to approximately 4 psig.
3. Determine ground water elevation above spring line of piping.
4. For every foot of ground water above spring line of piping, increase starting air test pressure by 0.43 psi.
5. Do not increase pressure above 10 psig.
6. Allow pressure to stabilize for at least five minutes.
7. Adjust pressure to 3.5 psig or to increased test pressure as determined above when ground water is present.
8. Do not make allowance for laterals.
9. Minimum Testing Duration in Minutes Per 100 Feet:
    a. Pipe Size 3 Inches: 0.2.
    b. Pipe Size 4 Inches: 0.3.

c. Pipe Size 6 Inches: 0.7.
d. Pipe Size 8 Inches: 1.2.
e. Pipe Size 10 Inches: 1.5.
f. Pipe Size 12 Inches: 1.8.
g. Pipe Size 15 Inches: 2.1.
h. Pipe Size 18 Inches: 2.4.
i. Pipe Size 21 Inches: 3.0.
j. Pipe Size 24 Inches: 3.6.
k. Pipe Size 27 Inches: 4.2.
l. Pipe Size 30 Inches: 4.8.
m. Pipe Size 33 Inches: 5.4.
n. Pipe Size 36 Inches: 6.0.

10. Record drop in pressure during testing period.
11. If air pressure drops more than 1.0 psi during testing period, piping has failed.
12. If 1.0-psi air pressure drop has not occurred during testing period, piping is acceptable; discontinue testing.
13. If piping fails, test reach of piping in incremental stages until leaks are isolated, repair leaks, and retest entire reach between manholes.
14. If unsatisfactory testing results are achieved, make necessary repairs and retest until result meets criteria.
15. Repair visible leaks regardless of quantity of leakage.

END OF SECTION 330505.41

SECTION 330505.43 - MANDREL TESTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Deflection testing of plastic sewer piping.

B. Related Requirements:

1. Section 333111 - Public Sanitary Sewerage Gravity Piping: Pipe materials, manholes, and accessories normally encountered with gravity sewerage piping.

1.2 REFERENCE STANDARDS

A. ASTM International:

1. ASTM D2122 - Standard Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings.

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Submit following items prior to start of testing:

1. Testing procedures.
2. List of test equipment.
3. Testing sequence schedule.
4. Provisions for disposal of flushing and test water.
5. Certification of test gage calibration.
6. Deflection mandrel drawings and calculations.

C. Test and Evaluation Reports: Indicate results of piping tests.

PART 2 - PRODUCTS

2.1 DEFLECTION TESTING

A. Equipment:

1. Properly sized rigid ball or "go, no go" mandrel.
2. Pull/retrieval ropes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that piping is ready for testing.

C. Verify that trenches are backfilled.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for preparation.

B. Lamping:

1. Lamp gravity piping after flushing and cleaning.
2. Perform lamping operation by shining light at one end of each pipe section between manholes.
3. Observe light at other end.
4. Pipe not installed with uniform line and grade will be rejected.
5. Remove and reinstall rejected pipe sections.
6. Clean and lamp until pipe section is installed to uniform line and grade.

C. Plugs:

1. Plug outlets, wye branches, and laterals.
2. Brace plugs to resist test pressures.

3.3 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. If visual inspection specified in Section 330130.11 – Television Inspection of Sewers shows pipe deflection as determined by the Engineer, Contractor will perform deflection testing as specified in this section.

C. Deflection Testing of Plastic Sewer Piping:

1. Perform vertical ring deflection testing on PVC sewer piping after backfilling has been in place for at least 30 days, but not longer than 12 months.
2. Allowable maximum deflection for installed plastic sewer pipe is no greater than five percent of original vertical internal diameter.
3. Perform deflection testing using properly sized rigid ball or "go, no go" mandrel.
4. Rigid Ball or Mandrel Diameter:

    a. Not less than 95 percent of base or average ID of pipe.
    b. Pipe Diameter: Comply with ASTM D2122.

5. Perform testing without mechanical pulling devices.
6. Locate, excavate, replace, and retest piping that exceeds allowable deflection.

END OF SECTION 330505.43

SECTION 330509.33 - THRUST RESTRAINT FOR UTILITY PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Concrete Thrust Blocking.
2. Mechanical Joint Restraint.

B. Related Requirements:
1. Section 312316.13 - Trenching: Trenching and backfilling requirements for Site utilities.
2. Section 331413 - Public Water Utility Distribution Piping: Requirements for piping Work as required by this Section.

1.2 REFERENCE STANDARDS

A. American Water Works Association:

1. AWWA C110
2. AWWA C600 - Installation of Ductile-Iron Water Mains and Their Appurtenances.

B. ASME International:

1. ASME B1.1 - Unified Inch Screw Threads, UN and UNR Thread Form.

C. ASTM International:
1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
4. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.
5. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
6. ASTM A536 – Standard Specification for Ductile Iron Castings.
7. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
8. ASTM A588/A588M - Standard Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi Minimum Yield Point, with Atmospheric Corrosion Resistance.
9. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel.
10. ASTM E8 – Tension Testing of Metallic Materials.
11. ASTM F436 - Standard Specification for Hardened Steel Washers.

1.3 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with installation of fittings and joints that require restraint.

1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer catalog information for restrained joint details and installation instructions.

C. Shop Drawings:

1. Indicate restrained joint details and materials being used.
2. Submit layout drawings showing piece numbers and locations.
3. Indicate restrained joint locations.

D. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.

1.5 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of joint restraints.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Store materials according to manufacturer instructions.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

1.8 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 PERFORMANCE AND DESIGN CRITERIA

A. Provide concrete thrust blocking as indicated on the Drawings.

B. When indicated on the Drawings, provide restraint devices for mechanical joint restraints and appurtenances in addition to concrete thrust blocking.

2.2 MECHANICAL JOINT RESTRAINTS

A. Manufacturer:

1. Megalug by EBAA Iron, Inc.
2. One-Lok SLCE with CORRSAFE coating by Sigma Corporation.
3. or approved equal.

B. Design:

1. Consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ASNI/AWWA C110/A21.10 for nominal pipe sizes 3 inch through 36 inch.
2. Include a minimum safety factor of 2:1 in all sizes for rating for water pressure.

C. Material:

1. Cast from grades 65-45-12 ductile iron material in accordance with ASTM A536 for gland body, wedges and wedge actuating components.

D. Coating:

1. Consist of a minimum of two coats of liquid thermoset epoxy coating with heat cure to follow each coat.
2. Surface pretreated with a phosphate wash, rinse and sealer before drying.
3. Electrostatically applied and heat cured.
4. Polyester based power to provide corrosion, impact and UV resistance.

E. Approvals:

1. Listed by Underwriters Laboratories in the 4 inch through 12 inch sizes.
2. Factory Mutual Approved in the 4 inch through 12 inch sizes.

3. Meet or exceed the requirements of ASTM F1674 of the latest revision for Mechanical Joint Restraints, 4 inch through 24 inch.

2.3 MATERIALS

A. Steel:

1. High-Strength Low-Alloy Steel: Comply with ASTM A588/A588M, heat treated.
2. High-Strength Low-Alloy Steel: Comply with ASTM A588/A588M.
3. Carbon Steel: Comply with ASTM A36/A36M.

2.4 FINISHES

A. Zinc Plating:

1. Factory applied.
2. Comply with ASTM B633.

B. Galvanizing:

1. Factory applied.
2. Comply with ASTM A153/A153M.

2.5 CONCRETE

1. Compressive Strength 4000 psi at 28 days.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that pipe and fittings are ready to receive Work.

C. Field measure and verify conditions for installation of Work.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

3.3 INSTALLATION

A. According to AWWA C600.

B. Install joint restraint system such that joints are mechanically locked together to prevent joint separation.

C. Install concrete thrust blocks according to the Drawings.

D. Install mechanical joint restraint by conventional tools and installation procedures per AWWA C600, while retaining full mechanical joint deflection during assembly. Ensure proper actuation of the gripping wedges with torque limiting twist off nuts.

3.4 TOLERANCES

A. Section 014000 - Quality Requirements: Requirements for tolerances.

END OF SECTION 330509.33

SECTION 330597 - IDENTIFICATION AND SIGNAGE FOR UTILITIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Trace wire for placement above direct-buried utility.
2. Permanent and temporary utility markers.

B. Related Requirements:

1. Section 312316.13 - Trenching: Backfilling considerations for installation of trace wire.
2. Section 331413 - Public Water Utility Distribution Piping: Piping, valves, and appurtenances requiring identification marking.
3. Section 333111 - Public Sanitary Sewerage Gravity Piping: Piping, valves, and appurtenances requiring identification marking.

1.2 REFERENCES

A. ASTM International:

1. ASTM B910 / B910M: Standard Specifications for Annealed Copper-Clad Steel Wire.

1.3 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer catalog information for each specified product.

1.4 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of products installed.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for maintenance materials.

1.6 QUALITY ASSURANCE

A. Trace Wire:
   1. Verify all installed trace wire is operational using Owner's locating equipment.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 – Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Accept materials on site in undamaged, unopened container, bearing manufacturer's original labels. Inspect for damage.

C. Protect materials from damage by storing in a secure location.

1.8 COORDINATION

A. Section 013000 – Administrative Requirements: Requirements for coordination

B. Furnish testing schedule for products requiring owner testing.

PART 2 - PRODUCTS

2.1 TRACE WIRE

A. Manufacturers:

   1. Copperhead Industries, LLC
      PO Box 1081
      Monticello, MN 55362

B. Trace wire for direct bury applications:

   1. 12 AWG high-strength copper clad steel (CCS) wire.
   2. 300-lb minimum rated break strength.
   3. 30 mil HDPE insulation.

C. Trace wire for directional drilling applications:

   1. Extra high-strength copper clad steel (CCS) wire.
   2. 2700-lb minimum rated break strength.
   3. 45 mil HDPE insulation.

D. Trace wire for pipe bursting:

   1. 3/16" high-strength stranded copper clad steel (CCS) wire.
   2. 4700-lb minimum rated break strength.
   3. 50 mil HDPE insulation.

E. Insulation color coded to marked utility according to the American Public Works Association (APWA) uniform color standards.

2.2 SPLICE CONNECTORS

A. Manufacturers:

1. Copperhead Industries, LLC
   PO Box 1081
   Monticello, MN 55362

B. Trace wire splices shall be made using a sealant-filled splice connector designed for direct bury installation in damp, wet, or submersible locations.

2.3 TERMINAL BOXES

A. Manufacturers:

1. Copperhead Industries, LLC (SnakePit & Cobra T3)
2. Valvco, Inc.
3. Approved equal.

B. Flush mount terminal boxes:

1. Minimum 36” long, 2-1/2” diameter ABS shaft.
2. Flared shaft bottom.
3. Permanently magnetic cast or ductile iron cover, frame and lid.
4. Variable size wire terminal blocks beneath lid.
5. Integral direct connection terminal to allow connection of locator without removing the lid.
6. 2 terminals with jumper.
7. Locking cover with pentagonal nut.
8. Lid stamped with utility type and color coded to marked utility according to the American Public Works Association (APWA) uniform color standards.

C. Above grade terminal boxes:

1. PVC terminal box with 1” diameter conduit connection.
2. Minimum 2 terminals with jumper.
3. Color coded to marked utility according to the American Public Works Association (APWA) uniform color standards.

2.4 GROUNDING ANODE

A. Manufacturers:

1. Copperhead Industries, LLC
   PO Box 1081
   Monticello, MN 55362

2. Substitutions: Section 016000 – Product Requirements.

B. Drive-in type magnesium anode grounding rod.

1. Minimum 1-lb magnesium.
2. Minimum 20’ of factory installed copper clad steel wire.

2.5 UTILITY MARKERS

A. Permanent

1. Manufacturer
   a. Carsonite: CRM Utility Marker
2. Color:
   a. Sanitary: Green
   b. Water: Blue

B. Temporary

1. 2”x2” pine wood, 36” above grade.
2. Painted:
   a. Sanitary: Green
   b. Water: Blue

PART 3 - EXECUTION

3.1 INSTALLATION

A. Trace Wire:

1. Install trace wire in such a manner that allows proper access for connection of line tracing equipment, and successful signal reception without distortion or loss of signal due to damaged wires, loops, coils, kinks, discontinuities, unapproved connections/terminations, or multiple instances of trace wire installed in close proximity to one another.
2. Install trace wire system as a continuous single wire. No looping, coiling, or kinking of wire is allowed.
3. Attach trace wire to utility pipes and services at 10’ intervals using tape or plastic zip ties installed all the way around the utility pipe. Allow for 1 to 3 inches of slack between the pipe and trace wire between attachment points.
4. Install mainline pipe trace wire continuously on the south or east side of utility pipes, running around or through valves, manholes, or other structures as shown on the details.
5. Make all connections between individual trace wires with approved splice connectors only.
6. Repair immediately any damage occurring during installation of the trace wire using an approved waterproof method. Taping and/or spray coating shall not be allowed.
7. Connect the new and existing trace wires using approved splice connectors where existing trace wire is encountered on an existing utility to be tied into or extended.

8. Leave a 3’ pigtail of trace wire lay horizontally beyond the pipe where trace wire is to be terminated at a mainline dead end/stub. Terminate the line by installing an approved splice connector with magnesium grounding anode.
9. Install branching mainline, service pipe, or hydrant lead trace wire as a single continuous wire between the mainline wire and a terminal box as shown in the details. Connect to the mainline wire with an approved connector without cutting the mainline trace wire. No looping, coiling, or kinking of wire is allowed.
10. Install trace wire for boring, directional drilling, and pipe bursting applications as one single continuous wire. Splice connectors are prohibited.
11. Install grounding anode whenever the line is terminated.
12. Install grounding anodes vertically and penetrating undisturbed soil. Anodes not driven into undisturbed soil will be considered defective work.
13. At dead ends, connect the grounding anode leader wire to the trace wire and trim the anode leader wire to length.
14. At terminal boxes, connect the outside leader wire directly to one of the terminals. Do not connect the anode leader wire directly to the trace wire.

B. Flush-mount terminal boxes:

1. Install flush-mount terminal boxes at finished ground elevations as shown in the drawings and details, or as directed by the Engineer.
2. Provide 3’ of extra trace wire in the flush mount terminal box to allow for connection of line tracing equipment.
3. Connect trace wire to flush-mount terminal box cap according to manufacturer’s instructions.

C. Above grade terminal boxes:

1. Install above grade terminal boxes as shown in the drawings and details, or as directed by the Engineer.
2. Provide 4” of extra trace wire in the terminal box to allow for connection of line tracing equipment.
3. Connect trace wire to the terminal post according to manufacturer’s instructions.

3.2 FIELD QUALITY CONTROL

A. Section 014000 – Quality Requirements.

B. Prohibited products and methods:

1. Uninsulated trace wire or insulated trace wire using any insulation other than HDPE.
2. Twist on wire nuts or other unapproved connectors.
3. Tape or spray on waterproofing.
4. Any installation involving multiple instances of wire twisted together or in close proximity to one another.
5. Connecting the trace wire to any conductive utilities.
6. Looping, coiling, or kinking the trace wire.
7. Using any other HDPE jacket color than specified by the American Public Works Association (APWA) uniform color standards.
8. Leaving excess trace wire in the trench.

9. Utilization of connectors in boring, directional drilling, and pipe bursting applications.

C. Post-installation test:

1. Locate all new trace wire installations using standard line tracing equipment, witnessed by the contractor, Engineer, or Engineer's Representative, and facility owner as applicable, prior to acceptance of ownership.
2. Perform this verification upon completion of rough grading and again prior to final acceptance of the project.
3. Continuity testing in lieu of line tracing shall not be accepted.

3.3 TRACE WIRE SCHEDULE

A. Public water infrastructure as shown on the plans:
1. Mains
2. Service lines
3. Hydrant leads

B. Public sanitary sewer infrastructure as shown on the plans:
1. Gravity mains
2. Forcemains
3. Service lines

C. Public storm sewer infrastructure as shown on the plans:
1. Forcemains

END OF SECTION 330597

SECTION 331413 - PUBLIC WATER UTILITY DISTRIBUTION PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pipe and fittings for public line.
2. Tapping sleeves and valves.
3. Bedding and cover materials.

B. Related Requirements:

1. Section 310513 - Soils for Earthwork: Soils for backfill in trenches.
2. Section 310516 - Aggregates for Earthwork: Aggregate for backfill in trenches.
3. Section 312316.13 - Trenching: Excavation and backfill as required by this Section.
4. Section 330110.58 - Disinfection of Water Utility Piping Systems: Disinfection of water mains and appurtenances.
5. Section 330509.33 - Thrust Restraint for Utility Piping: Tied joint restraint system to anchor and resist forces developed in underground closed pipeline systems.
6. Section 330597 - Identification and Signage for Utilities: Pipe markers.
7. Section 331417 - Site Water Service Utility Laterals: Water main service connections.
8. Section 331419 - Valves and Hydrants for Water Utility Service: Fire hydrants, valves, and valve boxes for fire hydrant and water main installations.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Section 012000 - Price and Payment Procedures: Contract Sum/Price modification procedures.

B. Pipe :

1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes excavation and backfill; pipe, and appurtenances, disinfection, couplings, trace wire system, insulation, bedding and backfill.

C. Fittings:

1. Basis of Measurement: By pound weight.
2. Basis of Payment: Includes gaskets, flanges, retraining glands, installation, bedding, concrete thrust restraints, and accessories. Quantity will be installed items at ductile iron class 153 fitting weights (MJ x MJ) in the 2017 Sigma Corporation Catalog.

D. Taps:

1. Basis of Measurement: By each.
2. Basis of Payment: Includes tapping sleeve, tapping valves, and accessories.

1.3 REFERENCE STANDARDS

A. American Society of Mechanical Engineers:

1. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250.

B. ASTM International:

1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A123.
3. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.
4. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12 400 ft-lbf/ft3 (600 kN-m/m3).
5. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
6. ASTM D2241 - Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).
7. ASTM D3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter.
8. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes Using Flexible Elastomeric Seals.
9. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
10. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

C. American Water Works Association:

1. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
2. AWWA C105 - Polyethylene Encasement for Ductile-Iron Pipe Systems.
3. AWWA C110 - Ductile-Iron and Gray-Iron Fittings.
4. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
5. AWWA C115 - Flanged Ductile-Iron Pipe with Ductile-Iron or Gray-Iron Threaded Flanges.
6. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast.
7. AWWA C153 - Ductile-Iron Compact Fittings.
8. AWWA C605 - Underground Installation of Polyvinyl Chloride (PVC) and Molecularly Oriented Polyvinyl Chloride (PVCO) Pressure Pipe and Fittings.
9. AWWA C606 - Grooved and Shouldered Joints.
10. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 60 In. (100 mm Through 1,500 mm), for Water Transmission and Distribution.

D. Manufacturers Standardization Society of the Valve and Fittings Industry:

1. MSS SP-60 - Connecting Flange Joints between Tapping Sleeves and Tapping Valves.

E. National Fire Protection Association:

1. NFPA 24 - Standard for the Installation of Private Fire Service Mains and Their Appurtenances.

F. NSF International:

1. NSF 61 - Drinking Water System Components - Health Effects.
2. NSF 372 - Drinking Water System Components - Lead Content.

1.4 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with termination of water main connection at Site boundary, connection to municipal water utility service and trenching.

1.5 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information regarding pipe materials and pipe fittings.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.6 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

1.7 QUALITY ASSURANCE

A. Materials in Contact with Potable Water: Certified according to NSF 60 and 61 and NSF 372. A product will be considered as meeting these standards if so certified by NSF, the Underwriters Laboratories, or other organization accredited by ANSI to test and certify such products.

B. Perform Work according to North Dakota Department of Health standards.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Storage:

1. Store materials according to manufacturer instructions.
2. Block individual and stockpiled pipe lengths to prevent moving.
3. Do not place pipe or pipe materials on private property or in areas obstructing pedestrian or vehicle traffic.
4. Store PE and PVC materials out of sunlight.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

1.10 WARRANTY

A. Section 017000 - Execution and Closeout Requirements: Requirements for warranties.

PART 2 - PRODUCTS

2.1 WATER PIPING

A. Ductile-Iron Pipe:

1. Comply with AWWA C151.
2. Bituminous Outside Coating: Comply with AWWA C151.
3. Pipe Mortar Lining:
   a. Comply with AWWA C104.
   b. Thickness: Double.
4. PE Encasement: Comply with AWWA C105.
5. Pipe Class:
   a. Comply with AWWA C151.
   b. Class 53.
6. Fittings:
   a. Material: Ductile iron; comply with AWWA C110.
   b. Compact Fittings: Comply with AWWA C153.
   c. Coating and Lining:
      1) Bituminous Coating: Comply with AWWA C110.
      2) Cement-Mortar Lining: Comply with AWWA C104; double thickness.
   d. All pipe sizes.
7. Joints:
   a. Mechanical and Push-on Joints: Comply with AWWA C111.
   b. Restrained Joints: Boltless, push-on type, joint restraint independent of joint seal, when indicated on the drawings.
8. Jackets: PE; comply with AWWA C105.

B. PVC:

1. Comply with AWWA C900, Class 235
2. Fittings (4” to 8” pipe):

a. Comply with AWWA C900 and C907
b. Blue in color.
c. Pipe Sizes: 4” to 8”
d. Manufacturer by IPEX USA or approved equal.

3. Fittings (all sizes):
   a. Material Ductile iron; comply with AWWA C110.
   b. Compact Fittings: comply with AWWA C153.
   c. Coating and Lining:
      1) Bituminous Coating: Comply with AWWA C110.
      2) Cement-Mortar Lining: Comply with AWWA C1O4; double thickness.
   d. Joints:
      1) Comply With AWWA C111.
         a) Push-on Joints
         b) Mechanical Joints for restrained fittings only
      2) Restrained Joints: Per Section 330509.33 - Thrust Restraint for Utility Piping, when indicated on the drawings.
   e. Jackets: PE; comply with AWWA C105.
4. Joints:
   a. Comply with ASTM D3139 and F477.
   b. Seals: PVC flexible elastomeric.
   c. Solvent-cement couplings are not permitted.

2.2 TAPPING SLEEVES AND VALVES

A. Tapping Sleeves:

1. Manufacturers:
   a. Romac Industries, Inc.
   b. Powerseal.
   c. Ford
   d. or equal.
   e. Substitutions: As specified in Section 016000 - Product Requirements.

2. Description:
   a. Material: Stainless Steel.

B. Tapping Valves:

1. Manufacturers:
   a. As listed in Section 331419 – Valves & Hydrants for Utility Service.
   b. Substitutions: As specified in Section 016000 - Product Requirements

2. Description:
   a. AWWA C509. Resilient-seated gate vales with non-rising stem.
   b. Inlet flanges, conforming to ANSI B16.1, Class 125 and MSS Sp-60.
   c. Mechanical joint outlets conforming to AWWA C111.
   d. Mark manufacturer’s name and pressure rating on valve body.

2.3 COUPLINGS

1. Products:
   a. Macro by Romac Industries, Inc.
      1) 4” to 12”
   b. Hymax by Krausz USA
      1) Greater than 12”
   c. or equal.
   d. Substitutions: As specified in Section 016000 - Product Requirements.

2. Description:
   a. Two (2) bolt wide range coupling.

2.4 VALVES AND FIRE HYDRANTS

A. As specified in Section 331419 - Valves and Hydrants for Water Utility Service.

2.5 MATERIALS

A. Bedding and Cover:

1. Bedding: Fill Type A5 as specified in Section 310516 - Aggregates for Earthwork.
2. Cover: Fill Type A5 as specified in Section 310516 - Aggregates for Earthwork.
3. Soil Backfill from above Pipe to Finish Grade:

   a. Soil Type S2 as specified in Section 310513 - Soils for Earthwork.
   b. Subsoil with no rocks greater than 6 inches in diameter, frozen earth, or foreign matter.

2.6 FINISHES

A. Steel: Hot-dip galvanized after fabrication, according to ASTM A123/A123M.

2.7 ACCESSORIES

A. Thrust Restraints: As specified in Section 330509.33 - Thrust Restraint for Utility Piping.

B. Tracer Wire: As specified in Section 330597 - Identification and Signage for Utilities.

C. Steel Rods, Bolt, Lugs, Nuts, and Brackets:
   1. 304 Stainless Steel.

D. Protective Coating:

1. Bituminous coating.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that existing utility water main size, location, and invert are as indicated on Drawings.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Coordination with City:
1. City contact for all coordination issues shall be Ryan James (701-200-9099).

C. Pipe Cutting:

1. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, and remove burrs.
2. Use only equipment specifically designed for pipe cutting; use of chisels or hand saws is not permitted.
3. Grind edges smooth with beveled end for push-on connections.

D. Remove scale and dirt on inside and outside before assembly.

E. Prepare pipe connections to equipment with flanges or unions.

3.3 INSTALLATION

A. Bedding:

1. Excavation:
   a. As specified in Section 312316.13 - Trenching.
   b. Hand trim for accurate placement of pipe to elevations as indicated on Drawings.
2. Dewater excavations to maintain dry conditions and to preserve final grades at bottom of excavation.
3. Place bedding material at trench bottom, level fill materials in one continuous layer not exceeding 6 inches of compacted depth, and compact to 90 percent of maximum density.

B. Piping:

1. Comply with AWWA C605.
2. Handle and assemble pipe according to manufacturer instructions and as indicated on Drawings.
3. Steel Rods, Bolts, Lugs, and Brackets: Coat buried steel before backfilling.
4. Ductile-Iron Piping and Fittings: Comply with AWWA C600.
5. Field Welding Materials: Comply with AWWA C206.

6. Flanged Joints: Do not use in underground installations except within structures.
7. Route pipe in straight line, and re-lay pipe that is out of alignment or grade.
8. High Points:
    a. Install pipe with no high points.
    b. If unforeseen field conditions arise that necessitate high points, install air-release valves as directed by Engineer.
9. Bearing:
    a. Maintain bearing along entire length of pipe.
    b. Excavate bell holes to permit proper joint installation.
    c. Do not lay pipe in wet or frozen trench.
10. Prevent foreign material from entering pipe during placement.
11. Allow for expansion and contraction without stressing pipe or joints.
12. Close pipe openings with watertight plugs during Work stoppages.
13. Install access fittings to permit disinfection of water system performed under Section 330110.58 - Disinfection of Water Utility Piping Systems.
14. Cover:
    a. Establish elevations of buried piping with not less than 7.5 feet of cover.
    b. Measure depth of cover from final surface grade to top of pipe barrel.
15. Tracer Wire: As specified in Section 330597 - Identification and Signage for Utilities.

C. Separation Distances from Contamination Sources:

1. For maximum protection of municipal water systems where water mains and sewers cross, the following methods of construction for various conditions are recommended.
2. Parallel Installation:
    a. Water mains shall be laid at least 10 feet horizontally from any existing or proposed gravity sanitary or storm sewer, sanitary forcemain, septic tank, or subsoil treatment system. The distance shall be measured edge to edge.
3. Crossings:
    a. Water mains crossing sewers shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer with preference to the water main located above the sewer.
    b. At crossings, one full length of water pipe shall be located so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required. Where water main crosses over an existing sewer.
4. Sewer Manholes
    a. No water pipe shall pass through or come in contact with any part of a sewer manhole. Water main should be located at least 10 feet from sewer manholes.

D. Valves and Hydrants: As specified in Section 331419 - Valves and Hydrants for Water Utility Service.

E. Tapping Sleeves and Valves: As indicated on Shop Drawings and according to manufacturer instructions.

F. PE Encasement:

1. Encase piping in PE as indicated on Drawings to prevent contact with surrounding backfill material.
2. Comply with AWWA C105.

3. Terminate encasement 3 to 6 inches above ground where pipe is exposed.

G. Thrust Restraints: As specified in Section 330509.33 - Thrust Restraint for Utility Piping.

H. Service Connections: As specified in Section 331417 - Site Water Service Utility Laterals.

I. Backfilling:

1. Backfill around sides and to top of pipe with cover fill in minimum lifts of 6 inches, tamp in place, and compact to 90 percent of Standard Proctor (ASTM 698) maximum dry density.
2. Place and compact material immediately adjacent to pipes to avoid damage to pipe and prevent pipe misalignment.
3. Maintain moisture content of bedding material to attain required relative compaction.
4. Backfilling: Backfill above pipe as specified in Section 312316.13 - Trenching.

J. Disinfection of Potable Water Piping Systems: As specified in Section 330110.58 - Disinfection of Water Utility Piping Systems.

K. Installation Standards: Install Work according to North Dakota Department of Health standards.

3.4 TOLERANCES

A. Section 014000 - Quality Requirements: Requirements for tolerances.

B. Install pipe to indicated elevation within tolerance of 5/8 inch.

3.5 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Testing:

1. Pressure Testing: As specified in Section 330505.31 – Hydrostatic Testing.
2. Compaction Testing:
   a. Comply with ASTM D698 and ASTM D6938.
   b. Testing Frequency: one test along utility trenches at maximum 500 foot intervals per 2 feet of vertical lift.
   c. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest.

END OF SECTION 331413

SECTION 331417 - SITE WATER SERVICE UTILITY LATERALS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Pipe and fittings for water service connections to buildings.
2. Corporation stop assemblies.
3. Curb stop assemblies.
4. Backflow preventers.
5. Meter setting equipment.
6. Meter boxes.
7. Trenching, bedding, and cover.

B. Related Requirements:

1. Section 310513 - Soils for Earthwork: Backfill-soil type.
2. Section 310516 - Aggregates for Earthwork: Bedding- and cover-material type.
3. Section 312316.13 - Trenching: Excavation of pipe trench.
4. Section 330110.58 - Disinfection of Water Utility Piping Systems: Flushing and disinfecting of water system.
5. Section 330509.33 - Thrust Restraint for Utility Piping: Thrust restraints as required by this Section.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Section 012000 - Price and Payment Procedures: Contract Sum/Price modification procedures.

B. Pipe and Fittings:

1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes hand-trimming excavation, pipe and fittings, bedding, thrust restraints, connection to service piping, trace wire system, disinfection, and municipal utility water source.

C. Water Service Connection

1. Basis of Measurement: By unit.
2. Basis of Payment: Includes service saddle, corporation stop, curb stop, curb box and cover, connection to existing service line (if applicable), fittings, and accessories.

1.3 REFERENCE STANDARDS

A. American Society of Mechanical Engineers:

1. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings.
2. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings.

B. American Society of Sanitary Engineering:

1. ASSE 1012 - Performance Requirements for Backflow Preventers with an Intermediate Atmospheric Vent.
2. ASSE 1013 - Performance Requirements for Reduced Pressure Principle Backflow Preventers and Reduced Pressure Principle Fire Protection Backflow Preventers.

C. ASTM International:

1. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings.
2. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
3. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3).
4. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
5. ASTM D2241 - Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).
6. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
7. ASTM D2855 - Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets.
8. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

D. American Welding Society:

1. AWS A5.8/A5.8M - Specification for Filler Metals for Brazing and Braze Welding.

E. American Water Works Association:

1. AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service.
2. AWWA C600 - Installation of Ductile-Iron Mains and Their Appurtenances.
3. AWWA C800 - Underground Service Line Valves and Fittings.
4. AWWA C901 - Polyethylene (PE) Pressure Pipe and Tubing, 1/2 In. (13 mm) Through 3 In. (76 mm), for Water Service.
5. AWWA M6 - Water Meters - Selection, Installation, Testing, and Maintenance.

F. NSF International:

1. NSF 61 - Drinking Water System Components - Health Effects.
2. NSF 372 - Drinking Water System Components - Lead Content.

1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information regarding pipe materials, pipe fittings, corporation stop assemblies, curb stop assemblies, meters, meter setting equipment, service saddles, backflow preventers, and accessories.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.

1.5 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of piping mains, curb stops, connections, thrust restraints, pressure-pipe centerline elevations, and gravity-pipe invert elevations.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.6 QUALITY ASSURANCE

A. Materials in Contact with Potable Water: Certified according to NSF 60 and 61 and NSF 372. A product will be considered as meeting these standards if so certified by NSF, the Underwriters Laboratories, or other organization accredited by ANSI to test and certify such products.

B. Perform Work according to North Dakota Department of Health standards.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Store materials according to manufacturer instructions.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 WATER PIPING AND FITTINGS

A. Copper Tubing:

1. Comply with ASTM B88.
2. Type: K, annealed.
3. Fittings: Cast copper; ASME B16.18 or wrought copper; ASME B16.22.
4. Joints: Compression connection.

B. PE Pipe:

1. Comply with AWWA C901, ASTM D2239, SIDR 7, PE4710, I.P.S.
2. Fittings:
   a. Type: Molded.
   b. Comply with AWWA C901,
3. Joints: Compression.

C. Pipe sizes
1. 1", 1 ½" and 2"
2. Larger than 2" see Section 331413.00 – Public Water Utility Distribution Piping.

2.2 CORPORATION STOP ASSEMBLIES

A. Manufacturers:

1. A.Y. McDonald Mfg. Co.
   PO Box 508
   Dubuque IA 52004
2. Ford Meter Box Company, Inc.
   775 Manchester Avenue
   Wabash, Indiana 46992
3. Substitutions: As specified in Section 016000 - Product Requirements
4. or equal.

B. Corporation Stops:

1. Comply with ASTM B62.
2. Body: Brass or red brass alloy.
3. Inlet End: Threaded for tapping according to AWWA C800.
4. Outlet End: Suitable for service pipe specified.
5. Corporation Stops for 1" copper services shall be flared or compression style plug corporations A.Y. McDonald 4701 and 4701-22 series or Ford F600 and F1000 series or Equal.
6. Corporation Stops for 1 ½" and 2" copper services shall be ball corporation style either flared or compression McDonald 4704B and 4704B-22 Series or Ford FB700 and FB1100 series or Equal.

7. Corporation Stops for 1” polyethylene services shall be compression style McDonald 4701-33 series or Ford F1001 series or Equal.
8. Corporations for 1 ½” and 2” polyethylene services shall be compression ball type McDonald 4704B-33, Ford BF1101 series or Equal.
9. Use of the proper size of insert stiffeners is required for compression corporations for polyethylene.

C. Service Saddles:

1. Type: Double strap. Stainless steel, gasketed, full width sleeve with integral tapped outlet.
2. Ford FS303, PowerSeal 3412AS, or Romac 306.
3. or Equal

2.3 CURB STOP ASSEMBLIES

A. Manufacturers:

1. A.Y. McDonald Mfg. Co.
   PO Box 508
   Dubuque IA 52004
2. Ford Meter Box Company, Inc.
   775 Manchester Avenue
   Wabash, Indiana 46992
3. Substitutions: As specified in Section 016000 - Product Requirements.
4. or Equal.

B. Curb Stops:

1. Body: Brass or red brass alloy.
2. Comply with ASTM B62.
3. Valve Type: Ball.
4. Sealing: Positive pressure.
5. Curb stops for copper services shall be either flared or compression McDonald 6104 and 6104-22 series, Ford B22 or B44 series or Equal.
6. Curb stops for polyethylene services shall be McDonald 6104-33 or Ford B66 series or Equal.
7. Use of proper size of insert stiffeners is required for compression joints for polyethylene.

C. Curb Boxes and Covers:

1. McDonald 5622 or Equal
2. Body:
   a. Cast iron.
   b. 8’ total height
   c. 1 ½” riser
3. Type: Extension.
4. Base: Minneapolis.
5. Lid:
   a. Inscription: WATER.
   b. Plug: Pentagonal.

6. Stationary Rod: none

2.4 MATERIALS

A. Bedding and Cover:

B. Bedding: Fill Type A5 as specified in Section 310516 - Aggregates for Earthwork.

C. Cover: Fill Type A5 as specified in Section 310516 - Aggregates for Earthwork.

D. Soil Backfill from Above Pipe to Finish Grade:

1. Soil Type S2 as specified in Section 310513 - Soils for Earthwork.
2. Subsoil: No rocks greater than 6 inches in diameter, frozen earth, or foreign matter.

2.5 ACCESSORIES

A. Tracer Wire: As specified in Section 330597 - Identification and Signage for Utilities.

B. Thrust Restraints: As specified in Section 330509.33 - Thrust Restraint for Utility Piping.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, and remove burrs.

C. Remove scale and dirt from inside and outside of piping before assembly.

D. Prepare pipe connections to equipment with flanges or unions.

3.3 INSTALLATION

A. Corporation Stop Assemblies:

1. Make connection for each different kind of water main, using suitable materials, equipment, and methods as approved by Engineer.

2. Provide service clamps for mains constructed of materials other than cast iron or ductile iron.
3. Location:
   a. Screw corporation stops directly into tapped and threaded iron main at 10- and 2-o'clock positions along main's circumference.
   b. Locate and stagger corporation stops at least 12 inches apart longitudinally.
4. Plastic Pipe Mains:
   a. Provide full support for service clamp for full circumference of pipe, with minimum 2-inch width of bearing area.
   b. Exercise care against crushing or causing other damage to mains at time of tapping or installation of service clamp or corporation stop.

5. Use seals or other devices such that no leaks are present in mains at points of tapping.
6. Do not backfill and cover service connections until installation has been approved by Engineer.

B. Bedding:

1. Excavate pipe trench as specified in Section 312316.13 - Trenching.
2. Placement:
   a. Place bedding material as indicated on Drawings.
   b. Level fill materials in one continuous layer not exceeding 6 inches of compacted depth.
   c. Compact to 90 percent maximum density.
3. Backfill around sides and to top of pipe with cover fill, tamp in place, and compact to 90 percent maximum density.

C. Pipe and Fittings:
1. Water mains shall be laid at least 10 feet horizontally from any existing or proposed gravity sanitary or storm sewer, septic tank, or subsoil treatment system. The distance shall be measured outside edge to outside edge.
2. Install pipe to allow for expansion and contraction without stressing pipe or joints.
3. Install access fittings to permit disinfection of water system.
4. Thrust Restraints: Form and place concrete for thrust restraints at each elbow or change of direction of pipe.
5. Establish elevations of buried piping with not less than 7.5 feet of cover.
6. Tracer Wire: As specified in Section 330597 - Identification and Signage for Utilities.

D. Backfilling:

1. Backfill around sides and to top of pipe with cover fill in minimum lifts of 6 inches, tamp in place, and compact to 90 percent of Standard Proctor (ASTM 698) maximum dry density.
2. Place and compact material immediately adjacent to pipes to avoid damage to pipe and prevent pipe misalignment.
3. Maintain moisture content of bedding material to attain required relative compaction.
4. Backfilling: Backfill above pipe as specified in Section 312316.13 - Trenching.

E. Curb Stop Assemblies:

1. Set curb stops on solid bearing.

2. Boxes:
   a. Center and plumb curb boxes over curb stops.
   b. Set box cover flush with finished grade.

F. Service Connections:

1. Install water service according as indicated on Drawings.

G. Disinfection of Water Piping System: Flush and disinfect system as specified in Section 330110.58 - Disinfection of Water Utility Piping Systems.

3.4 TOLERANCES

A. Install pipe to indicated elevation to within tolerance of 5/8 inch.

3.5 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Testing:

1. Pressure Testing: As specified in Section 330505.31 – Hydrostatic Testing

C. Compaction Testing:
1. Comply with ASTM D698 and ASTM D6938.
2. Testing Frequency: one test per service trench.
3. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest.

END OF SECTION 331417

SECTION 331419 - VALVES AND HYDRANTS FOR WATER UTILITY SERVICE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Valves.
2. Valve boxes.
3. Fire hydrants.

B. Related Requirements:

1. Section 310516 - Aggregates for Earthwork: Drainage Aggregate.
2. Section 330110.58 - Disinfection of Water Utility Piping Systems: Requirements for flushing and disinfecting.
3. Section 330509.33 - Thrust Restraint for Utility Piping: Thrust restraints as required by this Section.
4. Section 331413 - Public Water Utility Distribution Piping: Pressure testing of valves and hydrants.
5. Section 331417 - Site Water Service Utility Laterals: Piping, trenching, backfilling, and compaction requirements.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Section 012000 - Price and Payment Procedures: Contract Sum/Price modification procedures.

B. Valves:

1. Basis of Measurement: By each.
2. Basis of Payment: Includes excavation, valve, valve box, accessories, bedding, and backfill.

C. Adjustment of Existing Valves:

1. Basis of Measurement: By each.
2. Basis of Payment: Includes excavation, labor, equipment, and materials to properly adjust valve box to finished grade.

D. Fire Hydrants:

1. Basis of Measurement: By each.
2. Basis of Payment: Includes excavation, hydrant, top extension (where required), accessories, foundation bedding, and backfill.

E. Hydrant Barrel Extension:

1. Basis of Measurement: by each.

2. Basis of Payment: Includes removal of hydrant, installation of barrel extension, re-installation of hydrant and tracer wires, accessories, testing and backfill.

1.3 REFERENCE STANDARDS

A. American Water Works Association:

1. AWWA C500 - Metal-Seated Gate Valves for Water Supply Service.
2. AWWA C502 - Dry-Barrel Fire Hydrants.
3. AWWA C503 - Wet-Barrel Fire Hydrants.
4. AWWA C515 - Resilient-Seated Gate Valves for Water Supply Service.
5. AWWA C550 - Protective Interior Coatings for Valves and Hydrants.

B. National Fire Protection Association:

1. NFPA 291 - Recommended Practice for Fire Flow Testing and Marking of Hydrants.

C. NSF International:

1. NSF 61 - Drinking Water System Components - Health Effects.
2. NSF 372 - Drinking Water System Components - Lead Content.

1.4 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with installation of water mains.

1.5 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information regarding component materials, fittings, assembly and parts diagram, and accessories.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.

E. Qualifications Statements:

1. Submit qualifications for manufacturer and installer.
2. Submit manufacturer's approval of installer.

1.6 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for maintenance materials.

1.8 QUALITY ASSURANCE

A. Materials in Contact with Potable Water: Certified according to NSF 61 and NSF 372.

B. Cast manufacturer's name, pressure rating, and year of fabrication into valve body.

C. Perform Work according to North Dakota Department of Health standards.

1.9 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Delivery:

1. Seal valve and hydrant ends to prevent entry of foreign matter.
2. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Store materials according to manufacturer instructions.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 VALVES

A. Resilient-Wedge Gate Valves:

1. Manufacturers:
   a. American Cast Iron Pipe Company (American Flow Control & Waterous)
      1501 31st Ave. North
      Birmingham, AL 35202

b. Clow Valve Company
902 South Second St.
Oskaloosa IA 52577
c. Mueller Co.
633 Chestnut Street
Suite 1200
Chattanooga TN 37450
d. Substitutions: As specified in Section 016000 - Product Requirements.
e. or equal.

2. Description:

a. Comply with AWWA C515.
b. Body: Ductile iron.
c. Seats: Resilient.
d. Stem:
1) Type: Non-rising.
2) Material: Bronze.
e. Operation:
1) Square operating nut.
2) Opening Direction: Counterclockwise.

3. End Connections:
a. Push-on Joint
b. Alpha, where indicated on the drawings
4. Coatings:
a. Comply with AWWA C550.
b. Interior and exterior.
5. Pressure Rating:
a. 12-inch Diameter and Smaller: 200 psig.
b. 16-inch Diameter and Larger: 150 psig.
6. Exterior Bolts and Nuts: 304 Stainless Steel.

2.2 FIRE HYDRANTS

A. Manufacturers:

1. American Cast Iron Pipe Company (American Flow Control & Waterous)
1501 31st Ave. North
Birmingham, AL 35202

B. Models:
1. Waterous Pacer, WB-67.

C. Dry-Barrel, Breakaway Type:

1. Comply with AWWA C502.
2. Body: Cast iron or ductile iron.
3. Valve: Compression type.
4. Burial Depth: As indicated on Drawings.
5. Inlet Connection Size: 6 inches.

6. Valve Opening: 5-1/4 inches in diameter.
7. End Connections:
   a. Push-on Joint
   b. Alpha, where indicated on the drawings
8. Bolts and Nuts: 304 Stainless steel.
9. Interior Coating: Comply with AWWA C550.
10. Opening Direction: Counterclockwise unless otherwise indicated.

D. Hose Connections:

1. One pumper, National Standard Thread 40524.
2. Two hose nozzles, National Standard Thread 7532.
3. Attach nozzle caps by separate chains.

E. Maintenance and other features:

1. Valve seat, and all operating parts, shall be removable as a single unit through the barrel, without digging.
2. Main valve shall close with the water pressure, leaving no pressure on lower joint and flange when shut off.
3. Stuffing box shall be of conventional "O" ring type, should be fully accessible and sealed from water, moisture and foreign matter.
4. Valve rod or operating nut shall be brass or brass bushed where it passes through packing.
5. The drain should be positively actuated by the valve rod when opening or closing. Drain should not depend upon gravity when opening and closing.
6. Drain weep holes shall be plugged with brass screws if the water table is above the bottom of the hydrant.
7. Hydrant design shall allow for installation of a barrel top extension.
8. Utilize stainless steel bolts on bottom flange.
9. Wrap all portions of hydrant below finished grade with 8 mil polyethylene plastic.
10. Darley hydrant flag or equal, as shown on the Drawings.

F. Finishes:

1. Primer and two coats of enamel as recommended by manufacturer.
2. Color: Red.

2.3 VALVE BOXES

A. Manufacturers:

1. Tyler Union
   11910 CR 492
   Tyler, TX 75706
2. Substitutions: As specified in Section 016000 - Product Requirements.
3. or equal.

B. Description:

1. 12-inch Diameter Valves and Smaller:

    a. Material: Cast iron.
    b. Type: Two piece; screw.
    c. Model: Tyler Union 6850 Series
2. Valves Larger than 12-inch Diameter:
    a. Material: Cast iron.
    b. Type: Three piece; screw.
    c. Base: Round.
    d. Model: Tyler Union 6860 Series
3. Lid Inscription: WATER.

2.4 ACCESSORIES

A. Thrust Restraints: As specified in Section 330509.33 - Thrust Restraint for Utility Piping.

B. Valve Box Aligner: High-strength plastic device designed to automatically center valve box base and to prevent it from shifting off center during backfilling.
1. Manufacturers:
    a. Adaptor Inc.
    2151 S. 54th Street
    West Allis, WI 53219
    b. or equal.

C. Fire Hydrant Drainage Gravel: As specified in Section 310516 - Aggregates for Earthwork.

D. Exterior Bolts and Nuts: 304 Stainless Steel.

E. Barrel Extension: Standpipe and road extension kit manufactured or approved by the hydrant manufacturer. Length as shown on the Drawings or as directed by the Engineer.

2.5 SOURCE QUALITY CONTROL

A. Provide shop inspection and testing of completed assembly.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Determine exact location and size of valves from Drawings.

C. Identify required lines, levels, contours, and datum locations.

D. Verify that elevations of existing facilities prior to excavation and installation of valves and hydrants are as indicated on Drawings.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Locate, identify, and protect from damage utilities to remain.

C. Do not interrupt existing utilities without permission and without making arrangements to provide temporary utility services.

1. Notify Engineer not less than 48 hours in advance of proposed utility interruption.
2. Do not proceed without written permission from Engineer.

3.3 INSTALLATION

A. Perform trench excavation, backfilling, and compaction as specified in Section 331413 - Public Water Utility Distribution Piping.

B. Install valves and hydrants in conjunction with pipe laying.

C. Provide buried valves with valve boxes installed flush with finished grade.

D. Provide support blocking and drainage gravel while installing fire hydrants; do not block drain hole.

E. Orientation:

1. Set valves and hydrants plumb.
2. Set fire hydrants with pumper nozzle facing roadway.
3. Set fire hydrants with centerline of pumper nozzle 24 inches above finished grade and with safety flange not more than 6 inches nor less than 2 inches above grade.

F. After main-line pressure testing, flush fire hydrants and check for proper drainage.

G. Disinfection of Water Piping System: Flush and disinfect valves and hydrants with water mains as specified in Section 330110.58 - Disinfection of Water Utility Piping Systems.

3.4 ADJUSTMENTS OF EXISTING VALVE BOXES

A. Adjustments of existing valve box shall involve raising or lowering the lid of the valve box to the new finished surface.

B. It shall involve some or all of the following:

1. Spin/twist/rotate the box up or down.
2. Install riser ring.

3.5 RISER RINGS

A. Install riser ring below lid in asphalt paving areas:
   1. On all new valve boxes.
   2. On all existing valve boxes being adjusted.

B. Clean riser ring mounting area with wire brush.

C. Install ¼” bead of adhesive at 360 degrees.

D. Do not allow traffic on riser rings for a minimum of 8 hours after adhesive application.

3.6 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Testing: Pressure test valves and hydrants with water mains as specified in Section 330505.31 – Hydrostatic Testing.

END OF SECTION 331419

SECTION 333111 - PUBLIC SANITARY SEWERAGE GRAVITY PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Sanitary sewerage piping.
2. Connection to existing manholes.
3. Wye branches and tees.
4. Sanitary laterals.
5. Bedding and cover materials.

B. Related Requirements:

1. Section 310513 - Soils for Earthwork: Soils for backfill in trenches.
2. Section 310516 - Aggregates for Earthwork: Aggregate for backfill in trenches.
3. Section 312316.13 - Trenching: Execution requirements for trenching required by this Section.
4. Section 330130.11-Television Inspection of Sewers
5. Section 330505.41 - Air Testing: Low Pressure air testing of gravity sewer piping.
6. Section 330505.43 - Mandrel Testing: Deflection testing of plastic sewerage piping.
7. Section 330561 - Concrete Manholes: Manholes for sanitary sewerage piping.
8. Section 330597 - Identification and Signage for Utilities: Trace Wire.

1.2 DEFINITIONS

A. Bedding: Fill placed under, beside, and directly over pipe, prior to subsequent backfill operations.

1.3 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Section 012000 - Price and Payment Procedures: Contract Sum/Price modification procedures.

B. Pipe and Fittings:

1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes hand trimming, excavation, bedding, pipe and fittings, bypass pumping (if required), television inspection, trace wire system, and to indicated depth.

C. Cleanout:

1. Basis of Measurements: By each.
2. Basis of Payment: Includes hand trimming, excavating, reinforced concrete pad, casting, unit installation with accessories, connection to sewer piping and backfilling.

D. Sanitary Sewer Televising Riser:

1. Basis of Measurements: By each.
2. Basis of Payment: Includes the fitting on the main and all pipe, couplings, and fittings above the main.

E. Sanitary Sewer Service Connection:

1. Basis of Measurements: By each.
2. Basis of Payment: Includes labor, excavation, backfilling, materials, and equipment necessary for furnishing and installing one (1) in-line sanitary sewer service connection as shown in the plans. Pipe shall be measured as indicated above.

1.4 REFERENCE STANDARDS

A. ASTM International:
1. ASTM D698 - Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3).
2. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
3. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
4. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
5. ASTM D2729 - Standard Specification for Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
6. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
7. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).
8. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

1.5 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with Owner.

1.6 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer catalog cuts and other information indicating proposed materials, accessories, details, and construction information.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Source Quality-Control Submittals: Indicate results of factory tests and inspections.

E. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

1.7 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

1.8 QUALITY ASSURANCE

A. Perform Work according to North Dakota Department of Health standards.

1.9 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Storage:

1. Store materials according to manufacturer instructions.
2. Store valves in shipping containers with labeling in place.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Block individual and stockpiled pipe lengths to prevent moving.
3. Provide additional protection according to manufacturer instructions.

1.11 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 SANITARY SEWERAGE PIPING

A. Plastic Pipe:

1. Material: PVC.
2. Comply with ASTM D3034:
   a. Mains: SDR-35 or SDR-26
   b. Service Lines: SDR-26
3. Inside Nominal Diameter:
   a. Mains: as notes on plans
   b. Service Lines: 6 inch.
4. End Connections: Bell-and-spigot style, with rubber-ring-sealed gasket joint.
5. Fittings: PVC.
6. Joints:
   a. Elastomeric gaskets.
   b. Comply with ASTM F477.

2.2 MANHOLES

A. As specified in Section 330561 - Concrete Manholes.

2.3 FLEXIBLE COUPLINGS

A. Manufacturers:

1. Reinforced Flexible Coupling: Strong Back RC Series by Fernco.
2. Substitutions: As specified in Section 016000 - Product Requirements
3. or equal.

2.4 MATERIALS

A. Bedding and Cover:

1. Bedding and Cover: Fill Type A5, as specified in Section 310516 - Aggregates for Earthwork.
2. Soil Backfill from Above Pipe to Finish Grade:
   a. Soil Type S2, as specified in Section 310513 - Soils for Earthwork.
   b. Subsoil with no rocks more than 6 inches in diameter, frozen earth, or foreign matter.

2.5 ACCESSORIES

A. Trace Wire: As specified in Section 330597 - Identification and Signage for Utilities.

B. Cleanout Lids: Neenah R-1973 and labeled for sewer.

2.6 SOURCE QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for testing, inspection, and analysis.

B. Provide shop inspection and testing of pipe.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that trench cut is ready to receive Work of this Section.

C. Verify that excavations, dimensions, and elevations are as indicated on Drawings.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Prepare and implement temporary bypass pumping plan on work involving live sewers. Plan shall be approved by Engineer.

C. Correct over-excavation with Coarse Aggregate Type A5.

D. Remove large stones or other hard materials that could damage pipe or impede consistent backfilling or compaction.

E. Protect and support existing sewer lines, utilities, and appurtenances.

F. Utilities:

1. Maintain profiles of utilities.
2. Coordinate with other utilities to eliminate interference.
3. Notify Engineer if crossing conflicts occur.

3.3 INSTALLATION

A. Bedding:

1. Excavate pipe trench as specified in Section 312316.13 - Trenching.
2. Excavate to lines and grades as indicated on Drawings.
3. Dewater excavations to maintain dry conditions and to preserve final grades at bottom of excavation.
4. Provide sheeting and shoring as specified in Section 312316.13 - Trenching.
5. Placement:

a. Place bedding material at trench bottom.
b. Level materials in continuous layer not exceeding 6-inch compacted depth.
c. Compact to 90 percent of Standard Proctor (ASTM 698) maximum dry density.

B. Piping:

1. Install pipe, fittings, and accessories according to ASTM D2321, and seal joints watertight.
2. Lay pipe to slope gradients as indicated on Drawings.
3. Begin at downstream end of system and progress upstream.
4. Bedding: As indicated on Drawings.
5. Lay bell-and-spigot pipe with bells upstream.
6. Backfill and compact as specified in Section 312316.13 - Trenching.
7. Do not displace or damage pipe when compacting.
8. Connect pipe to existing sewer system with solid sleeve coupling.
9. Trace Wire: As specified in Section 330597 - Identification and Signage for Utilities.
10. Installation Standards: Install Work according North Dakota Department of Health standards.
11. Sewers shall be laid at least 10 feet horizontally from any existing or proposed water main. The distance shall be measured edge to edge.
12. Crossings:
    a. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade.

C. Manholes: As specified in Section 330561 - Concrete Manholes.

D. Connections to Existing Manholes:

1. Drilling:
    a. Core drill existing manhole to clean opening.
    b. Use of pneumatic hammers, chipping guns, and sledge hammers are not permitted.
2. Install watertight neoprene gasket and seal with nonshrink concrete grout.
    a. Use epoxy binder between new and existing concrete.

3. Prevent construction debris from entering existing sewer line when making connection.

E. Wye Branches and Tees:

1. Concurrent with pipe-laying operations, install wye branches and pipe tees at locations indicated on Drawings.
2. Use standard fittings of same material and joint type as sewer main.
3. Maintain minimum 5 foot separation distance between wye connection and manhole.
4. Use saddle wye or tee with stainless-steel clamps for taps into existing piping.
5. Mount saddles with gasket and secure with metal bands.
6. Lay out holes with template, and cut holes with mechanical cutter.

F. Sanitary Laterals:

1. Construct laterals from wye branch to terminal point as shown on the Drawings.
2. Where depth of main pipeline warrants, construct riser-type laterals from wye branch.
3. Minimum Depth of Cover over Piping: 8 feet.
4. Minimum Separation Distance between Laterals: 5 feet.
5. Install televising riser as shown on the Drawings.

G. Backfilling: As specified in Section –312316.13 - Trenching.

3.4 TOLERANCES

A. Section 014000 - Quality Requirements: Requirements for tolerances.

B. Maximum Variation from Indicated Slope: 1/8 inch in 10 feet.

3.5 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Request inspection by Engineer prior to and immediately after placing bedding.

C. Testing:

1. If tests indicate that Work does not meet specified requirements, remove Work, replace, and retest.
2. Pipe Testing:
   a. Pressure Testing: As specified in Section 330505.41 - Air Testing.
   b. Deflection Testing: As specified in Section 330505.43 - Mandrel Testing.

3. Compaction Testing:
   a. Comply with ASTM D698 and ASTM D6938.
   b. Testing Frequency: one test along utility trenches at maximum 500 foot intervals per 2 feet of vertical lift.
   c. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest.

D. Television Inspection:

1. As specified in Section 330130.11 – Television Inspection of Sewers.
2. Shall be completed on new mains and services prior to street construction.
3. Engineer shall review television inspection recordings and reports within 7 days of receipt.
4. Deficiencies shall be repaired by the contractor prior to street construction.

3.6 PROTECTION

A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

C. Cap open ends of piping during periods of Work stoppage.

END OF SECTION 333111

SECTION 333123 - SANITARY SEWERAGE FORCE MAIN PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Force mains.
2. Valves.
3. Valve boxes.
4. Cleanouts.
5. Maintenance Manholes
6. Bedding and cover materials.

B. Related Requirements:

1. Section 312316.13 - Trenching: Excavation, backfilling, compacting, and fill over underground pipe markers.
2. Section 330505.31 - Hydrostatic Testing: Pressure testing of completed force mains.
3. Section 330509.33 - Thrust Restraint for Utility Piping: Thrust restraints as required by this Section.
4. Section 330561 - Concrete Manholes: Connection to sanitary sewerage system.
5. Section 330597 - Identification and Signage for Utilities: Tracer Wire.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Section 012000 - Price and Payment Procedures: Contract Sum/Price modification procedures.

B. Pipe:

1. Basis of Measurement: By linear foot.
2. Basis of Payment: Includes excavation, hand trimming, backfill, bedding, thrust restraints, PVC and ductile iron fittings, trace wire system, and pipe.

C. Fittings:

1. Basis of Measurement: By pound weight.
2. Basis of Payment: Includes gaskets, flanges, retraining glands, installation, bedding, concrete thrust restraints, mechanical thrust restrains, and accessories. Quantity will be installed items at ductile iron class 153 fitting weights (MJ x MJ) in the 2017 Sigma Corporation Catalog.

D. Maintenance Manhole:
   1. Basis of Measurement: By each.
   2. Basis of Payment: Includes excavation, concrete structure, casting, air valve, knife gate valve, isolation valves, internal piping, venting, accessories, labor, and backfill.

E. Tapping Sleeve and Valve:
   1. Basis of Measurement: By the each.
   2. Basis of Payment: Includes tapping sleeve, tapping valves, and accessories.

1.3 REFERENCE STANDARDS

A. American Water Works Association:

   1. AWWA C104 - Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.
   2. AWWA C110 - Ductile-Iron and Gray-Iron Fittings.
   3. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings.
   4. AWWA C151 - Ductile-Iron Pipe, Centrifugally Cast.
   5. AWWA C515 – Ductile iron gate valves shall be the resilient wedge style valves.
   6. AWWA C509 - Resilient-Seated Gate Valves for Water Supply Service.
   7. AWWA C550 - Protecting Interior Coatings for Valves and Hydrants.
   8. AWWA C517 – Resilient-Seated Cast-Iron Plug Valves.
   9. AWWA C900 - Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 60 In., for Water Transmission and Distribution.

B. ASTM International:

   1. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft3 (600 kN-m/m3).
   2. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120.
   3. ASTM D2241 - Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series).
   4. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40.
   5. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80.
   6. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth).

1.4 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with connection to existing municipal sewer utility service.

1.5 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information indicating pipe material used, pipe accessories, valves, and restrained joint details and materials.

C. Shop Drawings:

1. Indicate piping piece numbers and locations.
2. Indicate restrained joint locations.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Manufacturer Instructions: Submit special procedures required to install specified products.

F. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

G. Qualifications Statement:

1. Submit qualifications for manufacturer, installer, and licensed professional.

1.6 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record invert elevations and actual locations of pipe runs and connections.

C. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

1.7 QUALITY ASSURANCE

A. Perform Work according to North Dakota Department of Health regulations.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum ten years' experience.

B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Storage:

1. Store materials according to manufacturer instructions.
2. Do not place materials on private property without written permission of property owner.
3. Do not stack pipe higher than recommended by pipe manufacturer.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Store gaskets for mechanical and push-on joints in cool and dry location, out of direct sunlight, and not in contact with petroleum products.
3. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 FORCE MAIN

A. Ductile-Iron Fittings:

1. Comply with AWWA C153.
2. Pressure Rating: 350 psig.
3. Ceramic Epoxy lined, Protecto 401TM, application as specified by manufacturer, and outside coated.
4. Mechanically restraints per Section 330509.33 – Thrust Restraint for Utility Piping.

B. Joints:

1. Comply with AWWA C111.
2. Type: Mechanical or push on.

C. Rubber Gaskets, Lubricants, Glands, Bolts, and Nuts: Comply with AWWA C111.

D. Bolts and Nuts: Type 304 Stainless Steel.

E. Jackets: AWWA C105 polyethylene jacket.

2.2 PVC PIPE

A. PVC Pressure Sewer Pipe and Fittings, 4-inch through 60-inch:

1. Comply with AWWA C900.
2. DR-25 Class 165.
3. Joints: Gasketed.
4. PVC fittings (DR-18, Class 235)
   a. Use for all locations except when mechanically restrained fittings are required.

2.3 KNIFE GATE VALVES

A. Manufacturers:
1. DeZurik
   250 Riverside Ave N
   Sartell, MN 56377
2. Henry Pratt Company
   675 Mitchell Avenue
   Woodland, WA 98674
3. Orbinox USA
   311 North Front Street
   Amory, Mississippi 38821

B. Description:
1. Materials:
   a. Body: Type 316 stainless steel.
   b. Gate: Type 316 stainless steel.
2. Seats: Resilient
3. Stem:
   a. Type: Non-rising.
   b. Material: 304 stainless steel
4. Operation:
   a. 2” operating nut with direction of opening cast in the nut, extended to the surface in enclosed operating box.
   b. Open counterclockwise unless otherwise indicated.
5. End Connections: flange.
6. Coatings:
   a. For cast iron or ductile iron parts: epoxy in accordance with AWWA C550.
7. Pressure Rating:
   a. 150 psig.
8. Exterior Bolts and Nuts: 304 Stainless steel.

2.4 TAPPING SLEEVES AND VALVES

A. Tapping Sleeve and Valve:
1. Manufacturers: Romac Industries, Inc., Powerseal, or Ford.
   a. SST Stainless Steel Tapping Sleeve.
   b. 662 Stainless Steel Tapping Sleeve.
2. Description: AWWA C509, resilient-seated gate valves with non-rising stem. Inlet flanges conforming to ANSI B16.1, Class 125 and MSS SP-60. Mechanical joint outlets conforming to AWWA C111.
3. Mark manufacturer's name and pressure rating on valve body.

2.5 CONCRETE STRUCTURES

A. Precast box culvert meeting the requirements of Section 606 of the North Dakota Department of Transportation Standard Specifications for Road and Bridge Construction.

B. Base and cover designed for HS-20 wheel loading.

C. Joints per ASTM C990.

2.6 CONNECTIONS TO EXISTING MAINS

A. For 12” and smaller, connect to existing pipes with Macro coupling by Romac.

B. For larger than 12”, connect to existing pipes with Hymax Coupling by Krausz USA.

2.7 MATERIALS

A. Bedding and Cover:

1. Bedding: Fill Type A5 as specified in Section 310516 - Aggregates for Earthwork.
2. Cover: Fill Type A5 as specified in Section 310516 - Aggregates for Earthwork.
3. Soil Backfill from above Pipe to Finish Grade:
    a. Soil Type S2 as specified in Section 310513 - Soils for Earthwork.
    b. Subsoil with no rocks greater than 6 inches in diameter, frozen earth, or foreign matter.

2.8 ACCESSORIES

A. Tracer Wire: As specified in Section 330597 - Identification and Signage for Utilities.

B. All bolts and nuts shall be 304 stainless steel.

C. Air Valves: as specified in Section 400578.29 – Combination Air Valves for Wastewater Service.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that excavation base is ready to receive Work.

C. Verify that excavations, dimensions, and elevations are as indicated on Drawings.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Correct over-excavation as directed by Engineer.

C. Remove large stones or other hard matter capable of damaging pipe or of impeding consistent backfilling or compaction.

3.3 INSTALLATION

A. Bedding:

1. Excavate pipe trench as specified in Section 312316.13 - Trenching.
2. Place bedding material at trench bottom.
3. Level materials in continuous layers not exceeding 6 inches in depth.
4. Maintain optimum moisture content of bedding material to attain required compaction density.

B. Piping:

1. Install pipe, fittings, and accessories as indicated on Drawings.
2. Route piping in straight line.
3. Install bedding at sides and over top of pipe to minimum compacted thickness of 6 inches.
4. Backfilling and Compacting:
    a. As specified in Section 312316.13 - Trenching.
    b. Do not displace or damage pipe while compacting.
5. Connect to municipal sewer system.
6. Tracer Wire: As specified in Section 330597 - Identification and Signage for Utilities.
7. Installation Standards: Install Work according to 10 States Standards.

C. Thrust Restraints:

1. Provide pressure pipeline with concrete and mechanically restrained joints at bends, tees, and changes in direction.
2. As specified in Section 330509.33 - Thrust Restraint for Utility Piping.

D. Maintenance Manholes:

1. Excavate and install concrete manhole structure per Section 330561 - Concrete Manholes.
2. Install internal piping, knife gate valve, air valve, isolation valves, and access tee with quick connect, supporting all structures with pipe stands.
3. Connect extension piping to air valve as shown on the drawings.
4. Pour concrete floor and form sump pit.

E. Tapping Sleeves and Valves:

1. Install tapping sleeves and valves as indicated on Drawings and according to manufacturer's instructions.

F. Connections To Existing Main:

1. Connecting new sanitary force main to existing force main shall involve removing the existing plug and installing a Hymax coupling by Krausz USA.

2. Coordination with City:
    a. City contact for all coordination issues shall be Ryan James (701-200-9099).

G. Cradles and Encasements: Provide concrete cradles and encasements for pipelines where indicated on Drawings, where indicated on Shop Drawings, and as specified in Section 802 – Portland Cement Concrete.

H. Encase piping in polyethylene on all ductile iron pipe and fittings to prevent contact with surrounding backfill material.

1. Install according to AWWA C105.

I. Crossings:

1. For maximum protection of municipal water systems where water mains and sewers cross, the following methods of construction for various conditions are recommended.
2. Maintain 10 feet horizontal separation of water main from sanitary sewer piping.
3. Water and sewer:
    a. Water mains crossing sewers shall be laid to provide minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer with preference to the water main located above the sewer.
    b. Locate one full length of water pipe so both joints will be as far from the sewer as possible. Special structural support for the water and sewer pipes may be required.
4. Where water main crosses over an existing sewer.
    a. No additional protection needed if water main is at least three (3) feet above the sewer. (Intervening soil must be left undisturbed).
    b. If crossing is within three (3) feet above the sewer, a full length of water main must be centered over the sewer main.
5. Where water main crosses under the sewer.
    a. In all cases, additional protection shall be provided by centering a full length of water main under the sewer main. All sewer joints located within ten (10) feet of the crossing shall be able to withstand 25 psi internal pressure.

3.4 FIELD QUALITY CONTROL

A. Section 014000 - Quality Requirements: Requirements for inspecting and testing.

B. Inspections: Request inspection by Engineer prior to placing bedding.

C. Pressure Testing: As specified in Section 330505.31 - Hydrostatic Testing.

D. Compaction Testing:
1. Comply with ASTM D698 and ASTM D6938.
2. Testing Frequency: one test along utility trenches at maximum 500 foot intervals per 2 feet of vertical lift.
3. If tests indicate Work does not meet specified requirements, remove Work, replace, and retest.

3.5 PROTECTION

A. Section 017000 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Protect pipe and aggregate cover from damage or displacement until backfilling operation is in progress.

END OF SECTION 333123

SECTION 400578.29 - COMBINATION AIR VALVES FOR WASTEWATER SERVICE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: All stainless steel combination air valves for wastewater pipelines.

1.2 REFERENCE STANDARDS

A. American Water Works Association:

1. AWWA C512 - Air-Release, Air/Vacuum, and Combination Air Valves for Waterworks Service.

B. ASTM International:

1. ASTM A126 - Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
2. ASTM A536 - Standard Specification for Ductile Iron Castings.

1.3 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with installation of process piping.

1.4 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer catalog information.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Section 016000 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Store materials according to manufacturer instructions.

D. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Furnish temporary end caps and closures on piping and fittings and maintain in place until installation.
3. Provide additional protection according to manufacturer instructions.

PART 2 - PRODUCTS

2.1 COMBINATION AIR VALVES FOR WASTEWATER SERVICE

1. Crispin.
2. Dezurik.
3. Pratt.
4. Valmatic
5. Substitutions: Equal products permitted.

B. Description:

1. Type: All stainless-steel, automatic, float operated, body as indicated on the plans.
2. Comply with AWWA C512.
3. Size: As indicated on Drawings.
4. Suitable for sewage service.
5. Pressure Rating: 150 psig.

C. Materials:

1. Body and Cover: Stainless steel.
2. Float, Seat, and Trim: Stainless steel.
3. Seat: Buna-N.
4. Hardware: Stainless steel.

D. End Connections - Single Body: As recommended by manufacturer.

E. Accessories:

1. Backwash accessories, including inlet shutoff valve, blowoff valve, rubber supply hose, and quick-disconnect couplings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Thoroughly clean end connections before installation.

C. Close pipe and equipment openings with caps or plugs during installation.

D. Cleaning: Clean surfaces to remove foreign substances.

3.3 INSTALLATION

A. According to manufacturer instructions.

B. Provide access for operation, removal, and maintenance, and to avoid discharge to occupied areas or other equipment.

3.4 FIELD QUALITY CONTROL

A. Section 017000 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.

B. Inspect for interferences and proper supports.

C. Equipment Acceptance:

1. Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.

3.5 CLEANING

A. Section 017000 - Execution and Closeout Requirements: Requirements for cleaning.

B. Keep interior of air release valves clean as installation progresses.

END OF SECTION 400578.29

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION

FUEL COST ADJUSTMENT CLAUSE
Revision Date: 9/8/2006

Introduction

This Special Provision provides for price adjustments to the Contract when significant changes in the cost of motor fuels and burner fuels occur while completing the Contract work. Participation in fuel cost adjustment program is not mandatory. A Contractor is not required to notify the Department at the time of submitting bids whether the Contractor will or will not participate in the fuel cost adjustment provision.

The North Dakota Department of Transportation (NDDOT) will send the low responsible bidder a "Fuel Cost Adjustment Affidavit" (SFN 58393) with the proposed Contract. The Contractor shall return a completed Fuel Adjustment Affidavit with the signed Contract as specified in Standard Specification Section 103.06, Execution and Approval of the Contract. The affidavit shall be returned on all Contracts with this provision even if the Contractor elects not to participate in the provision.

Compensation adjustments for motor fuels and burner fuels consumed in prosecuting the Contract shall be determined by the Engineer in accordance with the provisions set forth herein. Compensation adjustments will be assessed monthly for the cost of the motor fuels and burner fuels whenever the Current Fuel Index (CFI) is outside the given threshold of the Base Fuel Index (BFI) for the Contract.

If the Contractor has a fixed price for fuel for motor or burner fuels to complete the work, no fuel cost adjustments will be made for that fuel type. If there is no fixed fuel price for motor or burner fuels, participation in the Fuel Adjustment provision is the decision of the prime Contractor.

If the prime Contractor decides not to participate, no fuel cost adjustments will be made to the Contract for the Contractor or any subcontractors. If the prime Contractor elects to participate in the fuel cost adjustment provision, the prime Contractor shall include the anticipated fuel cost of subcontractors who wish to participate. If fuel cost adjustments are made to the Contract, the prime Contractor shall ensure that participating subcontractors including second and lower tier, are included in the adjustments in proportion to the percentage of work and anticipated fuel cost by that subcontractor.

Fuel Indexes

Each month, NDDOT will record the average wholesale price for No. 2 diesel fuel and the average wholesale price for unleaded gasoline (87 octane). The monthly average will be the average of the daily rack prices for the month as reported by DTN Energy for Fargo ND.

The burner fuel index will be the No. 2 diesel fuel index regardless of the type of burner fuel actually used.

The Base Fuel Index (BFI) price for motor fuels and burner fuel to be used in the Contract will be the average wholesale price for the month prior to the bid opening.

The Current Fuel Index (CFI) price for motor fuels and burner fuel to be used for each monthly adjustment will be the average wholesale price for the month prior to the adjustment month.

Fuel Ratio

For motor fuels diesel and unleaded gas, the fuel ratio of the Contract will be determined by dividing the Contractor's affidavit costs for each motor fuel by the original Contract amount.

For burner fuels, the fuel ratio of the contract will be determined by dividing the Contractor's affidavit cost for burner fuels by the original Contract amount of plant-mixed hot bituminous pavement paid by the ton. Asphalt cement, binders and other miscellaneous bituminous items shall not be included.

The fuel ratio of the contract for motor and burner fuels will remain the same throughout the length of the contract. The sum of the affidavit fuel costs shall not exceed 15% of the original Contract amount.

The fuel ratio for the three fuel types will be determined by the following equation:

$$\textbf{Fuel Ratio}_{(x, y, z)} = \textbf{Affidavit Cost}_{(x, y, z)} / \textbf{Original Contract Amount}_{(x, y, z)}$$

(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$\text{Fuel Ratio}_{(x, y, z)}$	=	Fuel ratio of the contract for each respective fuel type
$\text{Affidavit Cost}_{(x, y, z)}$	=	Fuel costs from Fuel Adjustment Affidavit (SFN 58393)
$\text{Original Contract Amount}_{(x, y)}$	=	Total of the original contract amount excluding lane rental, and Part B of the bid (when A+B bidding is used), if applicable.
$\text{Original Contract Amount}_{(z)}$	=	Total original contract amount for all hot bituminous pavement bid items combined, excluding bid items for asphalt cement, sawing and sealing joints, coring, etc. Only hot bituminous pavement bid items measured by the Ton will be included in the calculation.

Cost Change

The monthly change in fuel costs will be determined by the following equation:

$$\textbf{Cost Change}_{(x, y, z)} = (\textbf{CFI}_{(x, y, z)} - \textbf{BFI}_{(x, y, z)}) / \textbf{BFI}_{(x, y, z)}$$

(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel (use diesel prices)
$\text{Cost Change}_{(x, y, z)}$	=	The relative change in the current CFI and the BFI for each fuel type
$\text{CFI}_{(x, y, z)}$	=	Current Fuel Index for each fuel type
$\text{BFI}_{(x, y, z)}$	=	Base Fuel Index for each fuel type

Contract Adjustments

Contract adjustments will be made for the cost of motor and burner fuels whenever the cost change exceeds a ±0.10 threshold. No fuel cost adjustment will be made for work done under liquidated damages. Adjustments will be determined for Motor Fuel (diesel), Motor Fuel (unleaded), and Burner Fuel (burner) separately and shall be computed on a monthly basis.

When the cost change is greater than 0.10, the rebate to the Contractor for each fuel type shall be computed according to the following formulas:

$$\mathbf{FCA_{(x,\,y,\,z)} = Fuel\ Ratio_{(x,\,y,\,z)} \times Estimate_{(x,\,y,\,z)} \times (Cost\ Change_{(x,\,y,\,z)} - 0.10)}$$

(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$FCA_{(x,\,y,\,z)}$	=	Fuel Cost Adjustment for each of the fuel types
$Fuel\ Ratio_{(x,\,y,\,z)}$	=	Fuel Ratio for each of the fuel types
$Estimate_{(x,\,y)}$	=	The monthly total of work done on estimates issued in the current month excluding incentive or disincentive payments, pay factor adjustments and any work completed under liquidated damages.
$Estimate_{(z)}$	=	The monthly total of hot bituminous pavement work done on estimates issued in the current month, excluding bid items for asphalt cement, sawing and sealing joints, coring, etc. Only hot bituminous pavement bid items measured by the Ton will be included in the calculation. Hot bituminous pavement work completed under liquidated damages will not be included.
$Cost\ Change_{(x,\,y,\,z)}$	=	The monthly change in fuel costs for each of the fuel types

When the cost change is less than -0.10, the credit to the Department for each fuel type shall be computed according to the following formulas:

$$\mathbf{FCA_{(x,\,y,\,z)} = Fuel\ Ratio_{(x,\,y,\,z)} \times Estimate_{(x,\,y,\,z)} \times (Cost\ Change_{(x,\,y,\,z)} + 0.10)}$$

(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$FCA_{(x,\,y,\,z)}$	=	Fuel Cost Adjustment for each of the fuel types
$Fuel\ Ratio_{(x,\,y,\,z)}$	=	Fuel Ratio for each of the fuel types
$Estimate_{(x,\,y)}$	=	The monthly total of work done on estimates issued in the current month excluding any incentive or disincentive payments, pay factor adjustments and any work completed under liquidated damages.
$Estimate_{(z)}$	=	The monthly total of hot bituminous pavement work done on estimates issued in the current month, excluding bid items for asphalt cement, sawing and sealing joints, coring, etc. Only hot bituminous pavement bid items measured by the Ton will be included in the calculation. Hot bituminous pavement work completed under liquidated damages will not be included.
$Cost\ Change_{(x,\,y,\,z)}$	=	The monthly change in fuel costs for each of the fuel types

Payments

Adjustments will be determined by the Engineer monthly. Adjustments will be made under the following spec and code for each fuel type:

109 0100	Motor Fuels (Diesel)
109 0200	Motor Fuels (Unleaded)
109 0300	Burner Fuel

When significant payment adjustments are made on final estimates to account for final in-place measured quantities, the Engineer may prorate the adjustments back to the months when the work was done.

Attachments

For informational purposes, a ‘Fuel Cost Adjustment Affidavit’ (SFN 58393) is included as Attachment A.

FUEL COST ADJUSTMENT AFFIDAVIT

North Dakota Department of Transportation, Construction Services
SFN 58393 (8-2017)

Attachment A

PCN	Project Number

The Contractor is not required to notify the Department at the time of submitting bids whether he will or will not participate in the fuel cost adjustment program. The Contractor shall return the affidavit on all Contracts with this Provision even if the Contractor elects not to participate.

Check the box for each fuel type that has a fixed price. No adjustments in fuel price will be made for the boxes that are checked.

☐ Diesel ☐ Unleaded ☐ Burner

Does your company elect to participate in a fuel adjustment for this contract for the fuels that do not have a fixed price? No adjustments in fuel prices will be made if **No** is checked . ☐ Yes ☐ No

If yes, provide the total dollars for each of the applicable fuels:

Diesel (D)	
Unleaded (U)	
Burner Fuel (B)	
Sum (D+U+B)	% of Original Contract Amount *

*The sum of the D, U, and B may not exceed 15% of the original contract amount.

Under the penalty of law for perjury of falsification, the undersigned,

Name (print or type)	Title (print or type)
Contractor (print or type)	

hereby certifies that the documentation is submitted in good faith, that the information provided is accurate and complete to the best of their knowledge and belief, and that the monetary amount identified accurately reflects the cost for fuel, and that they are duly authorized to certify the above documentation on behalf of the company.

I hereby agree that the Department or its authorized representative shall have the right to examine and copy all Contractor records, documents, work sheets, bid sheets and other data pertinent to the justification of the fuel costs shown above.

Signature	Date

Acknowledgement

State of

County of

Signed and sworn to (or affirmed) before me on this day _____
(month, day, year)

Name of Notary Public or other Authorized Officer (Type or Print)	Affix Notary Stamp
Signature of Notary Public or other Authorized Officer	
Commission Expiration Date (if not listed on stamp)	

AGREEMENT BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

THIS AGREEMENT is by and between City of West Fargo ("Owner") and

("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

SU-8-992(040)041
Grading, Aggregate Base, PCC Concrete Pavement, Storm Sewer, Sidewalk, Landscaping, Signing, Pavement Markings, Traffic Signals, Street Lighting, Watermain, Sanitary Sewer, Fiber Optic
West Fargo, ND

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Sheyenne Street Improvements – 40th Ave to 32nd Ave in West Fargo, ND

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Moore Engineering, Inc. & Kadrmas, Lee & Jackson, Inc. (Engineer).Owner assumes all duties and responsibilities, and has the rights and authority to assign an Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Starting Work*

A. A Notice to Proceed will be issued to the Contractor indicating the date of commencement of Contract Times.

4.02 *Contract Times: Dates*

A. The Work will be complete on or before June 15, 2020. Liquidated damages will be enforced in accordance to 2014 NDDOT Standard Specifications for Road and Bridge Construction, 108.07 for the final completion date. Liquidated damages will be assessed at a rate of $350.00 for each calendar day that expires after June 15, 2020.

B. Liquidated Damages: Liquidated damages for failing to timely attain any completion dates are not additive and will not be imposed concurrently.

C. Parts of the Work shall be substantially completed on or before the following Interim Completion Dates:

Interim Completion Date No. 1: All Work from the south project limit at Station 513+65 to north of 40th Avenue at Station 523+36, except the 40th Avenue and Sheyenne Street NW and NE curb ramps and sidewalk.

Connect the 2 inch water service connection near Station 549+20 to allow abandoning of the Cass Rural Water line north of Station 522+05.

Interim Completion Date No. 1 is June 15, 2019. Liquidated damages will be assessed at a rate of $4,000.00 for each calendar day that expires after June 15, 2019.

Interim Completion Date No. 2: All remaining Work is complete, except minor punch list items. All remaining Work includes installation of all water, sanitary sewer and storm sewer utilities, all work associated with the installation of the concrete pavement, curb and gutter, sidewalk, driveways and asphalt pavement, installation of pavement markings, traffic control signs, traffic signals and street lights, placement of topsoil, seeding, mulching, fertilizer and weed control.

Interim Completion Date No. 2 is October 5, 2019. Liquidated damages will be assessed per Specification 108.07.B for each calendar day that expires after October 5, 2019.

Interim Completion Date No. 3: All Work is complete, except for achieving Final Stabilization per ND Department of Health Construction General Permit NDR10-000 and removing all temporary erosion protection and sediment control devices. The Work remaining after Interim Completion Date No. 3 will be watering and mowing of vegetative cover until reaching Final Stabilization.

Interim Completion Date No. 3 is November 3, 2019. Liquidated damages will be assessed at a rate of $850.00 for each calendar day that expires after November 3, 2019 until all Work for Interim Completion Date No. 3 is complete.

ARTICLE 5 – CONTRACT PRICE

5.01 NDDOT shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraph 5.01.A below:

A. For all Unit Price Work, an amount equal to the sum of the established unit price for each separately identified item of Unit Price Work times the actual quantity of that item as indicated in the Bid Proposal. The Bid prices for Unit Price Work set forth in the bid proposal, as of the Effective Date of the Agreement are based on estimated quantities.

5.02 NDDOT payment process is outlined in NDDOT Standard Specifications for Road and Bridge Construction.

ARTICLE 6 – CONTRACTOR'S REPRESENTATIONS

6.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

E. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.

F. Based on the information and observations referred to in Paragraph 6.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.

G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.

H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 7 – CONTRACT DOCUMENTS

7.01 *Contents*

A. The Contract Documents consist of the following:

1. This Agreement (pages 1 to 6, inclusive).
2. Performance bond (pages 1 to __, inclusive).
3. Payment bond (pages 1 to __, inclusive).
4. Specifications
    a. Provided in Request for Proposal
    b. NDDOT 2014 Edition of the Standard Specifications for Road and Bridge Construction and Supplemental Specifications
    c. Special Provisions
5. The NDDOT Request for Proposal.
6. Drawings consisting of 559 sheets with each sheet bearing the following general title: SU-8-992(040)041.
7. Addenda (numbers 1 to __, inclusive).
8. Exhibits to this Agreement (enumerated as follows):
    a. Contractor's Bid (pages 1 to ___, inclusive).

b. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).

9. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

a. Notice to Proceed (pages 1 to __, inclusive).

b. Work Change Directives.

c. Change Orders.

B. The documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

ARTICLE 8 – MISCELLANEOUS

8.01 *Assignment of Contract*

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

8.02 *Successors and Assigns*

A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

8.03 *Severability*

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

8.04 *Contractor's Certifications*

A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.05:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.05 *Other Provisions*

1. None.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

This Agreement will be effective on _____ (which is the Effective Date of the Agreement).

OWNER:	CONTRACTOR
City of West Fargo	
By:	By:
Title:	Title:
	(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)
Attest:	Attest:
Title:	Title:
Address for giving notices:	Address for giving notices:
City of West Fargo	
800 4th Avenue East	
West Fargo, ND 58078	
	License No.:
	(Where applicable)
(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)	Agent for service of process:

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

PAYMENT BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:
Amount:
Description *(name and location)*:

BOND

Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

_____ *(seal)*
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

_____ *(seal)*
Surety's Name and Corporate Seal

By: _____
Signature *(attach power of attorney)*

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.

4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.

5. The Surety's obligations to a Claimant under this Bond shall arise after the following:

    5.1 Claimants who do not have a direct contract with the Contractor,

        5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

        5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).

    5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.

7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

    7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

    7.2 Pay or arrange for payment of any undisputed amounts.

    7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. **Definitions**

    16.1 **Claim:** A written statement by the Claimant including at a minimum:

        1. The name of the Claimant;
        2. The name of the person for whom the labor was done, or materials or equipment furnished;
        3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
        4. A brief description of the labor, materials, or equipment furnished;
        5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
        6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
        7. The total amount of previous payments received by the Claimant; and
        8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

    16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

    16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

    16.4 **Owner Default**: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

    16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

EJCDC
ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

PERFORMANCE BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT
Effective Date of the Agreement:
Amount:
Description *(name and location)*:

BOND
Bond Number:
Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:
Amount:
Modifications to this Bond Form: ☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

_____ *(seal)*
Contractor's Name and Corporate Seal

By: _____
Signature

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

SURETY

_____ *(seal)*
Surety's Name and Corporate Seal

By: _____
Signature *(attach power of attorney)*

_____
Print Name

_____
Title

Attest: _____
Signature

_____
Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows: