

NO. 1

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION
REQUEST FOR PROPOSAL

URBAN FEDERAL AID PROJECT NO. SU-IM-8-984(153)156 (PCN-21564)

0.720 Miles

GRADING, AGGREGATE BASE, PCC PAVEMENT, HOT MIX ASPHALT, UNDERGROUND UTILITIES, BOX
CULVERT, SHARED USE PATH, SIGNING, MARKINGS, BRIDGE, STREET LIGHTING, DIGITAL MESSAGE SIGN
64TH AVE S, FARGO - 38TH ST S TO 33RD ST S

CASS COUNTY

DBE Race Neutral Goal - 0%

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 13, 2020.**

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-IM-8-984(153)156 (PCN-21564)

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

Project: SU-IM-8-984(153)156 (PCN-21564)

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- 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.

Project: SU-IM-8-984(153)156 (PCN-21564)

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: \$ _____

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-IM-8-984(153)156 (PCN-21564)

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-IM-8-984(153)156 (PCN-21564)

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	108	0001	CRITICAL PATH METHOD SCHEDULE	L SUM	1.				
003	201	0330	CLEARING & GRUBBING	L SUM	1.				
004	202	0105	REMOVAL OF STRUCTURE	L SUM	1.				
005	202	0170	REMOVAL OF CULVERTS-ALL TYPES & SIZES	LF	186.				
006	202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	10.				
007	202	0312	REMOVE EXISTING FENCE	LF	751.				
008	203	0101	COMMON EXCAVATION-TYPE A	CY	7,944.				
009	203	0109	TOPSOIL	CY	30,243.				
010	203	0115	CLAY EXCAVATION	CY	87,269.				
011	203	0116	TOPSOIL MANDATORY BORROW AREA	CY	3,993.				
012	203	0117	MANDATORY BORROW	CY	168,617.				
013	210	0050	BOX CULVERT EXCAVATION	EA	1.				
014	210	0099	CLASS 1 EXCAVATION	L SUM	1.				
015	210	0199	BACKFILL CLASS AA	LF	1,161.				
016	210	0201	FOUNDATION PREPARATION	EA	1.				

BID ITEMS

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

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
017	210	0210	FOUNDATION FILL	CY	2,028.				
018	210	0405	FOUNDATION PREPARATION-BOX CULVERT	EA	1.				
019	216	0100	WATER	M GAL	1,867.				
020	230	0165	SUBGRADE PREPARATION-TYPE A-12IN	STA	14.				
021	251	0300	SEEDING CLASS III	ACRE	21.380				
022	251	2000	TEMPORARY COVER CROP	ACRE	34.020				
023	253	0101	STRAW MULCH	ACRE	34.020				
024	253	0201	HYDRAULIC MULCH	ACRE	14.730				
025	255	0102	ECB TYPE 2	SY	32,175.				
026	255	0202	TRM TYPE 2	SY	118.				
027	258	0100	CONCRETE SLOPE PROTECTION	SY	709.				
028	260	0200	SILT FENCE SUPPORTED	LF	1,513.				
029	260	0201	REMOVE SILT FENCE SUPPORTED	LF	1,513.				
030	261	0112	FIBER ROLLS 12IN	LF	17,589.				
031	261	0113	REMOVE FIBER ROLLS 12IN	LF	17,589.				
032	265	0100	STABILIZED CONSTRUCTION ACCESS	EA	2.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
033	265	0101	REMOVE STABILIZED CONSTRUCTION ACCESS	EA	2.				
034	302	0101	SALVAGED BASE COURSE	CY	62.				
035	302	0121	AGGREGATE BASE COURSE CL 5	CY	7,109.				
036	302	9970	TYPE II PIPE BEDDING	CY	500.				
037	430	0500	COMMERCIAL GRADE HOT MIX ASPHALT	TON	648.				
038	550	0310	10IN NON REINF CONCRETE PVMT CL AE-DOWELED	SY	14,648.				
039	602	0130	CLASS AAE-3 CONCRETE	CY	746.700				
040	602	1130	CLASS AE-3 CONCRETE	CY	265.700				
041	602	1133	CONCRETE BRIDGE APPROACH SLAB	SY	230.				
042	602	1134	PILE SUPPORTED APPROACH SLAB	SY	230.				
043	602	1250	PENETRATING WATER REPELLENT TREATMENT	SY	3,250.				
044	606	1209	12FT X 9FT PRECAST RCB CULVERT	LF	92.				
045	606	5209	12FT X 9FT PRECAST RCB END SECTION	EA	2.				
046	612	0115	REINFORCING STEEL-GRADE 60	LBS	32,621.				
047	612	0116	REINFORCING STEEL-GRADE 60-EPOXY COATED	LBS	157,843.				
048	616	5890	STRUCTURAL STEEL	L SUM	1.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
049	622	0020	STEEL PILING HP 10 X 42	LF	1,250.				
050	622	0068	STEEL PILING HP 14 X 89	LF	1,750.				
051	622	0070	STEEL PILING HP 14 X 102	LF	1,540.				
052	624	0124	PEDESTRIAN FENCE	LF	465.300				
053	702	0100	MOBILIZATION	L SUM	1.				
054	704	0100	FLAGGING	MHR	200.				
055	704	1000	TRAFFIC CONTROL SIGNS	UNIT	3,417.				
056	704	1045	ATTENUATION DEVICE-TYPE B-75	EA	4.				
057	704	1052	TYPE III BARRICADE	EA	23.				
058	704	1060	DELINEATOR DRUMS	EA	144.				
059	704	3510	PRECAST CONCRETE MED BARRIER-STATE FURNISHED	EA	292.				
060	704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	3.				
061	706	0400	FIELD OFFICE	EA	1.				
062	708	1540	INLET PROTECTION-SPECIAL	EA	41.				
063	708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	41.				
064	709	0100	GEOSYNTHETIC MATERIAL TYPE G	SY	187.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
065	709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	18,583.				
066	714	0215	PIPE CONC REINF 15IN CL V-STORM DRAIN	LF	224.				
067	714	0325	PIPE CONC REINF 18IN CL IV-STORM DRAIN	LF	22.				
068	714	0620	PIPE CONC REINF 24IN CL III-STORM DRAIN	LF	256.				
069	714	0825	PIPE CONC REINF 30IN CL III-STORM DRAIN	LF	47.				
070	714	0910	PIPE CONC REINF 36IN CL III-STORM DRAIN	LF	394.				
071	714	1002	PIPE CONC REINF 42IN CL II-STORM DRAIN	LF	101.				
072	714	4092	PIPE CONDUIT 12IN-STORM DRAIN	LF	216.				
073	714	4097	PIPE CONDUIT 15IN-STORM DRAIN	LF	1,185.				
074	714	4101	PIPE CONDUIT 18IN-STORM DRAIN	LF	887.				
075	714	4103	PIPE CONDUIT 21IN-STORM DRAIN	LF	152.				
076	714	4107	PIPE CONDUIT 24IN-STORM DRAIN	LF	546.				
077	714	4112	PIPE CONDUIT 30IN-STORM DRAIN	LF	293.				
078	714	4117	PIPE CONDUIT 36IN-STORM DRAIN	LF	157.				
079	714	4121	PIPE CONDUIT 42IN-STORM DRAIN	LF	536.				
080	714	7175	PIPE PVE 36IN SEWER	LF	998.				

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
081	714	8498	CASING PIPE 18IN	LF	256.				
082	714	9680	PLUG PIPE-ALL TYPES & SIZES	EA	4.				
083	714	9696	EDGEDRAIN NON PERMEABLE BASE	LF	2,853.				
084	722	0100	MANHOLE 48IN	EA	4.				
085	722	0110	MANHOLE 60IN	EA	2.				
086	722	0120	MANHOLE 72IN	EA	3.				
087	722	0130	MANHOLE 84IN	EA	5.				
088	722	0140	MANHOLE 96IN	EA	1.				
089	722	0200	MANHOLE 108IN	EA	1.				
090	722	0300	MANHOLE SANITARY	EA	3.				
091	722	1100	MANHOLE RISER 48IN	LF	18.850				
092	722	1110	MANHOLE RISER 60IN	LF	8.380				
093	722	1120	MANHOLE RISER 72IN	LF	14.140				
094	722	1130	MANHOLE RISER 84IN	LF	31.690				
095	722	1140	MANHOLE RISER 96IN	LF	6.070				
096	722	1200	MANHOLE RISER 108IN	LF	6.310				

BID ITEMS

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
097	722	3510	INLET-TYPE 2	EA	9.				
098	722	3520	INLET-TYPE 2 DOUBLE	EA	7.				
099	722	3740	INLET SPECIAL CATCH BASIN-TYPE A 48IN	EA	11.				
100	722	3800	INLET SPECIAL CATCH BASIN-TYPE A 60IN	EA	3.				
101	722	4025	INLET CATCH BASIN BEEHIVE	EA	8.				
102	724	0210	FITTINGS-DUCTILE IRON	LBS	1,938.				
103	724	0300	GATE VALVE & BOX 6IN	EA	5.				
104	724	0310	GATE VALVE & BOX 8IN	EA	3.				
105	724	0317	GATE VALVE & BOX 16IN	EA	1.				
106	724	0411	6IN HYDRANT	EA	5.				
107	724	0810	WATERMAIN 6IN PVC	LF	46.				
108	724	0830	WATERMAIN 8IN PVC	LF	896.				
109	724	0850	WATERMAIN 12IN PVC	LF	40.				
110	724	0852	WATERMAIN 16IN PVC	LF	1,303.				
111	724	1117	12IN SANITARY SEWER PIPE	LF	220.				
112	724	1118	15IN SANITARY SEWER PIPE	LF	165.				

BID ITEMS

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
113	748	0190	CURB & GUTTER-TYPE I 30IN	LF	6,817.				
114	748	0210	CURB & GUTTER 42IN	LF	243.				
115	748	1020	VALLEY GUTTER 36IN	SY	30.				
116	750	0030	PIGMENTED IMPRINTED CONCRETE	SY	309.				
117	750	0120	SIDEWALK CONCRETE 5IN REINF	SY	5,720.				
118	750	0140	SIDEWALK CONCRETE 6IN	SY	277.				
119	750	0210	CONCRETE MEDIAN NOSE PAVING	SY	39.				
120	750	2115	DETECTABLE WARNING PANELS	SF	236.				
121	752	0600	FENCE CHAIN LINK	LF	813.				
122	752	0922	FENCE REMOVE & RESET	LF	813.				
123	752	2996	CORNER ASSEMBLY-STEEL POST	EA	8.				
124	754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	153.600				
125	754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	18.				
126	754	0137	ROADWAY TERMINATION-TYPE A	EA	2.				
127	754	0170	FLEXIBLE DELINEATORS	EA	50.				
128	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	237.				

BID ITEMS

Project: SU-IM-8-984(153)156 (PCN-21564)

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
129	754	0805	OBJECT MARKERS - CULVERTS	EA	12.				
130	754	8025	REVISE DYNAMIC MESSAGE SIGN	EA	1.				
131	762	0113	EPOXY PVMT MK 4IN LINE	LF	9,634.				
132	762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	128.				
133	762	1104	PVMT MK PAINTED 4IN LINE	LF	132.				
134	762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	725.				
135	762	1317	PREFORMED PATTERNED PVMT MK 16IN LINE-GROOVED	LF	68.				
136	762	1344	PREF PATT PVMT MK 7IN LINE CONTRAST-GROOVED	LF	6,552.				
137	764	0131	W-BEAM GUARDRAIL	LF	195.100				
138	764	0145	W-BEAM GUARDRAIL END TERMINAL	EA	4.				
139	770	0003	LIGHTING SYSTEM A	EA	1.				
140	772	9200	IT SYSTEM	EA	1.				
141	900	0100	SETTLEMENT PLATE	EA	20.				
142	920	1000	GEOFOAM	CY	33,491.				
143	920	1050	GEOMEMBRANE	SY	16,095.				
144	920	1300	PREFABRICATED VERTICAL WICK DRAINS	LF	659,568.				

BID ITEMS

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
145	920	1318	VIBRATING WIRE PIEZOMETER	EA	4.				
146	920	1320	VIBRATING WIRE DATA LOGGER	EA	2.				
147	920	2130	SAND DRAIN	TON	37,489.				
148	930	3000	BRIDGE BENCH MARKS	SET	1.				
149	930	4215	INSTRUMENTATION-AUTOMATED GROUND MOVEMENT SEN	EA	2.				
150	930	7012	ROADWAY CANOPY	L SUM	1.				
151	930	9537	ABUTMENT UNDERDRAIN SYSTEM	EA	2.				
			SUBTOTAL						
			OPTION 1						
152	624	0151	RAILING	LF	465.300				
			SUBTOTAL OPTION 1						
			OPTION 2						
153	602	7050	ARCHITECTURAL SURFACE FINISH	SF	4,169.				
			SUBTOTAL OPTION 2						

North Dakota Department of Transportation

BID OPENING: November 13, 2020

Job 001

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BID ITEMS

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$\$	000	\$\$\$\$\$	00
			SUBTOTAL + ALL OPTIONS						

Project: SU-IM-8-984(153)156 (PCN-21564)

Type of Work: GRADING, AGGREGATE BASE, PCC PAVEMENT, HOT MIX ASPHALT, UNDERGROUND UTILITIES, BOX CULVERT, SHARED USE PATH, SIGNING, MARKINGS, BRIDGE, STREET LIGHTING, DIGITAL MESSAGE SIGN

County: CASS

Length: 0.7200 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 10/15/2022 *. 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.

***REFER TO NOTE 100-P01 COMPLETION DATES FOR INTERIM COMPLETION DATES AND LIQUIDATED DAMAGE INFORMATION.**

REFER TO SP 94(20) WINTER SUSPENSION FOR ADDITIONAL TIME AND LIQUIDATED DAMAGE REQUIREMENTS.

PROPOSAL FORM

North Dakota Department of Transportation

BID OPENING: November 13, 2020**Job 001**

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Project: SU-IM-8-984(153)156 (PCN-21564)**Type of Work:** GRADING, AGGREGATE BASE, PCC PAVEMENT, HOT MIX ASPHALT, UNDERGROUND UTILITIES, BOX CULVERT, SHARED USE PATH, SIGNING, MARKINGS, BRIDGE, STREET LIGHTING, DIGITAL MESSAGE SIGN**County:** CASS**Length:** 0.7200 Miles**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.

BIDDER MUST SIGN ON THIS LINE

_____, TITLE _____

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 # 01, SU-IM-8-984(153)156

Grading, Aggregate Base, PCC Pavement, Hot Mix Asphalt Pavement, Underground Utilities, Box Culvert, Shared Use Path, Signing, Pavement Markings, Bridge, Street Lighting, Digital Message Sign

INDEX OF PROVISIONS

Road Restriction Permits

Hot Line Notice

Price Schedule for Miscellaneous Items dated October 1, 2014 (PS-1)

SP DBE Program - Race Neutral dated February 1, 2018

E.E.O. Affirmative Action Requirements dated March 15, 2014

Appendix A of the Title VI Assurances dated September 8, 2020

Appendix E of the Title VI Assurances dated September 8, 2020

SP Cargo Preference Act

Required Contract Provisions Federal Aid Construction Contracts
(Form FHWA 1273 Rev. May 1, 2012)

SP Certified Payrolls, dated 9-6-17

SP DBE Project Payment Reporting, dated 10-3-17

NOTICE – Electrician

Labor Rates from U.S. Department of Labor dated August 28, 2020 (Mod. No. 5)

On-The-Job Training Program dated October 1, 2016

SSP 1 Temporary Erosion & Sediment Best Management Practices

SSP 3 Local Agency Contracts

SSP 5 Limitations of Operations

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SSP 7 Bitumen Testing Price Adjustments

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SP 106(20) Conditions of Contract Award

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SP Fuel Cost Adjustment Clause dated September 8, 2006

Contract

Contract Bond

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
<p>Highways Restricted by Legal Weight</p> <p>Single Axle -- 20,000 lbs. Tandem Axle -- 34,000 lbs. Triple Axle -- 48,000 lbs. 4 Axles or more -- 15,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 105,500 lbs.</p> <p>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.</p>	<p>Permit Fee: \$20-\$70 per trip</p> <p>Ton Mile Fee:</p> <p>105,501 lbs. to 130,000 lbs. GVW -- \$1 per mile</p> <p>Over 130,000 lbs. GVW -- \$1 per mile plus \$5 per ton per mile for that weight exceeding 130,000 lbs. GVW</p> <p>Exceeding axle limits -- \$1 per ton per mile</p>
<p>8-Ton:</p> <p>Single Axle -- 16,000 lbs. Tandem Axle -- 32,000 lbs. 3 Axles or more -- 14,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 105,500 lbs.</p>	<p>Permit Fee: \$20-\$70 per trip</p> <p>Ton Mile Fee:</p> <p>105,501 lbs. to 120,000 lbs. GVW -- \$1 per mile</p> <p>Over 120,000 lbs. GVW -- \$1 per mile plus \$5 per ton per mile for that weight exceeding 120,000 lbs. GVW</p> <p>Exceeding restricted axle limits -- \$1 per ton per mile</p>
<p>7-Ton:</p> <p>Single Axle -- 14,000 lbs. Tandem Axle -- 28,000 lbs. 3 Axles or more -- 12,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 105,500 lbs.</p>	<p>Permit Fee: \$20-\$70 per trip</p> <p>Ton Mile Fee:</p> <p>105,500 lbs. to 110,000 lbs. GVW -- \$1 per mile</p> <p>Over 110,000 lbs. GVW -- \$1 per mile plus \$5 per ton per mile for that weight exceeding 110,000 lbs. GVW</p> <p>Exceeding restricted axle limits -- \$1 per ton per mile</p>
<p>6-Ton:</p> <p>Single Axle -- 12,000 lbs. Tandem Axle -- 24,000 lbs. 3 Axles or more -- 10,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 80,000 lbs.</p>	<p>Permit Fee: \$20-\$70 per trip</p> <p>Ton Mile Fee:</p> <p>\$5 per ton per mile for all weight exceeding 80,000 lbs. GVW</p> <p>Exceeding restricted axle limits -- \$1 per ton per mile</p>
<p>5-Ton:</p> <p>Single Axle -- 10,000 lbs. Tandem Axle -- 20,000 lbs. 3 Axles or more -- 10,000 lbs. per axle</p> <p>Gross Vehicle Weight -- 80,000 lbs.</p>	<p>No overweight movement allowed</p>

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

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

¹Price paid for bituminous material will be invoice price plus freight costs.

²Price 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.

³This 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-IM-8-984(153)156 (PCN-21564)

RACE/GENDER NEUTRAL GOAL: 0%

NDDOT Contact Information	
Contractor Sign In & Submit Advertisements 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
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.

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](#) 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 should 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.
- Must submit [Form C \(Notification of Intent to use\)](#) for DBE (if used) by 4:00 pm CST, within 2 business days after the bid opening. If no DBE's are used, Form C is not required.
- 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.

To maximize subcontracting opportunities the following actions are encouraged.

ADVERTISE

All DBE and Non-DBE prime contractors and all subcontractors (over/under \$500,000), vendors, regular dealers/suppliers, and manufacturers, are encouraged to advertise using one of the two options:

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 should:

- 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>

RECEIVE & EVALUATE ALL QUOTES GIVEN

All prime contractors and all subcontractors over \$500,000 should receive and evaluate all quotes offered.

All quotes given for each job should be faxed or emailed to prime contractors or subcontractors no later than the day before the bid opening. Subcontractors interested in work on the advertised jobs are encouraged to quote all contractors on the Sign-In report.

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 contractor 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 contractor 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.

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 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 NEUTRAL 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 CFR § 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, however.

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 expeditor) 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 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 means a contractor intending to serve as the prime contractor for highway construction projects.

Blanket quote means when a business provides the same quote, for all projects, at a bid opening, using the same price at one rate, which is not project specific. Blanket quotes for the construction season are not allowed, i.e. trucking, striping, signing, construction supplies, etc.

Commercially Useful Function (CUF) 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 as stated in the bidder's proposal.

Contractor means all DBE and non-DBE firms, including prime contractors, 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.

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.

Positive Contact means active and documented solicitation of DBE and other subcontractors. Advertising the prime's intention to bid, using the Contractor sign in to notify DBEs and other subcontractors of the jobs the prime is interested in, and contacting individual DBEs is deemed positive contact.

Prime contractor means bidders who are submitting proposals on this project, regardless of the size of the project.

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 DBE or a non-DBE subcontractors, brokers, vendors, regular dealers/suppliers, and manufacturers at any tier who submits quotes to another contractor.

Race/Gender Neutral (RGN) means a zero (0) percent goal that is used to assist all small businesses. Please note, NDDOT intends to achieve its overall DBE goals via RGN means; 3.47 percent is the Department's RGN goal.

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 timely.

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.

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 – Statewide6.9%
 - b. Goals for Minority Participation in Each Trade by County:
Barnes, Cass, Dickey, Eddy, Foster, Griggs, LaMoure, Logan,
McIntosh, Ransom, Richland, Sargent, Steele, Stutsman, Traill0.7%

Grand Forks1.2%

Benson, Cavalier, Nelson, Pembina, Ramsey, Towner, Walsh2.0%

Burleigh, Morton0.4%

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, Williams4.4%

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 affirmative 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 Federal 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 subcontractor 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 Office
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 having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (4) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations 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 11246, 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 affirmative 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 Contractor'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 standards 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 debarred 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, termina-

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 under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed 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-related 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 any, employee identification number when assigned, social security number, 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
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

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 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 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 on 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

NOTICE:

Electrical work done outdoors on highway construction projects is covered by the Line Construction rates rather than Electrician rates. When electrical work is performed on or within a commercial building only, such as a rest area, the job classification Electrician is to be used. Any other electrical work on a federal-aid highway construction project in North Dakota is covered by the line construction rates. The minimum wage and fringe amount stated in the attached wage determination within this proposal is required for such classification.

Apprentices in Line Construction: Apprentices in Line Construction must be classified and paid as Apprentice Linemen with a percentage of journeyman's pay that reflects the apprentice's progress level of training. Additionally, they must be enrolled in a bona fide lineman Apprentice Program regardless if they are also enrolled in an indoor Electrical Apprentice Program.

Electrical work may not be done by any Laborer classification under the ND Century Code. The Group 2 Laborer, Conduit Layer may only handle low voltage data or telephone lines and may not install or handle electrical conduit.

For assistance or questions concerning Davis-Bacon Wages and Requirements, go to:

<https://www.dot.nd.gov/manuals/civilrights/davisbacon.pdf>

Or contact:

Civil Rights Division
North Dakota Department of Transportation
608 East Boulevard Avenue
Bismarck, ND 58505-0700
Phone: 701-328-2605 Email: civilrights.nd.gov

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	20200037	Page 1
NORTH DAKOTA	STATEWIDE	DATE OF DECISION 1-3-20	
		Revised 2-07-2020 (Mod. No. 1) Revised 2-28-2020 (Mod. No. 2) Revised 3-05-2020 (Mod. No. 3) Revised 3-20-2020 (Mod. No. 4) Revised 8-28-2020 (Mod. No. 5)	

	Basic Hourly Rates	Fringe Benefits Payments			
		H & W/Pensions	Vacation	App. Tr.	Others
CARPENTERS	\$29.85	\$ 7.35			
CEMENT MASONS/FINISHERS	29.85	7.35			
LINE CONSTRUCTION:					
Lineman	43.50	5.75 + 29%			
Cable Splicer	43.50	5.75 + 29%			
Line Equipment Operator	36.93	5.75 + 29%			
Groundman	24.62	5.75 + 29%			
ELECTRICIANS:					
Electrician	34.92	11.40 + 11.5%			
Cable Splicer	36.67	11.40 + 11.5%			
(Adams, Billings, Bottineau, Bowman, Burke, Divide, Dunn, Emmons, Golden Valley, Grant, Hettinger, McHenry, McKenzie, Mclean, Mercer, Mountrail, Oliver, Pierce, Renville, Rolette, Sheridan, Sioux, Slope, Ward and Williams Counties)					
Electrician	36.36	10.80 + 11.5%			
Cable Splicer	37.94	10.80 + 11.5%			
(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	34.70	11.40 + 11.5%			
Cable Splicer	34.64	11.40 + 11.5%			
(Burleigh, Morton and Stark Counties)					
Electrician					
(Cass County)	14.72	3.40			
WELDERS:					
Receive rate prescribed for craft performing operation to which welding is incidental					
LABORERS:					
Group 1					
General Construction Laborers :Sack Shaker (cement and mineral filler), pipe handler, drill runner tender, salamander heater and blower tender, light truck, pickup driver, flaggers and pilot car drivers	21.90	2.90			

01-03-2020

Revised 8-28-2020 (Mod. No. 5)

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Articulated/Off Road Hauler; Asphalt Dump
Person; Asphalt Paving Screen Operator;
Backhoe, up to and including 1/2 CY; Boring
Machine Locator; Console Board Operator;
Distributor Operator (Bituminous); Forklift
Operator; Front End Loader, 1-1/2 CY up to
and including 3 CY; Grade Person; Grave
Screening Plant Operator (not Crushing or
Washing); Greaser; Lazar Screed Operator;
longitudinal Float and Spray Operator; Micro
Surfacer Machine; Motor Grader Operator
(Haul Roads); 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 Sheepfoot Packer
with or without Blade Attachment;
Self-Propelled Traveling Soil Stabilizer;
Sheepfoot

LABOR RATES

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Revised 2-07-2020 (Mod. No. 1)

Revised 2-28-2020 (Mod. No. 2)

Revised 3-05-2020 (Mod. No. 3)

Revised 3-20-2020 (Mod. No. 4)

Revised 8-28-2020 (Mod. No. 5)

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Page

	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	28.65	\$17.20			
Group 5					
Boom Truck, A-Frame or Hydraulic 2 tons up to and including 7 tons; Broom Self-Propelled; Concrete Saw (power operated); Cure Bridge Operator; Front End Loader Operator, less than 1-1/2 CY; Mobile Cement Mixer; Power Actuated Auger and Horizontal Boring Machine Operator, up to and including 5"; Roller (on other than hot mix asphalt paving); Oilers; Vibrating Packer Operator (Pad Type) (Self-Propelled); Water Spraying Equipment, Self-Propelled; Skidsteer Operator with attachments	27.80	17.20			
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; Pickup Sweeper, 1 CY and over Hopper Capacity; Scissor Jack (Self-Propelled) Platform Lift; Straw Mulcher and Blower; Stump Chipper Operator; Tractor Pulling Compaction or Aerating Equipment; Trenching Machine Operator, up to and including 45 H.P.; Assistant/Apprentice Operator	26.50	17.20			
TRUCK DRIVERS:					
Single-Axle Truck	28.82	13.85			
Tandem- and Tri-Axle Truck	28.94	13.85			
Tandem- and Tri-Axle Semi	29.25	13.85			
Lowboy	29.25	13.85			
Off Road Heavy Duty End Dumps, 20 Yards and Under	29.25	13.85			
Euclid, Over 20 Yards	30.77	13.85			

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 (15th) 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 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

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.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

BITUMEN TESTING PRICE ADJUSTMENTS

DESCRIPTION

This Special Provision outlines the Contract Price Adjustment procedures for acceptance of PG Asphalt Binder Using the Multiple Stress Creep Recovery (MSCR) Test under AASHTO M 332.

MATERIAL ACCEPTANCE SPECIFICATION

A. Sampling.

Obtain one sample of asphalt binder for each 250 tons of binder material supplied to the project. Obtain the sample as prescribed in the NDDOT Field Sampling and Testing Manual, Procedure NDDOT 1. Each 250 tons of material will represent a subplot and 4 sublots will constitute a lot of material. Partial lots will consist of however many subplot samples were collected for that lot.

B. Original and Check Samples.

Each sample consists of two parts, an original and a check. The Engineer will perform tests using the original sample first.

If a test returns a value resulting in a pay factor of less than 1.00, the Engineer will perform that test on the check sample and the check sample results will be used to determine the pay factor for the material.

C. Testing Parameters.

The Engineer will randomly select one subplot for testing per lot.

If the check sample results in a pay factor of less than 1.00 the Engineer will perform the substandard tests on the remaining sublots within that lot.

D. Determination of Pay Factor.

The Engineer will apply the pay factors in the Basis of Payment section of this Special Provision to each individual subplot of material. If more than one test parameter in a subplot results in a pay factor of less than 1.00, the Engineer will apply the pay factor that results in the largest monetary deduction to that subplot.

BASIS OF PAYMENT

The pay factor determined by the Engineer will be applied to the "PG _____ Asphalt Cement" contract item. The pay factor will be multiplied by the unit cost of the item and the quantity of oil represented by the sample.

Table 1
Requirements on Original Binder

Specification	Test Result	Pay Factor (Percent)
Dynamic Shear AASHTO T 315 $G^*/\sin \delta$ Min. 1.00 kPa	≥ 1.00	1.00
	0.97 – 0.99	0.95
	0.94 – 0.96	0.90
	0.91 – 0.93	0.85
	< 0.91	0.70

Table 2
Requirements on Rolling Thin Film Oven (RTFO) Residue

Specification	Test Result	Pay Factor (Percent)	Specification	Test Result	Pay Factor (Percent)
Standard Traffic “S” AASHTO T 350 $J_{nr@3.2}$ Max. 4.5 kPa ⁻¹	≤ 4.5	1.00			
	4.6	0.95			
	4.7	0.90			
	4.8	0.85			
	> 4.8	0.70			
Heavy Traffic “H” AASHTO T 350 $J_{nr@3.2}$ Max. 2.0 kPa ⁻¹	≤ 2.0	1.00	Heavy Traffic “H” AASHTO R 92 Percent Recovery @ 3.2 kPa Min. 30%	> 30	1.00
	2.1	0.95		29	0.95
	2.2	0.90		28	0.90
	2.3	0.85		27	0.85
	> 2.3	0.70		< 27	0.70
Very Heavy Traffic “V” AASHTO T 350 $J_{nr@3.2}$ Max. 1.0 kPa ⁻¹	≤ 1.0	1.00	Very Heavy Traffic “V” AASHTO R 92 Percent Recovery @ 3.2 kPa Min. 55%	> 55	1.00
	1.1	0.95		54	0.95
	1.2	0.90		53	0.90
	1.3	0.85		52	0.85
	> 1.3	0.70		< 52	0.70
Extreme Traffic “E” AASHTO T 350 $J_{nr@3.2}$ Max. 0.5 kPa ⁻¹	≤ 0.5	1.00	Extreme Traffic “E” AASHTO R 92 Percent Recovery @ 3.2 kPa Min. 75%	> 75	1.00
	0.6	0.95		74	0.95
	0.7	0.90		73	0.90
	0.8	0.85		72	0.85
	> 0.8	0.70		< 72	0.70

Table 3
Requirements for Pressure Aging Vessel (PAV)
Residue

Specification	Test Result	Pay Factor (Percent)
Standard Traffic "S" AASHTO T 315 DSR, $G^*(\sin \delta)$ Max. 5000 kPa	≤ 5000	1.00
	5001 - 5200	0.95
	5201 - 5400	0.90
	5401 - 5600	0.85
	> 5600	0.70
Traffic "H", "V", "E" AASHTO T 315 DSR, $G^*(\sin \delta)$ Max. 6000 kPa	≤ 6000	1.00
	6001 - 6050	0.95
	6051 - 6100	0.90
	6101 - 6150	0.85
	> 6150	0.70
Creep Stiffness AASHTO T 313 Max. 300 mPa	≤ 300	1.00
	301 - 310	0.95
	311 - 320	0.90
	321 - 330	0.85
	> 330	0.70
m-value AASHTO T 313 Min. 0.300	≥ 0.300	1.00
	0.295 – 0.299	0.95
	0.290 – 0.294	0.90
	0.285 – 0.289	0.85
	< 0.285	0.70

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

FEDERAL PROHIBITION ON CERTAIN TECHNOLOGICAL HARDWARE

DESCRIPTION

This Special Provision details technological items that are prohibited from use on Department contracts. The contents of this SP take precedent over requirements regarding affected equipment in all other contract documents.

CONTRACT REQUIREMENTS

A. Technological Equipment Prohibitions.

Equipment, services, and systems using telecommunications equipment or services are prohibited from containing equipment produced by:

- Huawei Technologies Company;
- ZTE Corporation; and
- Any subsidiary or affiliate of the named entities.

Video surveillance and telecommunications equipment are prohibited from containing equipment produced by:

- Hytera Communications Corporation;
- Hangzhou Hikvision Digital Technology Company;
- Dahua Technology Company; and
- Any subsidiary or affiliate of the named entities.

B. Contractor Certification.

The Prime Contractor must complete the information below, sign this Special Provision, and submit the signed document to the Engineer at the preconstruction conference. This signature affirms that no prohibited products will be used in the project.

Project Number(s): _____

PCN(s): _____

Company Name: _____

Signatory Name (printed): _____

Signature: _____

Date: _____

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

HMA CORING, ACCEPTANCE, AND PAY FACTORS

DESCRIPTION

This special provision modifies portions of Section 430 of the 2020 Standard Specifications for Road and Bridge Construction. It changes the requirements of shoulder construction, depending on the method of construction; updates coring requirements for the changes in subplot size; and to clarify how contract price adjustments are calculated.

CONSTRUCTION REQUIREMENTS

Replace Section 430.04 I, "Compaction" and Section 430.04 M, "Acceptance" with the following text.

I. Compaction.

1. General.

Remove all surface irregularities before beginning compaction.

Sequence rolling operations and select the type and the number of rollers to match production and to attain the required density before the mat temperatures fall below 185°F.

In areas not accessible to rollers, compact the pavement mat with hand or mechanical tampers.

2. Calculated Density.

a. General.

Use calculated density on mainline pavement, interstate crossroads, ramps, turn lanes, monolithically placed shoulders, rest area approaches, and parking lots.

b. Coring.

(1) General.

Obtain pavement cores at locations designated by the Engineer under the observation of the Engineer.

Use a machine that cuts a cylindrical core sample without disturbing the density of the sample. Complete coring on or before the working day following the placement of the lift. Obtain a core with a smooth outer surface, no distortion of the cylindrical shape, and no displacement of the aggregate particles. Obtain a core that is 4 to 6 inches in diameter and the full depth of the in place asphalt.

Fill core holes before placing the subsequent lift of pavement. If there is no subsequent lift of pavement, fill the core hole within 24 hours of obtaining the core. Remove free standing water before filling core holes. Fill core holes in 2

inch lifts using material from the same mix design used on the roadway. Compact each lift using a hand tamper.

(2) Pavement Density Cores.

Use a masonry saw to cut the core so that only the layer to be tested is removed.

Label each core, using a system approved by the Engineer, to identify the location from which the core was obtained.

(3) Pavement Thickness Determination Cores.

Obtain pavement thickness determination cores after the final lift of pavement has been placed. Label the cores. The Engineer will take possession of these cores immediately upon extraction. Do not cut these cores.

3. Ordinary Compaction.

a. General.

Use ordinary compaction on non-monolithic shoulders, driveways, section line approaches, bike paths, leveling courses, and patches.

Ordinary compaction consists of breakdown rolling, intermediate rolling, and finish rolling. Compact the bituminous material until the surface is tightly bound and shows no displacement under operation of the roller.

For patching, immediately after spreading perform initial rolling with pneumatic-tired rollers or combination rollers.

b. Breakdown Rolling.

Breakdown rolling consists of one or more complete coverage with a roller meeting the requirements of one of the following Sections:

- 151.01 A.3, “Self-Propelled Pneumatic-Tired Rollers”;
- 151.01 B.2, “Smooth-Faced Steel-Wheel Roller: Tandem – Type A”;
- 151.01 C, “Vibratory Rollers”; or
- 151.01 D, “Combination Rollers”.

c. Intermediate Rolling.

Follow breakdown rolling with intermediate rolling with a roller conforming to Section 151.01 A.3, “Self-Propelled Pneumatic-Tired Rollers”, or 151.01 D, “Combination Rollers” until the surface is tightly bound and shows no displacement under the roller.

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.

d. Finish Rolling.

Perform the finish rolling with a roller conforming to Section 151.01 B.3, “Smooth-Faced Steel-Wheel Roller: Tandem – Type B”, or 151.01 C, “Vibratory Rollers” in the static mode, and continue until roller marks are eliminated.

M. Acceptance.

1. General.

The Engineer will accept bituminous mix based on the criteria in this section.

The Engineer will include material used in shoulder placement when the shoulder is placed monolithically with the adjacent lane. Field density cores may be obtained in this area.

2. Aggregate.

The Engineer will accept aggregate used in the mix based on QC tests that are verified by QA testing, and the control limits specified in Section 430.04 E.5, "Control Limits".

If the results for two consecutive aggregate gradation tests in a single day fall outside the single test target value control limits, the Engineer will apply a contract price adjustment as specified in Section 430.06 C, "Contract Price Adjustments".

3. Asphalt Content.

The Engineer will base the acceptance of the asphalt content of bituminous mix on the totalizer readings obtained as specified in Section 430.04 E, "QC Testing" and SFN 9988, "Mix Bitumen Cut-Off Report" and will apply a contract price adjustment as specified in Section 430.06 C, "Contract Price Adjustments".

If the average asphalt content, as determined by the Engineer according to SFN 9988, "Mix Bitumen Cut-off Report" deviates from the target value by 0.40 percentage points or more, the Engineer may reject the material. If the material is accepted, the Engineer will apply a contract price adjustment as specified in Section 430.06 C, "Contract Price Adjustments".

4. Field Density.

This section will apply when the pavement is constructed as specified in Section 430.04 I.2, "Calculated Density".

The Engineer will base acceptance of the density of hot mix asphalt on the average density of the pavement compared to the daily average maximum theoretical density. The comparison will be made using SFN 59132, "Density Pay Factor".

The Engineer will determine the density of pavement based on lots. A lot is equal to the amount of material, in tons, placed each production day.

A subplot is defined as a single lift, one paver width wide, and 1,000 feet long. If a partial subplot is less than 500 feet, it will be included in the previous subplot. A partial subplot greater than 500 feet will be considered a separate lot.

The individual subplot densities will be averaged to determine the density of the pavement lot.

If the average density of the pavement compared to the daily average maximum theoretical density is above the values in Table 430-10, the Engineer will apply the adjustment factors specified in Section 430.06 C, "Contract Price Adjustments".

If the average density of the pavement compared to the daily average maximum theoretical density is at or below the values specified in Table 430-10, remove and replace the pavement.

Table 430-10

Superpave FAA 40, 41, 42, and 43	Superpave FAA 44 and 45
88.0%	89.0% ¹

¹ When the lift of pavement is placed on aggregate base, reclaimed material, or cold in place recycle material this number is reduced to 88.0%

BASIS OF PAYMENT

Replace Section 430.04 C.1, "General" with the following text.

C. Contract Price Adjustments.

1. General

The Engineer will calculate the Combined Adjustment Factor by multiplying the individual adjustment factors for:

- Aggregate gradation;
- Asphalt content; and
- Compaction.

1.0 will be subtracted from the Combined Adjustment Factor to determine the Contract Price Adjustment.

The contract price adjustment will be determined by multiplying the Contract Price Adjustment Factor by the total tons of hot mix asphalt placed during a single day and the contract unit price for "Superpave, FAA ____" or "RAP Superpave FAA ____".

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

PAINTING OVER GALVANIZED STEEL

PROJECT SU-8-984(153)156 – PCN 21564

GENERAL

This work consists of the surface preparation and painting of all galvanized steel pedestrian fence and steel railing components as shown in Section 170 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 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.	

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 AMS Standard No. 595A as specified herein:

Pedestrian Fence:	Color No. 10076 (Red)
Railing:	Color No. 10076 (Red)

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 Dry Film Thickness 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 from 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 respective contract unit prices for "Pedestrian Fence" and "Railing".

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

ARCHITECTURAL SURFACE FINISH

PROJECT SU-8-984(153)156 – PCN 21564

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 architectural surface finish work includes form-lining surfaces and application of concrete stain and anti-graffiti coating. This work consists of providing the required form liners as well as the application of stain and anti-graffiti coating to all vertical faces of the pedestrian wall and barriers and the edge of the deck as shown in Section 170 of the plans.

Obtain all concrete stain and anti-graffiti products from a single source.

ARCHITECTURAL CONCRETE TEXTURE

Construct the wall and barriers with an Architectural Concrete Texture as shown in the plans. Use form-liner patterns shown in the plans to achieve the architectural concrete texture. Use the following form-liners as instructed in section 170:

1. ¼" Deep Rib Smooth Flute Pattern, pattern # F30472 as manufactured by Dayton Superior., 1125 Byers Road, Miamisburg, OH 45342, 1-800-745-3700; ¼" Deep Rib Smooth Flute Pattern, pattern # 4000 as manufactured by Custom Rock Formliner, 2020 West 7th Street, St. Paul, MN, 55116, 1-800-637-2447 or approved equal.
2. Customrock #8022, Wave #1 as manufactured by Custom Rock Formliner, 2020 West 7th Street, St. Paul, MN, 55116, 1-800-637-2447 or approved equal.
3. Custom Word Form-Liner representing two words in seven languages each as shown in the plans. High resolution files will be provided by the Engineer to assist in recreating the proposed pattern.
4. Custom Wave Form-Liner. High resolution files will be provided by the Engineer to assist in recreating the proposed pattern.

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.

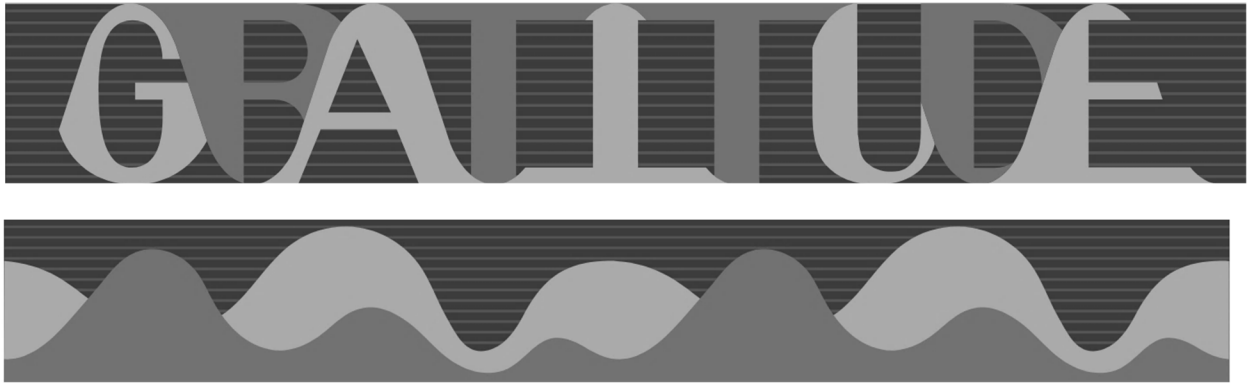
Submit work drawings showing the form-liner placement required to achieve the desired patterns, along with installation instructions and product data and specifications. Form-liner locations are as follows:

A. Barrier and Pedestrian Wall (Base Bid)

- I. Apply the Wave #1 Pattern to the vertical faces of the barriers and the pedestrian wall as shown in the plans.

B. Barrier (Bid Option 2)

- I. Use the custom form-lined words and waves produced by the manufacturer in coordination with the Engineer. An example of each type is shown below. All the required words are shown in plans.



- II. Place the seven Group A words shown in the plans on the north side of the Interior Barrier as shown in the plans. Repeat words as necessary to fill the length of the wall. Provide a minimum of three feet between words and a maximum of five feet. Use each word an equal number of times if possible, otherwise do not use any word more than once more than any other word in each group.
 - III. Place the custom repeating wave pattern on the south side of the Edge Barrier as shown in the plans.
 - IV. All locations with the 1" indent receive the Smooth Flute Pattern.
- C. Pedestrian Wall (Bid Option 2)
- I. Use the custom form-lined words and waves produced by the manufacturer in coordination with the Engineer. All the required words are shown in the plans.
 - II. Place the seven Group B words on the south side of the Pedestrian Wall as shown in the plans. Repeat words as necessary to fill the length of the wall. Provide a minimum of three feet between words and a maximum of five feet. Use each word an equal number of times if possible, otherwise do not use any word more than once more than any other word in each group.
 - III. Place the custom repeating wave pattern on the north side of the Pedestrian Wall as shown in the plans.
 - IV. All locations with the 1" indent receive the Smooth Flute Pattern.

MOCK-UP

60 days prior to constructing the barriers and the Pedestrian Wall for this project, build a full-size concrete mock-up of the Pedestrian Wall using the same materials, methods, and work force that will be used for the project.

A. Pedestrian Wall (Base Bid)

Build a full-height mock-up of the Pedestrian Wall that is a minimum of 4' long. Apply the Wave #1 form-liner to both sides of the pedestrian wall as shown in the plans. After the concrete has cured a minimum of 28 days, apply the stain for the special surface finish to the wall mock-up.

B. Pedestrian Wall (Option 2)

Build a full-size mock-up of the Pedestrian Wall including an entire word in the mock-up on one face and a minimum of 10 feet of the custom wave form-liner. After the concrete has cured a minimum of 28 days, apply the stain for the special surface finish to the wall mock-up. This mock-up would replace the requirement for a base bid mock-up.

Upon completion and review of the mock-up, the city reserves the right to replace the colors listed in the Special Surface Finish section below with a maximum of 3 different colors.

SURFACE PREPARATION

Following removal of forms, give all exposed textured concrete surfaces an ordinary surface finish as specified in Section 602.04 I.1 "Surface Finish A" before the surface preparation. Finish non-form-lined surfaces per Section 602.04 I.3 "Surface Finish C". Finish defects greater than ½ in diameter to blend with the balance of the textured surface. Thoroughly flush all surfaces that are to receive an architectural surface finish prior to application of stain materials to assure that surface is free of latency, dirt, dust, grease, efflorescence, paint or other foreign material. Clean surface not more than 24 hours before applying the finish. Pressure wash with water at 3000 psi with a rate of 3 to 4 gallons per minute. Use a fan nozzle perpendicular to the surface and 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.

SPECIAL SURFACE FINISH

Apply Special Surface Finish, consisting of a special penetrating stain mix, to all exposed concrete surfaces of the barriers and Pedestrian Wall as shown in the plans. Also apply the Special Surface Finish to the exposed concrete surfaces of the pier footing wall, pier columns, pier cap and the edge of the deck. At the pier extend the Special Surface Finish 1' below the proposed finished grade. 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. Pier (Base Bid)
 - I. Federal Standard 36463 (Gray)
- B. Outside Edge of Deck (Base Bid)
 - II. Federal Standard 36463 (Gray)
- C. Pedestrian Wall and Barriers (Base Bid)
 - I. Non-Form-Lined Surfaces: Federal Standard 36463 (Gray)
 - II. 1" Indent (Wave #1 Pattern): Federal Standard 36173 (Gray)
- D. Pedestrian Wall and Barriers (Option 2)
 - I. Non-Form-Lined Surfaces: Federal Standard 36463 (Gray)
 - II. 0" Indent: Federal Standard 36463 (Gray)
 - III. 0.5" Indent: Federal Standard 36173 (Gray)
 - IV. 1" Indent: Federal Standard 36076 (Gray)

Provide a 100% acrylic; water-repellant, semi-opaque, tinted emulsion sealer designed for concrete and masonry surfaces. Use products intended for outdoor use and that allow for moisture vapor transmission. Provide a stain that 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)

ANTI-GRAFFITI COATING

Apply a sealant to all stained concrete that is compatible with the stain used for the Pedestrian Wall and barriers and the associated anti-graffiti coating. During the test panel and mockup demonstrations, apply the sealant over the stained concrete on half of each panel. The Engineer will decide on the use of the sealant based on the test panel and mockup.

Apply a clear, multi-coat anti-graffiti coating system designed for exterior architectural concrete surfaces to all stained concrete. 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 panels/mockups. 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.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

- A. Base Bid - Include the cost of work described in this Special Provision for the pier, barriers and Pedestrian Wall in the contract unit price for "Class AAE-3 Concrete"
- B. Bid Option 2 – This contains all work required to replace the wave form-liner pattern for the barriers and Pedestrian Wall with the custom Waves and Words patterns as described above. Include the added cost of work for the barriers and Pedestrian Wall in the contract unit price for "Architectural Surface Finish".

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
INTERCONNECT CABLE

1. DESCRIPTION

This provision sets forth the minimum requirements for a fiber optic interconnection system to establish communication between ITS equipment as specified.

2. GENERAL

Include all necessary labor, equipment and material to install the interconnect cable and connections such that the communication link is complete and fully operational in the price bid for "Revise Dynamic Message Sign".

The fiber optics cable shall be a 36 single-mode fibers suitable for outside plant operations.

A. Fiber Optic Cable Specification

1. The purpose of this specification is to describe a fiber optic cable for a duct installation application, compatible with daisy-chain operation, for the purpose of controlling a dynamic message sign in a closed-loop system.
2. Cable Specification
 - a. The cable shall be a loose tube, single jacket, all dielectric cable design. The buffer tubes shall be dry or gel filled, and the cable shall have a dielectric central strength member and a dry water blocking system.
 - b. Fiber cable construction shall be loose tube, dry or gel-filled core, with color-coding per TIA/EIA 598B standards. The Central Strength member shall contain no metallic conductors (Dielectric). The overall strength member shall be aramid fiber yarn or fiberglass, the inner jacket shall be black UV and moisture resistant PE. The outer jacket will be black UV and moisture resistant PE with sequential foot markings.
 - c. Cable shall meet RUS 7 CFR 1755.900 (PE-90) and Telcordia GR-20 standards for fiber optic cable.
 - d. The cable shall have the following characteristics:

FIBER OPTIC REQUIREMENTS	
Requirement	Single-Mode
Fiber Type	Single Mode
Cable Type	Loose Tube, Single Jacket, Dielectric, Outdoor rated.
Outer Jacket	Medium Density Polyethylene (MDPE)
Fiber Strands Count	36
Compliant Standard	ITU-T G.652D
Uncabled Attenuation (maximum)	0.35/0.25 dB/km at 1310/1550 nm respectively
Nominal Mode Field Diameter (µm)	8.0-10.0
Clad Diameter (µm)	125 ± 0.5
Buffer Tube Core	Gel-filled or dry-longitudinal water blocking
Tensile Strength:	600 lbs. (RUS PE-90)
Maximum outside diameter	0.5 inches
Bend radius (minimum)	8 inches during installation 4 inches after installation
Tensile Strength:	600 lbs. (RUS PE-90)

3. Mechanical Specifications

- a. Fiber optic cable insulation shall have a maximum tensile load of 600 lbs. for installation and 180 lbs. for in-service load. The minimum bend radius shall be 20xOD or installation and 10xOD for in-service.
- b. The temperature range shall be -40°C to +70°C.

4. Documentation

The cable manufacturer shall provide documentation indicating the attenuation and bandwidth for individual fibers on each reel within five (5) business days after delivery of the cable.

B. Splicing requirements

1. The purpose of this specification is to describe splicing requirements for the installed fiber optic cable. Splices shall not be allowed unless otherwise approved by the NDDOT and Engineer.
2. All splicing shall occur in a Coyote Pup, Raychem, Tyco, or approved equal splice enclosure.

3. Single mode fiber when tested shall be allowed the following tolerances: 0.01 dB per 100' of fiber, 0.075 dB for each fusion splice, 0.3 dB for each ST connector, 0.3 dB for each ST splice, and 0.3 dB for each end that is bare fiber tested.
4. A CAD schematic drawing shall be supplied to the NDDOT showing all splice locations and terminations including bundle and individual fiber strand numbers. The CAD schematic drawing shall be in a .dgn format.

C. Fiber Optic Termination

1. The purpose of this specification is to describe single-mode fiber optic connectors for mating the ends of the fiber with other fiber optic devices.
2. The fiber optic connectors shall be single-mode connectors of "ST" Type.
3. The controller cabinets shall be provided with a wall or rack mounted patch panel frame with capacity to terminate all fibers entering or exiting the cabinet. The panel shall have a minimum of 12 terminations. Only fibers to be immediately connected to equipment are required to be terminated. The cabinet shall be large enough to provide ample space to house all equipment specified. Each individual fibers shall be labeled. The contractor shall install patch cable as required for connecting to the traffic signal controller and/or detection equipment. The contractor may mount the panel on the cabinet exterior with the permission of the engineer and if it is outdoor rated.

3. SHOP DRAWINGS

Shop drawing submittals shall be complete and indexed and shall include, but not be limited to the following:

- A. Complete details of all components and sections showing all materials.
- B. A listing of all applicable North Dakota DOT, UL and AASHTO specification.
- C. Name of the manufacturer and supplier.

4. TESTING

End-To-End Conformance Testing using Optical Time Domain Reflectometer (OTDR). The contractor shall test each fiber of each cable run and provide results of the test and the reel packing label test results from the manufacturer to City of Bismarck. The test should include the breakout cable. If the individual cable runs do not match the test results of the packing label test results less the connection and splice losses, the cable shall be replaced at the Contractor's expense.

5. INSTALLATION REQUIREMENTS

- A. Interconnect shall be installed per the manufacturers recommendation with warning tape placed 12 inches above the cable.
- B. The contractor shall include a No.12 AWG unspliced insulated copper trace wire running the full length. The purpose of this conductor is for locating the fiber. The cost for the insulated copper conductor shall be incidental to the cost of the interconnect conductor.
- C. The Contractor shall identify the foot mark of the cable of the incoming and outgoing cable of each hand-hole. The identifying mark shall be recorded and a label shall be placed in the hand-hole. A summary of all identifying marks shall be provided to City of Bismarck.
- D. The Contractor shall leave a minimum of 20 feet of cable slack in each hand-hole. At Splice Enclosure locations, a minimum of 50 feet of cable slack shall be left at each cable end.

6. METHOD OF MEASUREMENT

The Interconnect Cable shall be included in the item Revise Dynamic Message Sign and will not be measured for payment. This shall include all labor, equipment, and material to install the cable. The connectors and breakout cable shall be incidental to this item.

<u>Pay Item</u>	<u>Pay Unit</u>
Revise Dynamic Message Sign	Each

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

GEOFOAM & WICK DRAINS

Project: SU-8-984(153)156 - PCN 21564

DESCRIPTION

This work consists of furnishing and placing sand drainage layer, wick drains, sand cushion, expanded polystyrene (EPS) geofoam, and polyvinyl chloride (PVC) geomembrane.

EQUIPMENT

A. Sand Drainage & Sand Cushion

Refer to Section 302.02 EQUIPMENT in the Standard Specifications.

B. Wick Drains

The wick drains shall be installed with equipment which will cause minimum disturbance to the subsoil during installation. The wick drains shall be installed with a sleeve or mandrel that will be advanced to the required depth using constant load, or constant rate of advancement methods. The mandrel shall protect the wick drain material from tears, cuts and abrasions during installation and shall be withdrawn after the installation of the drain. The drain shall be installed with the approved anchorage to anchor the bottom of the drain at the required depth at the time of mandrel removal. This cross sectional area of the mandrel and anchor combination shall not be greater than 10 square inches. The wick drain installation unit shall be capable of applying a minimum downward force of 30,000 pounds.

The use of falling weight impact hammers or jetting shall not be permitted for installation of wick drains. Vibratory techniques may be used to penetrate stiff upper soil layers but may not be used once the mandrel has penetrated underlying compressible soils.

C. EPS Geofoam

Use machine or handheld equipment that will not result in damage to the underlying soil or geofoam on which the blocks are placed. Any blocks damaged by equipment shall be replaced at the Contractor's expense.

D. PVC Geomembrane

Use machine or handheld equipment that will not result in damage to the underlying soil or geofoam on which the membrane is placed. Any membrane or geofoam blocks damaged by equipment shall be replaced at no cost to the owner

MATERIALS

A. Sand Drainage & Sand Cushion

Supply aggregate that meets the requirements of the table below:

Sieve Size	Percent Passing
2 inch	100
No. 40	5-40
No. 200	0-5

B. Wick Drains

Wick drains shall be commercially available prefabricated type made up of a ribbed or corrugated plastic core wrapped in a filter of non-woven synthetic material. The core shall be fabricated with suitable drainage channels. Drains shall be free of defect, rips, holes, or tears. During shipment and storage, drains must be wrapped in a protective covering to prevent exposure to natural light.

The core shall have a minimum thickness of 0.089" and a minimum width of 3.8".

The fabric wrap must meet the requirements of the table below:

Geosynthetic Material Property	Test Method	Value
Core Tensile Strength	ASTM D638	175 lbs. min.
Fabric Grab Tensile Strength	ASTM D4632/D4632M	110 lbs. min.

Handling and storage of wick drain materials should follow the manufacturer's recommendations. During shipment and storage, the wick drain material shall be wrapped in a heavy-duty protective covering. The storage area shall be such that the wick drain material is protected from sunlight, mud, dirt, dust, debris, and detrimental substances. The drains shall be free of defects, rips, holes, or flaws. Damaged materials shall be replaced at the Contractor's expense.

All wick drain material delivered to the site shall be labeled or tagged for quality control purposes. Each roll shall be identified by lot or control numbers, individual roll number, date of manufacture, manufacturer, and product identification.

Wick drains shall be produced by a manufacturer with an in-place quality control program which is monitored by an independent third-party testing organization.

C. EPS Geofoam

Geofoam shall be commercially available material meeting the requirements of Rigid Cellular Polystyrene Geofoam, ASTM D6817 with the following minimums.

- Minimum Compressive Strength at 1% Deflection of 5.8 PSI
- Minimum Flexural Strength of 30.0 PSI
- Minimum Density of 1.15 lbs/CF

Handling and storage of EPS geofoam materials should follow the manufacturer's recommendations. During shipment and storage, the EPS geofoam material shall be wrapped in a heavy-duty protective covering. The storage area shall be such that the wick drain material is protected from sunlight, moisture, fire, mud, dirt, dust, debris, and detrimental substances. The EPS geofoam should not be exposed to open flame or other ignition sources, nor should it be exposed to organic solvents, petroleum product and their vapors (examples include, but are not limited to, acetone, paint thinner and gasoline). Damaged materials shall be replaced at the Contractor's expense.

Provide temporary ballast or other restraint prior to and during installation.

All EPS geofoam material delivered to the site shall be labeled or tagged for quality control purposes. Each block or group of blocks shall be identified by lot or control numbers, date of manufacture, manufacturer, and product identification.

EPS geofoam shall be produced by a manufacturer with an in place quality control program which is monitored by an independent third party testing organization.

D. PVC Geomembrane

The geomembrane material shall be 30 mil PVC with the following physical specifications:

Property	Test Standard	Tolerance
Thickness	D-5199	30 + 1.5mil
Tensile Properties Strength at Break Elongation Modulus at 100%	D-882 (Min)	73 lbs/in 380% 32 lbs/in
Tear Strength	D-1004 (Min)	8 lbs
Dimensional Stability	D-1204 (Max Chg)	0.03
Low Temperature Impact	D-1790, Pass	-20° F
Specific Gravity	D-792, Typical	1.2 g/cc
Water Extraction	D-1239 (Max Loss)	0.0015
Volatile Loss	D-1203 (Max Loss)	0.007
Soil Burial Break Strength Elongation Modulus at 100%	G160 (Max Chg)	5% 20% 20%
Hydrostatic Resistance	D-751 (Min)	100 psi
Seam Strengths Shear Strength Peel Strength	D882 (Min)	58.4 lbs/in 15 lbs/in

The PVC roll stock shall be factory fabricated into the largest panels possible to minimize field seams. Field fabrication will not be allowed. Prior to factory seaming, all roll goods shall be inspected. All factory seams shall be made by radio frequency (RF) welding methods. All factory seams shall have a minimum width of 1 inch. The surface of the welded areas must be dry and clean. Pressure must be applied to the full width of the seam on the top and bottom surface while welded area is in a melt-type condition.

All panels and seams shall be 100% visually inspected during fabrication. No defective seams will be allowed. Upon discovery of any defective seam, production shall stop and the seam shall be repaired. Production personnel shall determine and rectify the cause of the defect prior to continuation of the seaming process.

In addition to visual inspection, a 48-inch weld sample shall be made with each factory seam welding unit used in this work at the beginning of every work shift and every four hours of production thereafter. Sample shall be taken from a seam specifically made for quality testing and not taken from the fabricated panel itself. Test specimens shall be cut at quarter points from each 48-inch seam sample (a total of three places) and tested for seam strength and peel adhesion. The shear and peel seam strength shall be tested in accordance with ASTM D882.

A log shall be maintained showing the date, time, panel number and test results. Failure of the material and/or seams to meet all the requirements of these specifications may be cause for rejection of the material and/or seams as appropriate. Test results shall be provided to the Engineer upon request.

Each factory-fabricated panel shall be accordion-folded and placed onto a sturdy wooden pallet designed to be moved by a forklift or similar equipment. Each panel shall be given prominent and unique identifying markings indicating the proper direction of unfolding to facilitate layout and position in the field. The panels shall be suitably packaged, enclosed and protected to prevent damage during shipment and each package shall be prominently marked in the same fashion as the panels within. Until needed, packaged factory fabricated panels shall be stored in their original unopened wrapping, and protected from the direct heat of the sun, where possible. Pallets should not be stacked.

CONSTRUCTION REQUIREMENTS

A. Sand Drainage & Sand Cushion

Refer to Section 302.04 CONSTRUCTION REQUIREMENTS except for the following:

- 302.04 A 1
- 302.04 A 3
- 302.04 F

Install the sand cushion per the geofoam manufacturers recommendations.

B. Wick Drains

Prior to the installation of wick drains, demonstrate that equipment, methods, and materials produce satisfactory installation in accordance with these specifications. For this purpose, install trial wick drains at locations designated by the Engineer. Approval by the Engineer of the method and equipment used to install the trial wicks shall not necessarily constitute acceptance of the method for the remainder of the project. If the

Engineer considers that the method of installation does not produce a satisfactory wick, methods and equipment shall be altered to comply with these specifications.

1. Request the Engineer stake the proposed locations of the wick drains and take all reasonable precautions to preserve the markers. Verify the location of all existing utilities and instrumentation devices prior to installing the wick drains.
2. Wick drains that deviate from the plan locations by more than 6 inches, or are damaged, or are improperly installed, will be rejected and no compensation will be allowed for any materials furnished or for any work performed on such wick drains. Replacement wick drains shall be offset from the location of the rejected wick drains as directed by the Engineer. The rejected wick drains shall remain in place.
3. Install the wick drains vertically to the depth(s), elevation(s), described levels, or to the firm substratum indicated in the Plans. Firm substratum is defined as the layer which resists further penetration at a reasonable effort. Provide the Engineer with a suitable means of verifying plumbness of the mandrel and determining the tip elevation of the wick drain at any time. The equipment shall be carefully checked for plumbness and shall not deviate more than $\frac{1}{4}$ inch per foot from the vertical. The wick drains shall be installed in such a sequence that construction equipment will not damage previously placed wick drains.
4. Splicing of the drain material shall be conducted in accordance with the manufacturer's recommendation to ensure structural integrity and hydraulic conductivity of the drain. A maximum of one splice per drain will be permitted without specific permission from the Engineer.
5. Where obstructions or hard layers are present that prevent the installation of a wick drain, make two additional attempts to install a wick drain within 18 inches of the original location. If the drain can still not be installed, the location will be marked and designated for obstruction clearance by means of augering, drilling, punching, or spudding. Obstruction clearance in accordance with the approved procedure will be permitted to a maximum depth shown on the Plans, or as directed by the Engineer, and only where prior approval is given by the Engineer.
6. Where obstructions cannot be cleared by the methods listed in B.5, the Engineer will determine if the wick drain is to be abandoned or installed to the required tip elevation.
7. Cut wick drains neatly at the upper end with a 4 to 8-inch length protruding above the working surface, or as shown on the Plans.
8. Installation of the drains shall be coordinated with the appropriate subcontractors such that geotechnical instrumentation (vibrating wire piezometers, shape arrays, and settlement plates) can be properly installed. Special care shall be taken to install the drains in such a manner so as not to disturb the instrumentation already in place. Reimburse the project owner for replacement of instrumentation damaged as a result of the Contractor's activities.

C. EPS Geofoam

Prior to the placement of EPS geofoam, the Contractor shall submit a work plan describing its proposed operations. The work plan should demonstrate that its equipment, method, and materials will produce a satisfactory installation in accordance with these specifications. If the Engineer considers that the method of installation does not produce a satisfactory geofoam product meeting the intent of the project design, methods and equipment shall be altered to comply with these specifications.

Installation of the EPS geofoam shall be coordinated with the appropriate subcontractors such that geotechnical instrumentation (vibrating wire piezometers, vibrating wire settlement cells, and settlement plates) can be properly installed. Special care shall be taken to install the geofoam in such a manner so as not to disturb the instrumentation already in place. The Contractor will be required to reimburse the State for replacement of instrumentation damaged as a result of the Contractor's activities.

Coordinate with other construction elements to ensure that appropriate box outs are properly created for items that will extend into or through the geofoam.

D. PVC Geomembrane

At least 30 days prior to the commencement of work the Contractor shall submit the following for review and approval:

1. Experience. A list of projects for the manufacturer, fabricator, and installer. Supplied information should include projects identified by name, location, project description, size, completion date, description of soil conditions, and contact person for the contracting organization.
2. Manufacturer's material specifications indicating conformance with the requirements of Sections 4.0 Materials, 5.0 Factory Seams, and 6.0 Inspection and Testing of Factory Seams.
3. The fabricator shall furnish a proposed geomembrane panel layout to be approved in writing by the Engineer prior to material shipment. The drawings will show: the direction of factory seams, the size of panels and the location of field seams, consistent with the requirements of the project drawing. These details shall include the recommended termination details of the geomembrane.
4. Manufacturer's qualifications: The manufacturer of the PVC geomembrane of the type specified shall have at least five years of experience in the manufacture of PVC geomembranes. In addition, the geomembrane manufacturer shall have manufactured at least one million square feet of the specified type of geomembrane in the last five years.
5. Fabricators qualifications: The fabricator of the proposed PVC geomembrane shall have a minimum of five million square feet of PVC fabrication experience.

6. Installer qualifications: The geomembrane installer shall have at least three years of experience in the installation of the specified geomembrane and shall have installed a minimum of five million square feet of the specified geomembrane.

Preparation: The surfaces on which the membrane is to be placed shall be maintained in a firm, clean, dry and smooth condition during the installation. All surfaces shall be compacted and smooth graded (if soil). All surfaces the membrane is to be placed on shall be free of rocks, roots, gravel, grade stakes or debris that may puncture the geomembrane.

All subgrade damaged by construction equipment and deemed unsuitable for geomembrane deployment shall be repaired prior to placement of the geomembrane. If groundwater is present within 12 inches below the surface to be lined, the general contractor shall dewater the area prior to and during installation of the liner.

Immediately prior to the installation of the geomembrane, the Engineer and the geomembrane installer shall perform a complete and detailed inspection to determine acceptance of the finished subgrade and elevations. Any erosion or other damage to the subgrade that has occurred shall be corrected before geomembrane placement.

Placement: PVC geomembrane shall not be deployed until all applicable submittals (and associated certifications) listed in Construction Requirements Section D of this specification are submitted and approved by the owner's representative. Should the PVC geomembrane be deployed prior to approval of the Engineer, it will be at the sole risk of the geomembrane installer and/or general contractor. If the material does not meet the specification it shall be removed from the site at no cost to the owner.

Only those panels of lining material that can be anchored and seamed together the same day shall be unpackaged and placed into position. In areas where high wind is prevalent, the lining installation should begin on the upwind side of the project and proceed downwind. The leading edge of the liner shall be secured at all times with sandbags sufficient to hold it down during high winds. The leading edges of the liner material left exposed after the day's work shall be anchored with sand bags spaced no less than 10 feet to prevent damage or displacement due to wind.

The geomembrane shall be placed over the prepared surfaces in such a manner as to ensure minimum handling and in accordance with the approved shop drawings. The geomembrane shall be closely fitted and sealed around any projections through the lining. Liner panels, damaged from any cause, shall be repaired in accordance with the Repairs section of this specification.

Geomembrane placement shall not be performed if moisture present prevents proper subgrade preparation, panel placement or panel seaming.

In general, field seams shall be oriented parallel to the line of the maximum slope, i.e., the seam should run down the slope. In corners and odd geometric locations, the total length of the field seam shall be minimized. If at all possible, seams shall not be located at low points in the subgrade unless geometry requires seaming to be done at these locations.

No vehicles will be allowed on the geomembrane. Small rubber tired equipment with a ground pressure not exceeding 5 psi and a total weight not exceeding 750 lbs will normally be allowed. Typical equipment that is usually used during installation and testing and allowed on the geomembrane include air compressors, generators, etc. Materials, equipment or other items shall not be dragged across the geomembrane surface or be allowed to slide down slopes on the lining. All parties walking or working on the liner shall wear soft-sole shoes. No smoking shall be permitted on the liner.

Field Seams: Solvent adhesive, a capable hot air welder or a wedge welder shall be used to seal the factory-fabricated panels together in the field.

These seams shall be made as a lap joint formed by lapping the edges of the sheets in accordance with the following recommendations or as specified by welder manufacturer.

Panel Overlapping for Seams:

- Chemical Seam: 6" to 8" overlap with a 2" wide seam.
- Thermal Seams: 4" to 6" overlap and a minimum 1.5" wide seam.

Avoid fishmouths, wrinkles, folds or pleats in the same area. Where fishmouths do occur, they should be slit out far enough from the seam to dissipate them, lapped, seamed together in the lapped area and patched. Any necessary repairs to the PVC geomembrane shall be done using an additional piece of the specified parent material applied in accordance with the Repairs section this specification. All patching material shall have rounded edges.

Inspection and Testing of Field Seams: The owner's representative shall be notified prior to all pre-qualification and production welding and testing.

1. Prequalification Test Seams:

- i) Test seams shall be prepared and tested by the geomembrane installer to verify that the seaming parameters are adequate.
- ii) Test seams shall be made in accordance with ASTM D 4437 by each welding technician at the beginning of each seaming period. Test seaming shall be conducted under the same conditions and with the same equipment and

operator as production seaming. The test seams shall be approximately 5 feet long for all types of field welds.

- iii) Samples shall be tested and evaluated in accordance with the specifications in Materials Section D. It should be noted that conditioning of samples and appropriate temperature and humidity requirements must be met to allow for proper testing of the PVC geomembrane.
- iv) If there is no area on site to provide for these requirements, the trial weld samples can be sent to an independent laboratory to verify seam strength.
- v) For peel and shear testing, see Section 3, Destructive Field Seam Testing section of this document. Field peel and shear strength values should meet the requirements of PGI-1104.
- vi) If a test seam fails, an additional test seam shall be immediately completed. If the additional test seam fails, the seaming apparatus shall be rejected and not used until the deficiencies are corrected and a successful full test seam can be produced.
- vii) Each test seam shall be labeled with date, geomembrane temperature, number of seaming unit, panel identification, seam number or test location, technician performing the test seam and a pass or fail description and be stored by the installer for future reference.

2. Non-Destructive Field Seam Testing

- i) The installer shall non-destructively test the full length of all field seams before the seams are covered. Each seam shall be numbered or otherwise designated. The location, date, test unit, name of QC person, and outcome of all non-destructive tests shall be recorded and submitted to the Engineer.
- ii) Testing should be performed as the seaming progresses, not at the completion of all field seaming, unless agreed to in advance by the Engineer. All defects found should be repaired, re-tested and remarked to indicate acceptable completion of repair.
- iii) Non-destructive testing shall be performed using the air lance test method (ASTM D4437).
- iv) Air Lance Testing
 - (1) Chemical and solid thermal, i.e., single track, welds can be tested utilizing the Air Lance Test Method ASTM D4437. The installer shall provide an air compressor, air hose and air lance wand with a pressure gauge capable of measuring the air flow at the tip. Experienced technicians familiar with this procedure shall perform the testing.
 - (2) This non-destructive test involves placing the air lance wand 1/4" to 1/2", but not more than 2", from the edge of the completed seam and closely monitoring the backside of the sheet for any air penetration through the seam, loose edges, ripples, and/or noise. If air penetrates the seam area, the technician will either see this visibly or hear it audibly.

- (3) All seams tested by the air lance method shall be marked with the date tested, name of the technician, length of the seam, and test results. As with all QC work this should be documented on all QC paperwork and preferably witnessed by the owner's representative.

3. Destructive Field Seam Testing

- i) When air lance testing is performed using ASTM D4437, a minimum of one destructive sample per 500 lineal feet of field seam or at another pre-determined length should be obtained and tested in accordance with ASTM D6392 by the geomembrane installer from a location specified by the Engineer. To obtain test results prior to completion of geomembrane installation, the geomembrane installer shall cut destructive samples as seaming progresses. The Engineer will direct where the samples are cut. The geomembrane installer shall not be informed in advance of the sample location. When air channel testing is performed, no destructive samples will be taken from the production liner but destructive samples can be obtained from the anchor trench or test welds.
- ii) All field samples shall be marked with their sample number and seam number. The sample number, date, time, location, and seam number shall be recorded. The geomembrane installer shall repair all holes in the geomembrane resulting from obtaining the samples. All patches shall be repaired and tested using an air lance test. All destructive seam areas shall be patched and tested the same day as the destructive sample.
- iii) The destructive sample size shall be 12" wide by 36" long with the seam centered lengthwise. The sample shall be cut lengthwise. The sample shall be cut into three equal sections and distributed as follows; one section given to the Engineer as an archive sample, one section given to the Engineer for laboratory testing and one section given to the geomembrane installer for field testing.
- iv) For field testing of destructive samples, the geomembrane installer shall cut 10 identical 1" wide replicate specimens from his sample. The geomembrane installer shall test 5 replicate specimens for seam shear strength and 5 for peel strength. Peel strength tests will be performed on both the inside and outside of dual track welds. To be acceptable, an average of five specimens must pass field seam specification testing requirements shown in Materials Section D.
- v) Reports of the results of examinations and testing shall be prepared and submitted to the Engineer.
- vi) For field seams, if laboratory tests fail, that shall be considered an indicator of possible inadequacy of the entire seam length corresponding to the test sample. Additional destructive samples of the subject seam shall be taken by the geomembrane installer at locations indicated by the Engineer, typically 10 feet on either side of the failed sample and laboratory seam tests shall be performed. Passing tests shall be an indicator of adequate seams. Failing tests shall be an indicator of inadequate seams. All destructive sample locations shall be repaired

with a cap strip either thermally or chemically welded into place. All cap stripped seams shall be non-destructively tested with an air lance test.

4. Identification of Defects

- i) The geomembrane installer and Engineer shall inspect panels and seams during and after panel deployment to identify all defects, including holes, blisters, and undispersed raw materials.
- ii) The geomembrane installer and Engineer shall inspect seams before, during, and after field seaming to identify all dirty and wrinkled areas and any defects.

5. Evaluation of Defects

Each suspect location (both in seam and non-seam areas) shall be non-destructively tested using the air lance test method in ASTM 04437. Each location which fails non-destructive testing shall be marked, numbered, measured and posted on the daily installation drawings and subsequently repaired.

- i) If a destructive sample fails the field or laboratory tests, the geomembrane installer shall repair the seam between the two nearest passed locations on both sides of the failed destructive sample location.
- ii) Defective seams, tears, or holes shall be repaired by re-seaming or applying a cap strip.
- iii) Re-seaming may consist of either:
 - (1) Removing the defective area and rewelding the parent material using the original welding equipment, or
 - (2) Reseaming by cap stripping as described in the Repairs section of this specification.
- iv) Each patch shall extend a minimum of 6" in all directions beyond the defect.
- v) All repairs shall be measured, located and recorded.

6. Verification of repairs on seams

Each repair shall be non-destructively tested using the air lance test in ASTM D4437. Tests which pass the non-destructive test shall be taken as an indication of a successful repair. Failed tests shall be re-seamed and retested until a passing test result is obtained. The number date, location, technician, and test outcome of each patch shall be recorded.

Repairs: Any repairs made to the liner shall be made with parent material supplied by the manufacturer. For the best welding performance, the repair should be made with newly manufactured material. Patches shall be cut with rounded corners and shall

extend a minimum of 6" in each direction from the damaged area. The entire surface of the patch shall be bonded to the PVC lining material.

METHOD OF MEASUREMENT

A. Sand Drainage & Sand Cushion

The sand drainage layer will be measured according to Section 109.01 MEASUREMENT OF QUANTITIES in the Standard Specifications.

The sand cushion will not be measured for payment and will be incidental to the geofoam.

B. Wick Drains

Wick drains that are accepted by the Engineer will be measured from the bottom of the sand drainage layer to the tip of the installed wick. No additional payment will be made for the 4 to 8-inch length protruding above the working surface.

C. EPS Geofoam

The amount of geofoam installed will be measured by survey conducted by the Engineer.

D. PVC Geomembrane

The Engineer will measure, completed and in place, the surface area of geofoam covered by the geomembrane. The Engineer will not measure overlaps or geomembrane not covering geofoam.

BASIS OF PAYMENT

The accepted quantities will be paid at the contract unit price for per the bid items below:

SPEC	CODE	ITEM DESCRIPTION	UNIT
920	1000	GEOFOAM	CY
920	1050	GEOMEMBRANE	SY
920	1300	PREFABRICATED VERTICAL WICK DRAINS	LF
920	2130	SAND DRAIN	TON

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

WINTER SUSPENSION

Project: SU-8-984(153)156 - PCN 21564

DESCRIPTION

This project has a 2-year construction schedule. Winter suspension will be from November 15, 2021 to April 15, 2022.

Complete the following work within the project corridor during the 2021 construction season

1. DMS Sign Relocation (interim completion date of 5/29/21)
2. Required watermain per Note 100-P01 (interim completion date of 7/31/21)
3. Geotechnical Instrumentation (interim completion date of 10/2/2021)
4. Surcharge, sand drain, and wick drains from station 116+19.9 to 140+33.96 (interim completion date of 10/2/21)
5. Temporary Stabilization per Section 76 of the plans
6. I-29 Access Control Fence

WINTER SUSPENSION REQUIREMENTS

If the above requirements are not met, Liquidated Damages of \$5,000 per calendar day will be charged from the November 15, 2021 (or interim completion dates) until April 15, 2022 or until the winter suspension requirements are met.

Meet the following conditions before beginning winter suspension:

- A. 64th Avenue west of I-29 is restored to its pre-project condition
- B. Reset existing signs where replacement signs have not been installed. The cost of labor, materials, and equipment necessary to reset and remove the existing signs before and after the winter suspension is included in the contract unit price for "Traffic Control Signing." Reset all signs according to Standard Drawing D-754-23.
- C. Place topsoil, seed, and stabilize areas per Section 76;
 - o Temporary site drainage has been shown with flow arrows in Section 76. The drainage will require swales to be cut to facilitate drainage. The flow arrows assume that storm sewer is not installed in the 2021 construction season. If storm sewer is installed, grade site to drain via storm sewer or surface drainage. All costs to facilitate drainage through winter suspension are incidental to other items bid.
- D. Restore storm water drainage on any haul roads utilized;
- E. Maintain access on existing field approaches;
- F. Remove construction equipment, garbage, and materials from the Right of Way;
- G. Remove all portable traffic control devices. Post mount or anchor any signs or devices required by the plans over the winter; and
- H. Place two precast concrete median barriers and Road Closed sign (R11-2-48) on the east and west limits of the surcharge embankment. Include the cost for this work in other items bid.

Schedule a winter suspension inspection with the Engineer 2 days before the anticipated winter suspension. The Engineer may require the completion of additional items of work relating to the suspension before issuing suspension.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

GEOTECHNICAL INSTRUMENTATION

Project: SU-8-984(153)156 - PCN 21564

DESCRIPTION

This work consists of procuring and installing the following:

- ShapeArrays
- Vibrating Wire Piezometers
- Vibrating Wire Data Logger
- Settlement Plates
- Remote sensing, near real-time, automated data acquisition system (ADAS), which includes 2 monitoring stations (MS)

DEFINITIONS

Instrumentation: various sensors, instruments, or systems used to measure settlement (elevation changes), piezometric trends (pore water pressure changes), and temperature.

Monitoring: the measurement of instrumentation, as well as the transmission, reduction, presentation, and evaluation of the instrumentation data.

Instrumentation Program: general specifications, details, and plans regarding instrumentation (and associated monitoring). Also, general reference to the full instrumentation and monitoring system.

Geotechnical Instrumentation Engineer: personnel (hired by the Contractor) responsible for proper installation and performance of both field components and the web-based data presentation and reporting system, as well as instrumentation deliverables and documents.

Vibrating Wire (VW): a type of instrumentation sensor technology, manufactured by GEOKON, Inc., RST, Inc., or approved other, known for its long-term performance and resilience.

VW Piezometer (PZ): a sensor customarily installed and sealed within a borehole; used to measure piezometric pressure (pore water pressure), which can be converted to the effective groundwater table elevation (piezometric head or hydraulic head).

ShapeArray (SAA): an automated string (array) of connected tiltmeters, that can be installed horizontally in a shallow trench within a protective conduit (trench backfilled with sand); used to measure a complete profile of settlement beneath an embankment.

Communication Cable: (also referred to as Data Cable) the data transmission wire pre-attached to an automated sensor by its manufacturer, with exposed leads or plugs that can be manually measured or connected directly to a datalogger or cloud-connector (usually routed through conduit) for automated monitoring.

VW Datalogger: physical hardware, manufactured by GEOKON, Inc., or RST, Inc., that automatically measures the vibrating wire instrumentation sensors (vibrating wire communication cables are connected to this, and this connects to a THREAD)

THREAD: physical hardware, manufactured by Sensemetrics, Inc. (THREAD X-Series), or approved equivalent, that automatically and immediately transmits instrumentation data (from VW dataloggers and/or ShapeArrays) through a wireless mesh and/or cellular network to the cloud, whereby data is automatically and remotely reduced, presented, and accessible via a secure, web interface hosted by Sensemetrics, Inc., or approved other.

Monitoring Station (MS): a pole-mounted arrangement, assembled by the Geotechnical Instrumentation Engineer, located at each designated instrumentation cross-section, consisting of a solar panel, VW datalogger, THREAD, cable connections, and mounting hardware.

Automated Data Acquisition System (ADAS): all monitoring station components (solar panel, VW dataloggers, and THREADs) and the online Sensemetrics monitoring system, working together to provide automated instrumentation measurements, accessible via a near real-time, customized web interface.

PURPOSE

Instrumentation is implemented to monitor performance of bridge approach embankments and engineered subgrades, using automated pore water pressure and settlement measurements (via VW Piezometers and ShapeArrays, respectively), as well as manual confirmation of settlement (via settlement plates). The purpose of the VW piezometers is to monitor excess pore water pressures in the soil to confirm that primary consolidation is complete, the rate has stabilized, and that clay gained enough shear strength to allow staged construction. The ShapeArray is used to monitor settlement (downward elevation change) and shape of deformation, to confirm primary consolidation is complete, confirm rate has stabilized, isolate zones of instability, and corroborate VW piezometer data to allow staged construction. Settlement plates will be manually surveyed at specified intervals, to measure settlement (downward elevation change) near the top of the constructed embankment, to confirm the rate has stabilized to permit road construction and corroborate ShapeArray and VW piezometer

measurements. Automated instrumentation will remain in use after embankment construction and into the warranty period, to monitor long-term embankment performance.

MATERIALS

A. ShapeArrays

1. ShapeArrays (SAA). ShapeArrays shall consist of rigid segments separated by flexible joints comprised of triaxial MEMS gravity sensors. The SAA manufacturer shall have ISO 9001:2008 certification. The SAAs shall fulfill the following requirements:

Technical Specifications:	Minimum Requirements:
Segment Length	500 mm
Joint diameter	19 mm
Waterproof	2000 Kpa (200 m water)
Temperature Range	-35°C to +60°C
Angular range of MEMS sensors	± 360°
Deformation accuracy	± 1.5 mm for 32 m SAA
Long-term reliability MTBF	38 years for 32 m SAA
Notes:	Horizontal Installation, housed within 2-inch, Schedule 80, PVC conduit

2. ShapeArray Communication Cables. SAA communication cables shall be shielded with waterproof jacket, as manufactured and supplied by the SAA manufacturer, with an Amphenol connector to connect directly to the THREAD.
3. Conduit. Conduit that the SAA will be inserted horizontally within shall consist of 2-inch, Schedule 80, gray PVC electrical conduit with bell ends. End caps shall consist of gray PVC, designed to cap 2-inch, Schedule 80 gray PVC electrical conduit. Conduit, including end caps, shall be connected using PVC primer and cement (or approved combination) manufactured for gray PVC electrical conduit, and allowed proper set times prior to SAA installation. Conduit shall be placed according to the Drawings and manufacturer recommendations.
4. SAA Install Kit. SAA installation kit shall be supplied by the SAA manufacturer, including adapters for 2-inch conduit installation, and reference end assembly (near-end) to permit secure mounting and survey confirmation.

B. Vibrating Wire Piezometers

1. Vibrating Wire (VW) Piezometers (PZ). Vibrating wire piezometers shall be standard, groutable, unvented, with stainless steel filters, and shall be Model 4500S as manufactured by Geokon, Inc., Model VW2100 as manufactured by RST Instruments, Ltd., Part number 52611030 as manufactured by Durham Geo Enterprises, Inc., or approved equal. The vibrating wire piezometer manufacturer

shall have ISO 9001:2008 certification. The vibrating wire piezometers shall fulfill the following requirements:

Technical Specifications:	Minimum Requirements:
Standard Range	350 Kpa (50 psi)
Over Range	2 x rated pressure
Resolution	0.025% F.S.
Accuracy	± 0.1% F.S.
Nonlinearity	< 0.5% F.S.
Temperature Range	-20°C to +80°C
Length x Diameter	133 x 19.1 mm (maximum size)

2. Vibrating Wire Piezometer Communication Cables. Vibrating wire piezometer communication cables shall consist shielded cable with four 22-gauge tinned-copper conductors within a polyurethane jacket, as recommended, supplied, and connected to the sensor by the vibrating wire tiltmeter manufacturer.
3. Tremie Pipe. Tremie pipe shall consist of PVC (1-inch minimum diameter) with factory threaded flush joints, and will be used to both grout the boreholes from the bottom up and set the VW piezometers tip-down (adhered to the outside of the tremie pipe) at their specified depths.
4. Cement-Bentonite Grout. In order to support the “fully grouted” method for vibrating wire piezometer installation, cement-bentonite grout shall be composed of a mixture of water, Portland cement, and bentonite. Based off known soil conditions for this Project, and extrapolating from the “Grout for Soft Soils” details in Table 1, of P.E. Mikkelsen and G.E. Green’s FMGM paper entitled “Piezometers in Fully Grouted Boreholes”, the grout mixture shall meet:

Materials	Grout for Soft Soils	
	Weight	Ratio by Weight
Water	75 gallons	6.6
Portland Cement	94 lbs (1 sack)	1
Bentonite	39 lbs. (as required)	0.4
Notes	When placed, cement-bentonite grout shall be in colloidal form attained by high speed mechanical mixing. Borehole grouted from bottom, filled to top.	

C. Settlement Plates

Settlement Plates (SP). Settlement plates shall be installed at the top of the drainage sand, and consist of a 24 by 24-inch, 3/4-inch thick section of plywood, with a standard black 3/4-inch floor flange will be bolted to the center. A riser pipe consisting of a 3/4-inch inner diameter steel threaded rod (5-foot section) will be mounted to the floor flange, with additional riser pipes (of same dimensions and detail) and couplings used as necessary. Plastic sleeves will be placed around the riser pipes, from the settlement plate to above grade.

D. Vibrating Wire Analyzer

Vibrating Wire Analyzer (VWA). The portable vibrating wire analyzer, used for gathering baseline readings, shall be manufactured by Campbell Scientific, Geokon, or approved equivalent. The VWA shall be available on site throughout the monitoring period for manual confirmation, as directed by State forces.

E. Monitoring Stations

Each side (west and east) of the bridge shall include one monitoring station, consisting of a pole-mounted assembly of hardware for automated embankment monitoring. Each monitoring station shall consist of three major monitoring-related products (and related appurtenances): a solar panel, a VW datalogger, and a THREAD.

1. Solar Panel The ready-to-mount solar panel, supplied by the THREAD manufacturer, shall utilize renewable energy to power the THREAD (which will in turn power the VW datalogger) at each monitoring station.
2. VW Datalogger Manufactured and quality tested through ISO 9001:2015, the VW datalogger, shall comprise a self-contained, 4-channel logger, connecting to the vibrating wire instrumentation installed beneath the embankment via their communication cable leads routed to the monitoring station. The VW datalogger shall be manufacturer-modified to connect to, and immediately transmit vibrating wire measurements to, the THREAD. A VW Datalogger-to-THREAD cable is required for each Monitoring Station.

Technical Specifications:	Minimum Requirements:
Measurement Accuracy	±0.05% F.S. (450-4000 Hz)
Measurement Resolution	1 part in 20,000
Program Memory	24K Flash
Data Memory	320K EEPROM
Temperature Range	-30°C to +50°C
L × W × H	260 × 160 × 91 mm
VW Channels	4
Power	Direct connection to THREAD
Notes:	Must be customized by the manufacturer to connect to THREAD

3. THREAD. The THREAD shall connect to the VW datalogger—and power the GEOKON datalogger—while also automatically collecting the vibrating wire measurements immediately. Utilizing its second port, the THREAD shall also connect directly to the ShapeArray, and automatically collect those measurements immediately as well. Next, the THREAD, through its wireless/cellular antennas, shall transmit instrumentation data through a wireless mesh and/or cellular network to the cloud, whereby data is automatically, immediately, and remotely reduced, presented, and accessible via a secure, web interface hosted by Sensemetrics and managed by the Geotechnical Instrumentation Engineer.

F. Automated Data Acquisition System

1. Monitoring Station components The hardware required for the Automated Data Acquisition System (ADAS), including the solar panels, VW Dataloggers, and THREADs, is specified in the previous section.
2. Sensemetrics Platform The Sensemetrics cloud-based platform shall automatically retrieve the measurements collected on site by the VW Datalogger and THREAD, and immediately populate the online interface with near-real time data. The browser-based software interface shall be configured to communicate with each THREAD and calibrated according to sensor calibration certificates, baseline readings, and measured sensor elevations, such that measurements will be automatically reduced and presented in graphical and tabular form.

The online platform shall be monitored throughout construction through project completion through the warranty period. The online platform shall be decommissioned and archived such that the State can access instrumentation data for up to 1 year later (or until successful online transfer of data to State forces).

CONSTRUCTION REQUIREMENTS

A. Submittals

Manufacturer's product information demonstrating compliance with this specification for:

1. ShapeArrays
2. Vibrating wire piezometers
3. Data logging equipment

Name and experience documentation for proposed Drilling Subcontractor for vibrating wire piezometer installation.

Name and experience documentation for Geotechnical Instrumentation Engineer.

Geotechnical Instrumentation Engineer to provide the owner with drawing indicating routing locations of all buried instrumentation wiring upon instrumentation completion.

All calibration certificates and manuals for vibrating wire settlement system, vibrating wire piezometers, and data logging equipment.

Monitoring data: The Contractor shall maintain the ADAS such that the Engineer and/or State forces can access data at any time, to download or view; eliminating the need for reporting. The Geotechnical Instrumentation Engineer shall coordinate a training meeting to facilitate online access, use of online platform, and guide State forces to manually enter surveyed settlement plate data. All monitoring data shall be available for

archival viewing or download until 6 months after instrumentation has been removed from the Project (or until successful online transfer to State forces).

B. Drilling Subcontractor Requirements

Contractor will employ a Drilling Subcontractor for vibrating wire piezometer installation.

The Drilling Subcontractor will meet the following requirements:

1. Minimum 5 vibrating wire piezometer installations using a fully-grouted installation technique within the previous 2 years.
2. Ability to successfully drill a soil boring within the formation to the depth and size required to complete the installations.

C. Geotechnical Instrumentation Engineer Requirements

Contractor will employ a Geotechnical Instrumentation Engineer to procure, program, coordinate, install, and monitor all appropriate instrumentation, appurtenances, and monitoring systems.

The Geotechnical Instrumentation Engineer will meet the following requirements:

1. Demonstrate experience with the specified instrumentation on 2 long term instrumentation and monitoring projects, utilizing required sensors and monitoring systems, in the past 5 years.
2. Be a North Dakota registered Professional Engineer, or perform the work under the direct supervision of a North Dakota registered Professional Engineer employed by the same company as the Geotechnical Instrumentation Engineer.
3. Provide such record of experience to the Engineer no later than 1 month prior to delivering instrumentation, appurtenances, and monitoring systems to the project site, and before proceeding with any work.

D. Preparation

1. Confirmation testing.

Prior to arrival on site for installation, all received instrumentation, cables, and appurtenances shall be inspected and tested for proper operation in accordance with the procedures recommended by the respective manufacturers. Any improper sensor function, or lack of continuity in the communication cables, shall be immediately repaired (or replaced) in accordance with manufacturer recommendations, and as approved by the Engineer. Dataloggers, modems, readout devices, and appurtenances shall be similarly inspected and tested, and if required, shall be repaired (or replaced). No additional time will be granted for any delays due to replacing/repairing damaged instrumentation or related components. Please include confirmation testing results in each submitted Installation Record.

2. Location.

The prospective (and installed) location of all instrumentation shall be staked or marked (and measured), with GPS coordinates recorded to the nearest 0.1 foot, and elevation survey accuracy to the nearest 0.01 foot.

E. Installation

1. General.

The Geotechnical Instrumentation Engineer, specifically their professional geotechnical engineer registered in the State of North Dakota, shall oversee all installations of vibrating wire piezometers, ShapeArrays, and Monitoring Stations. The Contractor shall coordinate instrumentation installation, protection, and maintenance activities with the remainder of the Work. Unless otherwise approved by the Engineer, the installation of instrumentation relative to the construction sequence shall satisfy the requirements for items detailed herein and on the Plans.

2. Sequence.

The Sequence is where instrumentation fits into the bigger picture of the Project; a chronology of various construction activities surrounding the various instrumentation installations. The subsequent section, Procedure, will describe the specific sequence (procedure) of the various instrumentation installations themselves.

Instrumentation installation activities are required at two distinct junctures during embankment construction and will need to fit into the general construction sequence as detailed chronologically below, in order to provide the Contractor and the Engineer with meaningful instrumentation data. The Engineer has the right to refuse payment for any instrumentation not installed at the appropriate juncture. The same general sequence applies to both sides of the bridge.

a. Before the embankment is constructed

- i. Subgrade corrections (i.e. topsoil removal, pavement removal, subcuts, etc.).
- ii. Wick drain installation and placement of drainage sand layer above subgrade soils.
- iii. **Non-Automated instrumentation (settlement plates) installation and initial surveying.**
- iv. **Automated instrumentation (VW piezometers and ShapeArray) installation, including drilling, instrumenting boreholes, installing SAA anchor and monitoring station, and trenching in conduit and cable runs (avoiding wick drains).**
- v. **Automated data acquisition system (ADAS) testing; fully functional via the Sensemetrics online platform. Trench backfilled. ADAS tested again.**

- vi. **Hold period of at least 24 hours for fully grouted boreholes to set up; confirmed by piezometer measurement trends via online platform. Engineer will give go-ahead.**
- vii. Additional fill placement above the instrumentation, and on top of the drainage sand layer. Construction traffic shall exercise caution within 2 vertical feet above instrumentation sensor locations and conduit. Protect monitoring station and immediate surroundings.

b. After the embankment is constructed

- i. Embankment construction continuing above automated embankment instrumentation, lift by lift.
- ii. Waiting period commencement for embankment and/or preload monitoring, with ongoing surveying.

3. Procedure.

The installation procedures for all instrumentation and monitoring systems shall abide by the following, listed in order of precedence:

- Instructions and recommended best practices provided by the respective instrumentation and/or monitoring system manufacturer.
- The Plans
- Project experience of the Geotechnical Instrumentation Engineer

The following discussion has been arranged per the Sequence section above (chronologically), highlighting the 2 distinct junctures and the 2 sets of instrumentation installations accordingly.

a. Borings

- i. Borings shall be drilled at the piezometer locations on the west and east embankment per the plans.
- ii. Borings shall be drilled to the depth required to reach specified elevations on the plans for the piezometers.
- iii. Borings shall be logged, with boring logs submitted with their respective instrumentation installation record. Boring logs shall be logged per ASTM D2488 standard with sampling at 5-foot intervals.
- iv. Each boring will contain 2 VW piezometer (4 total)

b. VW Piezometers

- i. VW piezometers shall be installed at the elevations shown on the plans, according to the manufacturer's recommendations, and any modifications proposed (and accepted by the Engineer).

- ii. VW piezometers shall be installed per the fully grouted method, per the table in the **MATERIALS, B.4** section of this specification.
- iii. Baseline readings shall be recorded immediately prior to installation using the VW Analyzer.
- iv. Piezometers shall be affixed to the tremie pipe at a location correlating to the specified elevation, prior to grouting the borehole.
- v. Piezometer depths shall be recorded to the nearest 0.1 foot, including measurement from bottom of tremie pipe to affixed piezometer. Record tremie pipe quantity and lengths installed within borehole. Do not cut or modify any tremie pipes during/after installation
- vi. Borehole grouted from the bottom to top. Tremie pipe (with piezometer attached) abandoned in place. Borehole should be topped off with grout if subsidence occurs.
- vii. Once borehole grout sets up, top of tremie pipe shall be surveyed for elevation to the nearest 0.1 foot, in order to back calculate installed piezometer elevation. All relevant measurements and baseline readings to be included on Installation Records.
- viii. Communication cables from each piezometer shall run through separate protective schedule 40, 2-inch conduit to the monitoring station, and connect to the VW dataloggers.
- ix. Protective conduit shall be embedded at least 2 feet below the finished ground surface, and feature strain-relief measures for both the cable and the conduit.

c. ShapeArrays

- i. ShapeArrays shall be installed according to the Drawings and the manufacturer's recommendations, and any modifications proposed (and accepted by the Engineer).
- ii. Each ShapeArray will be pulled through schedule 80 conduit (no other conduit shall be within 6 inches laterally), and set into the bottom of a sandy bottom, leveled shallow trench that will span from the future centerline (far end) to outside of the embankment toe (reference end).
- iii. The reference end will be connected to a foundation element, such that it will not move throughout the monitoring period.
- iv. Geotechnical Instrumentation Engineer shall drill at least a 6-foot deep borehole at the reference point, backfill the bottom 3 feet with concrete, and place (in the wet) a metal pipe for anchoring the ShapeArray's reference end.
- v. The ShapeArray will be fastened to, and sealed within, the conduit, which will then be fastened to the galvanized anchor mechanism.
- vi. The SAA communication cable will be connected to the monitoring station.

- vii. As soon as the ShapeArray is determined to be functional via the online platform of the ADAS, the shallow trench will be backfilled.
 - viii. SAA Reference End to be surveyed monthly, or more frequent if Reference End movement is suspected.
 - ix. Retain empty SAA reels for decommissioning.
- d. Settlement Plates
- i. Settlement plates shall be installed according to the Drawings.
 - ii. Settlement plates shall be installed on a level (sandy) surface, at the bottom of a small two to three-foot deep excavated hole.
 - iii. The hole shall be immediately backfilled as soon as the settlement riser pipes, and plastic pipes surrounding them, are determined to be plumb.
 - iv. A survey crew shall be on site during installation to immediately record the baseline readings and surrounding grade elevation.
- e. Monitoring Station & ADAS
- i. Monitoring stations shall be installed at the locations shown on the drawing according to the manufacturer's recommendations.
 - ii. Confirm field hardware connections to online platform configurations.
 - iii. Manually input settlement measurements into online platform within 48 hours of surveying.

MONITORING AND MAINTENANCE

A. General Maintenance

The Contractor shall be responsible for all instrumentation maintenance, repairs, and replacements to ensure all instrumentation and monitoring systems are in proper working order and fully operational throughout the monitoring period, up until 1 year following substantial completion. The instruments and appurtenances shall be checked for proper operation in accordance with the procedures recommended by the respective manufacturers, or to the discretion of Engineer and/or State forces. Any instrumentation, ADAS components damaged by the Contractor, its Subcontractors, or others (i.e. from vandalism, weather, flooding, negligence, etc.), shall be immediately repaired or replaced at no cost to the State. The State reserves the right to halt construction until non-working instrumentation and/or monitoring systems are repaired or replaced (Contractor is encouraged to keep extra sensors, spare components, and supplies on site). Instrumentation may only be decommissioned/transitioned as approved by the Engineer and/or State.

B. General Monitoring

The Contractor and Geotechnical Instrumentation Engineer shall be responsible for monitoring all instrumentation at specified intervals, evaluating all instrumentation data, assisting decisions regarding instrumentation data, providing written recommendations,

and immediately notifying the Engineer and State if there are data threshold exceedances, or if the ADAS has not been fully operational for a defined period of time. During construction, the Engineer will verify the construction instrumentation on an ongoing basis. Verification will include evaluation of the readings with respect to historical and/or anticipated readings, observe data trends, respond to the notification group concerning validity of automated alarms and/or instrumentation readings, and to immediately halt construction activities where necessary if a valid action level alarm has been exceeded (only permitting construction activities following Contractor corrective action acceptable to the Engineer and State OR Engineer and State accepts the risk of proceeding with given conditions).

C. Reading Frequencies

In the absence of unusual events, the Contractor will be responsible for monitoring all instrumentation at the frequencies presented below. The Engineer or State reserves the right to increase or decrease reading frequencies at any time, requiring the Contractor to reprogram the dataloggers and online platform within 24 hours.

<i>Instrument</i>	<i>Reading Frequency (beginning at midnight)</i>
VW piezometers and SAAs	1 hour

D. Notification Group

Designated Project personnel deemed the “Notification Group” will be identified upon commencement of the Project, and are subject to receiving the automatic notifications and reporting. At a minimum, the Notification Group shall consist of 2 personnel each from the following parties: Contractor, Instrumentation Consultant, Engineer, and State.

E. Online Platform Configuration

The online interface, as accessed by State forces, shall be customized to the preferences of the State forces, including, but not limited to:

1. A map/plan, including project elements and sensor locations (that point to respective data graphs)
2. SAA graphs, plotting settlement vs. time (with ability to toggle between normal time and logarithmic time)
3. VW Piezometer graphs, plotting piezometric head (elevation in feet) vs. time (with ability to toggle between normal time and logarithmic time)
4. Monitoring Station diagnostic graphs, including voltage, temperature, barometric pressure vs. time

5. Automatic alerts consisting of automatic emails to the Notification Group, triggered by either data outages (any ongoing interruption longer than 12 hours for any sensor) and data thresholds
6. Notation on graphs of embankment construction filling and waiting periods, and other noteworthy items post-construction
7. Automatic weekly reports for the SAAs and VW piezometers, including graphs (both normal and logarithmic time)

METHOD OF MEASUREMENT

ShapeArrays will be measured per location installed.

Vibrating Wire Piezometer will be measured per each location installed (two transducers per location).

Settlement Plate will be measured per each location installed

Data logging Equipment will be measured per each location installed and consist of the Vibrating Wire Analyzer and Monitoring Stations.

BASIS OF PAYMENT

The accepted quantities will be paid at the contract unit price for per the bid items below:

Instrumentation	SPEC	CODE	ITEM DESCRIPTION	UNIT
Settlement Plate	900	0100	SETTLEMENT PLATE	EA
Vibrating Wire Piezometer	920	1318	MULTI-LEVEL VIBRATING WIRE PIEZOMETER	EA
Data Logger	920	1320	VIBRATING WIRE DATA LOGGER	EA
ShapeArray	900	4215	INSTRUMENTATION-AUTOMATED GROUND MOVEMENT SENSOR	EA

The unit price for Instrumentation-Automated Ground Movement Sensor is for full compensation of the work including but not limited to: excavation, trenching, and backfillings required for installation of the shape array system, cost of submittals, surveying the location and elevation of the arrays, and costs for furnishing all tools, labor, equipment, materials and incidentals necessary to complete the work.

The unit price for Instrumentation – Multi-Level Vibrating Wire Piezometer is for full compensation of the work including but not limited to: drilling by Drilling Subcontractor to establish borehole for vibrating wire piezometer installation; assembly and installation of

sacrificial PVC tremie pipe into the borehole and attachment of transducers (two transducers per vibrating wire piezometer location indicated on the plans); procurement of all vibrating wire piezometer transducers meeting these specifications; surveying elevation of top of sacrificial tremie pipe; costs of submittals; and costs for furnishing all tools, labor, equipment, materials and incidentals necessary to complete the work.

The unit price for Instrumentation – Data logging Equipment is for full compensation of the work including but not limited to: procurement of all Data logging Equipment meeting these specifications; installation of the system as described above at the approved location; trenching and backfilling to connect piezometer and shape arrays to the data logger location; earth ground rod and wiring; all costs associated with testing, installation, programming, documentation, and assistance to project owner during system handover by the Geotechnical Instrumentation Engineer of all data logging equipment; and costs for furnishing all tools, labor, equipment, materials and incidentals necessary to complete the work.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

COMMERCIAL GRADE HOT MIX ASPHALT

PROJECT 8-984(153)156 – PCN 21564

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 project
ND T 209 Theoretical Maximum Specific Gravity and Density of Hot Mix Asphalt	1 per project

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

UTILITY COORDINATION

PROJECT SU-8-984(153)156 – PCN 21564

DESCRIPTION

This work consists of coordinating the construction schedule with third party utility companies owning facilities within the project limits, verifying the location of those facilities during construction, and resolving issues with those utilities.

The requirements in this Special Provision replace the requirements of Section 105.03, "Cooperation With Utility Owners".

ATTACHMENTS

Appendix A – Utility Coordination Table

Appendix B – Utility Exhibits

DEFINITIONS

Conflict: A utility in need of relocation or adjustment for the construction to proceed in that area.

Protect in Place (PIP): A utility that does not need relocation, but needs precautions to protect the utility during construction activities.

Utility Encounter (UE): A Conflict or Protect in Place situation involving an existing third party owned utility.

CONTRACTOR RESPONSIBILITIES

A. Responsibilities.

The responsibilities for utility coordination include the following:

- Conduct the preconstruction utility coordination meeting;
- Maintain a point of contact for all utility companies;
- Maintain a schedule for utility activities;
- Hold weekly utility meetings in addition to the weekly planning and reporting meeting and report on the utility meetings at the weekly planning and reporting meeting;
- Follow up with any utility companies that do not show up to construction meetings;
- Coordinate work efforts of the utility companies, revise work schedules and traffic control as necessary to ensure adequate cooperation between UE and construction work;
- Develop and update the utility coordination plan;
- Provide a weekly written summary for contacts and meetings to the Engineer; and
- Coordinate with all of the other parties to update the project schedule specified in Section 108.03, "Progress Schedule".

B. Utility Coordination Plan.

Develop a utility coordination plan with each utility company that includes the phasing and scheduling requirements for UE.

C. Record of Utility Outage Notifications.

Request a copy of notifications that utility companies provide to customers for service outages. Maintain copies of all notifications until the Contractor signs the final estimate.

D. Utility Coordination Schedule.

Create and maintain a construction schedule that includes timelines for the phasing of utility coordination work. Include information contained in the contract documents and information obtained during coordination discussions with utility owners. Written agreements between the Contractor and a utility company will govern over information contained in contract documents; however, the agreements must be signed by the NDDOT, Contractor, and Utility Company to be effective. Written agreements are considered contract revisions, however they are not eligible for additional compensation or additional time unless agreed to separately by the Engineer.

The Utility Coordination Table contains information related to the utility coordination requirements at each area designated as a UE. The timelines included on the Table may be longer than shown if the Contractor requests multiple resolutions simultaneously. Adjust work schedules as required to accommodate utility resolutions.

Revisions to the construction schedule due to a utility company or companies non-conformance with agreed upon schedules or failure to reasonably coordinate work efforts with the Contractor will be considered excusable, non-compensable delays as specified in Section 108.06, "Determination of and Extensions to the Contract Time".

Failure by the Contractor to reasonably coordinate schedules with a utility company or companies for UE identified in the contract, or failure to document coordination efforts will be considered non-excusable delays as specified in Section 108.06, "Determination of and Extensions to the Contract Time".

CONSTRUCTION REQUIREMENTS

A. General.

The vertical and horizontal utility locations shown in the plans are approximate. Plan locations should not be interpreted as exact for bidding or construction purposes. The locations of utility lines are available at the specific locations included in the Utility Exhibits.

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

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

B. Utilities Identified in Plans.

Coordinate UE work with the affected utility owners. Maintain continuous communication with the Engineer, affected subcontractors, and affected utility owners until UE will no longer affect or be affected by the Contractor.

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

The Contract documents show all known UE for the project.

If a UE identified as a Protect in Place is determined to be a Conflict during construction, the Engineer will make necessary revisions to the Contract as specified in Section 104.02, "Contract Revisions". These types of changes will be considered excusable, compensable delays as specified in Section 108.06, "Determination of and Extensions to the Contract Time".

C. Utilities Encountered During Work.

1. General

Neither of the cases discussed in this subsection relieve the Contractor of liability that may arise under provisions of the NDCC.

2. Unidentified Utility Encounters

The Department will bear costs associated with revisions to the work as specified in Section 104.02 B, "Differing Site Conditions" only if the Engineer determines that all of the following conditions exist:

- a UE exists that was not designated in the plans; and
- the UE is in a location that affects the prosecution of the work to construct the project as designed.

3. Utility Encounters Created Due to Actions Performed by the Contractor

If a new UE is created due to actions performed by the Contractor for the Contractor's convenience; the Contractor shall account for and protect the affected facilities. Before performing these actions, the Contractor shall coordinate with the utility owner. The Department will not make additional payments to the Contractor nor the utility owner for UE created in this manner and will not provide additional time to the Contractor for completing the work.

If utility companies incur costs, the Department will not participate in those costs and will not make payment to the Contractor for those costs.

D. Utility Coordination Meetings.

1. Preconstruction Utility Meeting.

Arrange the meeting with the utility owners, the Contractor and affected subcontractors, local agency representatives, and the Engineer to occur no later than two weeks after the preconstruction meeting. At the meeting, provide an agenda and a tentative construction schedule for planning UE work; after the meeting, publish minutes and distribute a copy to all meeting attendees within 48 hours of the conclusion of the meeting.

2. Weekly Utility Coordination Meeting.

Organize a weekly meeting to discuss utility coordination efforts with utility companies and

affected subcontractors, local authorities, the Engineer and others who may have an interest in utility coordination efforts. Hold the weekly utility coordination meeting immediately before the weekly planning and reporting meeting. Publish minutes and distribute copies to all meeting attendees within 48 hours of the conclusion of the meeting.

The intent of this meeting is to disseminate information regarding ongoing and upcoming UE work and to ensure that all affected parties are collaborating and sharing information related to that work.

Provide a summary of the discussion at the weekly planning and reporting meeting.

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 utility facilities or repair damage to 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."

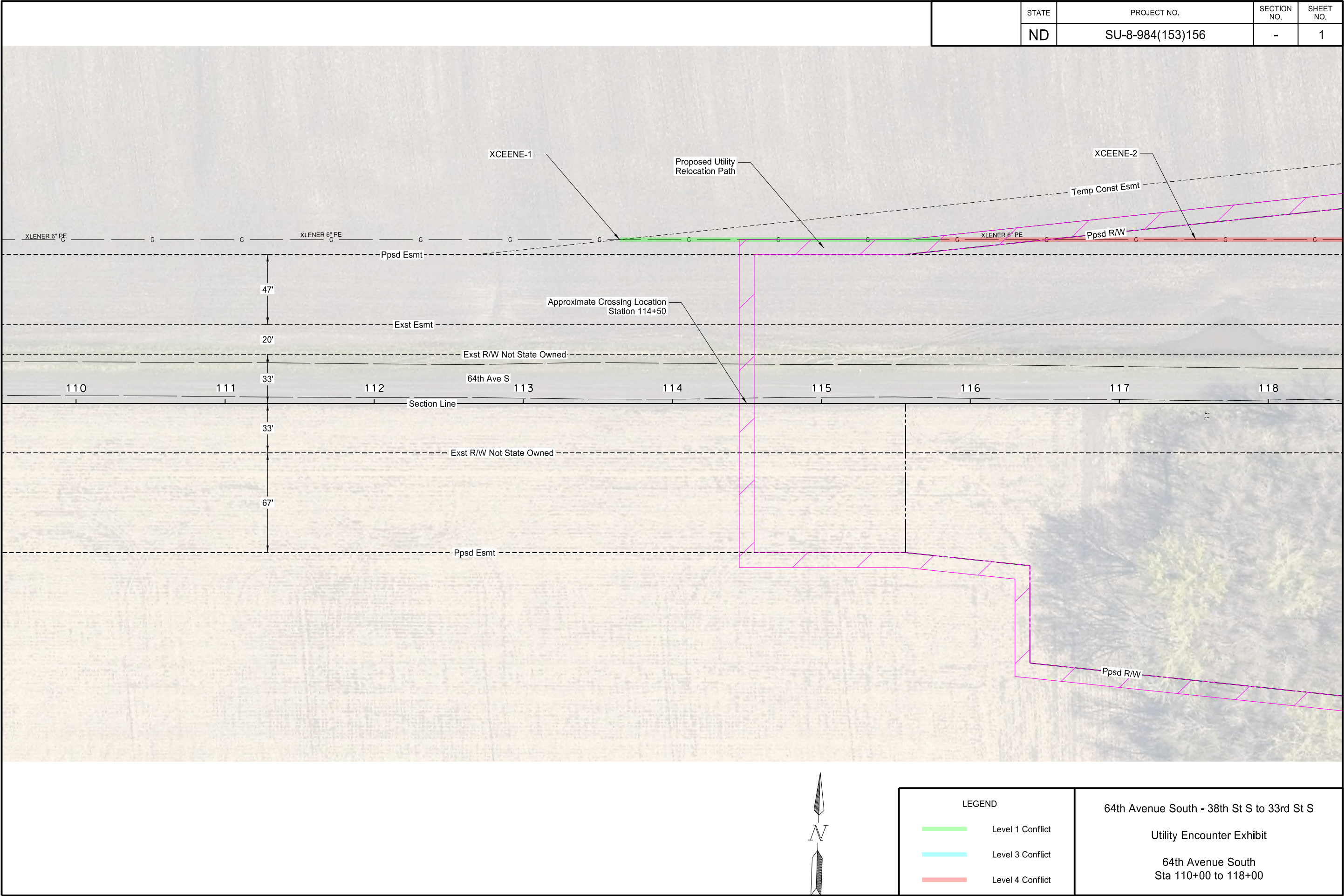
G. Utility Criteria.

The Utility Coordination Table and Utility Exhibits contain specific information related to each UE location.

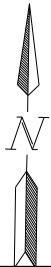
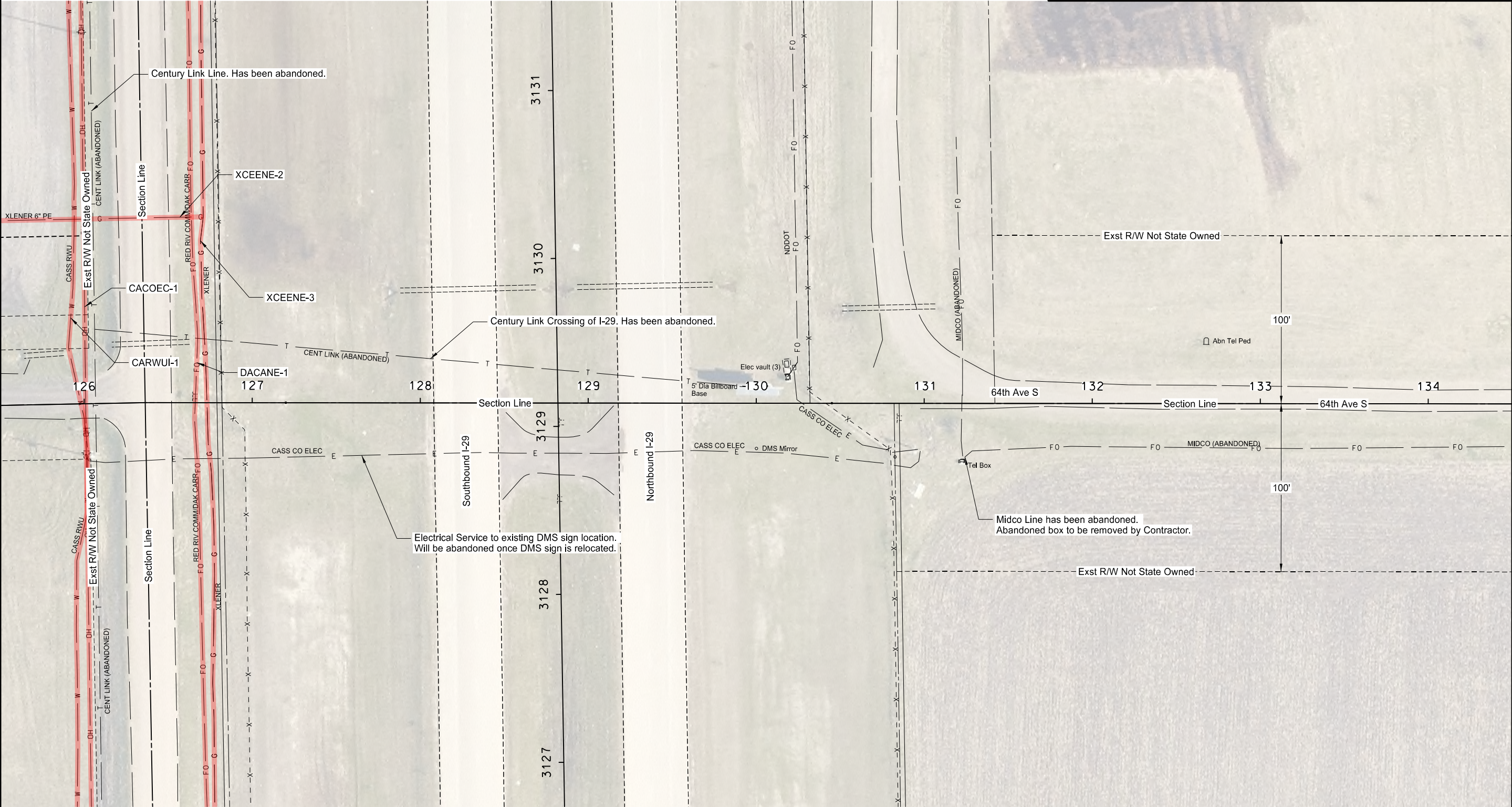
Utility Coordination Table Appendix A of SP 98(20) SU-8-984(153)156 PCN 21564 Sorted By Station																	
UE ID #	Utility Coordination Exhibits	Approx. Sta From		Approx. Sta To	LT/RT or Crossing or Point Location	Roadway (Alignment/Chain)	Approx. Qty	Unit	Max Excavation Cut (-) / Fill (+) Feet	Encounter Level	Resolution Criteria / Comments (The following information for the Contractor is based on early coordination with utilities. Information is approximate. Details for the schedule and construction phasing will need to be finalized between the Contractor and Utility Companies. Comments also outline other items that Contractor will need to account for in potential phasing for the project).	Utility Company	Type of Facility	After Notification - Time For Utility to Mobilize (D = Working Day, W = Week)	Estimated Time to Complete Relocation (D = Working Day, W = Week)	UTILITY ENCOUNTER TYPE (UE)	
																Protect in Place	Conflict
XCEENE-1	1	113+65	to	115+80	LT	PR64	215	LF	0'	Level 1	Topsoll stockpile area will be over the line. No permanent impacts.	Xcel Energy	Gas Line	N/A	N/A		
XCEENE-2	1,2,3	115+80	to	126+70	LT	PR64	1090	LF	28' (+)	Level 4	Will be relocating along the proposed Right of Way for the future interchange. Will cross 64th Avenue at approximately Station 114+50. Estimated relocation timeline prior to July 1, 2021. Existing line will be abandoned in place once relocation is completed.	Xcel Energy	Gas Line	N/A	N/A		X
CARWUI-1	2,3	125+98	to	-	Crossing	PR64	1	EA	25' (+)	Level 4	City of Fargo will be providing water service to the homeowner from 38th Street S and existing line will be abandoned in place. Estimated timeline for abandonment is June 1, 2021. Protect line in place until in place abandonment has been completed.	Cass Rural Water Users Incorporated	1.5" Water Service Line	N/A	N/A	X	X
CACOEC-1	2,3	126+01	to	-	Crossing	PR64	1	EA	25' (+)	Level 4	Will be relocating along the proposed Right of Way for the future interchange. Will cross 64th Avenue at approximately Station 114+50. Relocation will possibly be completed before the end of 2020.	Cass County Electric Cooperative	Overhead Power Line	N/A	N/A		X
DACANE-1	3	126+66	to	-	Crossing	PR64	1	EA	28' (+)	Level 4	Will be relocating along the proposed Right of Way for the future interchange. Will cross 64th Avenue at approximately Station 114+50. Relocation will possibly be completed before the end of 2020.	Dakota Carrier Network	Fiber Optic Line	N/A	N/A		X
XCEENE-3	3	126+73	to	-	Crossing	PR64	1	EA	28' (+)	Level 4	Will be relocating along the proposed Right of Way for the future interchange. Will cross 64th Avenue at approximately Station 114+50. Estimated relocation timeline prior to July 1, 2021. Existing line will be abandoned in place once relocation is completed.	Xcel Energy	Gas Line	N/A	N/A		X
																1	5

Utility Company Information			
Utility Company	Contact Name	Phone Number	Email
Cass County Electric	Phil Windjue	701-356-4481	pwindjue@kwh.com
Cass Rural Water	Jerry Blomeke	701-428-3139	jerry.blomeke@cassruralwaterdistrict.com
Dakota Carrier Network	Mike Mack	701-364-1305	mmack@dakotacarrier.com
Xcel Energy	Brennen Wilkens	701-795-5218	brennen.wilkens@xcelenergy.com

Utility Conflict Level Designations	
(Disclaimer: the Following conflict levels were designated based on information provided by utility companies, surveyed located and limited pre-design potholing locations.)	
Level 1	Utility not exposed by proposed improvements, no impacts.
Level 2	Utility exposed by proposed improvements but no permanent impacts, contractor to protect in place and perform careful excavation.
Level 3	Utility permanently impacted by proposed improvements and requires vertical adjustment only. Horizontal location of utility will not change.
Level 4	Utility permanently impacted by proposed improvements and requires complete relocation. Vertical and horizontal location of utility will change.



STATE	PROJECT NO.	SECTION NO.	SHEET NO.
ND	SU-8-984(153)156	-	3



LEGEND	
—	Level 1 Conflict
—	Level 3 Conflict
—	Level 4 Conflict

64th Avenue South - 38th St S to 33rd St S

Utility Encounter Exhibit

64th Avenue South
Sta 126+00 to 134+00

	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
	ND	SU-8-984(153)156	-	4



LEGEND

- Level 1 Conflict
- Level 3 Conflict
- Level 4 Conflict

64th Avenue South - 38th St S to 33rd St S

Utility Encounter Exhibit

64th Avenue South
Sta 134+00 to 140+00

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

CITY OF FARGO STANDARD SPECIFICATIONS

Project: SU-8-984(153)156; PCN 21564

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 Fargo Standard Specifications	Erik Gilbertson Moore Engineering, Inc.	<i>This document was originally issued and sealed by Erik Gilbertson, Registration Number PE-5581, on 08/26/2020 and the original document is stored at the North Dakota Department of Transportation</i>
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1. SUMMARY

- A. The City of Fargo has Standard Specifications to cover the storm sewer, domestic water distribution and sanitary sewage collection portions of the project. Revisions to the Standard Specifications are provided within this Special Provision. The following City of Fargo Specifications are included:

Section	Title
1000	Excavation, Trenching, and Backfilling for Underground Work
1200	Sanitary Sewers
1300	Water Mains
1500	Storm Sewers

2. GENERAL

- A. All related requirements in these portions of the City of Fargo specifications not included in this special provision 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 Fargo Standard Specifications.
- B. Payment and measurement for storm sewer, water distribution and sanitary sewage collection items are in accordance with the City of Fargo Standard Specifications, except as noted, for the following items:

Spec	Code	NDDOT Pay Item Name	City of Fargo Specification Number & Detail	
210	0215	BACKFILL CLASS AA	1000	-
302	9970	Type II Pipe Bedding	1000	-
714	-	PIPE CONC REINF <SIZE>IN CL <TYPE>-STORM DRAIN	1500	5.1, 5.2
714	-	PIPE CONDUIT <SIZE>IN-STORM DRAIN	1500	5.1, 5.2
714	7175	PIPE PVC 36IN SEWER	1200	5.1, 5.2
722	-	MANHOLE <SIZE>IN	1500	5.3B, 5.4B
722	0300	MANHOLE SANITARY	1200	5.3, 5.5B, 5.10, 5.11, 5.12
722	-	MANHOLE RISER <SIZE>IN	1500	5.3B, 5.4B
722	3510	INLET-TYPE 2	1500	5.9B
722	3520	INLET-TYPE 2 DOUBLE	1500	5.10B
722	-	INLET SPECIAL CATCH BASIN-TYPE A <SIZE>IN	1500	5.3B, 5.4B
722	-	INLET CATCH BASIN – TYPE A <SIZE>	1500	5.8B
724	0210	FITTINGS-DUCTILE IRON	1300	5.3, 5.4
724	-	GATE VALVE & BOX <SIZE>IN	1300	5.12
724	0411	6IN HYDRANT	1300	5.5, 5.8, 5.14
724	-	WATERMAIN <SIZE>IN	1300	5.1, 5.2
724	-	<SIZE> IN SANITARY SEWER PIPE	1200	5.1, 5.2

- C. Pay item names comply with standard NDDOT naming conventions as listed above.

3. REVISIONS TO THE CITY OF FARGO SPECIFICATIONS

SECTION 1000

EXCAVATION, TRENCHING AND BACKFILLING FOR UNDERGROUND WORK

Delete Section 2.5 Trench Foundation Material and **Replace** with the following:

Use Type II Pipe Bedding as directed by the Engineer to replace soft, spongy, or other unsuitable material encountered in the trench bottom when installing sanitary sewer, storm drain, or water main.

Use Type II Pipe Bedding for the last 10 feet of all future pipe stub connections for sanitary sewer mains, storm sewer, and water mains.

Trench Foundation Material or references to "1 ¼" crushed rock" or "1 ¼" trench found rock" or "Type II Pipe Bedding" to meet the following gradation:

<u>Sieve Size</u>	<u>Percent Passing</u>
1 ½ in (37.5 mm)	100
½ in (12.5 mm)	0 – 15
No. 4 (4.75 mm)	0 – 10

Delete Section 1000 3.8.1 Rough Excavation and **Replace** with the following:

Rough excavation to be deep enough to provide at least three (3) inches of pipe embedment material as specified. Trenches to be of sufficient width to provide ample space for workmen to install the pipe. Minimum trench width of outside diameter of the bell plus 24 inches.

Delete Section 3.8.9 Maximum Trench Widths and **Replace** with the following:

It is the Contractor's responsibility to ensure all trenches are constructed in a safe manner and in accordance with all legal requirements.

The trench width at the ground surface may vary with and depend upon depth, type of soils, and position of surface structures. The minimum clear width of the trench, sheeted or unsheeted, measured at the spring-line of the pipe shall be excavated to a width that will provide adequate working space to install the pipe and mechanically tamp embedment and encasement materials, but in no case less than the manufacturer's recommendations or the outside diameter of the bell plus 24 inches. If the pipe is installed in a compacted embankment, compact pipe embedment to a point of at least 2.5 pipe diameters from the pipe on both sides of the pipe or to the trench walls, whichever is less.

Delete Section 4.2.3 Trench Foundation Material and **Replace** with the following:

Include all costs associated with dewatering, excavation, and disposal of unsuitable material in the price bid for "TYPE II PIPE BEDDING". A quantity has been provided in the plans that represents 25% of the overall underground pipe length.

SECTION 1200 SANITARY SEWERS

Add Section 2.6.7 Sanitary Manhole Coatings as follows:

All sanitary manholes to include coatings with the requirements as follows:

1. Coordinate all work to coincide with weather conditions within the selected manufacturer's requirements for installation.
2. Maintain materials and surrounding air temperature to a minimum of 50-degrees prior to, during and 48 hours after completion of all manhole coating. Follow manufacturer's recommendations.
3. Epoxy coating and topcoat may be applied by spray cast or troweling methods.
4. Warranty: Protective lining manufacturer to guarantee its products free from material and workmanship defects for a minimum period of five (5) years for all installation systems. This five (5) year warranty extends to cover failures of all components installed including leading due to natural or internal corrosion and structural failures (defined as the breaking or collapse caused by defects in materials or workmanship). Warranty to be transferred to the City of Fargo at the completion of the project.

5. Application:
 - a. Refer to manufacturer's instructions and product data.
 - b. Cast bottom manhole section with Xypex Bio-San C500 concrete additive.
 - c. Prior to applying coatings ensure that manhole surface is clean, dry and free of oil, grease and other components.
 - d. Apply basecoat to entire manhole: Tnemec Permashield 218 or approved equal.
 - e. Apply topcoat to entire manhole: Tnemec Permashield 434 or approved equal.
6. Inspection:
 - a. Verify a leak free, uniform appearance.
 - b. Repair all pinholes and visual defects.
 - c. Verify wetfilm thickness meets product requirements.
 - d. Conduct warranty inspection with Owner and Engineer 18-24 months following activation of the sanitary sewer system.

Add the following to Section 3.10 Deflection Test

Repeat mandrel test following mass grading, including transport of fill material, on all pipe crossed by construction equipment.

Delete Section 4.2.2 Sanitary Sewer Pipe and **Replace** with the following:

Measure pipe by customary and conventional methods for the actual length installed. Measurement will be from center of manhole to center of manhole or from end of existing pipe to center of manhole or end of pipe stubout. No additional or direct payment will be made for the jointing of the pipes or manhole connections.

Add to Section 4.2.4 Standard and Drop Connection Manholes with the following:

Manhole cost includes all sanitary manhole coatings described in Section 2.6.7.

Add Section 4.2.10 Sanitary Sewer Connections and Stubs as follows:

Remove existing plugs and connect to sewer mains as indicated on the plans. Contractor to provide a water tight PVC cap at all termination points. Include the cost for removing or installing a PVC cap in the price bid for "<size>In Sanitary Sewer Pipe"

Add Section 4.2.11 Gravel Backfill as follows:

All sanitary sewer main installed under the road, and 2-feet behind the back of curb to be installed with gravel backfill, see detail 5.2. Include all costs to upgrade the backfill for sanitary sewer and water main in the price bid for "Backfill Class AA".

SECTION 1300 WATER MAINS

Add the following to the end of Section 3.9 Disinfection

Water samples for bacteriological testing will only be accepted at the City of Fargo Water Plant between the hours of 8 am and 4 pm, Monday through Thursday.

Add Section 4.2.12 Gravel Backfill

All water main installed under the road, and 2-feet behind the back of curb to be installed with gravel backfill, see detail 5.2. Include all costs to upgrade the backfill for water main in the price bid for "Backfill Class AA".

SECTION 1500 STORM SEWERS

Delete parts of Section 2.1.2 and **Replace** the following items.

<u>Pipe Size</u>	<u>Class</u>
12" to 15"	Class V, C Wall
18"	Class V, B Wall

Delete Section 2.5 Polypropylene (PP) Pipe and **Replace** with the following:

2.5.1 Material

Polypropylene compound for pipe and fittings production to be impact modified copolymer meeting the material requirements of ASTM F2881, Section 5 and AASHTO M330, Section 6 for the respective diameters. Minimum pipe stiffness of 46 psi – ASTM D2412.

2.5.2 Manufacture

12-inch to 60-inch diameter pipe to be dual-wall or triple-wall pipe. Provide dual-wall pipe with a smooth interior and annular exterior corrugations and meet or exceed ASTM

F2881 and AASHTO M330, Type S. Provide triple-wall pipe with smooth interior and exterior walls and meet or exceed AASHTO M330, Type D.

2.5.3 Jointing

Join pipe with a gasketed integral bell & spigot joint meeting the requirements of ASTM F2881, for the respected diameters.

Provide watertight pipe joints according to the requirements of ASTM D3212. Spigots to include gaskets meeting the requirements of ASTM F477. Pipe manufacturer to install pipe gasket covered with a removable, protective wrap to ensure the gasket is free from debris. Manufacturer to provide a joint lubricant, to be used on the gasket and bell during assembly.

Add the following to the end of Section 3.3:

PVC and PP pipe connections to structures 48" diameter or larger shall be made with either of the following:

- A resilient watertight connector using non-magnetic 300 series stainless steel components with no welds or rivets in the assembly. Fasten connectors to the pipe using stainless steel bands. All connectors to meet the requirements of ASTM C923 and be installed into a cast or cored hole. Connector shall be Press-Seal PSX: Direct Drive or approved equal.
- A resilient watertight compression connector cast integrally with the manhole structure and meeting the requirements of ASTM C923. The connector shall be cast integrally during the manufacturing process in a manner so that it will not pull out during pipe coupling. The connector shall be cast so that it is centrally located within the wall of the structure and perpendicular to the pipe. Connector shall be A-LOK X-CEL or approved equal.

Delete Section 4.2.5 Flared-End Section (FES) and **Replace** with the following.

Install trash guard as shown in Section 1500 Drawing No. 5.16 on all end sections. Include all labor and materials necessary to install end sections and trash guards in the price bid for "Pipe Conc Reinf <Size>In Cl <Type>-Storm Drain" or "Pipe Conduit <Size>In-Storm Drain".

Add Section 4.2.7 Pipe Connections as follows:

Connect proposed pipe to existing pipe. The joints and / or connections to meet the requirements of the Specifications or be per Manufacturer's recommendations, as approved by the Engineer. The existing pipe material and size shown in Section 55 of the plan set is based on proposed infrastructure constructed by others.

Remove existing plugs at all connection points. Provide a precast plug at all termination points. Include cost of connecting to existing pipes or installing a precast plug in the price bid for "Pipe Conc Reinf <Size>In Cl <Type>-Storm Drain" or "Pipe Conduit <Size>In-Storm Drain".

Add Section 4.2.8 Gravel Backfill as follows:

All storm sewer (storm drain) installed under the road, and 2-feet behind the back of curb to be installed with gravel backfill, see detail 5.2. Include all costs to upgrade the backfill for storm sewer in the price bid for "Backfill Class AA".

Add Section 4.2.9 as follows:

Any additional material, labor, or equipment costs, or potential delays, resulting from the Contractor's selection of storm sewer pipe to be considered and included in the unit price bid. This may include, but is not limited to, costs for upsized pipe, upsized manholes due to connection requirements, additional concrete for inverts, additional adjustment rings, additional excavation, additional haunching, encasement and trench backfill, and additional contractor testing.

4. REVISIONS TO THE CITY OF FARGO DETAILS

The following details have been revised and are attached herein. The revisions are summarized as follows:

Section 1200

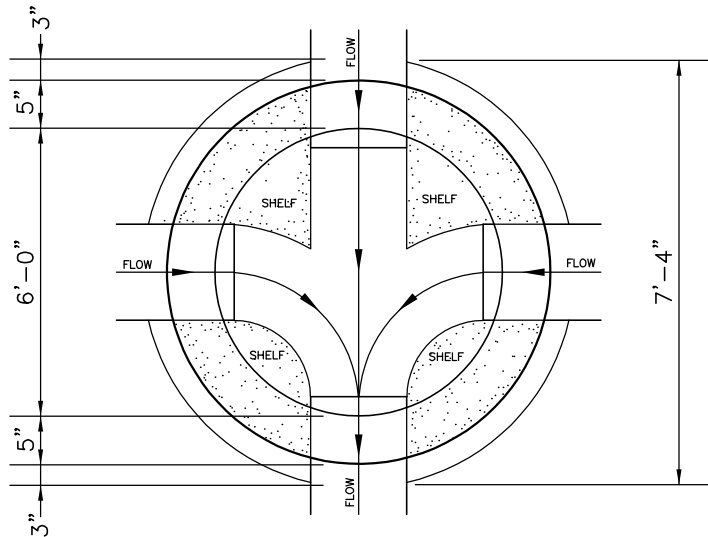
Drawing No. 5.5B: New detail for 36" mains

Section 1500

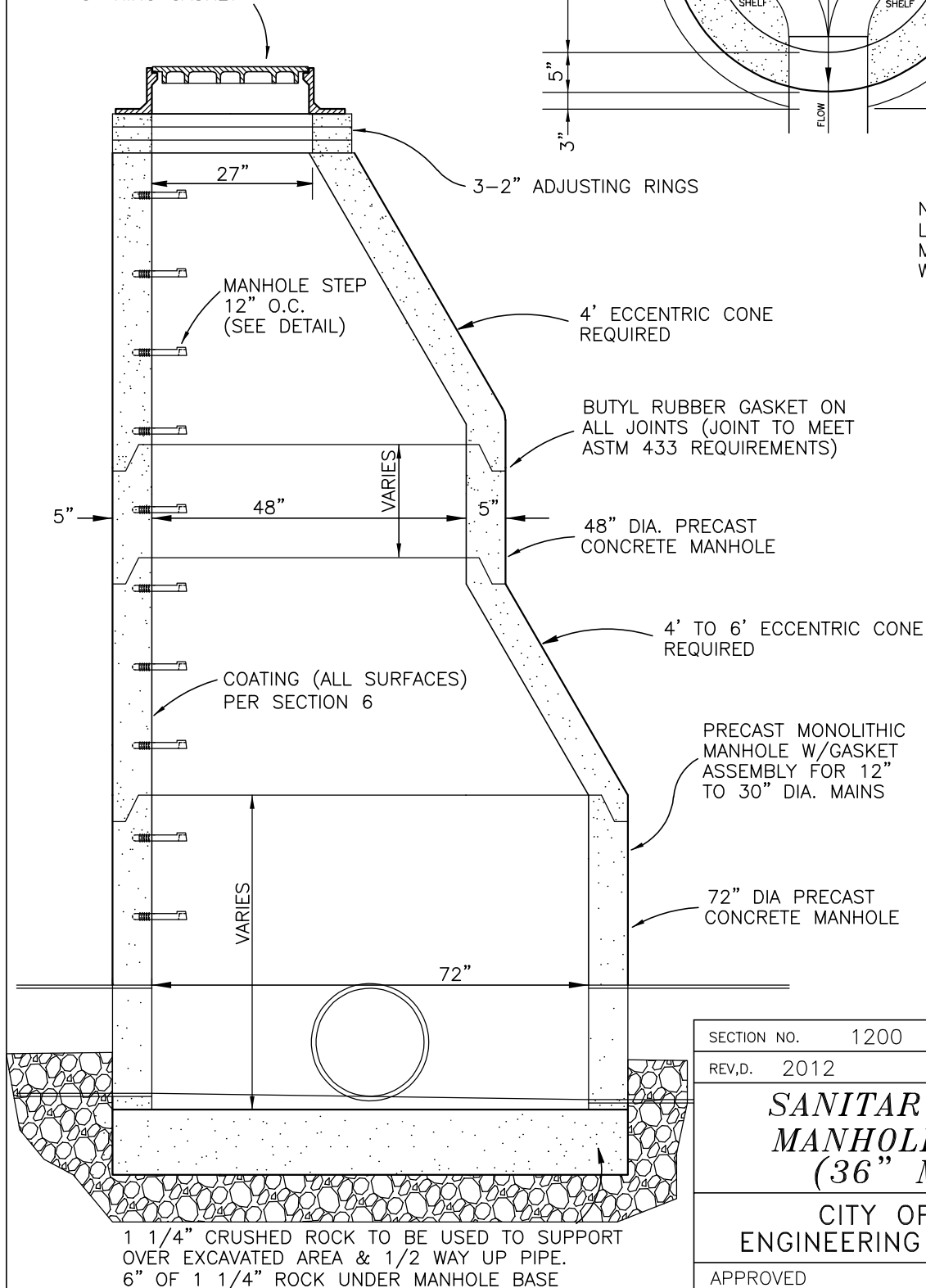
Drawing No. 5.3B	Modified detail labeling Riser/H-Distance
Drawing No. 5.4B	Modified detail depicting flat top and labeling Riser/H-Distance
Drawing No. 5.8	Modified detail labeling H-Distance
Drawing No. 5.9	Modified detail labeling H-Distance
Drawing No. 5.10	Modified detail labeling H-Distance

NOTE:
 CASTING FRAME & COVER TO BE
 NEENAH FOUNDRY CO. R-1733
 MUNICIPAL CASTINGS INC. 301-7/301A
 EAST JORDEN 1205-AGSSA
 OR APPROVED EQUAL

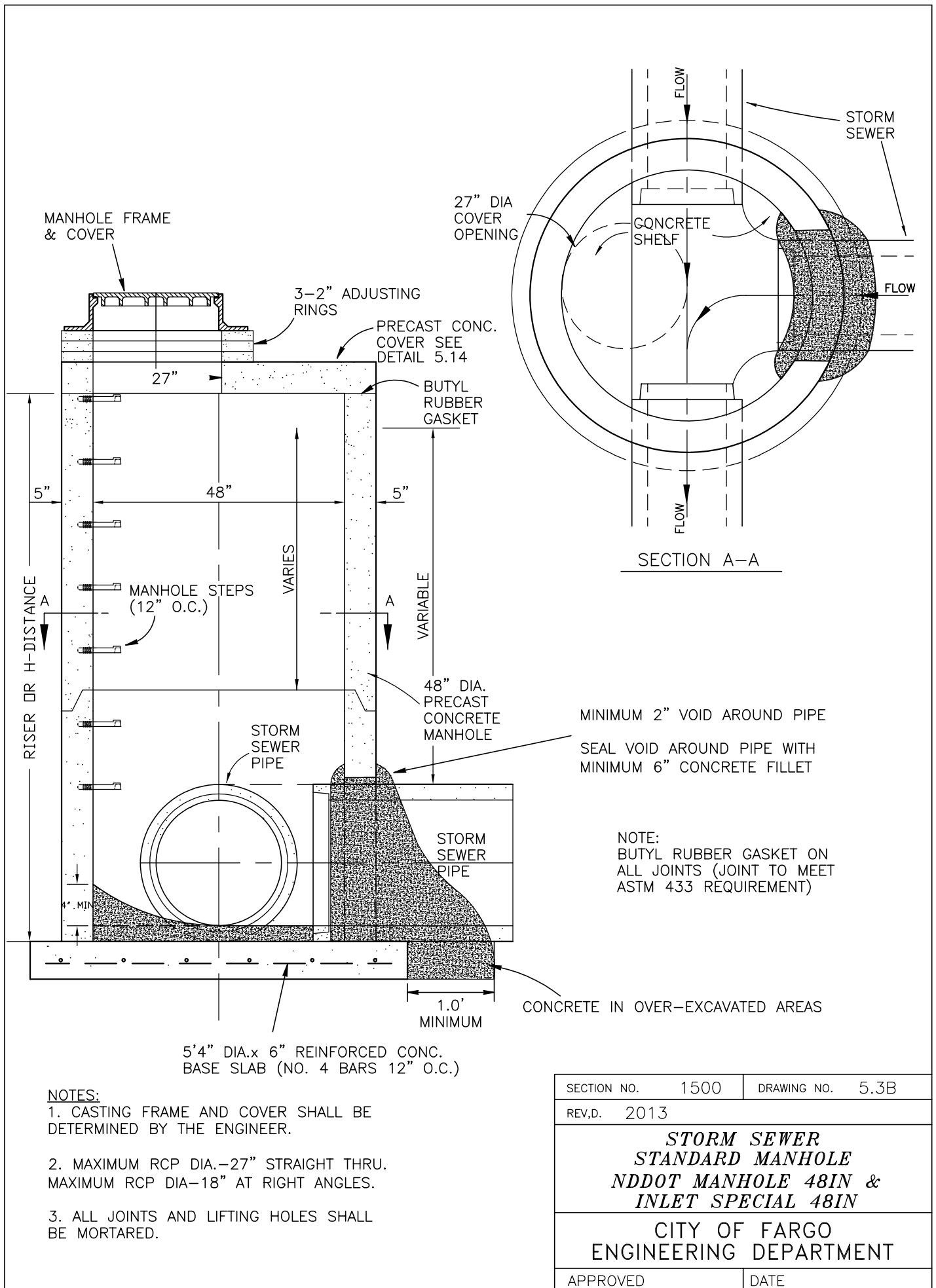
MANHOLE COVER SHALL HAVE
 -CONCEALED PICK BAR
 -"O" RING GASKET



NOTE:
 LIFT HOLES TO BE
 MANUFACTURED
 WATER PROOF



SECTION NO.	1200	DRAWING NO.	5.5B
REV.D.	2012		
SANITARY SEWER MANHOLE DETAIL (36" MAINS)			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED		DATE	



NOTES:

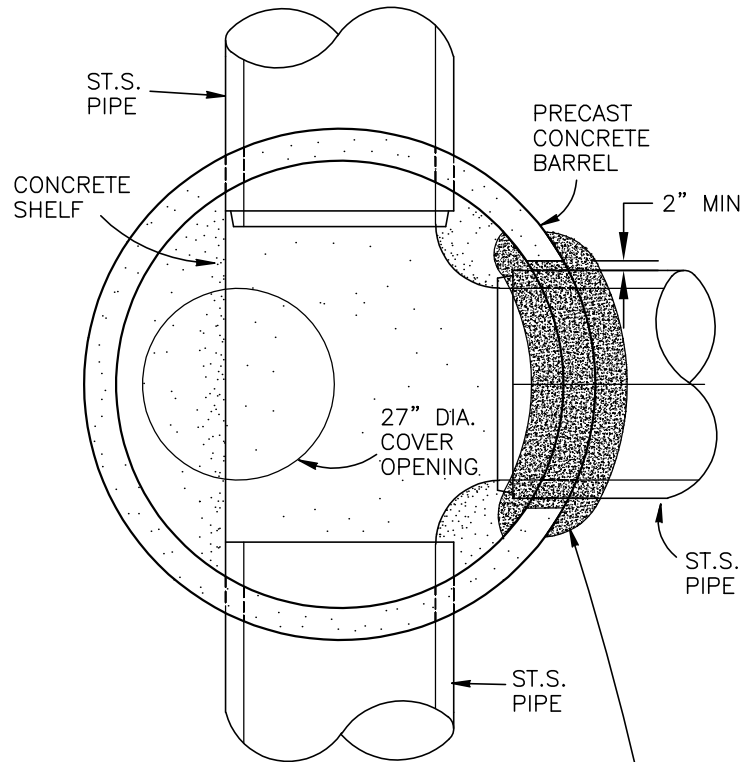
1. CASTING FRAME AND COVER SHALL BE DETERMINED BY THE ENGINEER.
2. MAXIMUM RCP DIA.-27" STRAIGHT THRU. MAXIMUM RCP DIA.-18" AT RIGHT ANGLES.
3. ALL JOINTS AND LIFTING HOLES SHALL BE MORTARED.

SECTION NO. 1500	DRAWING NO. 5.3B
REV.D. 2013	
STORM SEWER STANDARD MANHOLE NDDOT MANHOLE 48IN & INLET SPECIAL 48IN	
CITY OF FARGO ENGINEERING DEPARTMENT	
APPROVED	DATE

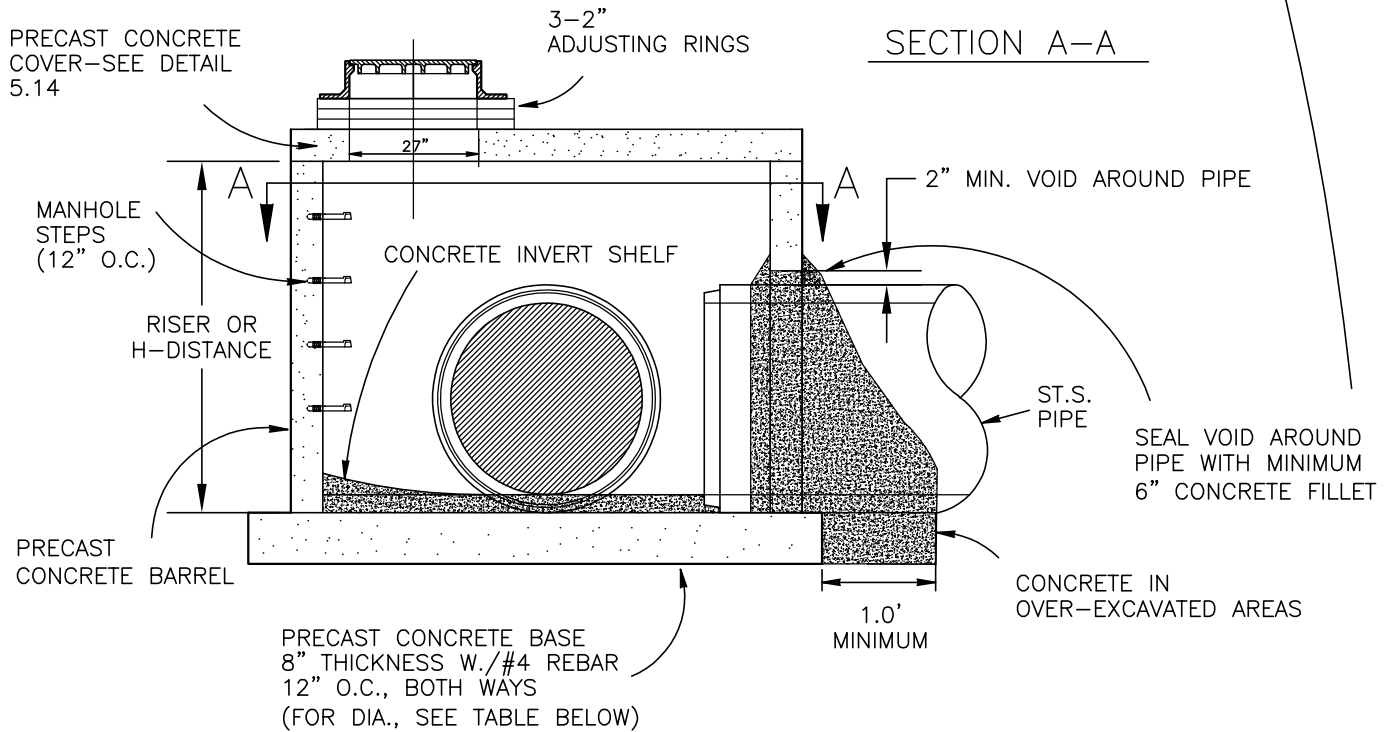
NOTES:

1. BUTYL RUBBER GASKET ON ALL JOINTS
(JOINT TO MEET ASTM 433 REQUIREMENT)

2. CASTING FRAME AND COVER SHALL BE DETERMINED BY THE ENGINEER BASED ON
STRUCTURE LOCATION & PURPOSE.

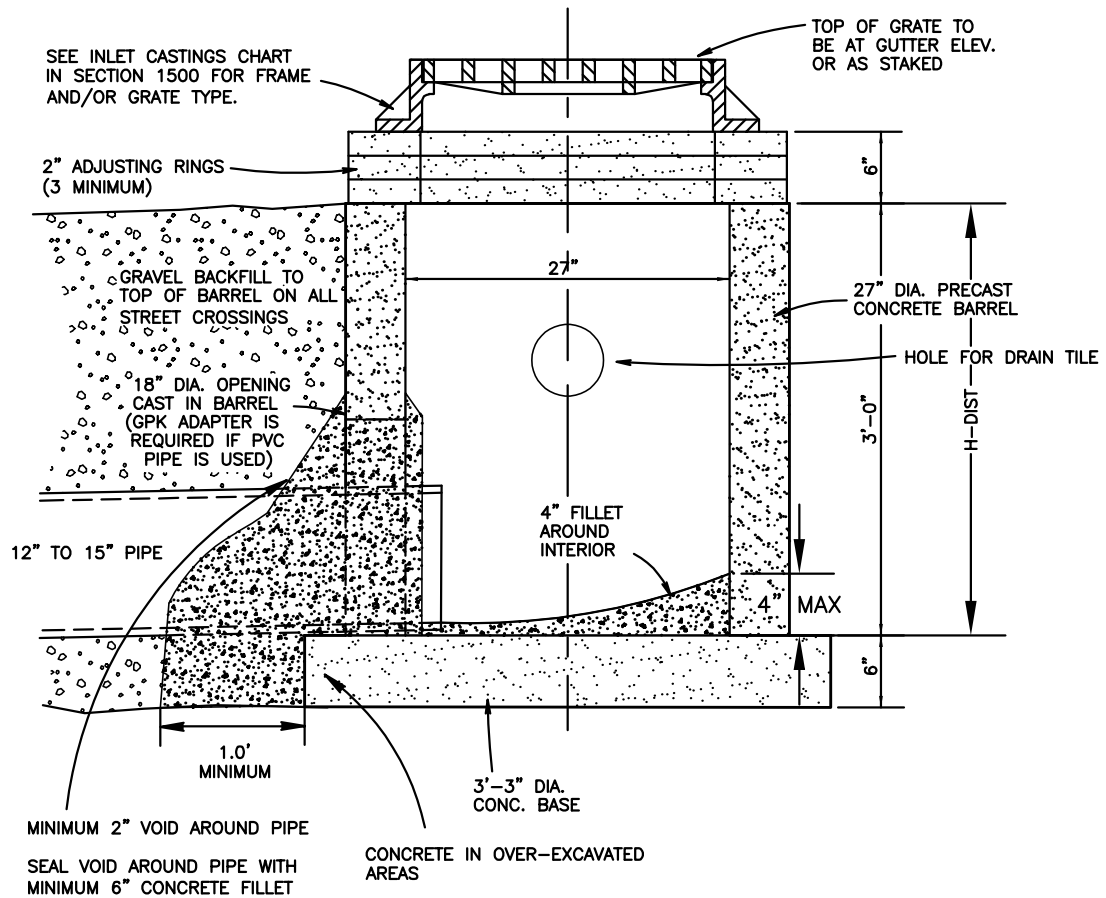
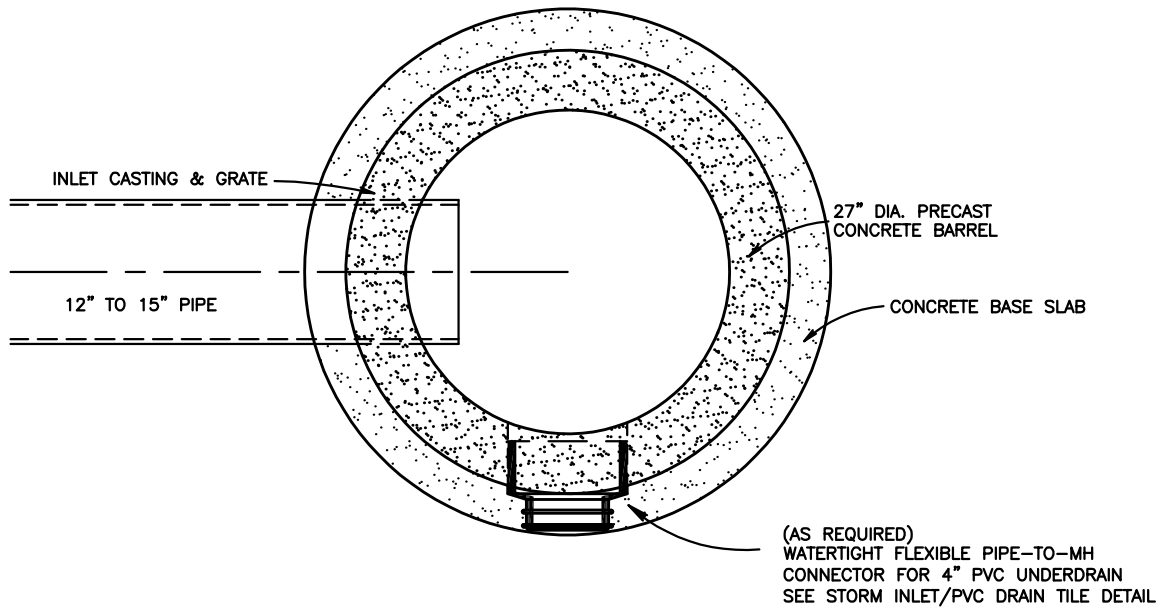


SECTION A-A

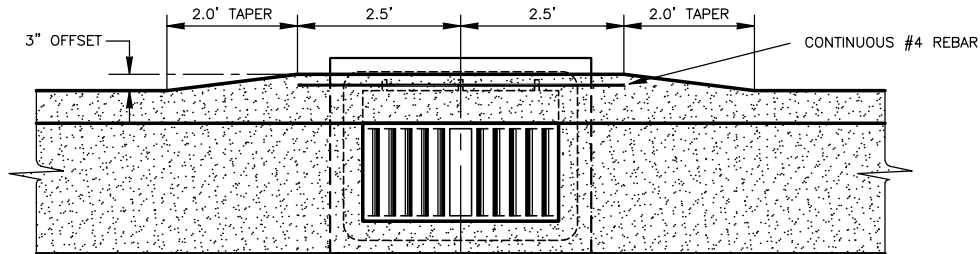
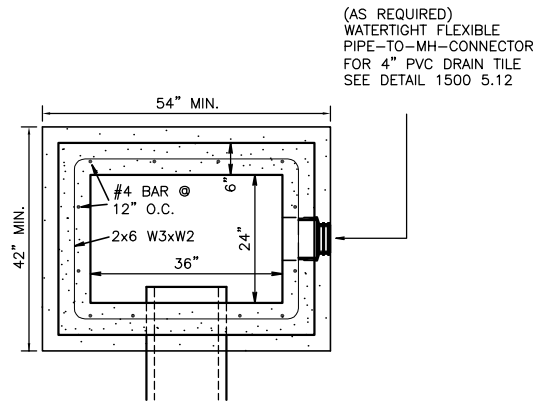
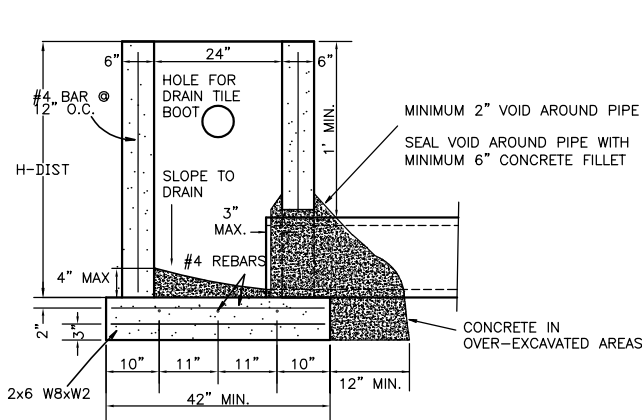


MANHOLE TYPE	(A) MANHOLE INSIDE DIA.	(B) MANHOLE OUTSIDE DIA.	MAXIMUM PIPE SIZES		
			0° ±	90° ±	135° ±
A	60"	7'-0"	36"	24"	36"
B	72"	8'-0"	42"	33"	42"
C	84"	9'-4"	48"	36"	48"
D	96"	10'-6"	60"	42"	60"

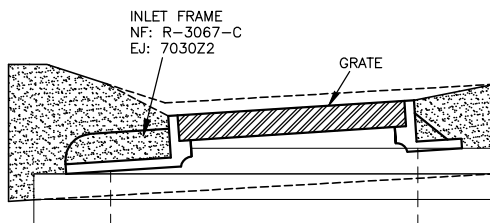
SECTION NO.	1500	DRAWING NO.	5.4B
REV.D.	2013		
<i>STORM SEWER MANHOLE TYPE "A - D" NDDOT MANHOLE 60IN - 108IN & INLET SPECIAL 60IN</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED		DATE	



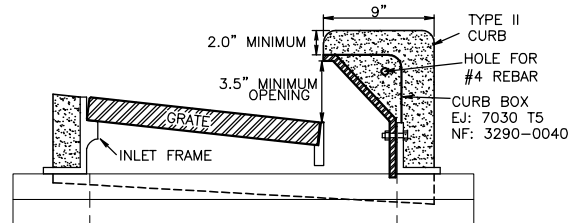
SECTION NO.	1500	DRAWING NO.	5.8
REV,D.	2013		
STORM SEWER ROUND INLET (RDI)			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED		DATE	



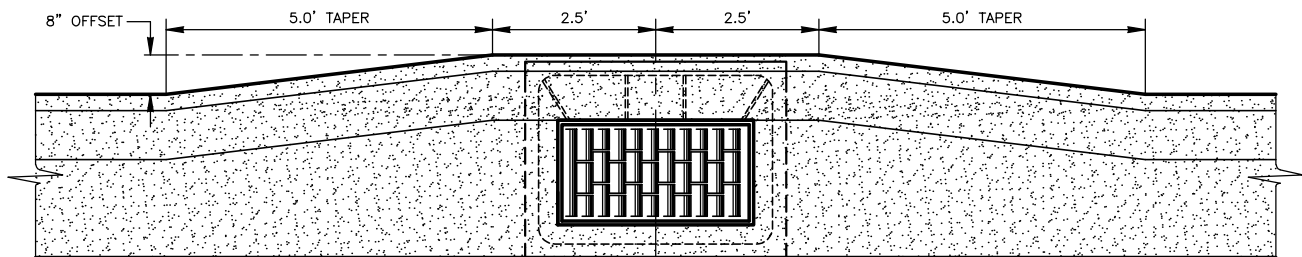
TYPE II CURB — PLAN VIEW



TYPE I CURB



TYPE II CURB



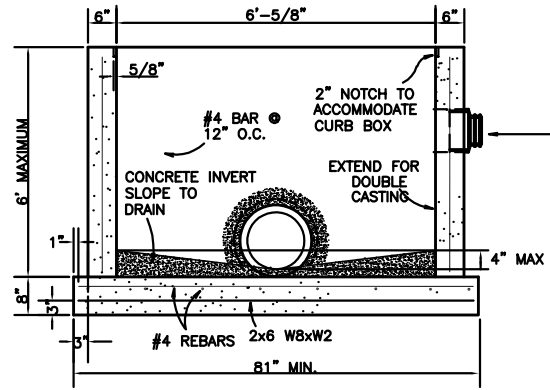
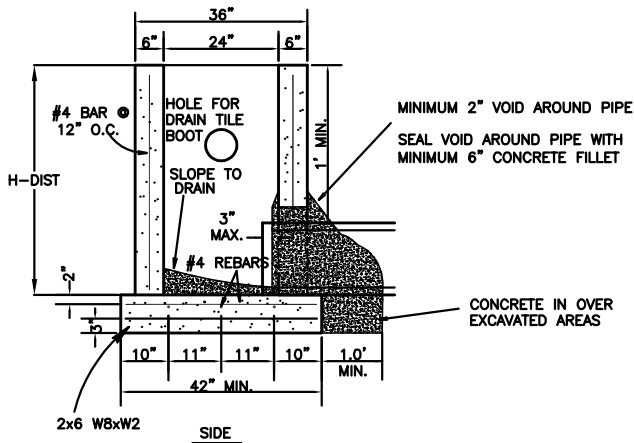
TYPE I CURB — PLAN VIEW

NOTES:

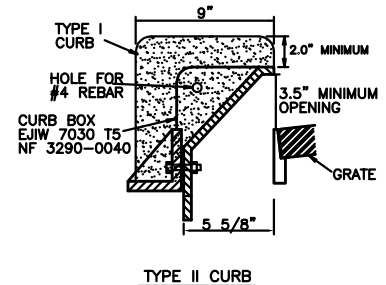
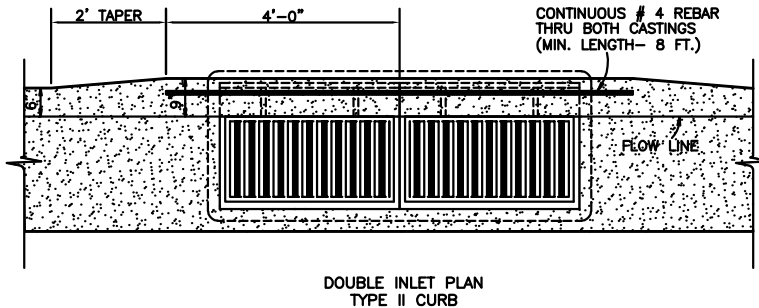
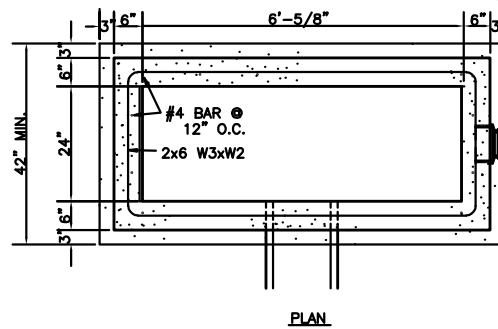
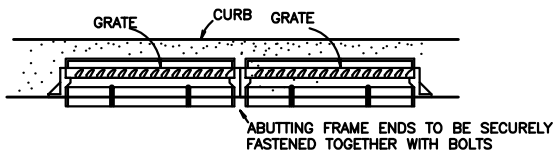
1. VERIFY FRAME, GRATE, & CURB BOX WITH INLET CASTINGS CHART IN SECTION 1500.
2. METAL USED IN THE MANUFACTURE OF CASTINGS SHALL CONFORM TO AASHTO M-105, CLASS 35B.
3. THE CONTRACTOR SHALL HAVE THE OPTION OF USING PRECAST OR POURED IN PLACE BASES. CLASS OF CONCRETE SHALL BE AE. THE AGGREGATE SIZE SHALL BE APPROVED BY THE ENGINEER IN THE FIELD.
4. PRECAST RISERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199.
5. ON PROJECTS WITH P.C.C. PAVEMENT ALL INLET RISERS OR BARRELS SHALL BE CONSTRUCTED 4 TO 5 INCHES BELOW FINAL ELEVATION AND ADJUSTED TO FINAL GRADE AFTER THE PAVING. ADJUSTMENT MAY BE DONE WITH ADJUSTMENT RINGS, MASONRY OR CAST-IN-PLACE. ALL COSTS FOR THIS ADJUSTMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE INLET.

CURB BOX
STANDARD CURB — NEENAH 3290-0040 or EAST JORDAN T5

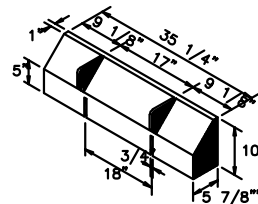
SECTION NO.	1500	DRAWING NO.	5.9
REV.D.	2013		
<p><i>SINGLE BOX INLET (SBI) DETAIL</i></p>			
<p>CITY OF FARGO ENGINEERING DEPARTMENT</p>			
APPROVED		DATE	



(AS REQUIRED)
WATERTIGHT FLEXIBLE
PIPE-TO-MH-CONNECTOR
FOR 4" PVC DRAIN TILE
SEE DETAIL 1500 5.12



CURB BOX
STANDARD CURB - NEENAH 3290-0040 or E.J. T5
MOUNTABLE CURB - NEENAH 3067-7009 or E.J. T7
OR APPROVED EQUAL



NOTES:

1. SEE INLET CASTINGS CHART IN SECTION 1500 FOR FRAME AND/OR GRATE TYPE.
2. METAL USED IN THE MANUFACTURE OF CASTINGS SHALL CONFORM TO AASHTO M-105, CLASS 35B.
3. THE CONTRACTOR SHALL HAVE THE OPTION OF USING PRECAST OR POURED IN PLACE BASES. CLASS OF CONCRETE SHALL BE AE. THE AGGREGATE SIZE SHALL BE APPROVED BY THE ENGINEER IN THE FIELD.
4. PRECAST RISERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199.
5. ON PROJECTS WITH P.C.C. PAVEMENT ALL INLET RISERS OR BARRELS SHALL BE CONSTRUCTED 4 TO 5 INCHES BELOW FINAL ELEVATION AND ADJUSTED TO FINAL GRADE AFTER THE PAVING. ADJUSTMENT MAY BE DONE WITH ADJUSTMENT RINGS, MASONRY OR CAST-IN-PLACE. ALL COSTS FOR THIS ADJUSTMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE INLET.

SECTION NO.	1500	DRAWING NO.	5.10
REV.D.	2013		
DOUBLE BOX INLET (DBI) DETAIL			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED		DATE	

**CITY OF FARGO SPECIFICATIONS
EXCAVATION, TRENCHING, AND BACKFILLING
FOR UNDERGROUND WORK**

**PART 1
DESCRIPTION OF WORK**

The terms “Excavation” and “Trenching”, either individually or collectively, as used in these Specifications and other contract documents shall refer to and shall mean all material excavated or otherwise removed, in the performance of the specified work and all subsequent handling, backfilling, and/or disposing of such material. Excavation and trenching shall include site clearing and preparation where required, subgrade preparation, boring, tunneling, bell holes, all sheeting, shoring, and dewatering of trenches and excavations, protection of adjacent property, backfilling, pipe encasement, specified backfill compaction and consolidation, surfacing, final grading and dressing of the sites to the grades and elevations shown on the drawings or specified to be done, and other work necessary or required.

PART 2 MATERIAL

2.1. CLASSIFICATION OF EXCAVATED MATERIAL

No classification of excavated material will be made. Excavation and trenching work shall include all the removal and subsequent handling of all material encountered in the excavation limits.

2.2. SURFACE RESTORATION

Unless stated specifically to the contrary in the Special Instructions, the Contractor shall replace all surface material and shall restore paving, curbing, sidewalks, gutters, fences, sod, topsoil, and other items disturbed, to a condition equal to that before the work began; furnishing all labor, material, and equipment necessary to do this work. Traveled streets shall be kept open and maintained by the Contractor after the backfilling and before surfacing or final inspection. The cost of all such work shall be absorbed in the contract unit price for size of pipe being installed unless otherwise specified in the special instructions.

2.3. BARRICADES AND LIGHTS

When streets or public thoroughfares are impacted by construction activity, the public shall be protected by placement of adequate warning devices. All open trenches and other excavations shall be provided with suitable barrier signs and lights, to the extent that adequate protection is provided to the public against accident by reason of such open construction. Obstructions such as equipment and material piles shall be provided with similar warning signs and lights.

All barricades and warning devices shall be in accordance with Section 4100 of these Specifications.

2.4. PAVING REMOVAL AND REPLACEMENT

Whenever paving or sidewalk is encountered on the line of the pipe, it shall be cut through at such places and in such a manner as the Engineer may direct. Removals shall be in accordance with Section 1050 of these Specifications.

The Contractor shall maintain all paving cuts until paving is done. Temporary patching may be done with concrete, asphalt, stabilized gravel or any other method approved by the Engineer, except for temporary patches left over the winter, which shall be concrete. Permanent patches shall be subject to the warranty period specified in the contract.

A. ASPHALT PAVING

Asphalt paving that is removed shall be replaced in kind in accordance with Section 2400 of these Specifications.

B. CONCRETE PAVEMENT REPLACEMENT

Concrete pavement and concrete base pavement that is removed shall be replaced in kind in accordance with Section 2100 of these Specifications.

C. SIDEWALK REPLACEMENT

Concrete sidewalks removed on the line of the pipe shall be replaced in kind with new sidewalk. Sidewalk replacement shall be done in accordance with Section 2300 of these Specifications.

2.5. TRENCH FOUNDATION MATERIAL

Material used for stabilizing trench bottoms shall be 100% crushed rock and shall be sized 1-1/4" minus or as specified on the plans or bid sheet.

PART 3
CONSTRUCTION

3.1. LOCATION AND PROTECTION OF EXISTING UTILITIES

The location of the public or private utilities may be shown on the plans, as reported by the various utility companies and the City, but this does not relieve the Contractor of the responsibility of determining the accuracy or completeness of said locations. North Dakota law requires the Contractor to contact ND One-Call at 800-795-0555 prior to any underground interference. The Contractor shall protect all trees, shrubs, manholes, water shut-off, survey monuments, or any other existing utilities from damage. Any utilities that are damaged during the course of the work shall be repaired or replaced to the satisfaction of the Engineer at the Contractor's expense.

3.2. CONTRACTOR TO MAINTAIN TRAFFIC AND DRAINAGE

A. TRAFFIC

The Contractor shall conduct the work in such a manner as to interfere as little as possible with the use of the street for public travel, whether vehicular or pedestrian. When it is necessary to cross or interfere with roads, driveways, and walks, whether public or private, the Contractor shall at his own expense provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of travel, and shall give reasonable notice to owners of private drives before interfering with them; provided however, that such maintenance of traffic will not be required at any point where the Contractor has obtained permission from the owner and tenant of the private property, or from the authority having jurisdiction over public property involved to obstruct traffic at any designated point thereon and for the duration of whatever period of time as may be agreed on.

B. DRAINAGE

The trenches shall be smoothed to conform to the elevations and contours of the existing ground and all sod removed or damaged shall be replaced at the Contractor's expense. The backfilling of the trench shall be done in such manner as to prevent water from accumulating in unfilled or partially filled trenches. All ditches or other watercourses crossed by the line of the trench shall be restored to their original condition immediately

after backfilling in order that surface drainage will be obstructed no longer than necessary.

3.3. CLEARING, GRUBBING, AND TREE REMOVAL

Sites that are to be occupied by permanent construction or which are to be excavated and graded shall be cleared and grubbed of all stumps, trees, logs, brush and other vegetation and debris as may be required for the proper conduct and execution of the work.

Clearing, grubbing, and tree removal shall be in accordance with Section 1050 of these Specifications.

3.4. TOPSOIL

3.4.1. STRIPPING AND STOCKPILING

The Contractor shall remove and stockpile all topsoil in areas of excavation as delineated in the field by the Engineer in accordance with Section 1050 of these Specifications.

3.4.2. TOPSOIL SPREADING AND IMPORT

All topsoil shall meet the requirements specified in Section 2000 of these Specifications.

3.5. DISPOSAL OF EXCESS MATERIAL

All excess excavated material shall become the property of the Contractor and shall be disposed of away from the work site at such locations and in such a manner as the Engineer may direct. The Contractor shall furnish a dump person at no expense to the City. Broken concrete, asphalt, and other similar materials shall be separated from the earth fill and hauled to the City of Fargo landfill.

Stockpiling: On projects where the City retains ownership of the excess material at a site designated on the plans or special instructions, the Contractor shall stockpile the material. The costs to haul and shape the material to a drainable, mowable stockpile shall be included in the cost of other bid items.

3.6. EXCAVATION FOR STRUCTURES

Except where special construction on unstable soil is authorized, all structures shall be founded on and be in direct contact with undisturbed original subsoil; all unauthorized excavation below the specified structure subgrade shall be replaced by and at the expense of the Contractor, with concrete monolithic with that of the structure, slab or foundation above.

All excavations shall be kept dry to the extent that no pipe or reinforcing steel is installed in water and that no water will be allowed to rise over the reinforcing steel prior to the concrete being placed. No water shall be allowed to come in contact with any concrete within 12 hours after placing. Such lowering of the water level shall be maintained from subgrade preparation until after the concrete has been placed and hardened. In the case of trenches, the dewatering shall be done by means of well points or other acceptable means until the pipe has been laid and backfill has been completed to a stage where danger from flotation is eliminated.

The Contractor is responsible for the condition of any sewer, drain or other conduit which may be for drainage purposes and all such pipes or conduits shall be clean and free of all sediment before acceptance thereof by the Engineer.

Concrete forms shall be required above extended footings and excavations shall provide adequate clearance for their installation and removal. In no case shall excavation faces be undercut to provide for extended footings. Not less than 6 inches clearance shall be provided between excavation faces and brick or block masonry exterior wall surfaces that are to be plastered.

Subgrade soil for all concrete structures shall be firm, dense, and thoroughly consolidated and compacted; shall be free of mud and muck; and shall be sufficiently stable to remain firm and intact under the feet of the workmen. Where necessary, a layer of concrete of sufficient strength and thickness to withstand subsequent construction activity shall be installed below the specified subgrade elevation and the structure concrete placed thereon. Coarse gravel or crushed stone may be used for subsoil reinforcement if satisfactory results can be obtained thereby. Such material shall be applied in thin layers, each layer being entirely embedded in the subsoil by thorough tamping. All excess soil shall be removed to compensate for the displacement of the gravel or crushed stone and the finished elevation of any subsoil reinforced in this manner shall not be above the specified subgrade.

3.7. STRUCTURE BACKFILL

Backfilling around and outside of structures shall be adequately compacted, to the extent necessary to prevent future settlement, by tamping or by other means approved by the Engineer. Settlement by inundation with water will be permitted only where no damage could result to the structure from hydrostatic pressure or uplift. All backfill shall be earth only, with no vegetation or debris being placed in the backfill.

Mechanically compacted backfill shall not be deposited or compacted in water and shall consist of loose, damp earth having a moisture content such that maximum density of the compacted soil will be obtained. Moisture content shall be uniform throughout and where added, it shall be made in sufficient time in advance to ensure uniform distribution throughout the backfill.

3.8. TRENCH EXCAVATION

No more than 300 feet of trench shall be open at any one time in advance of the complete construction of the pipe installation. Ordinary excavation shall be open-cut from surface, however when depth of trench and soil conditions permit, tunneling may be required beneath crosswalks, driveways, curbs and gutters, pavement and other surface structures; for such tunneling no additional compensation will be allowed over the price for open-cut excavation.

All material excavated shall be deposited alongside the trench in a manner that will cause the least inconvenience to the public and be consistent with the rapid and economical handling of the work. Sidewalks, streets, driveways, and alleys shall be kept open to traffic and all trees shall be protected from injury.

3.8.1. ROUGH EXCAVATION

Rough excavation shall be deep enough to provide at least three (3) inches of pipe embedment material as specified. Trenches shall be of sufficient width to provide ample space for workmen to install the pipe and in no case shall the trench be less than 24 inches.

3.8.2. HAND EXCAVATION

Hand excavating tools and methods shall be used in locations where the use of mechanical equipment would cause damage to trees, buildings, culverts, utilities, or other structures above or below ground.

3.8.3. TUNNEL EXCAVATION

Tunnel sections shall provide adequate clearance for the proper installation of the pipe. All bracing, shoring, or sheeting necessary for the construction of the tunnel and the proper protection of the workmen therein shall be furnished and installed by the Contractor and, where and as required by the Engineer, shall be left in place. All tunnel backfill shall be of proper moisture content and condition to readily compact, and shall be thoroughly tamped and rammed into the annular space around the pipe.

3.8.4. ALIGNMENT, GRADE, AND MINIMUM COVER

The alignment, grade and elevation shall be fixed and determined by means of offset stakes located by the Engineer. The minimum cover over water lines and the minimum separation from sewer lines shall be in accordance with Section 1300 of these Specifications. Care should be taken to maintain depth of cover under ditches, vertical curves, gutters and on service lines. Cover over sewers and sewage force mains shall be as shown on the plans and as staked by the Engineer.

3.8.5. REPLACEMENT OF UNSUITABLE PIPE FOUNDATION MATERIAL

When, in the sole opinion of the Engineer, the trench bottom is not suitable to provide a uniform base for the pipe, the trench shall be undercut to sufficient depth to build an acceptable base.

3.8.6. ARTIFICIAL TRENCH FOUNDATIONS

Whenever so ordered by the Engineer, the Contractor shall excavate to such depth below grade as the Engineer may direct and the trench bottom shall be brought to grade with such artificial material(s) as the Engineer may order installed. All timber, concrete foundations, wooden invert, pipes, posts, stringers, and/or saddles made necessary by quicksand or other treacherous soil, shall be installed as directed by the Engineer.

3.8.7. *DEWATERING OF TRENCHES*

Pipe trenches shall be kept free from water during excavation, grading, pipe laying and embedment in an acceptable manner. When the trench bottom is unstable due to ground water, and in all cases where the static ground water level is above the bottom of the trench or bell hole excavation, such ground water shall be lowered by means of well points and pumps or by other means acceptable to the Engineer, to the extent necessary to keep the trench free from water and the trench bottom stable at all times the work is in progress. The disposal of the wastewater from trench dewatering operations shall be piped/routed to existing drainage ditches, channels or drains, subject to the approval of the Engineer. Surface water shall be diverted to prevent it from entering trenches to the greatest extent possible without damage to adjacent property from dikes, ditches, or impounded water. The ND Storm Water Permit shall govern dewatering methods.

3.8.8. *FINISH GRADING OF TRENCH BOTTOM*

Trench bottoms shall conform to the grade and elevation to which the pipe is to be laid and the gravel bedding shall be accurately compacted, graded, and shaped to provide uniform bearing and support for each pipe along its length between bell holes before the pipe is laid in the trench.

In the event that after placing the pipe in the trench it is found that the prepared trench bottom is not at the proper elevation, the pipe shall be removed and the grade corrected. In no case shall the pipe be raised from and dropped in the trench bottom for the purpose of lowering a subgrade that is too high.

A. BELL HOLES

Bell holes in the trench bottom shall be dug after the trench has been graded. Each bell hole shall be dug immediately prior to placing the pipe in the trench. Regardless of the type of joint, all bell holes shall be of sufficient depth and size that the joints can be properly made with no part of the pipe bell in contact with the trench bottom.

A.1. SANITARY AND STORM SEWERS

Bell holes shall not be longer than 1/4 of the pipe laying length nor exceed 18 inches.

A.2. WATER LINES

Bell holes shall be large enough to properly make the joint, and no part of the pipe bell is in contact with the pipe bottom.

B. EXCAVATION FOR CONCRETE ENCASEMENT OR EMBEDMENT OF THE PIPE

Where concrete encasement or embedment is required, trench subgrade elevation will be determined by the thickness of the required concrete section. The horizontal dimension shall be at least the minimum trench width permitted for the pipe being laid and shall extend the full width of the trench as excavated and shall be poured against vertical trench walls. In the case of a sheeted trench, the concrete shall be poured against sheeting that has been left in the trench.

3.8.9. *MAXIMUM TRENCH WIDTHS*

Trenches shall be excavated to a width that will provide adequate working space to install and embed the pipe. However, in order to protect the pipe from loading in excess of design conditions, the width of the lower portion of the trench to a point 6 inches above the pipe shall not exceed 24" plus the outside diameter of the bell.

3.8.10. *UNAUTHORIZED TRENCH WIDTHS*

Where, for any reason, the width of the lower portion of the trench exceeds the maximum permitted, pipe of adequate design, special pipe embedment, rock encasement, or arch concrete encasement as required by loading conditions and as determined by the Engineer shall be furnished and installed by the Contractor at his sole expense. The determination of necessary pipe, special embedment or arch concrete encasement shall be based on pipe strength equal to the minimum three-edge bearing ultimate strength stipulated in the governing pipe specification for the size and type of pipe involved. Trench loading will be based on saturated backfill weighing 120 pounds per cubic foot with suitable allowances for trench or other live loads where required.

3.8.11. TRENCH BRACING AND SHEETING

Sheeting, bracing, or pulling a trench box or shield shall be used and maintained where necessary to comply with City, County, State and Federal regulations to protect personnel & property on the job. The cost of such sheeting, unless a special price is called for in the contract, shall be included in the bid price per foot of pipe. In order to meet trench width provisions, it is not possible for the trench box or shield to be on grade at the bottom of the pipe. The box shall be made to rest on a ledge cut along each side of the top of the pipe, and a narrower and deeper trench shall be cut inside the box to accommodate the bedding material, pipe, and backfill material up to the top of the pipe. This installation is necessary to maintain the strength of the flexible pipe and pipe envelope and to prevent excessive deflection when the box is moved forward and the pipe trench is backfilled.

In the event it is necessary to extend sheeting or bracing to the bottom of the trench, all materials used therein, except cross braces that interfere with the pipe installation, shall be left in place. Where sheeting is left in place, it shall not be braced against the pipe, but shall be supported by stakes driven into the trench bottom on each side of the pipe and with tops of the stakes supported by cross braces above the top of the pipe or by other means, approved by the Engineer, which will not result in the application of concentrated loads or horizontal thrust on the pipe. These cross braces may be removed after the specified pipe encasement has been completed beyond the point of cross brace removal.

3.8.12. SHEETING LEFT IN TRENCH

The Contractor may make written request to the Engineer for permission to leave timber in a trench and receive payment for the same. Such request must state location, the amount of timber, and the reason for leaving it in the trench. When such request is made and granted, payment shall be made only for the timber left in the trench at current prices in the City of Fargo. No timber shall be left in the trench without written order of the Engineer.

3.8.13. DISPOSAL OF EXCESS EXCAVATED MATERIAL

All excess material removed from trenches shall be disposed of at such location and in such manner as the Engineer may direct. Any material loaded, hauled, and dumped within a two (2) mile radius of the project shall be done by and at the expense of the Contractor. The Contractor shall level the dumpsite to the satisfaction of the Engineer.

3.9. HAUNCHING, ENCASEMENT, AND TRENCH BACKFILL

The bedding material shall be placed so that after the pipe is laid, the bedding will extend up the sides of the pipe a distance of 1/2 the pipe diameter, where the material shall then be shovel-sliced and tamped with mechanical tamping equipment to provide uniform bearing along the entire length of pipe.

Generally, most of the trenches backfilled in the City of Fargo will be backfilled with the excavated material, however in certain cases, special types of backfill will be used. No trench backfill containing rock or detritus from rock excavation shall be placed in the upper 12 inches of the trench nor shall any rock, stone, concrete or boulder larger than 8 inches be placed within 6 inches of any portion of installed pipe. Large stones or concrete pieces may be placed in the remainder of the trench backfill only if well separated and so arranged that no interference with backfill settlement will result.

*3.9.1. TYPES OF BACKFILL AND ENCASEMENT MATERIAL**A. COMPACTED EARTH BACKFILL*

Compacted earth backfill shall be free from sticks, large roots, or other organic material coarser than grass roots, stones, hard lumps, and clods and shall have a moisture content such that optimum compaction is obtained when PROPERLY TAMPED OR ROLLED.

B. UNCOMPACTED OR WATER SETTLED EARTH

All earth backfill not required to be tamped or rolled, including all earth backfill settled with water, shall be free of brush, roots more than 2 inches in diameter, or other organic material that would interfere with proper settlement and consolidation.

C. GRAVEL OR SAND BACKFILL

Gravel for backfill shall meet the requirements for ND Class 3 with the Number 200 sieve requirement modified to be 3-15% passing. When the aggregate does not meet the gradation specified for all required samples, a reduction in the contract unit price will be made for such material in accordance with the acceptance requirements for Aggregate Base outlined in the current version of the NDDOT Standard Specifications for Road and Bridge Construction.

D. PIPE ENCASEMENT

All gravel for pipe encasement shall meet the requirements specified above.

E. CONCRETE ENCASEMENT

All concrete for encasement shall be 3000 psi Portland Cement Concrete.

3.9.2. PIPE ENCASEMENT METHODS

A. GRAVEL ENCASEMENT AND HAUNCHING

The pipe shall be bedded and encased in gravel encasement as specified. After the pipe has been graded, aligned and joined, sufficient gravel encasement material shall be deposited and compacted under and around each pipe in 6" lifts with mechanical tamping equipment to firmly support and hold the pipe in position during subsequent pipe laying activity. Gravel encasement material shall be deposited in such a manner that it is scattered along the pipe and not dropped in a compact mass.

All pipe and bells shall be covered with a minimum of 3 inches of gravel above the pipe. The gravel shall not be "humped" over the pipe but shall be level from one side of the trench to the other.

For concrete storm sewers, gravel encasement shall only be required to 1/2 way up on the pipe. PVC and PP storm sewer shall be covered with a minimum of 3" of gravel above the pipe.

B. CONCRETE ENCASEMENT

The pipe shall be encased in concrete when called out on the plans or as determined by the Engineer. Materials shall be as specified and constructed as directed by the Engineer.

Loose material shall be removed from the trench and the concrete placed with continuous contact with undisturbed soil on the sides and bottom of the trench. A base course of concrete shall be screeded to a level that ensures the pipe to be at the specified grade. Each length of pipe shall be held in rigid alignment and braced to prevent flotation. The pipe joints shall be carefully sealed to prevent entrance of concrete mortar and water into the joints. The cementing or sealing of the joints shall be done at least one hour before the encasement is poured.

3.9.3. BACKFILLING ABOVE PIPE ENCASEMENTS

Normal backfill above pipe encasement shall be done with excavated earth backfill and compacted. Compacted gravel backfill above encasement for the entire depth of the trench will be required beneath pavements, driveways, parking areas, curbs, gutters, walks or other surface construction; road and highway shoulders; and all tunnel backfill, except where a clay capped trench is required (see standard details).

The locations of compaction tests will be determined by the Engineer in the field. The Contractor shall assist with, and make all necessary accommodations for compaction and material testing at no additional compensation.

3.9.4. COMPACTION METHODS

A. STANDARD COMPACTION OF BACKFILL

The backfill shall be compacted to 90% of Standard Proctor Density for areas outside the street right-of-way and 95% of Standard Proctor Density for all trenches located in street right-of-ways unless otherwise noted on the plans or special instructions. Moisture content shall be between optimum and +6% of optimum for earth backfill and between 4% of dry weight and optimum for gravel backfill. Where excessive ground moisture is encountered, the Engineer

may relax the earth backfill moisture requirements, in which case the Contractor shall provide compactive effort satisfactory to the Engineer to achieve compaction as close to zero-air voids as possible.

Before any compaction is begun, two (2) feet of backfill shall be placed over the encasement to prevent damage to the installed pipe. Backfill shall be compacted in successive 12-inch layers. If pneumatic hand tampers are used, the backfill shall be installed in 6-inch layers. Pneumatic tampers are to be used only in areas that are not accessible to heavier duty or motorized compaction equipment. The Contractor shall take special care to uniformly compact all portions of the trench, particularly the valve boxes and manholes, as he is responsible for damage caused by future settlement due to improper compaction.

B. WATER SETTLEMENT OF BACKFILL

Earth, gravel and sand backfill may be compacted by the water settlement or “flushing” method where permitted by the special instructions or by the Engineer and where water and fire hydrants are available. Water shall be applied in a manner that will use a minimum of water yet provide effective settlement of the backfill. In no case shall the trench be allowed to overflow or water to be wasted. Generally, the water shall be introduced into the bottom of the trench as quickly as possible by forcing the hose vertically downward in the trench and regulating the flow to promote consolidation.

3.10. FINAL INSPECTION

After the Contractor has completed the installation of the public facility and any clean-up items, he shall make a written request to the Engineer for a final inspection. Upon receipt of this request, the Engineer will set a date and time for the final inspection. The final inspection request form can be found on the City’s website.

PART 4
GUARANTEE, MEASUREMENT & PAYMENT

4.1. GUARANTEE

The guarantee shall be per the contract, and shall include trench settlement. When settlement occurs during the guarantee period, the Contractor shall fill the settled area with imported topsoil and reseed, or repair settled curb, pavement, etc. as applicable, at no additional cost to the City.

4.2. MEASUREMENT AND PAYMENT

4.2.1. EXCAVATION AND BACKFILL FOR STRUCTURES

All costs for excavating and backfilling of structures shall be included in the cost of the structure unless indicated as a separate bid item on the bid sheet. Where gravel is indicated as a separate bid item on the bid sheet, it will be measured and paid for on a cubic yard basis.

4.2.2. TRENCHING

The cost of trenching and subsequent handling of the material regardless of character or condition shall be included in the contract unit price for the pipe per linear foot in place.

4.2.3. TRENCH FOUNDATION MATERIAL

The contract unit price for “Trench Found” for the size of pipe being installed shall include all costs for removal of unsuitable material and replacement with material meeting the specifications for Foundation Material.

Where no bid item exists, the Contractor will be paid the actual cost of the delivered foundation material plus 15%, with no allowance for excavation nor the installation of the material.

4.2.4. ARTIFICIAL TRENCH FOUNDATIONS

Where not otherwise provided for in the special instructions or on the bid sheet, compensation for extra excavation and artificial trench foundations shall be made in accordance with Section 9000 of these Specifications.

4.2.5. BACKFILL

Backfilling of trenches will be paid as follows:

- A. STANDARD COMPACTION OF BACKFILL: All costs for standard compaction of backfill shall be included in the contract unit price for the size of pipe being installed.
- B. GRAVEL BACKFILL: All costs for installing and compacting gravel backfill shall be included in the “w/Gravel Backfill” contract unit price for the size of pipe being installed. The contract unit price shall include the cost of loading, hauling, and dumping of the excavated material.

In the event no “w/Gravel Backfill” bid item is provided on the bid sheet for the size of pipe being installed with gravel backfill, gravel backfill will be paid for by the cubic yard as an extra to the contract. The Contractor will be paid the actual cost of the gravel backfill material plus 15% with no allowance for the installation. The cubic yards of gravel will be calculated by multiplying the length of the trench by the height as measured from the top of the pipe encasement to the bottom of the existing pavement (or top of gravel if not under hard surfacing). This product will then be multiplied times the average width; however the width shall not exceed the outside diameter of the pipe bell plus 24 inches at the bottom of the trench and 48 inches plus the outside diameter of the pipe at the top.

- C. WATER SETTLED BACKFILL: All costs for this type of backfilling shall be included in the contract unit price for the size of pipe being installed.

4.2.6. GRAVEL ENCASEMENT

All costs of furnishing and placing the gravel encasement shall be included in the contract unit price for the size of pipe being installed.

4.2.7. CONCRETE ENCASEMENT OF PIPE

If concrete encasement is shown on the plans and not included as a separate item on the bid sheet, its cost shall be included in the contract unit price for the size of pipe being installed. In cases where unforeseen conditions warrant the use of concrete encasement and such has not been included on the plans or bid sheet, it will be paid for in accordance with Section 9000 of these Specifications.

4.2.8. PAVEMENT AND SIDEWALK REMOVAL AND REPLACEMENT

If pavement or sidewalk removal is shown on the plans and not included as a separate item on the bid sheet, its cost shall be included in the contract unit price for the size of pipe being installed. In cases where a separate bid item exists for pavement or sidewalk removal and replacement, the maximum width of concrete or asphalt pavement that will be paid for is 48 inches plus the outside diameter of the pipe bell. Any removal in excess of these limits will be at the expense of the Contractor unless the Engineer designates additional removal.

4.2.9. TREE REMOVAL

Tree removal shall be in accordance with Section 1050 of these Specifications.

4.2.10. CLEARING AND GRUBBING

Clearing and Grubbing shall be in accordance with Section 1050 of these Specifications.

4.2.11. TOPSOIL

Topsoil will be paid as follows:

A. TOPSOIL STRIPPING:

Topsoil stripping shall be in accordance with Section 1050 of these Specifications.

B. TOPSOIL SPREADING:

Topsoil spreading shall be in accordance with Section 2000 of these Specifications.

C. TOPSOIL IMPORT:

Topsoil import shall be in accordance with Section 2000 of these Specifications.

**CITY OF FARGO SPECIFICATIONS
SANITARY SEWERS**

**PART 1
DESCRIPTION OF WORK**

The work to be done under this section of the Specifications and the accompanying plans consists of the furnishing of all labor, material, accessories and equipment necessary to construct sewers in the City of Fargo. The work includes excavation, removal and replacement of paving where encountered; furnishing, laying and jointing pipe; making connections to existing sewers and manholes as necessary; constructing new manholes; protecting existing utilities and public and private property; backfilling trenches; bypass pumping and other work as may be necessary in order that the work may be completed in accordance with these Specifications and the plans accompanying them.

PART 2
MATERIAL

2.1. SOLID WALL POLYVINYLCHLORIDE (PVC) SEWER PIPE

2.1.1. MATERIAL

The material shall conform to “Standard Specifications for Rigid Polyvinyl Chloride Compounds”, ASTM D-1784, Class 12454-B or 12454-C or 12364-C. The pipe shall be produced using a continuous extrusion process employing a prime grade of white unplasticized polyvinyl chloride.

2.1.2. PIPE MANUFACTURE

The PVC sewer pipe and fittings 8” in diameter shall meet ASTM D3034, SDR 26 requirements; 10” to 15” in diameter shall meet the requirements of ASTM D3034 SDR 35 minimum; PVC pipe and fittings larger than 15 inches in diameter shall meet the requirements of ASTM F 679, wall thickness T-1, pipe stiffness of 46 psi. When pipe is installed at depths of 18 feet or more, SDR 26 with a pipe stiffness of 115 psi shall be used.

2.1.3. JOINTING

The joint system shall be an integral bell gasketed joint that forms a watertight seal in accordance with ASTM Specification D3212 and F477.

2.1.4. SERVICES

Services shall be made by the use of in-line wyes or, with the Engineer’s approval, saddle wyes may be used. Saddle wyes shall be PVC with a rubber gasket and shall be installed as per the manufacturer’s recommendation and attached with two stainless steel straps.

2.2. CLOSED PROFILE POLYVINYL CHLORIDE SEWER PIPE

2.2.1. MATERIAL

The pipe and fittings be made of PVC plastic meeting the requirements of ASTM D-1784 having a minimum cell classification of 12364 -A.

2.2.2. MANUFACTURE

The PVC profile wall pipe and fittings shall meet the requirements of ASTM F 794 latest edition and have a minimum pipe stiffness of 46 psi. Closed cell PVC pipe will only be allowed in 21-inch diameter or larger.

2.2.3. JOINTING

The joint system shall be of the bell and spigot type with a gasket that meets the requirement of ASTM D3212 & F477 to form a watertight seal. Gaskets shall be factory installed and chemically bonded to the bell end of the pipe. Field cuts and field installed gaskets shall be done in accordance with the manufacturer's instructions and his recommended equipment and materials.

2.2.4. SERVICE CONNECTIONS

Connections to the pipe shall be made with GPK in-line fittings, GPK saddle wyes, or "Inserta-Tee" as manufactured by Fowler Manufacturing or approved equal. Installation shall be as per the manufacturer's recommendation. Exposed channels in the PVC profile pipe shall be sealed with 3M industrial sealant 612, 3M 605 urethane adhesive, or Hilti C-100 sealant.

2.2.5. APPROVED MANUFACTURERS

Vylon High Capacity and Diamond Plastics Pro-21 closed profile PVC pipes are approved products.

2.3. DUCTILE IRON PIPE

2.3.1. MATERIAL

Ductile iron pipe shall meet the requirements of ASTM A-746 Standards.

2.3.2. MANUFACTURE

The ductile iron pipe will be push-on joint type and shall be coated on the exterior with bituminous and on the interior with a factory applied minimum nominal thickness of 40 mil polyethylene lining. All ductile iron pipe shall be encased in 8-mil polyethylene plastic film or 4-mil cross-woven polyethylene plastic film. Pipe shall be Class 53 and ductile pipe will only be used with the Engineer's prior approval.

2.3.3. JOINTING

Joints shall meet the requirements of ANSI/AWWA C 111/A21.11.

2.3.4. SERVICES

Services shall be made by the use of in-line wyes or, with the Engineer's approval, saddle wyes may be used. Saddle wyes shall be PVC with a rubber gasket and shall be installed as per the manufacturer's recommendation and attached with two stainless steel straps.

2.4. REINFORCED CONCRETE PIPE

2.4.1. MATERIAL

Material, manufacture and testing of reinforced concrete pipe shall comply with ASTM C76 and to Section 1500-2.1 of these Specifications.

2.4.2. MANUFACTURE

The class and wall type will be as indicated on the plan sheets and shall meet the testing requirements as set forth in the latest edition of ASTM C76. All interior surfaces shall be spray coated with a 14-20 mil thick coating of Coal Tar Epoxy. Special coatings, if required, shall be as specified in the special instructions on the particular project. Concrete pipe will only be allowed when directly specified on the plans.

2.4.3. *PVC SHEET LINER*

1. General

All work for and in connection with the installation of the lining in concrete pipe, and the field sealing and welding of joints, shall be done in strict conformity with all applicable specifications, instructions, and recommendations of the lining manufacturer.

The manufacturer of the lining shall furnish an affidavit attesting to the successful use of its material as a lining for sewer pipes for a minimum period of ten years in sewage conditions recognized as corrosive or otherwise detrimental to concrete.

2. Material

2.1. Liner shall be Ameron T-Lock as manufactured by Ameron Protective Linings Division or approved equal.

2.2. Composition

The liner must be continuous and free of pinholes, both across the joints and in the liner itself. The material used in the liner and in all joint, corner, and welding strips shall be a combination of poly (vinyl chloride) resin, pigments, and plasticizers, specially compounded to remain flexible. Poly (vinyl chloride) resin shall constitute not less than 99 percent, by weight, of the resin used in the formulation. Copolymer resins will not be permitted.

2.3. Physical Properties

2.3.1. All plastic liner plate sheets, joint, corner, and welding strips shall have the following physical properties when tested at 77°F+/-5°.

Property	Initial	(Par.2.4)
Tensile strength	2200 psi min.	2100 psi min.
Elongation at break	200% min.	200% min.
Shore durometer, Type D	1 sec. 50 - 60 10 sec. 35 - 50	+/- 5 with respect to +/- 5 initial test result
Weight change		+/- 1.5

2.3.2. Tensile specimens shall be prepared and tested in accordance with ASTM D412 using die B.

2.3.3. Liner plate locking extensions embedded in concrete shall withstand a test pull of at least 100 pounds per linear inch, applied perpendicularly to the concrete surface for a period of one minute, without rupture of the locking extensions or withdrawal from embedment. This test shall be made at a temperature of 70 - 80° F inclusive.

2.3.4. The lining shall have good impact resistance, shall be flexible, and shall have an elongation sufficient to bridge up to 3-inch settling cracks, which may occur in the pipe or in the joint after installation, without damage to the lining.

2.3.5. The lining shall be repairable at any time during the life of the pipe or structure.

2.4. Chemical resistance

After conditioning to constant weight at 110° F, tensile specimens and weight change specimens shall be exposed to the following solutions for a period of 112 days at 77° F +/- 5°.

At 28-day intervals, tensile specimens and weight change specimens shall be removed from each of the chemical solutions and tested in accordance with

Paragraph 2.3.2. If any specimen fails to meet the 112-day requirements before completion of the 112-day exposure, the material will be subject to rejection.

Chemical Solution	Concentration
Sulfuric acid	20% *
Sodium hydroxide	5%
Ammonium hydroxide	5% *
Nitric acid	1% *
Ferric chloride	1%
Sodium hypochlorite	1%
Soap	0.1%
Detergent (linear alkyl benzyl sulfonate or (LAS)	0.1%
Bacteriological	BOD not less than 700 ppm.

* Volumetric percentages of concentrated C.P. grade reagents.

2.5. Pipe-size sheets and accessories

2.5.1. Pipe linings shall be a minimum of 0.065 inches in thickness and supplied as pipe-size sheets, fabricated by shop-welding the basic-size sheets together. Shop welds shall be made by lapping sheets a minimum of 2 inch and applying heat and pressure to the lap to produce a continuous welded joint.

Tensile strength measured across shop-welded joints measured in accordance with ASTM D412 shall be at least 2000 psi.

2.5.2. Sheets shall be supplied in prefabricated, pipe-sized tubular-shaped sheets, ready to lower onto the inner pipe forms. Transverse flaps shall be provided at the ends of sheets for pipe.

2.5.3. Welding strips Joint strips shall be sized per manufacturer's recommendations.

2.5.4. Prior to preparing the sheets for shipment, they shall be tested for pinholes using an electrical spark tester set between 18,000 – 22,000 volts. Any holes shall be repaired and retested.

3. Installation of lining

3.1. General

3.1.1. Lining shall be cast integral with the pipe at the pipe manufacturer's facility. Installation of the lining, including preheating of sheets in cold weather and the welding of all joints, shall be done in accordance with the recommendations of the lining manufacturer.

3.1.2. Coverage of the lining shall not be less than the minimum shown on the plans.

3.1.3. All nail and tie holes and all cut, torn, and seriously abraded areas in the lining shall be patched. Patches made entirely with the welding strip shall be fused to the liner over the entire patch area. Larger patches may consist of smooth liner sheet applied over the damaged area with adhesive. All edges must be covered with welding strip fused to the patch and the sound lining adjoining the damaged area.

3.1.4. Care shall be exercised in handling, transporting, and placing lined pipe to prevent damage to the lining. No interior hooks or slings shall be used in lifting pipe. All handling operations shall be done with an exterior sling or with a suitable fork lift.

3.1.5. On pipe having 360° liner coverage, the longitudinal edges of the sheet shall be butt welded. When pipe tubes are furnished, these are shop-welded joints made in accordance with 2.6.1.

3.1.6. No pipe with damaged lining will be accepted until the damage has been repaired to the satisfaction of the Engineer.

3.2. Field joints in lining for concrete pipe

3.2.1. No lining joint shall be made until after the trench has been back-filled and consolidated. Pipe joints must be dry before lining joints are made.

3.2.2. Field joints in the lining at pipe joints shall be made according for liner manufacturer recommendations.

3.2.3. All welding of joints is to be in strict conformance with the specifications and instructions of the lining manufacturer.

3.3. Testing and repairing damaged surfaces

3.3.1. After the pipe is installed in the trench, all surfaces covered with lining, including welds, shall be tested with an electrical holiday detector as approved by the lining manufacturer with the instrument set between 18,000 – 22,000 volts.

All welds shall be physically tested by a nondestructive probing method. All patches over holes, or repairs to the liner wherever damage has occurred, shall be accomplished in accordance with Paragraph 3.1.8.

3.3.2. Each transverse welding strip which extends to a lower edge of the liner will be tested by the purchasing agency. The welding strips shall extend 2 inches below the liner to provide a tab. A 10-pound pull will be applied to each tab. The force will be applied normal to the face of the structure by means of a spring balance. Liner adjoining the

welding strip will be held against the concrete during application of the force. The 10-pound pull will be maintained if a weld failure develops, until no further separation occurs. Defective welds will be retested after repairs have been made. Tabs shall be trimmed away neatly by the installer of the liner after the welding strip has passed inspection. Inspection shall be made within 2 days after joint has been completed in order to prevent tearing the projecting weld strip and consequent damage to the liner from equipment and materials used in or taken through the work.

A. Welders/Fusers

All welders/fusers for the PVC liner shall be precertified by Ameron or approved manufacturer prior to the start of work. All joints shall be numbered and initialed by the welder. The inspector will record on a daily basis the number of the joint and the welder at the end of each working day.

B. Factory Representative

The Contractor will make provisions to have a factory representative knowledgeable in joint fusing present at least one day during the first week of welding, and again at the time of the final inspection, to aid both the Contractor and the City in the detection of faulty welds, and to ensure the quality of the welds.

C. Final Inspection

The Contractor shall provide adequate ventilation, lighting and equipment (to include a cart/skateboard and tools) to allow for final inspection of all welds prior to putting the line in service.

2.4.4. JOINTING

Joints shall be of the bell and spigot type with a rubber “O”-ring type gasket that forms a watertight seal. Joints shall meet the requirements of ASTM C 443 OR C 361.

2.4.5. SERVICES

Services shall be made with “Inserta-Tee” as manufactured by Fowler Manufacturing Company or approved equal. The service hole in the pipe shall be cored to the recommended diameter and the tee installed as per the manufacturer’s recommendation.

2.5. CENTRIFUGALLY CAST FIBERGLASS-REINFORCED POLYMER MORTAR (CCFRPM) PIPE*2.5.1. MATERIAL*

This pipe shall have a stiffness of 72 psi and a pressure rating of 150 psi. It must meet AWWA C905 specifications. Each pipe shall be hydrostatically tested at the factory to two times the working pressure. The resin must meet the requirements of ASTM D3754 with the joints meeting ASTM D4161.

Installed pipe shall be pressure and leakage tested at 125 psi for a minimum of 30 minutes. Pressure and leakage shall be in accordance Section 1300 of these Specifications.

2.5.2. MANUFACTURE

Approved is HOBAS Pipe USA or approved equal.

2.5.3. INFILTRATION TESTING

Infiltration testing shall be performed on the new sanitary sewer line. The allowable limits of infiltration shall not exceed a rate of 100 gallons per inch of internal pipe diameter per mile per 24 hours with no allowance for manholes. Duration of all tests shall be a minimum of 2 hours. No more than 1500 feet of sewer shall be tested at any one time. Prior to testing for infiltration the system shall be pumped out so that normal infiltration conditions exist at the time of testing. The amounts of infiltration shall be determined by pumping the infiltrated water into calibrated drums, or by other approved methods.

2.5.4. SERVICES

Services shall be made with "Inserta-Tee" as manufactured by Fowler Manufacturing Company or approved equal. The service hole in the pipe shall be cored to the recommended diameter and the tee installed as per the manufacturer's recommendation.

2.6. MANHOLES

2.6.1. MATERIAL

Manholes shall meet the requirements of ASTM C478 and shall be furnished with an approved casting (Neenah R-1733 or EJ1205Z or approved equal) with a self-sealing lid, concealed pick bar, and the word "SANITARY" (or words "SANITARY SEWER") cast into the center of the lid in letters at least one inch high.

2.6.2. MANUFACTURE

The manholes shall be constructed in accordance with the detail drawings included as part of these Specifications. The manhole shall be furnished with an eccentric-type cone section. All manhole bases shall be monolithic or, if approved by the Engineer, a precast base or mini-tee manhole may be used. The main sewer shall be carried through manholes by split pipe whenever practicable. The concrete manhole shelves shall slope from the top edges of the invert at a rate of 2" per foot. When split pipe is not possible due to breaks in grade or elevation, the sewer invert shall be made of concrete. The shape of the invert shall conform exactly to the lower 1/3 of the pipe it connects and be left smooth and clean. Side branch inverts shall be constructed with as large radius of curvature as possible.

2.6.3. JOINTS

Connections to sewer pipe larger than 36" diameter shall be made with a resilient watertight seal integrally cast as part of the manhole. Smaller pipes may be connected to the manhole similarly, or with a resilient watertight pipe-to-manhole connector having all stainless steel components with no welds nor rivets. All resilient seals shall meet or exceed ASTM C-923 and be fastened to the sewer pipe by means of stainless steel bands. Joints between manhole sections shall be sealed with a butyl rubber gasket. The joint shall meet the requirements of ASTM 443 for pipe joints. PVC pipe connections to existing manholes shall be core-drilled and booted.

2.6.4. MANHOLE ADJUSTING RINGS

Manhole adjusting rings shall be as specified in Section 1500 of these Specifications.

2.6.5. *LIFT HOLES*

Lift holes shall be manufactured to provide a watertight seal.

2.6.6. *MANHOLE SEALS*

The Contractor shall install watertight manhole seals on the sanitary manholes as designated in the plans. The Contractor shall have the option of using either internal or external manhole seals except where a type of seal is specifically designated by the Engineer. These seals shall be installed as per the manufacturer's recommendations. Extensions will be paid for under the bid item for "Install Watertight Manhole Seal Extension", and shall be able to cover a minimum adjusting ring/chimney height of 7 to 10 inches.

The Contractor shall verify the dimensions and determine which type of seal should be utilized and the number of extensions that will be required. If an internal seal is used, the sealing surface shall be clean and free of loose material and excessive voids. If the surface has minor irregularities, a bead of butyl-rubber caulking shall be applied to fill these voids. If the sealing surface is rough or has excessive voids, a low-shrink mortar sealing surface shall be installed. Any flanges or protrusions on the interior to the casting shall be removed and ground smooth.

If an external seal is used, the Contractor shall install the seal as per the manufacturer's recommendation. The exterior of the manhole and casting shall be wire-brushed clean and leveled and smoothed with a low-shrink mortar surface if necessary.

A. INTERNAL SEAL

Internal seal shall be as manufactured by Cretex Specialty Products, NPC Inc., Strike Products Polyethylene I/I Barrier or approved equal. The sealing bands and all mounting hardware (screws, bolts, nuts, etc.) shall be type 304 stainless steel. Any casting modifications, mortar leveling, casting adjustment, concrete removal and replacement (due to offsets, etc.) shall be incidental to this bid item. If the I/I Polyethylene I/I Barrier is used, it shall be installed as per the manufacturers recommendation and the bottom surface of the I/I Barrier shall be sealed to the manhole cone top surface using a butyl sealant.

B. EXTERNAL SEAL

External seal shall be as manufactured by Cretex Specialty Products, NPC, Inc., WrapidSeal heat shrinkable sleeve system as manufactured by Conusa – CPS or approved equal. All concrete removal and replacement, excavation, backfill and casting adjustments shall be incidental to the bid item.

2.7. SANITARY SEWER FORCE MAIN TRACER WIRE

The tracer wire shall be in accordance with the requirements of Section 1300 of these Specifications, except it shall be green in color. The pedestal shall be a Rhino Triview Flex Pedestal complete with 6' long "U" channel, post or approved equal.

2.8. INSULATION

Insulation, where required by the Engineer, shall be extruded polystyrene (rigid), 2" thick unless noted otherwise, and shall be provided in 4' x 8' sheets, cut smaller where necessary.

PART 3
CONSTRUCTION

3.1. GENERAL

Excavation, trenching and backfilling shall be done in accordance with Section #1000 of these Specifications. Pipe and fittings shall be handled and laid in accordance with the manufacturer's or industry standards. Pipe, fittings and manholes shall be laid in the location shown on the plans, the exact location being designated by the Engineer. The bell and spigot shall be wiped clean and sufficient lubrication placed on the gasket and spigot end before the pipe is fully pushed into the bell. Field cut spigot ends shall be beveled prior to being pushed into the bell. Every part of the pipe shall be bedded uniformly throughout its length. Pipe shall be laid upgrade with the spigot end pointing in the direction of flow. All sewers must be kept thoroughly clean. When the trench is left at night or the pipe laying stopped, the upper end of the pipe must be closed with an end board or cap to prevent dirt and sand from entering the pipe.

3.2. ALIGNMENT

The Engineering Department will provide line and grade for all sanitary sewer pipes. Grade and alignment shall be maintained by the use of a line parallel to the grade and line of the sewer. This line is to be supported above the ground on batter boards spaced 50 feet or less apart and rigidly anchored to and supported by steel post driven into the ground.

Not less than 3 batter boards shall be maintained at all times. The Engineer shall be immediately notified of any misalignment of the batter boards set in accordance with the grade and alignment of the tacked offset stakes provided.

Electronic grade control is allowed, however the Contractor will be required to install and maintain batter boards and periodically check the line & grade from the offset stakes provided. In no instance will the Contractor be allowed to change the alignment or grade without the permission of the Engineer.

3.3. INSTALLATION OF WYE BRANCHES

Wye branches shall be located at the points designated by the Engineer. The Contractor shall ensure that the wye branches have been marked in advance of the construction of the sewer. If the locations have not been marked, the Contractor shall stop sewer construction until such time as the location (s) has been obtained. Wye branches shall not be installed causing the location of the service to be on the lower 1/2 of the sewer main. The location of the wye branch with reference to the nearest down-stream manhole shall be accurately determined and recorded together with the direction it faces.

3.4. INSTALLATION OF RISERS

If the sewer depth exceeds 12 feet in depth, risers shall be installed. This shall be done by installing a wye in the main sewer and placing a length of pipe sufficiently long to reach within 10' of the sidewalk grade. On risers of 5 feet or greater, 1 1/4" crushed rock shall be used to encase the wye and support the vertical bend outside of the wye. Work shall conform to the detailed drawings for sewer service connections and placed at the location shown on the plans or as ordered by the Engineer.

3.5. INSTALLATION OF SERVICE CONNECTIONS

Service connections on new construction shall have the risers laid on a slope not to exceed 2 feet vertically to 1 foot horizontally. The pipe shall be laid so that it has solid bearing on undisturbed earth. The service pipe shall make a horizontal angle with the wye branch or slant that ensures a proper connection is made. The first length of pipe shall not make a total angle with the branch or slant greater than 4 inches in two feet, and the wye branch or slant shall be installed in such a manner as to fit the alignment of the branch service line as closely as possible. On all new construction sewer services shall be installed as the sewer main is installed so that the backfill of the sewer main trench and the sewer service trench will be done in one continuous operation.

3.6. TRANSFER SEWER SERVICE

When it is indicated on the plans to transfer existing service connections to the new sewer and this item is included as a bid item, it shall be done in accordance with Section 1400 of these Specifications.

3.7. SEWER SERVICE REPAIRS

Repairs shall be in accordance with Section 1400 of these Specifications.

3.8. MANHOLES

The manhole base shall be set at the proper grade and alignment to provide a smooth transition from the incoming pipe (s) to the outgoing pipe. Manhole bases shall be bedded in 6" of 1 1/4" crushed rock. The area that is over-excavated adjacent to the manhole base and under the pipe shall be backfilled with 1 1/4" crushed rock to prevent settlement and provide for support for the pipe from the manhole edge to the regular trench excavation. Care shall be taken that the connection between the manhole and the pipe is watertight and the invert is smooth and continuous as it enters and exits the manhole.

3.9. CASTING TO GRADE (BOULEVARD)

This bid item shall be in accordance with Section 1500 of these Specifications, except that all joints between the rings and the manhole, the rings and the frame, and in-between rings shall be constructed water-tight by a method recommended by the ring manufacturer. In lieu of the use of a sealant, an external mechanical frame-chimney seal may be used for a watertight installation.

3.10. DEFLECTION TEST

Deflection tests shall be performed by the Contractor on all flexible conduit sewers. Deflection tests shall be conducted after the final backfill has been in place at least 30 days. Deflection tests shall be made using a Go/No-Go device or other approved method. The Contractor shall provide the appropriate equipment to test the sewer main. The diameter of the Go/ No-Go device or rigid mandrel shall be 95% of the undeflected inside diameter of the flexible pipe. The mandrel design shall have nine or more "legs". The Contractor is required to install and bed the pipe in such a manner as to limit the diametric deflection to less than 5%. All pipes exceeding 5% deflection shall be re-laid or replaced by the Contractor at his expense and at no additional cost to the owner.

3.11. LOW PRESSURE AIR TESTING

Upon completion of the sewer, before house services are connected to the pipe line, and after the line has been backfilled and cleaned, the Contractor shall furnish all necessary equipment and personnel to conduct a low pressure air test on all gravity plastic pipe sewer lines sized 30 inches in diameter or less. The test shall be conducted in the presence of the City's project representative

between two manholes in succession and in accordance with ASTM F-1417, as modified herein. The Contractor shall notify the representative a minimum of 48 hours prior to testing. All costs for performing the test shall be included in the price of the installed pipe.

The sewer pipe section under test shall be clean at the time of testing, but the pipe may be wetted. Pneumatic plugs each having a length greater than the diameter of the pipe being tested shall be used to plug the pipe ends at manholes. One plug shall have the air supply hose and the return air pressure hose. The air supply hose, connected from the compressor to the plug, shall have a throttling valve, bleeding valve, and shut off valve for control. The air pressure tap shall have a sensitive pressure gauge, 1 to 10 psi range, protected by a gauge cock and a pressure relief valve set a 10 psi. The gauge must be in 0.1 pound increments. The testing gauge shall be located at ground level, out of and away from the manhole. Air shall be slowly introduced into the plugged line until the internal air pressure reaches 4.0 psig greater than the average back pressure of any ground water pressure that may submerge the pipe. At least two minutes shall be allowed for the air temperature to stabilize before readings are taken and the timing started, during which time the air supply shall be regulated to maintain the pressure between 3.5 and 4.0 psig. After the stabilization period the air supply shall be shut off and timing begun.

The sewer section under test will be accepted as having passed the low pressure air test if it does not lose air at a rate to cause the pressure to drop more than 0.5 psig in less time than ½ minute per inch diameter of the pipe tested. If the pipe fails to meet the requirements of the test, the Contractor shall, at his sole expense, determine the source of leakage and repair/replace defective material and/or workmanship, after which, the low pressure air test and deflection test, if applicable, shall be performed again.

To determine the air pressure to be added for the average ground water above the pipeline, the ground water height in feet above the pipeline shall be divided by 2.31, and that incremental pressure added to the gauge pressure. A table for converting water height to gauge pressure is as follows:

Ground Water Level Over Top of Pipeline	Incremental Air Pressure to be Added to Gauge Pressure Readings
1 foot	0.43 psig (<i>4.43 psig total</i>)
2 feet	0.86 psig (<i>4.86 psig total</i>)
4 feet	1.72 psig (<i>5.72 psig total</i>)
8 feet	3.44 psig (<i>7.44 psig total</i>)
10 feet	4.30 psig (<i>8.30 psig total</i>)
Over 10 feet	<i>*DO NOT PERFORM TEST</i>

** If the air pressure required to run the test exceeds 8.3 psig, the Contractor shall lower the groundwater to acceptable levels by means of dewatering (incidental) and perform the test.*

3.12. TELEVISIONING

All gravity sewers shall be televised by the City of Fargo Street Department. Any abnormalities such as, but not limited to, deviations of grade, misaligned joints, cracked/defected pipe, rolled gaskets, shall be repaired by the Contractor at his expense. Sections requiring repair shall be re-televised to verify condition of repair. It is the Contractor's responsibility to provide drivable access to each manhole for the City of Fargo camera truck. Televising requires a 7 day advance notice and shall be scheduled through the inspector on site, and will be completed during normal City of Fargo Street Department hours. If the camera operator deems the pipe unsuitable for televising, the Contractor, at his expense, shall clean the sewer by means of jetting. Any/all costs associated with televising shall be incidental to other items.

3.13. SANITARY FORCE MAIN TRACER WIRE

All sanitary force main shall have a solid copper tracer wire secured to the sewer force main as it is being installed. Splices made to the tracer wire shall be sealed with a two-part mixture and enclosed in a plastic sleeve.

The tracer wire shall be looped up at pedestal locations or as directed by the Engineer. Enough wire shall be left above finished grade to allow connection into the pedestal fixture. A label shall be secured to the outside of the pedestal denoting "sewer locating line". All connections shall be made as per the manufacturer's recommendations.

Upon completion of the project the Contractor shall furnish a locator and using a low voltage circuit, test the entire tracer wire system in the presence of the Engineer. The test shall consist of a continuous above ground trace of the piping and appurtenances installed. All areas failing the location test shall be corrected at the Contractor's expense. The wire shall be tested in accordance with the requirements of ASTM B-1, B-3, B-8 and D-1248. All wire will be spark tested at 7500 VAC.

3.14. BYPASS PUMPING

The Contractor shall install a temporary bypass to maintain uninterrupted sewer service on sewer reconstruction or sewer repair projects where work will interfere with sewage flow in the existing sewer. The bypass shall be made by diverting the effluent flow at an upstream access manhole and pumping it through a separate conduit to a downstream reentry point or to an adjacent sewer

system. The pump and bypass conduit shall be of adequate size and capacity to handle the flow. The effluent level in the bypass pumping manhole shall not be allowed to rise more than 1 foot above the crown of the incoming sewer pipe. Bypass pumping shall be incidental to the sewer work.

Bypassing of sewage flow by means of plugging the existing sewer and providing for backflow of sewage through adjoining sewers may be allowed when existing piping is available and when approved by the Engineer.

On all temporary sanitary sewer bypass locations, the Contractor shall supply and maintain an overflow prevention monitor. The monitor shall be a field-ready corrosion resistant housing meeting IP67/NEMA 4, 4X standards with cellular communication capability. It shall be preprogrammed for the text service provider as designated by the Engineer. Unit must be designed for maintenance-free operation and non-confined space entry. Unit shall be provided with a field replaceable 6-volt Alkaline Lantern Battery and have the capability of transmitting text alerts to a minimum of three user-designated cell phones. Unit shall be Model 1st Response 8200 by Eastech Flow Controls, Upper River, NJ or approved equal.

PART 4
GUARANTEE, MEASUREMENT & PAYMENT

4.1. GUARANTEE

The guarantee shall be per the contract.

4.2. MEASUREMENT AND PAYMENT

4.2.1. GENERAL

The cost of excavating and trenching shall be included as part of this specification.

4.2.2. SANITARY SEWER PIPE

Pipe will be measured by customary and conventional methods and paid for on a unit price basis for the actual length installed. Measurement will be from center of manhole to center of manhole or from end of existing pipe to center of manhole or end of pipe stubout. No additional or direct payment will be made for the wyes or for the jointing of the pipes or manhole connections.

4.2.3. WYE BRANCHES

The cost of furnishing and installing the wye branches shall be included in the unit bid price per linear foot of sewer pipe in place.

4.2.4. STANDARD AND DROP CONNECTION MANHOLES

The cost of furnishing and installing the manholes will be paid for on a lump sum bid per each manhole installed. Costs shall include all excavation, bedding, backfilling, constructing, furnishing and installing the manhole and casting in place, connections to the sewer and sealing the manhole joints and lift holes. On Drop-Manholes all additional fittings, collars, pipe and appurtenances below the main sewer shall be included in the bid price.

4.2.5. RISER PIPES

Sewer service riser pipes will be paid for on a linear foot basis. The bid price shall include all bends, rock or concrete encasement if required, planking or any other incidental items required.

4.2.6. DEFLECTION AND AIR TESTING

No additional payment will be made for deflection and/or air testing. All costs for material, labor, and equipment necessary to complete the testing shall be included in the contract unit price per linear foot of sewer main installed.

4.2.7. FORCE MAIN

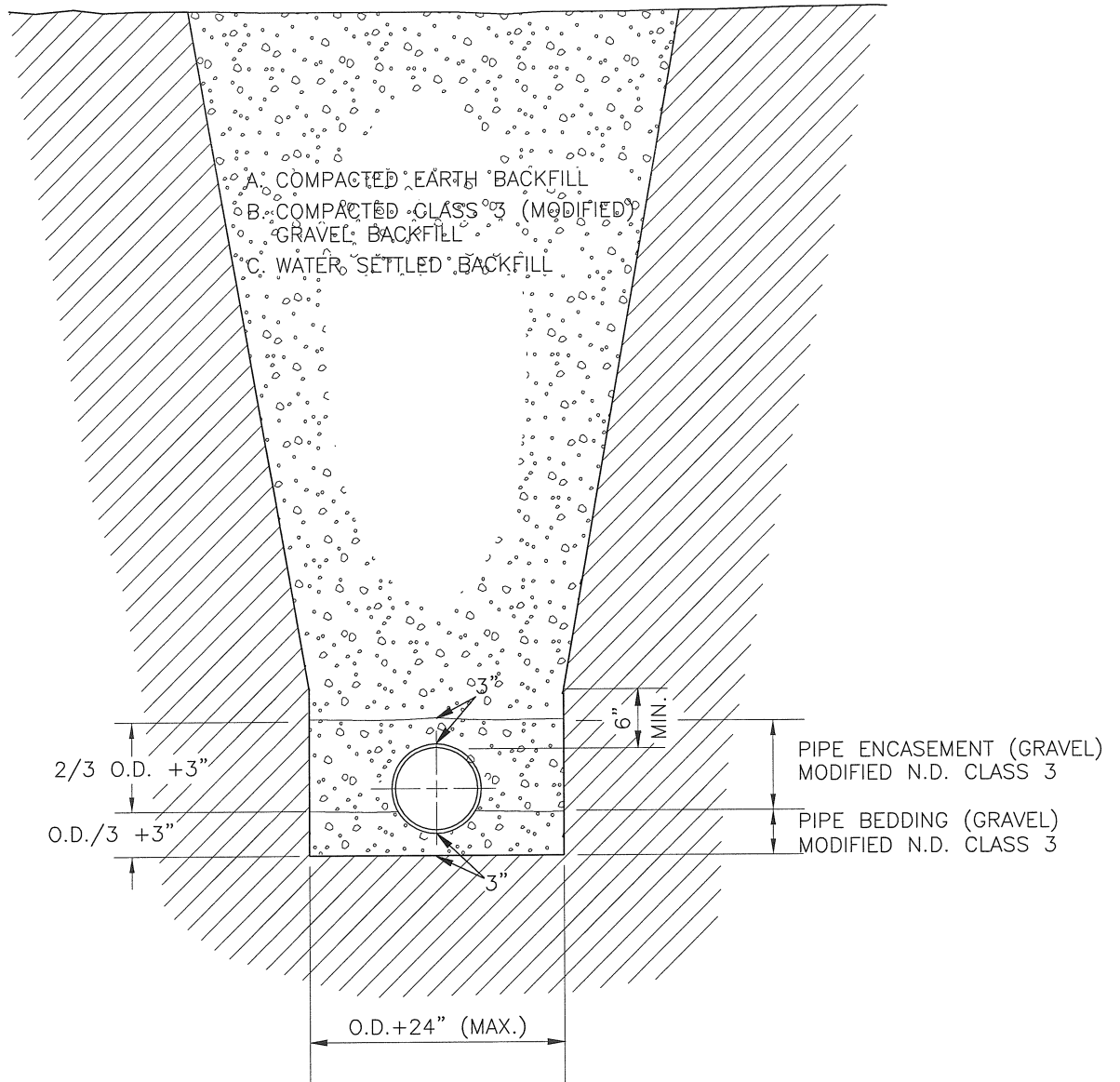
Pipe will be measured by customary and conventional methods and paid for on a unit price basis for the actual length installed. No additional or direct payment will be made for jointing, bends or connections.

4.2.8. TRACER WIRE

Payment for the tracer wire shall be incidental to the force main. The locating pedestal will be paid on a unit price per each basis and shall include all labor, material and equipment necessary to install one locating wire pedestal.

4.2.9. OTHER COSTS

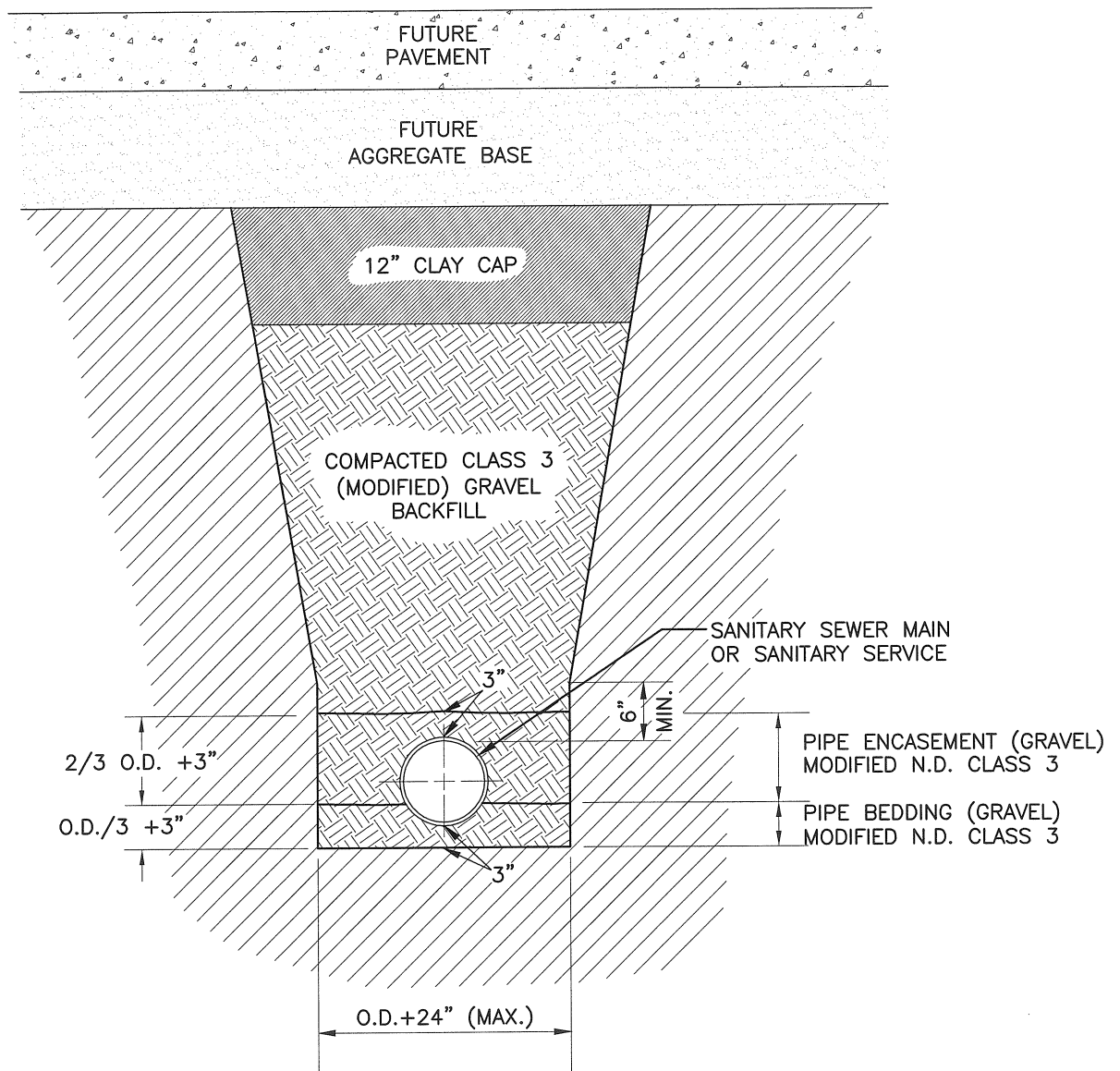
All costs for work necessary to properly complete the work specified herein shall not be bid items; the costs shall be charged to other items unless a bid item is included on the bid sheet.



NOTE:

CRUSHED CONCRETE MEETING THE
ND CLASS 5 AGGREGATE GRADATION
REQUIREMENTS MAY BE SUBSTITUTED
FOR THE PIPE BEDDING & ENCASEMENT
MATERIAL.

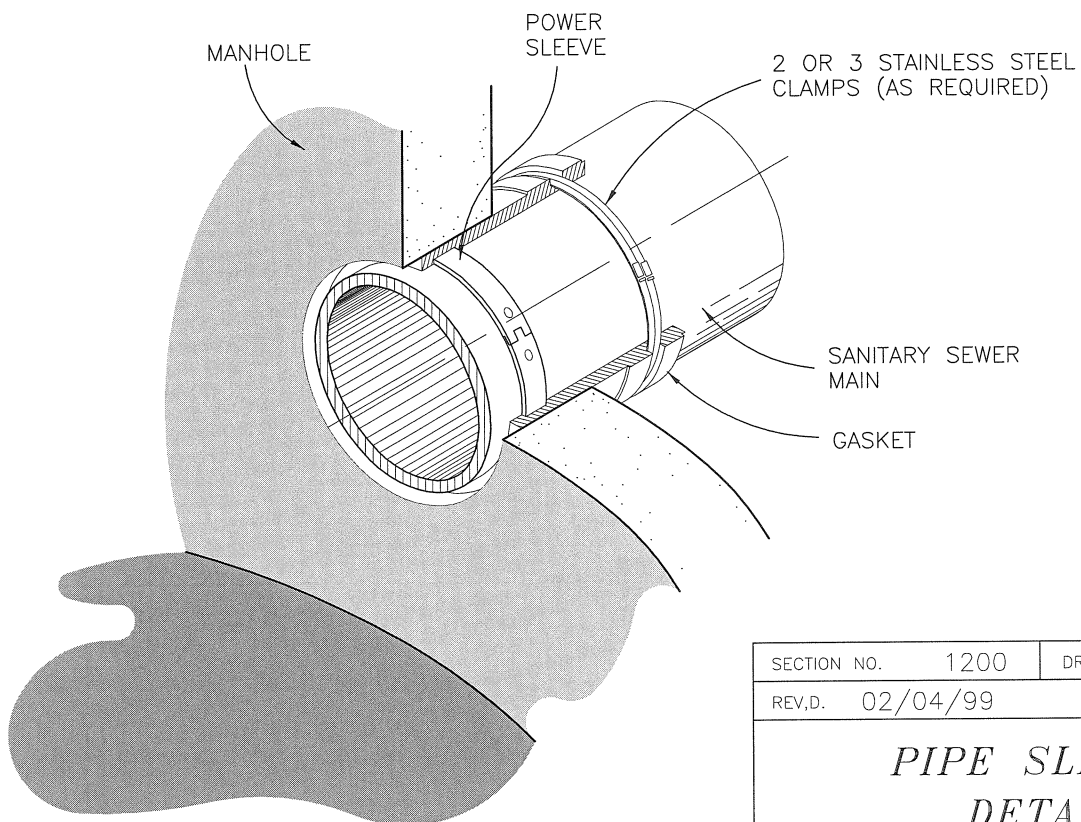
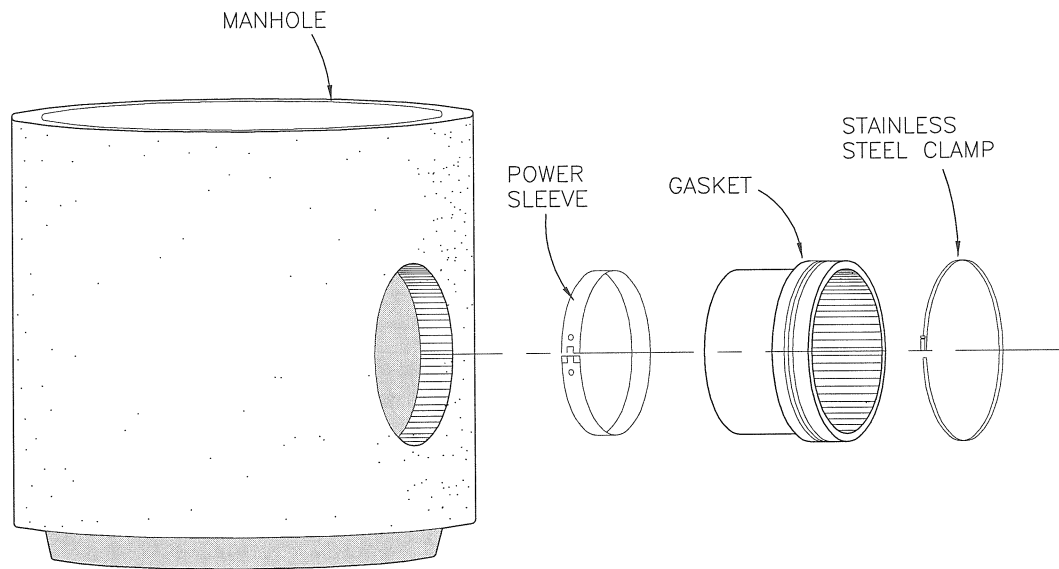
SECTION NO.	1200	DRAWING NO.	5.1
REV.D.	2012		
<i>SANITARY SEWER TRENCH BACKFILL</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012



NOTE:

THIS DETAIL APPLIES WHERE SANITARY SEWER IS INSTALLED UNDER FUTURE PAVING WITH EDGE DRAIN.

SECTION NO.	1200	DRAWING NO.	5.2
REV.D.			
<i>SANITARY SEWER TRENCH UNDER NEW PAVEMENT</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	<i>BED</i>	DATE	<i>2-21-2012</i>



SECTION NO.	1200	DRAWING NO.	5.3
REV.D.	02/04/99		
<i>PIPE SLEEVE DETAIL</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	<i>BEO</i>	DATE	<i>2-21-2012</i>

CASTING FRAME & COVER
- NEENAH FOUNDRY CO. R-1733
MUNICIPAL CASTINGS INC. 301-7/301A
EAST JORDEN 1205-AGSSA
OR APPROVED EQUAL

4' ECCENTRIC CONE
REQUIRED

BUTYL RUBBER GASKET ON ALL JOINTS (JOINT TO MEET ASTM 433 REQUIREMENT)

VARIES

14-20 MILS OF COAL TAR
EPOXY OR APPROVED
EQUAL ON BOTTOM
SECTION OF MANHOLE

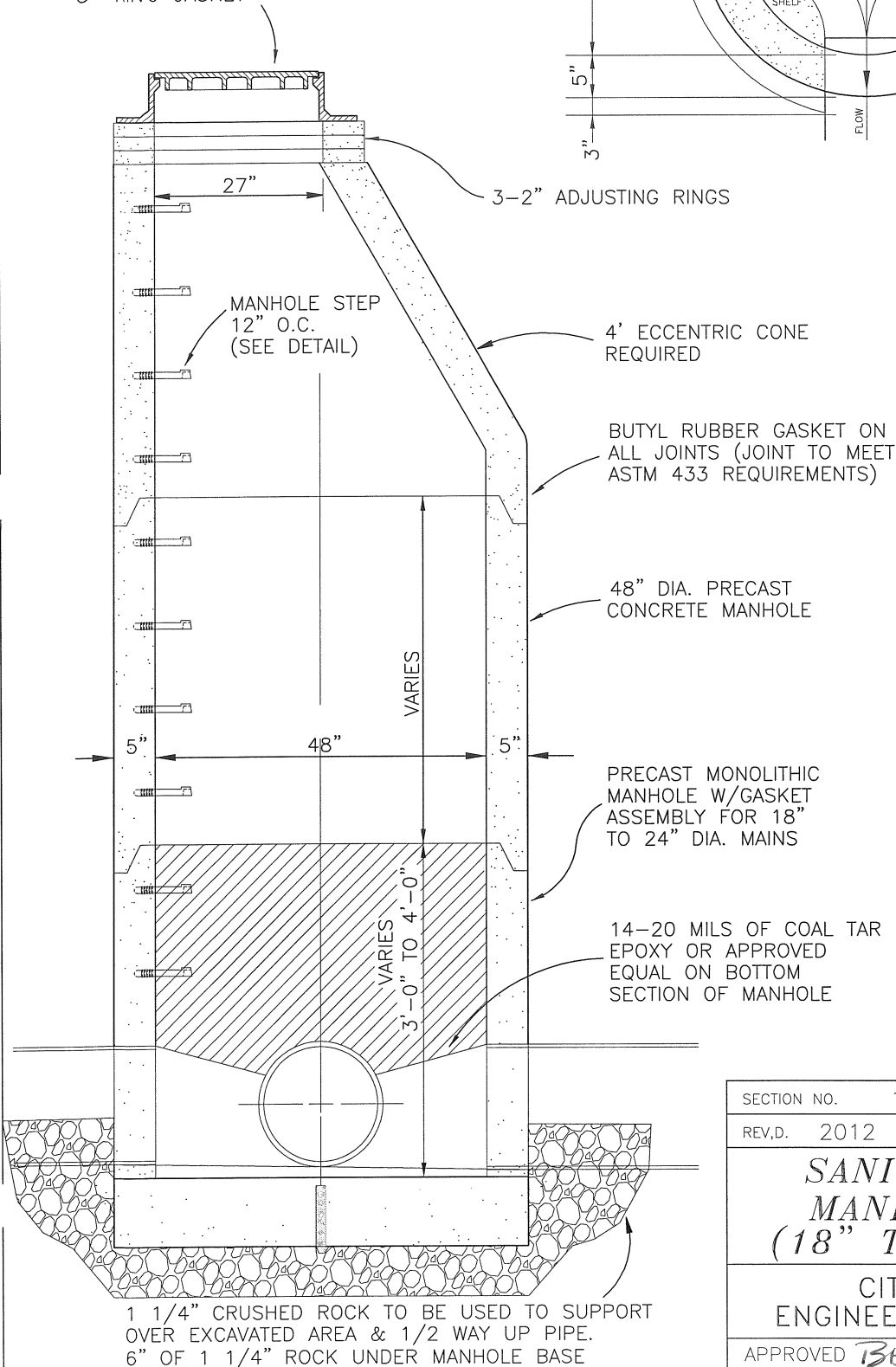
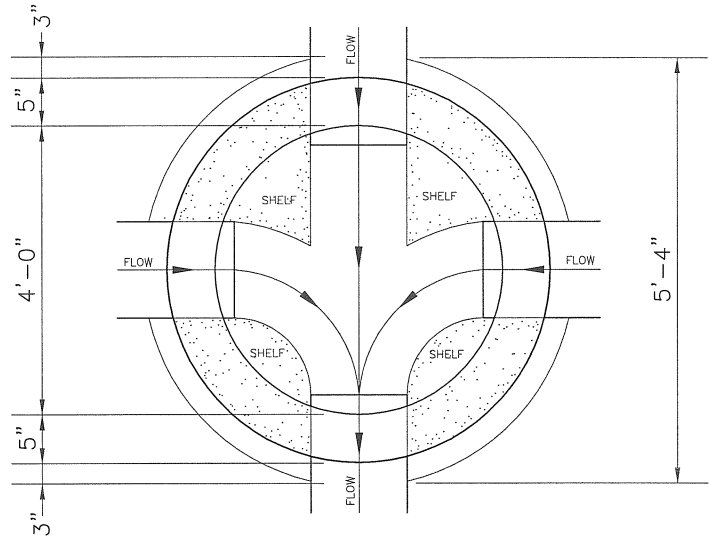
VARIES

NOTE:
LIFT HOLES TO BE
MANUFACTURED
WATER PROOF

SECTION NO.	1200	DRAWING NO.	5.4
REV.D.	2012		
<p align="center"><i>SANITARY SEWER MANHOLE DETAIL(8", 10" 12", 15" MAINS)</i></p>			
<p align="center">CITY OF FARGO ENGINEERING DEPARTMENT</p>			
APPROVED	<i>BED</i>	DATE	<i>2-21-2012</i>

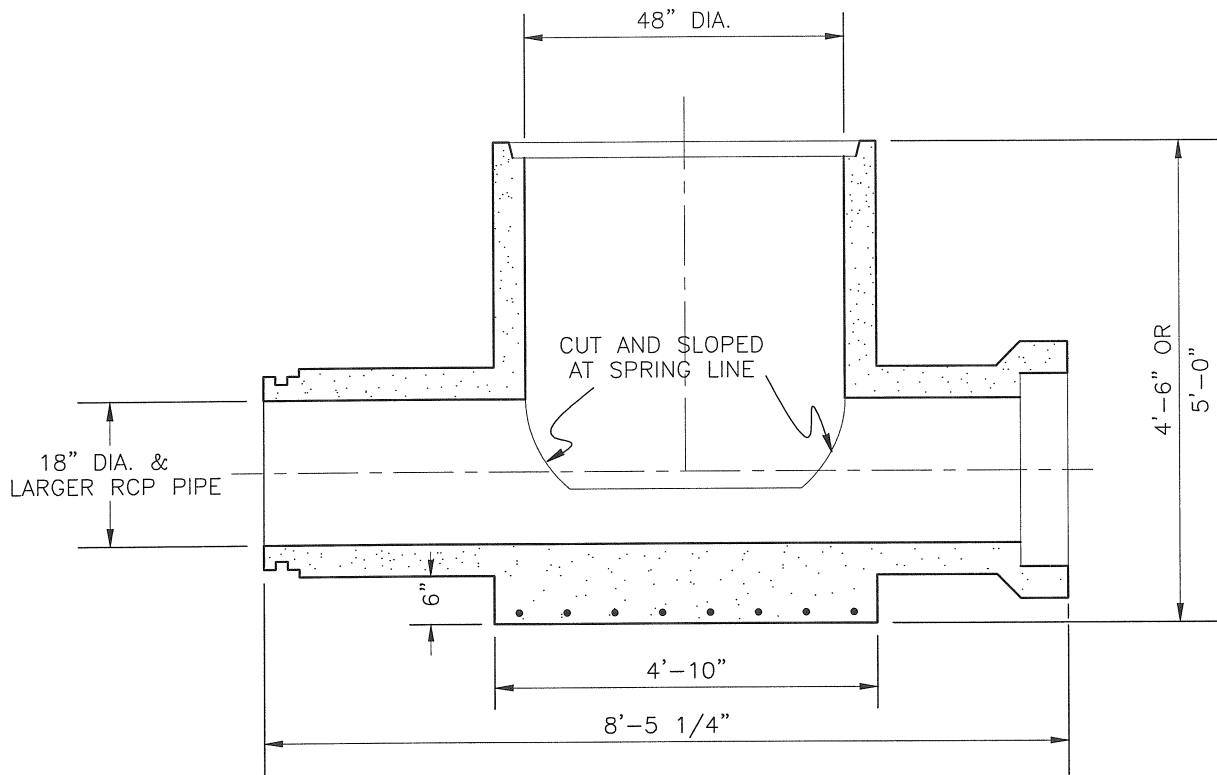
NOTE:
 CASTING FRAME & COVER TO BE
 NEENAH FOUNDRY CO. R-1733
 MUNICIPAL CASTINGS INC. 301-7/301A
 EAST JORDEN 1205-AGSSA
 OR APPROVED EQUAL

MANHOLE COVER SHALL HAVE
 -CONCEALED PICK BAR
 -"O" RING GASKET



NOTE:
 LIFT HOLES TO BE
 MANUFACTURED
 WATER PROOF

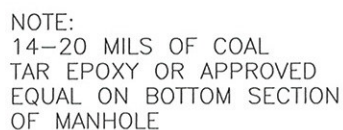
SECTION NO.	1200	DRAWING NO.	5.5
REV.D.	2012		
SANITARY SEWER MANHOLE DETAIL (18" TO 24" MAINS)			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BEO	DATE	2-21-2012




SECTION NO.	1200	DRAWING NO.	5.6
REV.D.	March, 1999		
<i>MINI-TEE</i> <i>MANHOLE DETAIL</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012

COVER SHALL HAVE
- CONCEALED PICK BAR
- "O" RING GASKET

5.6 MINI-TEES



SECTION NO.	1200	DRAWING NO.	5.7
REV.D.	2013		
<p align="center"><i>SANITARY SEWER MANHOLE (EXTERIOR DROP CONNECTION)</i></p>			
<p align="center">CITY OF FARGO ENGINEERING DEPARTMENT</p>			
APPROVED		DATE	1-2-13

CASTING FRAME & COVER
NEENAH FOUNDRY CO. R-1733
MUNICIPAL CASTINGS INC. 301-7/301A
EAST JORDEN 1205-AGSSA
OR APPROVED EQUAL

COVER SHALL HAVE
-CONCEALED PICK BAR
-"O" RING GASKET

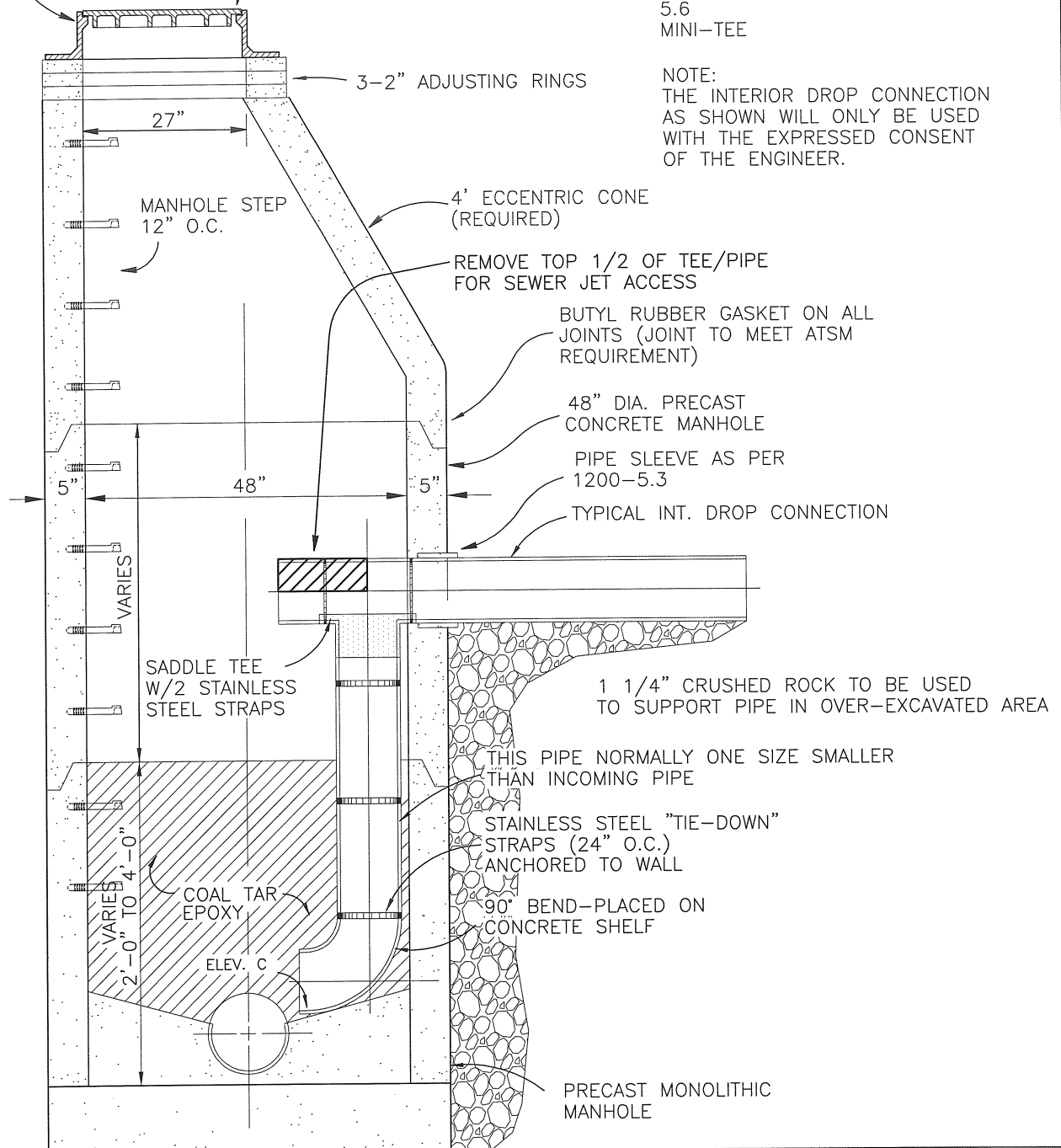
NOTE:
INVERT AND LOWER MANHOLE SECTION
AS PER DETAILS:

5.4
(8", 10", 12" & 15" MAINS)

5.5
(18", 21" & 24" MAINS & LARGER)

5.6
MINI-TEE

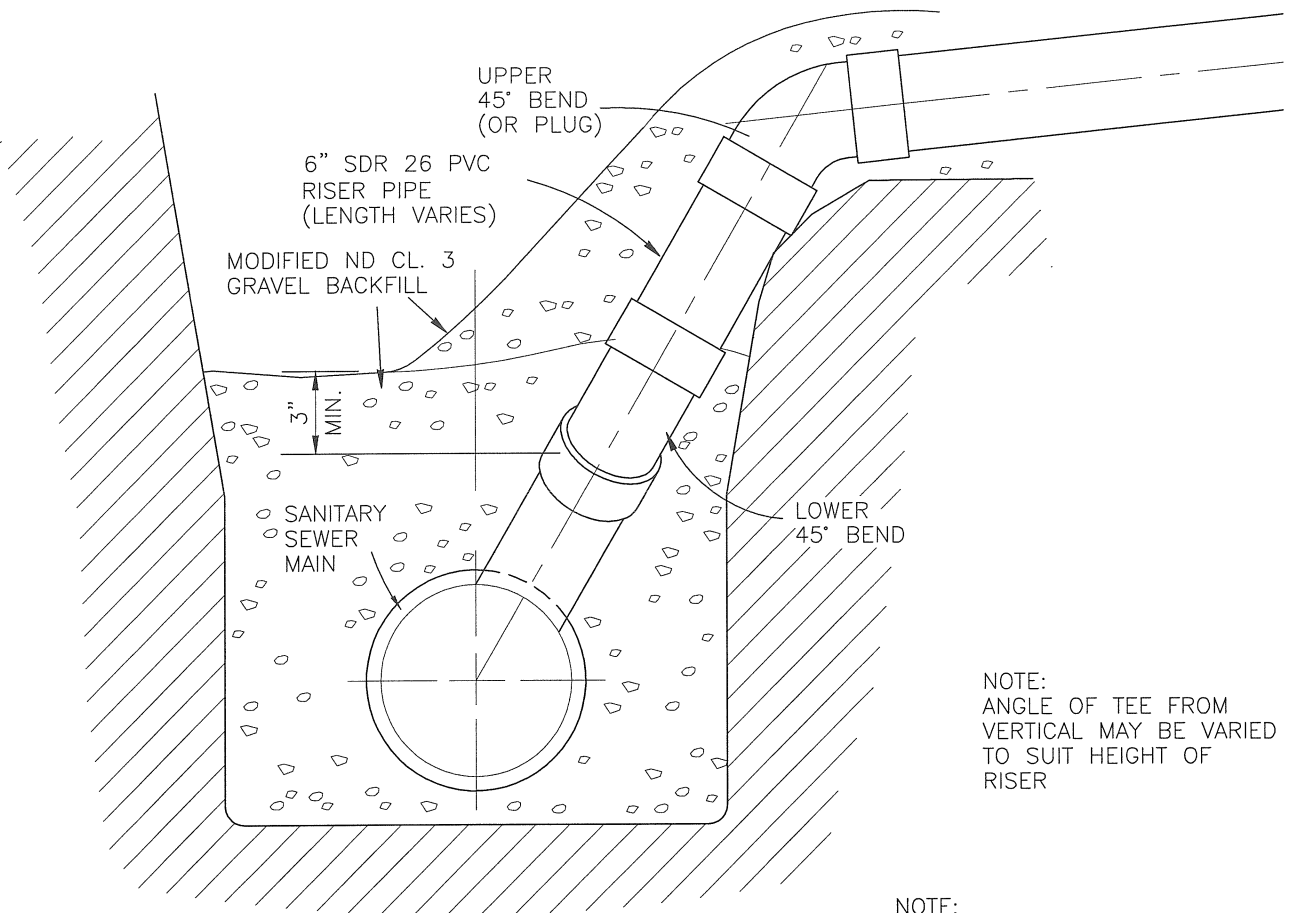
NOTE:
THE INTERIOR DROP CONNECTION
AS SHOWN WILL ONLY BE USED
WITH THE EXPRESSED CONSENT
OF THE ENGINEER.



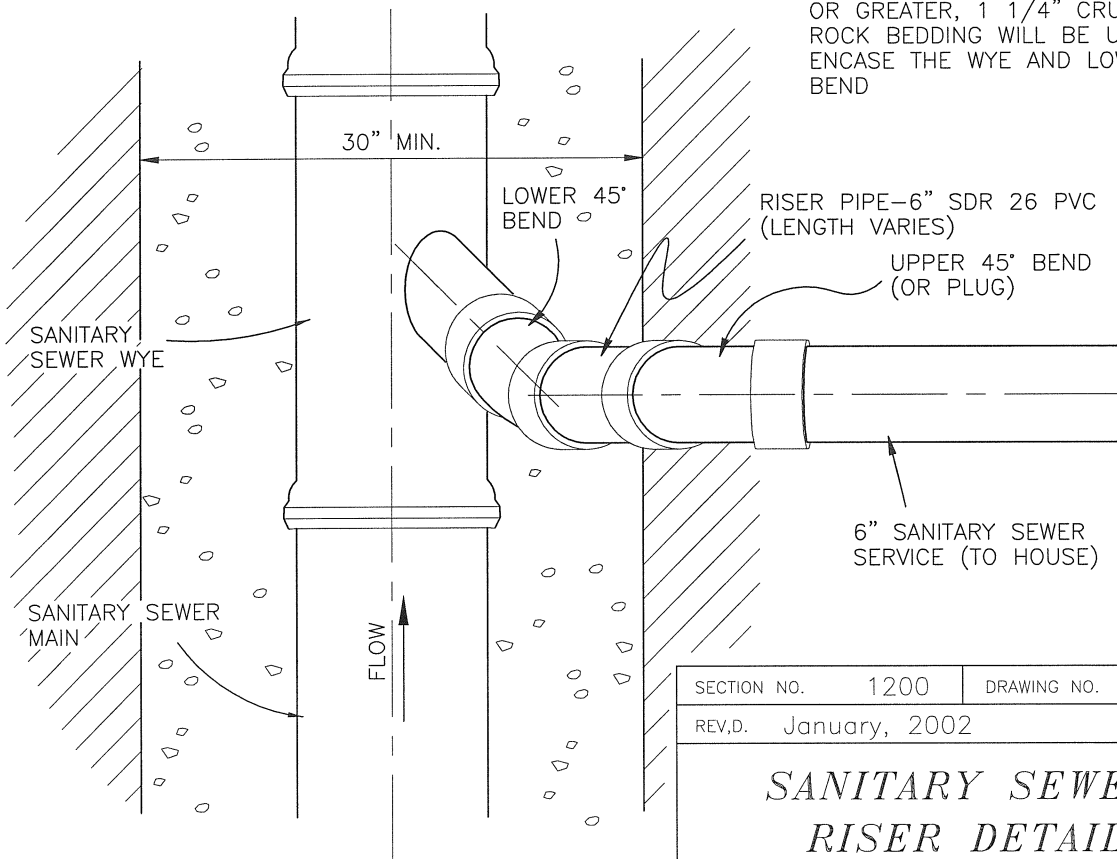
NOTE:
LIFT HOLES TO BE
MANUFACTURED
WATER PROOF

NOTE:
14-20 MILS OF COAL
TAR EPOXY OR APPROVED
EQUAL ON BOTTOM SECTION
OF MANHOLE

SECTION NO.	1200	DRAWING NO.	5.8
REV.D.	2012		
SANITARY SEWER MANHOLE (INTERIOR DROP CONNECTION)			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012

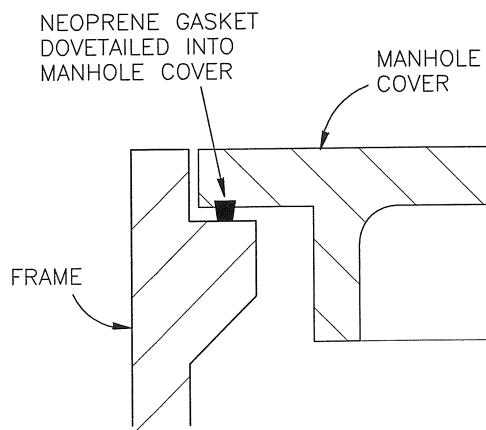
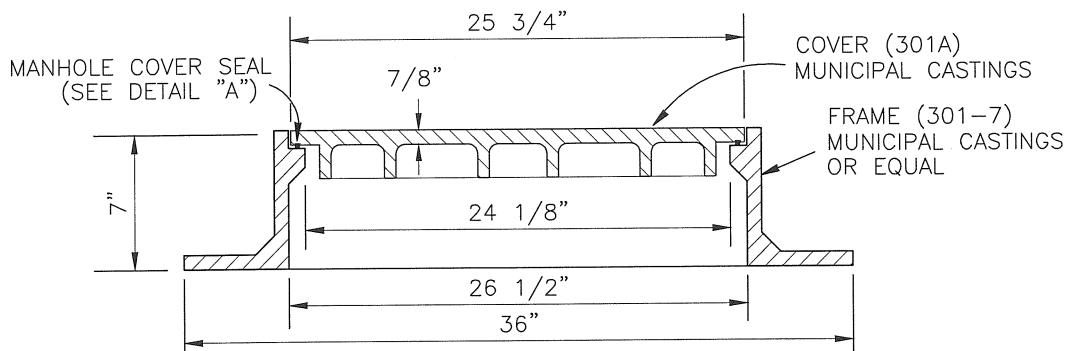
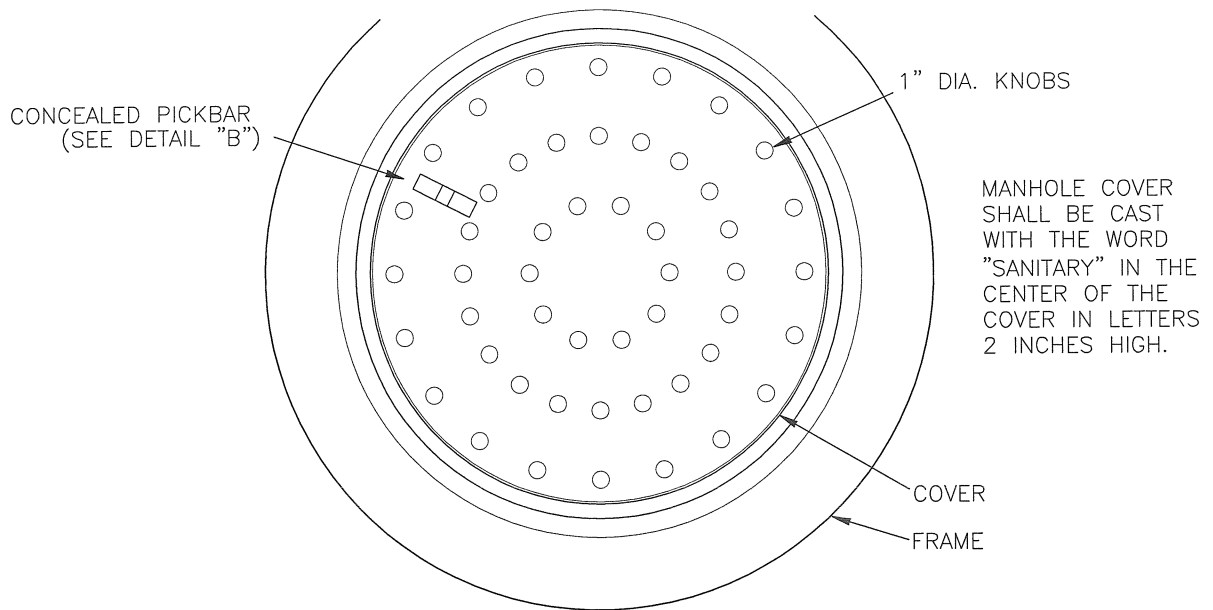


NOTE:
ANGLE OF TEE FROM
VERTICAL MAY BE VARIED
TO SUIT HEIGHT OF
RISER

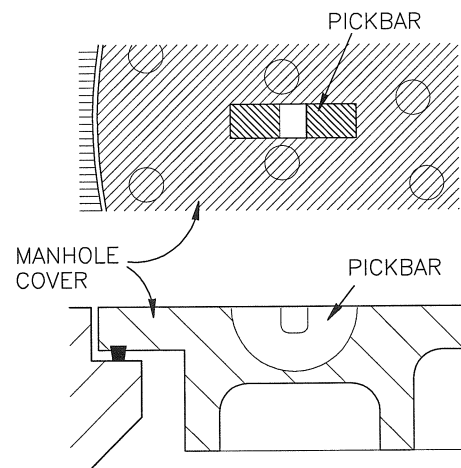


NOTE:
IF LENGTH OF RISER IS 5 FEET
OR GREATER, 1 1/4\"/>

SECTION NO.	1200	DRAWING NO.	5.9
REV.D.	January, 2002		
<i>SANITARY SEWER RISER DETAIL</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012

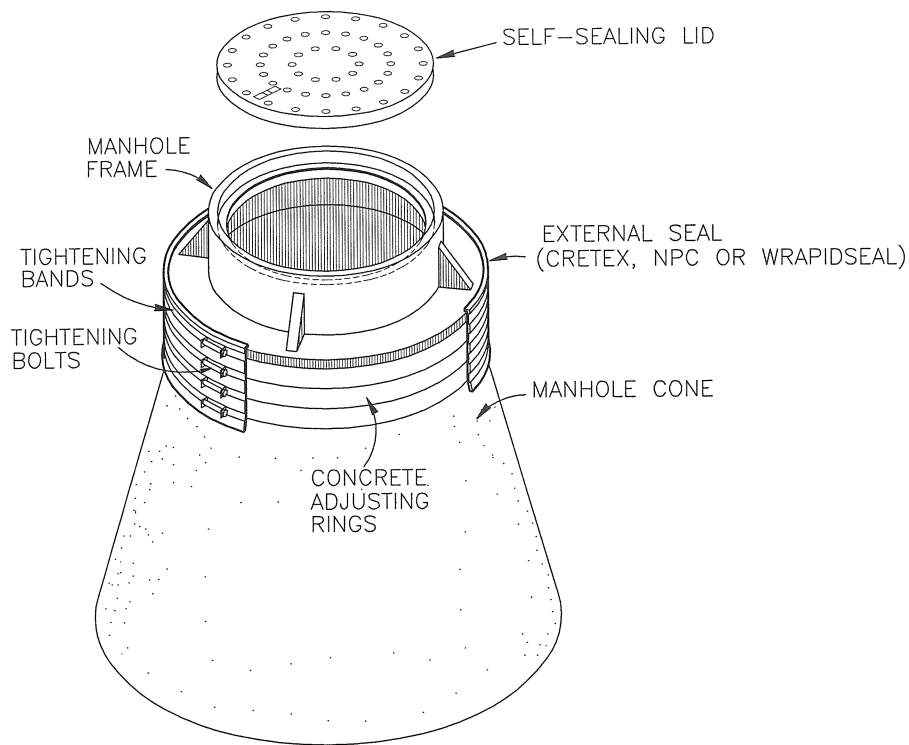


DETAIL "A"

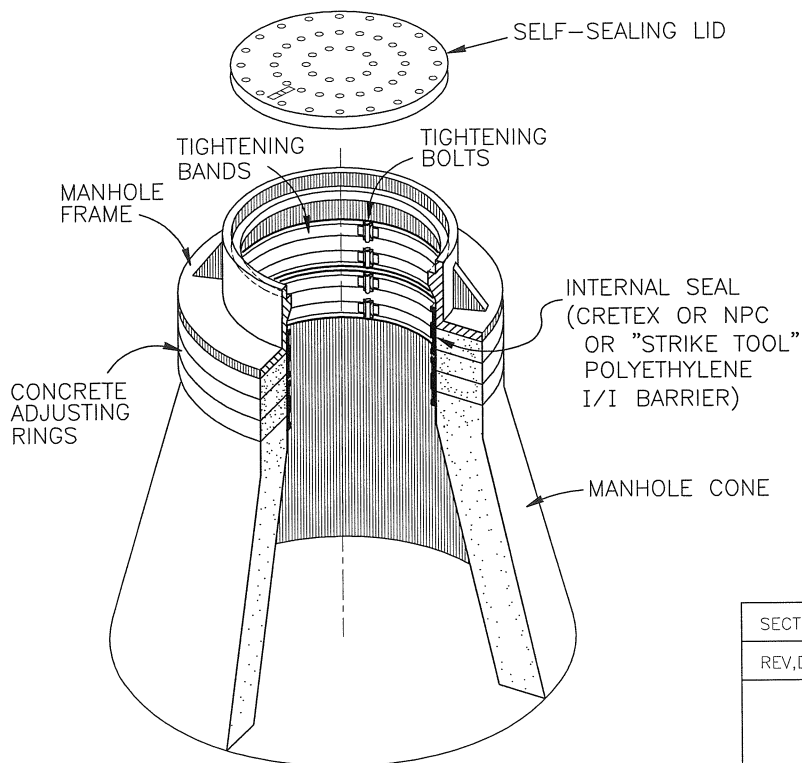


DETAIL "B"

SECTION NO.	1200	DRAWING NO.	5.10
REV.D.	2012		
SANITARY MANHOLE COVER CASTING			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012

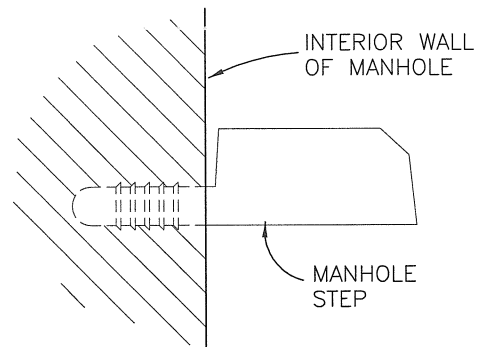
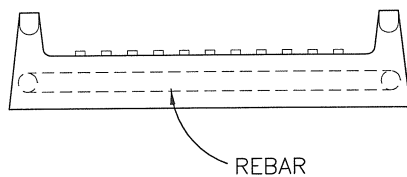
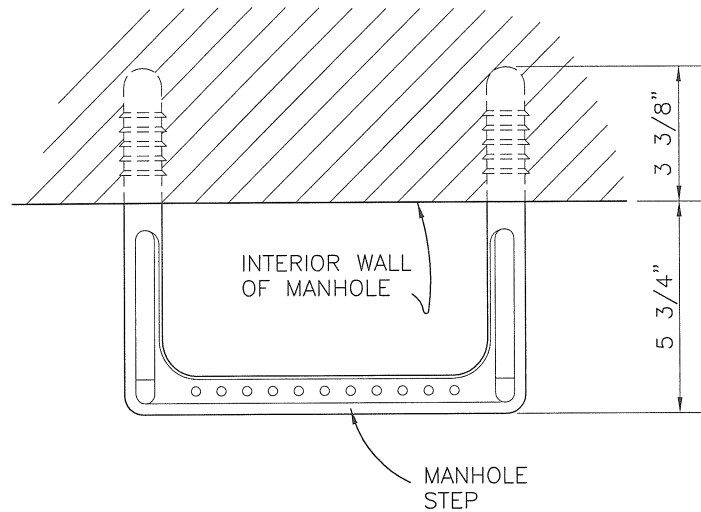


EXTERNAL MANHOLE SEAL



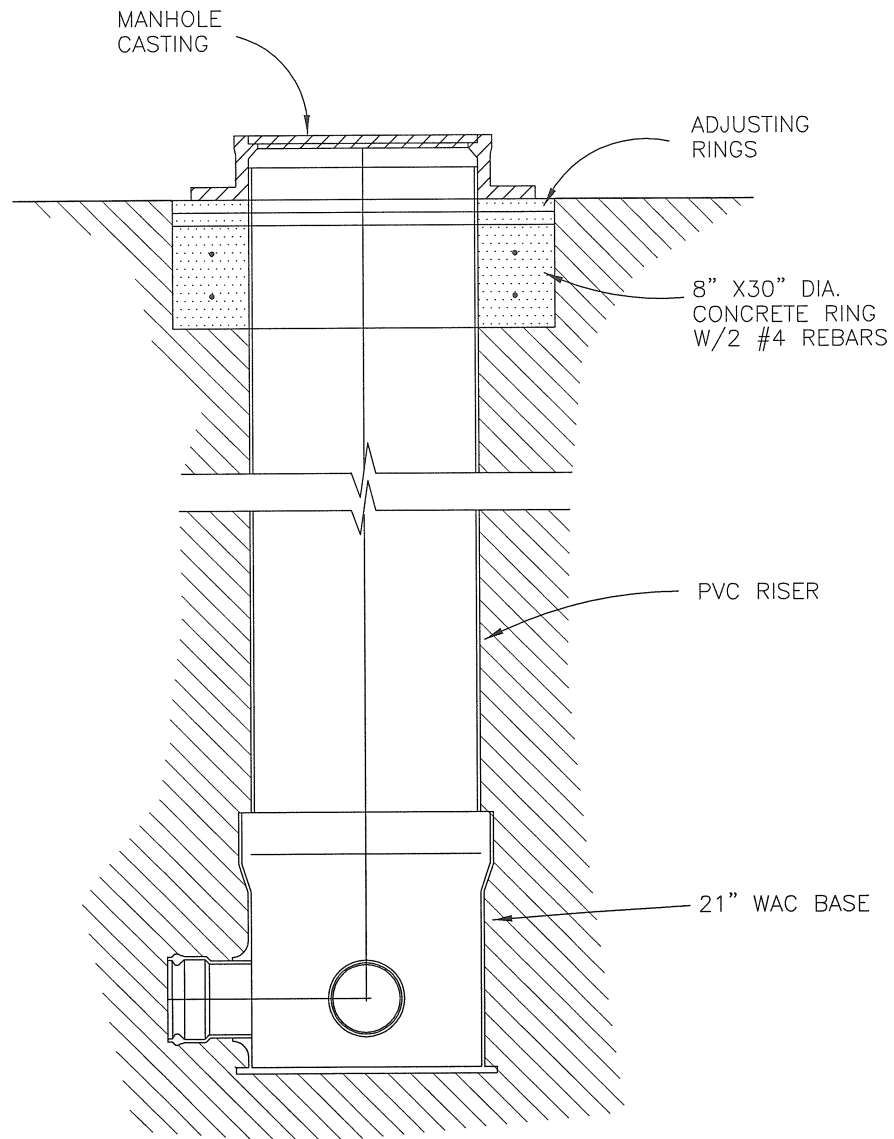
INTERNAL MANHOLE SEAL

SECTION NO.	1200	DRAWING NO.	5.11
REV.D.	March, 2007		
<i>MANHOLE SEALS DETAIL</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012



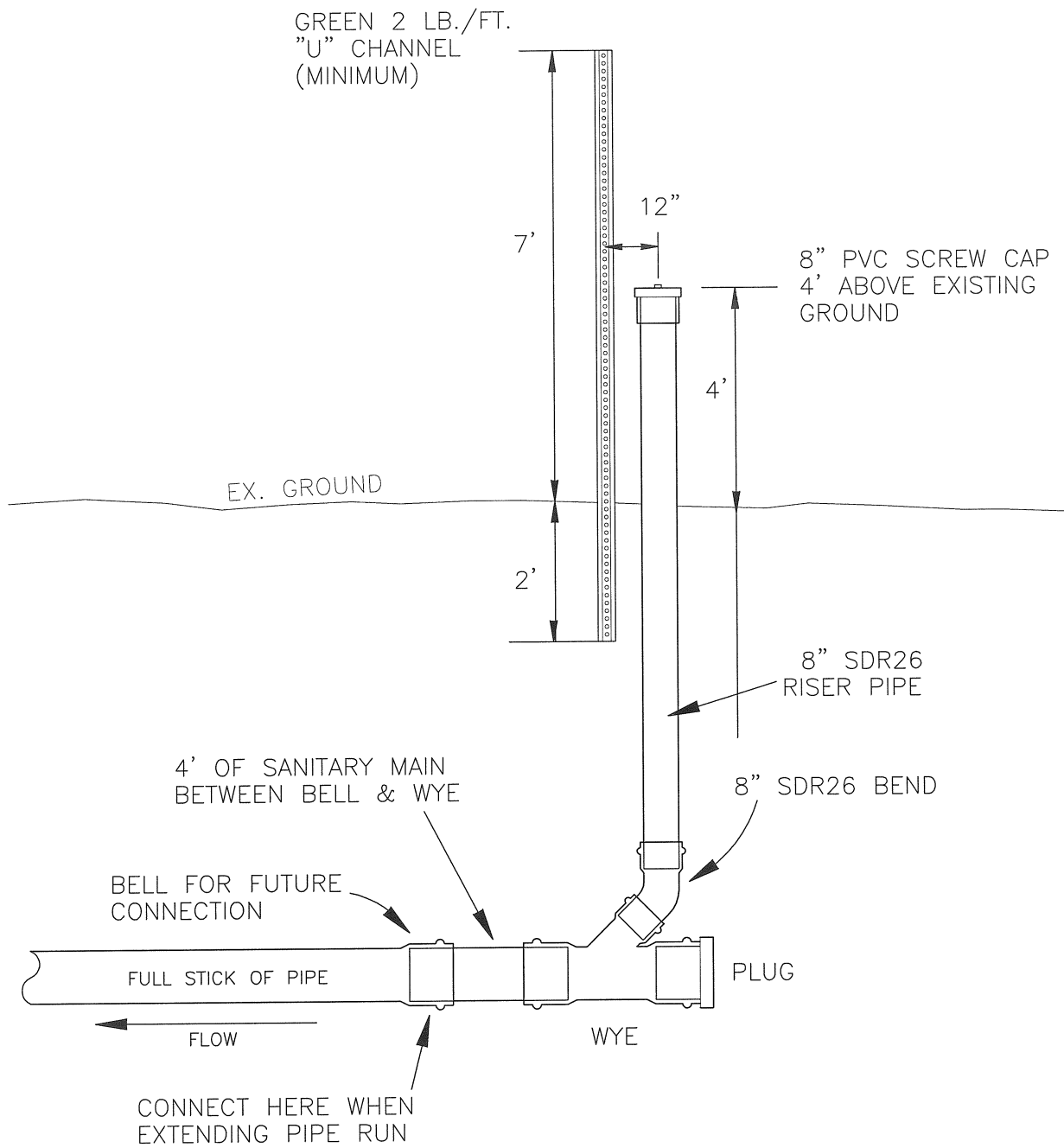
NOTE:
 STEP SHALL BE CONSTRUCTED OF 1/2" REINFORCING
 ROD AND COMPLETELY ENCASED IN A CORROSION
 RESISTANT RUBBER OR POLYPROPYLENE PLASTIC,
 WHICH WILL RESIST DETERIORATION FROM HYDROGEN
 SULFIDE OR OTHER CHEMICALS AND GASES
 ENCOUNTERED IN MANHOLE APPLICATION.
 ALSO, STEP SHALL HAVE A VERTICAL RESISTANCE OF
 400 LBS., AND A PULLOUT RESISTANCE OF 1000 LBS.
 SUCH AS: THE WEDG-LOC STEP BY DELTA PIPE
 PRODUCTS OR APPROVED EQUAL.

SECTION NO.	1200	DRAWING NO.	5.12
REV.D.	March, 2000		
<i>MANHOLE STEP DETAIL</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012



WAC MANHOLE DETAIL

SECTION NO.	1200	DRAWING NO.	5.13
REV.D.	MARCH, 2000		
STANDARD DETAIL WASTEWATER ACCESS CHAMBERS (WAC's)			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BEO	DATE	2-21-2012



SECTION NO.	1200	DRAWING NO.	5.14
REV.D.	2012		
<p><i>SANITARY SEWER CLEANOUT DETAIL</i></p>			
<p>CITY OF FARGO ENGINEERING DEPARTMENT</p>			
APPROVED	BEO	DATE	2-21-2012

CITY OF FARGO SPECIFICATIONS
WATER MAINS

PART 1
DESCRIPTION OF WORK

The work to be done under this section of the Specifications and the accompanying plans consists of the furnishing of all labor, material, accessories and equipment necessary to construct water mains in the City of Fargo. The work includes excavation, furnishing, laying and jointing pipe; making connections to existing water mains as necessary; installing new valves, valve boxes, or valve manholes; installing hydrants; protecting existing utilities and public and private property; backfilling trenches and other work as may be necessary to in order that the work may be completed in accordance with these Specifications and the plans accompanying them.

PART 2

MATERIALS

All products (treatment chemicals and material) 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 (NSF) International Standards 60 & 61, as appropriate. A product will be considered as meeting these standards if so certified by NSF, The Underwriters Laboratories, or other organizations accredited by ANSI to test and certify such products.

2.1. POLYVINYLCHLORIDE (PVC) PRESSURE PIPE

2.1.1. MATERIAL

The PVC material shall conform to the requirements of ASTM D-1784, Class 12454-B.

2.1.2. PIPE MANUFACTURE

The pipe shall be marked to indicate compliance with NSF 61, Factory Mutual (FM) and be either marked or tagged with the Underwriter Laboratory (UL) approval. All PVC pressure pipe shall be manufactured in accordance with the latest revision of AWWA Standard C900. The pipe shall be DR 18.

2.1.3. PIPE JOINTS

PVC pipe joints shall be rubber gasketed conforming to the requirements of ASTM D-3139-98 or the latest revision.

2.2. DUCTILE IRON PIPE

2.2.1. MATERIAL

Ductile iron pipe shall conform to AWWA C-151 Standards.

2.2.2. PIPE MANUFACTURE

Ductile iron pipe shall be American made and conform to a Class 53 standard thickness class unless otherwise specified.

2.2.3. PIPE JOINTS

Ductile iron pipe joints shall be slip joints with rubber gaskets and meet AWWA C-111 Standards.

2.2.4. LINING

The ductile iron pipe shall be lined with cement mortar in accordance with AWWA C104. Cement for mortar shall be Portland Cement conforming to current ASTM specifications. The thickness of the lining shall not be less than the following:

1/16" for 3 to 12 inch pipe

3/32" for 14 to 24 inch pipe

1/8" for pipe larger than 30 inches

2.2.5. PIPE COATINGS

Ductile iron pipe shall be coated with a 1 mil asphaltic coating.

2.2.6. POLYETHYLENE WRAP

All ductile pipe shall be wrapped with polyethylene plastic film having a minimum thickness of 8 mils or with a cross woven polyethylene plastic film having a minimum thickness of 4 mils. All water service taps on ductile iron main shall be wrapped for a minimum distance of 3 feet from the water main.

2.3. FITTINGS

All fittings shall be PVC or Ductile Iron, and shall be “push-on” or “slip-joint” unless specified otherwise in the plans or special instructions to bidders. Cast iron fittings will be used only when approved by the Engineer.

2.3.1. PVC FITTINGS

PVC fittings shall be injection molded conforming to the requirements of AWWA C-907 and carry a working pressure of at least 150 psi. Molded fittings shall be made of PVC compound with a minimum hydrostatic design basis of 4,000 psi.

2.3.2. DUCTILE IRON FITTINGS

Ductile Iron fittings shall conform to AWWA C153, and shall be cement mortar lined on the interior and bituminous coated on the exterior. Cement lining shall conform to AWWA C104, and joints shall conform to AWWA C111. All ductile iron fittings shall be wrapped with polyethylene plastic film as specified for the ductile iron pipe, which must be securely fastened to the pipe on each side of the fitting. Mechanical joint fittings, where allowed by the Engineer, shall be bid complete with gaskets, glands, and stainless steel bolts.

2.3.3. COUPLINGS

All pipe couplings up to and including 12” in diameter shall be epoxy coated ductile iron meeting or exceeding the requirements of ASTM A 536, grade 65-45-12. Couplings shall meet the requirements of AWWA Standard C219. The coupling shall carry a minimum working pressure of 300 psi, having end rings that are segmented and joined with a pinless hinge, gaskets formed from virgin Nitrile Butadiene Rubber (NBR) compounded for water and sewer service in accordance with ASTM D2000, and 304 stainless steel armor. Fasteners shall be 304 stainless steel.

Couplings up to and including 12” in diameter shall be Romac Macro HP, Hymax DI High Pressure, or approved equal. Couplings larger than 12” shall be mechanical-joint long body sleeves meeting the requirements of AWWA C153.

2.4. GATE VALVES

2.4.1. GENERAL

Cast iron resilient-seated gate valves and tapping valves shall conform to the latest requirements of AWWA C509. Ductile iron resilient-seated gate valves and tapping valves shall conform to the latest requirements of AWWA C515. The valve seats shall be able to withstand 200 psi and the body shall withstand 400 psi.

2.4.2. CONSTRUCTION

Size:	4" to 36"
Joints:	Joints shall be provided with AWWA standard bell ends, flanged ends or mechanical joint bell ends as required for the type of pipe being used.
Gaskets:	Rubber.
Operation:	Open left (counter clockwise) w/ 2 inch operating nut.
Bolting:	All body bolts shall be stainless steel.
Stem & seals:	The stem shall be made of bronze and shall have two "O" rings to provide sealing.
Coating:	All valves shall be coated inside and out in accordance with the latest revision of AWWA C-550.

Acceptable manufacturers are American Flow, Clow, Mueller, U.S. Pipe or Waterous.

16" and larger valves shall be installed horizontally with bevel gear actuators.

*2.5. VALVE BOXES**2.5.1. GENERAL*

Valve boxes are required on all valves. All valve boxes shall be heavy-duty cast or ductile iron in accordance with ASTM A 48 30B material specification with a minimum tensile strength of 30,000 psi, have screw type adjustment, 5 1/4" shaft, and be furnished with heavy-duty cast or ductile iron bases and covers. Covers shall be made in the USA and cast with "WATER" on them. Valve boxes shall be three-piece type, adjustable from 62 to 82 inches in height, except that they shall in all cases be supplied and installed with a sufficient quantity of additional intermediate section(s) to allow the top of the installed box to be set at finished grade at mid-height of adjustment.

2.5.2. VALVE BOX ADAPTOR

Rubber valve box adaptors shall be installed for all valve boxes on all gate valves and butterfly valves. The adaptor shall be the Valve Box Adaptor II as manufactured by Adaptor, Inc. or as approved by the Engineer.

2.6. TAPPING SLEEVES AND VALVES

Valves shall be in accordance with the latest revision of AWWA C-509. The sleeves shall be mechanical joint with stainless steel bolts or stainless steel tapping sleeves with a stainless steel flange.

*2.7. HYDRANTS**2.7.1. GENERAL*

Hydrants shall be non-jacket types meeting the latest revision of AWWA C-502. All hydrants shall be equipped with a break-off traffic flange and shall be capable of being extended in 6" increments.

2.7.2. CONSTRUCTION

Main valve opening: 5" minimum.

Hydrant barrel: 7 3/8" minimum inside diameter.

Type of shut-off: Compression.

Inlet connection: 6" size- bell or mechanical joint type.

Nozzles: 2-2 1/2" hose nozzles; 1-4 1/2" pumper nozzle.

Nozzle threads: National Standard threads.

Bury depth: 8 feet 6 inches.

Operating & cap nuts: City of Fargo Standard (NST).

Direction to open: To the left (counter-clockwise).

Paint: City of Fargo Standard Red above ground line.

Bolts: All bolts below ground shall be stainless steel.

Hydrants shall be wrapped with polyethylene plastic film as per section 2.2.6.

POLYETHYLENE WRAP.

Acceptable manufacturers are Waterous WB67 Pacer and American Darling B62B-1.

2.8. HYDRANT MARKERS*2.8.1. GENERAL*

Hydrant markers shall be mounted on both sides of the post to face traffic (perpendicular to the curb) and shall be installed with each hydrant.

POST: Green U-channel- 2 lb. per foot & 9 feet long with 2 foot bury.

SIGN: 4" by 7" by 0.063" aluminum covered with Engineer Grade reflective sheeting, Red hydrant symbol on white background.

2.9. SERVICE CONNECTIONS

All service connections to PVC pipe shall be stainless steel, double bolt (minimum) service saddles. Service saddles shall have stainless steel washers between the nut and the plastic washer to equalize tightening stress. Rubber tapered gaskets shall be required to resist circumferential and longitudinal forces along with O-ring or flat gaskets for hydraulic seal. Saddle bolts shall be tightened to the manufacturers recommended tightness and verified with a torque wrench. Bolt tightness shall be rechecked with a torque wrench after the pipe tap is complete.

Approved saddle types:

Romac style 306

Ford style FS 300

Powerseal 3412AS

Cascade CSC2

2.10. YARD HYDRANTS*2.10.1. GENERAL*

Yard hydrants, where allowed by the Engineer, shall be brass ¾" frost proof type equipped with a brass vacuum breaker. The valve stem and plunger assembly shall be removable for inspection and repair without the need for digging up of the hydrant.

2.10.2. CONSTRUCTION

Hydrant barrel: 1" brass.

Inlet connection: ¾" NPT in brass casting.

Nozzle: heavy duty ¾" brass hose thread.

Bury depth: 7 feet.

Paint: Standard Red above ground line.

Acceptable manufacturers are Merrill Any Flow Brass Frost Proof or equal.

2.11. TRACER WIRE AND TRACER WIRE ACCESSORIES

2.11.1. GENERAL

All tracer wire and tracer wire accessories (connectors, splices, access points, and magnesium ground rods) shall be domestically manufactured in the USA. Tracer wire shall be installed along all water mains, water services, and sanitary sewer force mains unless otherwise noted in these plans. All system components, including tracer wire and tracer wire accessories must be compatible. Tracer wire and tracer wire accessories shall be considered incidental to other items.

2.11.2 TRACER WIRE

All tracer wire shall meet the following criteria:

- All tracer wire shall have HDPE insulation and color coded per APWA standards for specific utility being marked
- Must carry a radio signal to aid in locating buried underground utilities
- Certified to meet ASTM B170 specification for oxygen-free electrolytic copper
- Certified to meet ASTM B869 specification for 21% conductivity, hard drawn, copper-clad steel wire
- Certified to meet ASTM D1238 specification for polyethylene plastics extrusion materials
- The wire shall be identified by surface marking indicating manufacturer's identification, conductor size, and other appropriate information.

Tracer wire to be used for direct bury shall meet the following criteria:

- 12 AWG copper clad carbon steel core with HDPE coating (30 mil thickness) and minimum 450 lb. break load

Tracer wire to be used for directional drilling and boring shall meet the following criteria:

- 12 AWG copper clad carbon steel core with HDPE coating (45 mil thickness) and minimum 1,150 lb. break load

Tracer wire to be used for pipe bursting and slip lining shall meet the following criteria:

- 7 x 7 stranded copper clad steel with HDPE coating (50 mil thickness) and minimum 4,700 lb. break load

2.11.3 *TRACER WIRE CONNECTORS*

Tracer wire connectors shall be used to interconnect tracer wire at the intersection of mains and laterals. Non-locking, friction fit, twist on wire nuts, or taped connectors are prohibited.

Tracer wire connectors to be used for direct bury, directional drilling, and boring shall meet the following criteria:

- Pre-filled with dielectric silicon that never hardens.
- Waterproof and corrosion proof.
- Manufactured for the wire gauge being installed.
- Designed for direct bury and low voltage up to 50V.

Connectors used for direct bury, directional drilling, and boring shall be “DryConn Direct Bury Lug Aqua”, “Copperhead Mainline to Service Connector”, or approved equal.

Tracer wire connectors to be used for pipe bursting and slip lining shall meet the following criteria:

- 1/4”- 20 slotted stainless steel set screw with 30 volt maximum and shall be protected from corrosion with a wax pad or other approved anti-corrosive methods.

Connectors used for pipe bursting and slip lining shall be “SnakeBite Pipe Burst Connector” or approved equal.

2.11.4 *TRACER WIRE SPLICES*

Tracer wire splices shall be used to join tracer wires at the end of a spool or when required to repair damaged tracer wire. End of spool tracer wire splices shall occur no more than once per 500 feet.

Tracer wire splices to be used for direct bury, directional drilling, and boring shall be “DryConn Direct Bury Lug Aqua”, “Copperhead Mainline to Service Connector”, “Copperhead SnakeBite Locking Connector”, or approved equal.

Tracer wire connectors to be used for pipe bursting and slip lining shall meet the following criteria:

- In-line splices for the 7x7 copper clad steel core tracer wire shall be made with a 30 volt maximum solid brass lug with a set screw locking mechanism. The brass lug shall be protected with a fast cure heat shrink that creates a weather resistant connection.

2.11.5 ACCESS POINTS

Tracer wire access points shall be “Copperhead Cobra Access Point”, “Rhino TriView Test Station”, or approved equal.

Tracer wire access points installed at hydrant locations shall meet the following criteria:

- Made of polypropylene material
- Direct connection point for utility locator transmitter
- Minimum of 2 terminal exterior connection points with a jumper
- Tracer wire protection conduit connection opening at the bottom with 1” MTP thread
- Blue in color

Tracer wire access points installed at hydrant locations shall be “Copperhead Cobra Access Point” or approved equal.

The mounting bracket for connecting tracer wire access points to a hydrant shall be either a ¾” HDPE flange or a stainless steel flange. To protect tracer wire from weed whips, mowers, etc., tracer wire shall be run through a tracer wire protection conduit. The tracer wire protection conduit shall be a minimum 2-foot long piece of 1” HDPE heavy-wall innerduct with MTP thread on the connection end and an angle-cut buried end.

Tracer wire access points installed at locations other than hydrants or curb stops shall meet the following criteria:

- Temperature stable from -40 degrees Fahrenheit to +150 degrees Fahrenheit
- Color coded per APWA standards for specific utility being marked

- Shall be 54" in length
- Shall have tracer wire terminal post
- Must have a minimum of 2 external terminals ¼" brass shall include a bolt, nut, washers and ring terminal
- TS-SHUNT/ Jumper between the two adjacent terminals shall be rust free
- Mounted to a "T" post or "U" Channel

Tracer wire access points installed at locations other than hydrants shall be "Rhino TriView Test Station" or approved equal.

2.11.6 MAGNESIUM GROUND ROD

Magnesium ground rods shall meet the following criteria:

- Shall be a 1.5 lb. drive-in magnesium ground rod
- HDPE cap mounted to top of rod
- Minimum of 12 foot factory installed 12 AWG copper clad carbon steel core tracer wire
- Magnesium ground rod tracer wire shall be 12 AWG copper clad carbon steel core with HDPE coating (30 mil thickness) and minimum 450 lb. break load
- Magnesium ground rod tracer wire coating shall be red in color

2.12. INSULATION

Insulation shall be in accordance with Section 1200 of these Specifications.

PART 3

CONSTRUCTION

3.1. GENERAL

Excavation, trenching, and backfill shall be done in accordance with Section 1000. Pipe and fittings shall be handled and laid in accordance with the latest revision of AWWA Standard C600. Pipe and fittings shall be laid in the location shown on the plans, the exact location being designated by the Engineer during construction. Before laying any pipe, it shall be cleaned of all foreign matter and kept clean thereafter. Open ends shall be protected at all times to prevent the entrance of dirt, trench water, animals or foreign material into the pipe. The bell and spigot shall be wiped clean and sufficient lubrication placed on the gasket and spigot before the pipe is pushed fully into the bell. Field cut spigot ends of push-on joints shall be beveled prior to being pushed into the bell. Every part of the pipe shall be bedded uniformly throughout its length. All handling, field cuts, polyethylene wrapping, and jointing shall be done as per the manufacturer's recommendation.

3.2. ALIGNMENT

The Engineering Department will provide line and grade for all water main. All water mains shall have a minimum cover of 7.5'. Grade shall be maintained by the Contractor using methods approved by the Engineer. Water mains installed parallel to sanitary sewer shall be laid 10 feet apart, distance shall be measured edge to edge. Where a water main crosses a sanitary sewer line, a minimum vertical distance of 18 inches shall be maintained between the outside of the water main and the outside of the sewer. Deflections from a straight line or grade, where permitted by the Engineer, shall not exceed the pipe manufacturer's recommendation.

3.3. THRUST BLOCKS

All fittings shall be braced by means of poured concrete or concrete thrust blocks. No wood thrust blocks will be allowed. Poured concrete shall be 3000 psi concrete poured against undisturbed earth. Care shall be taken not to cover up joints, bolts, flanges, and the fittings with concrete.

Thrust restraint at the joints may be used in lieu of concrete thrust blocking with the permission of the Engineer. Restraint devices for PVC pipe shall meet or exceed the requirements of ASTM F 1674-96 or the latest revision, Standard Test Method for Joint Restraint Products for Use with PVC Pipe.

3.4. SETTING HYDRANTS

All hydrants shall be vertically plumb and shall have their pumper nozzle facing and at right angles to the street. Each hydrant shall be set on a concrete block and blocked behind with concrete block(s) of sufficient size to prevent settling and horizontal movement. Hydrant bases shall be backfilled with at least 1/3 cubic yard of 1 1/4" crushed rock to facilitate drainage and covered with polyethylene plastic film. The 1 1/4" crushed rock shall extend to 6" above the weep hole. After backfilling the hydrant markers shall be installed 18 inches behind the hydrant.

3.5. CONNECTIONS TO EXISTING WATER MAINS

Connections between new and existing pipes shall use proper specials and fittings to suit the actual conditions encountered. Suitable facilities shall be provided for proper de-watering, drainage, and disposal of all water removed from the excavation or pipe without damage to adjacent property. Prior to the closure of existing water mains, the Contractor shall notify all affected water users.

3.6. WATER MAIN SHUTDOWNS

The Contractor shall coordinate water main shutdowns with the Engineer and the Mains and Hydrants Department. The Contractor is responsible for gate valve locations and property notification. The Mains and Hydrants Department will assist with cleaning and operating the valves if required.

Shutdowns in residential areas may not occur prior to 9:00 AM. Residential water users shall be notified of the outage by 7:00 PM the night before the planned shutdown.

The Contractor shall schedule outages to non-residential water users in such a manner as to minimize the impact of the outage to the user. Outage notifications to non-residential water users shall be per the direction of the Engineer, but in no case shall be given less than 2 working days prior to the shutdown.

Notifications shall be in writing and shall indicate the estimated duration of the shutdown. A sample shutoff notification form can be found on the City's website. If actual shutdown varies from the stated time by more than one hour, a second verbal notification is required.

The Contractor shall turn on all valves after the necessary water main connections have been made.

3.7. TEMPORARY WATER SERVICES

If the water to a property is to be out for more than 12 hours, the Contractor will be responsible for providing a temporary water service to the affected water users. All piping shall be rated for potable water use. Minimum pipe size shall be 1" diameter for up to 3 service connections, 2" diameter for 4 or more connections. The Contractor shall use larger pipes where necessary to provide adequate domestic service throughout the duration of the temporary connection. Valves shall be provided on temporary piping at intervals not to exceed 500 feet. The method of providing the temporary water service (which hydrant to use, direction to feed, etc.) shall be an option of the Contractor subject to the approval of the Engineer.

All temporary water mains and services shall be disinfected in accordance with section 1300.3.9. One water sample per block at the end of a service connection will be taken after the temporary water line is flushed. The sample shall show the absence of bacteria before connections are allowed. All mains and services shall be flushed prior to being put into service. No additional contract time will be allowed for failure to pass bacteria test.

3.8. SETTING VALVES

Valves will be installed where shown on the plans or as directed by the Engineer. Before installing the valve, care should be taken to ensure that all foreign material has been removed. The stuffing boxes shall be tightened and the valve opened and closed to see that all parts are in first class working order. Valves shall be set on block as shown in the details. The body of the valve shall be wrapped with polyethylene wrap, securely fastened to the pipe on both sides of the valve, as per ANSI/AWWA C105/A21.5. Valve and valve boxes must be plumb. The valve box adapter shall be installed on the valve and the valve box shall be placed directly over the operating nut, and the top of the box being brought flush with finish grade. The Valve box shall be wrapped with polyethylene plastic film as per section 2.2.6. *POLYETHYLENE WRAP*. The box shall be backfilled and thoroughly tamped around the box. After backfilling a wrench shall be dropped on the valve to ensure that it is operable. Prior to acceptance, the City Water Department will verify that each valve is easily operable.

3.9. DISINFECTION

All water mains shall be chlorinated as set forth by the latest revision of AWWA Standard C651. Sufficient chlorine tablets or powder shall be placed in each pipe to furnish a resultant solution of

50 to 100 parts per million of available chlorine. Generally required dosage to meet this standard is as follows:

<u>WATER MAIN SIZE</u>	<u>REQUIRED DOSAGE</u>
2"	1 LB. PER 10,000 FEET
4"	1 LB. PER 2,500 FEET
6"	1 LB. PER 1,100 FEET
8"	1 LB. PER 700 FEET
10"	1 LB. PER 350 FEET
12"	1 LB. PER 280 FEET
16"	1 LB. PER 160 FEET

The chlorinated water shall remain in the pipe line for at least 24 hours and shall have a residual chlorine content of at least 5 parts per million at that time. A bacteriological sample will be taken after the main is flushed and shall show the absence of bacteria before connections are allowed to the water main. Chlorine disinfection shall be included in the unit bid price for the pipe.

3.10. PRESSURE AND LEAKAGE TESTING

All water main and services shall be subjected to pressure and leakage testing. All services shall be pressure tested with the main. The Contractor shall furnish all pumping equipment, labor and gauges required for these tests and if any section of pipe does not meet these tests, the Contractor shall at his own expense locate and repair the defects and retest the line until it meets the requirements. The pipe shall be subjected to a hydrostatic test of 150 psi for a period of two hours. Each pressure test shall be limited to a maximum of 1,500 linear feet of water main. The pressure shall be held within 2 psi of this test pressure for the entire time and leakage shall not exceed the rate established by the following formula:

$$Q = (LD\sqrt{P})/148,000$$

In which:

Q= maximum permissible leakage rate in gallons per hour for the length of line being tested.

L= length of the line being tested in feet.

D= internal diameter of the pipe in inches.

P= average test pressure in psig.

In the event that the line contains more than one size of pipe, the allowable leakage for each size shall be calculated separately and then added to obtain the total allowable leakage allowed for the

lines being tested. Repairs shall be made by replacing the defective pipe or dismantling the faulty joint, cleaning, realigning the gland or gasket and reassembling the joint as per the original specification. Repair sleeves may only be used if approved by the Engineer and shall have all stainless steel parts. All cost of locating and repairing the leaks shall be borne by the Contractor.

3.11. BACTERIOLOGICAL TESTING

Bacteriological testing is required on all new and replaced water main before the water main is placed in service. The tests ensure that the water being introduced into the system has been properly disinfected and is free of contamination. Only the City inspector may do the testing procedure. Records are kept of the litmus test, the bacteriological tests, and the chain of custody during the sample submittal process.

All water samples for bacteriological testing shall be collected from a newly installed water service. If a project does not include newly installed water services, the Contractor shall supply all labor and materials necessary to collect the sample. The materials, location, and method for abandonment/removal of necessary materials shall be approved by the Engineer. Water samples may not be collected from a fire hydrant.

After final flushing and before the new water main is connected to the distribution system, two consecutive sets of acceptable samples, taken at least 24 hours apart, shall be collected from the new main. At least one set of samples shall be collected from every 1,200 feet of new water main. All samples shall be tested for bacteriological quality in accordance with *Standard Methods for the Examination of Water and Wastewater*, and show the absence of coliform organisms and the presence of a chlorine residual.

The basic procedure is as follows:

1. Insert litmus paper test strip in the discharge stream of the hydrant while it is being flushed. The color change will indicate that there is residual chlorine content.
2. Before the valves are opened, obtain a sterile sample of the disinfected main. This water sample will be taken after the completion of the pressure test. 100-ml samples will be taken with a chlorine neutralizer tablet in the container. The sample must be taken to the water plant immediately for testing. If this is not possible, the sample must be kept in a refrigerated container, however, the test must begin within 24 hours. Results will be available approximately 24 hours from the time the test is admitted.

3. A second sample is obtained from the same location at least 24 hours after the first sample. This sample indicates that the residual chlorine content is such that verification is obtained that the pipe, newly introduced water, and any debris are disinfected. As such, the sample must be obtained from water that has remained in the new pipe for at least 24 hours. Both samples must pass the test before the new water main may be opened and put in use in the distribution system.
4. When flushing the mains, care must be taken to ensure that flow is away from the existing mains. This may involve flushing ½ block in one direction until the water is clear, and then closing that valve and flushing from the other end of the block for a mid-block hydrant.

If the initial disinfecting fails to produce satisfactory results, the main shall be reflushed and re-sampled. If check samples also fail, the main shall be rechlorinated by the continuous feed or slug method until satisfactory results are obtained.

The Contractor should note that the testing tank may require sterilization in order to avoid contamination of the mains during the testing process. The pipe installation crews will need to ensure that the pipes are free of dirt, debris and other matter. It must be remembered that the final water quality test is not the primary means for certifying the sanitary condition of the main. The sanitary handling of materials, the construction practices, and the continual inspection of the work are the primary means for ensuring the sanitary condition of the water main.

The Contractor shall assist the inspector as necessary to obtain the samples. All costs for the disinfection and testing of water mains shall be incidental to the bid price for the water main.

3.12. TRACER WIRE SYSTEM

3.12.1. GENERAL

Tracer wire shall be installed below the spring line of pipes and fittings. Tracer wire shall be securely fastened to the water main pipe with tape or plastic ties at every pipe bell or at 20 foot intervals, whichever is less. In addition, tracer wire shall be secured within 1 foot of all underground utility appurtenances. The maximum mainline spacing for a tracer wire access point shall be no greater than 600 linear feet. End of spool tracer wire splices shall occur no more than once per 500 feet. All lateral tracer wires shall be a single wire, connected to the mainline tracer wire using an approved tracer wire connector. Looping or coiling of wire is not allowed.

Minimum requirements for the number of tracer wire lines are as follows:

- One wire shall be used for direct bury installations
- Two wires shall be used for directional drilling/ boring installations
- One 7x7 extreme strength copper clad steel core tracer wire shall be used for pipe bursting/ slip lining installations.

Any damage occurring during installation of the trace wire must be immediately repaired by removing the damaged wire and installing a new section of wire with approved connectors and/or splicing kits. Taping and/or spray coating is not allowed. Mainline trace wire shall not be connected to existing conductive pipes.

All costs associated with the installation and testing of the tracer wire shall be considered incidental to other items.

3.12.2. TRACER WIRE CONNECTORS

Tracer wire connectors shall be used to interconnect tracer wire at the intersection of mains and laterals. Tracer wire connectors shall be installed in accordance with the manufacturer's installation instructions. The mainline tracer wire shall not be cut.

3.12.3. TRACER WIRE SPLICES

Tracer wire splices shall be used to join tracer wire at the end of a spool or when required to repair damaged tracer wire. End of spool tracer wire splices shall occur no more than once per 500 feet.

3.12.4. TRACER WIRE ACCESS POINT

At each hydrant, the tracer wire and the magnesium ground rod tracer wire shall be routed up the side of the hydrant, through the tracer wire protection conduit, and connected to the access point. The Contractor shall leave 2 feet of tracer wire and magnesium ground tracer wire slack in the tracer wire protection conduit.

At locations other than hydrants or curb stops, tracer wire and the magnesium ground rod tracer wire shall be ran into a "Rhino TriView Test Station" or approved equal access point. The access point shall be mounted to a "U" channel post. The Contractor shall leave 2 feet of tracer wire and magnesium ground tracer wire slack in the "Rhino TriView Test Station" or approved equal access point.

Tracer wire shall not be mounted to the lid of gate valves or other devices that are located within the pavement section.

3.12.5. TRACER WIRE MAGNESIUM GROUND RODS

Tracer wire must be properly grounded at all hydrants. Grounding of trace wire shall be achieved by use of a drive-in magnesium ground rod specifically manufactured for this purpose and shall be driven into virgin ground below the pipe bedding. The lateral tracer wire and the magnesium ground rod tracer wire shall be ran up the hydrant through the tracer wire protection conduit and connected to the access point. The Contractor shall leave 2 feet of tracer wire and magnesium ground rod tracer wire slack in the tracer wire protection conduit.

3.12.6. TRACER WIRE ELECTRICAL CONDUCTIVITY TEST

All new tracer wire installations shall be located using typical low frequency (512Hz) line tracing equipment furnished by the Contractor and witnessed by the Contractor and Engineer prior to acceptance of ownership.

This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project.

Continuity testing in lieu of actual line tracing shall not be accepted. All areas failing the location test shall be corrected at the Contractor's expense. The wire shall be tested in accordance with the requirements of ASTM B-1, B-3, B-8 and D-1248.

3.12.7. ELECTRICAL CONDUCTIVITY TEST FOR DUCTILE IRON

The Contractor shall perform a conductivity test one week after completion of pressure testing of the water main on all ductile iron pipe water main. This shall be performed in a timely manner to ensure acceptable conductivity prior to further construction.

On water main reconstruction projects, the Contractor shall perform the conductivity test prior to service line reconnections to ensure main line isolation from house services.

The Engineer and Owner may require a Contractor to test the first section of pipe installed to demonstrate the Contractor's ability to install the pipe in an acceptable manner. When the connection to the existing system is not made with a valve, the Contractor shall test the existing section to the first available valve(s) to determine the condition of the existing system, or the Contractor may make provisions to test his work separately, prior to connection to the existing system, in a manner acceptable to the Engineer.

The system (pipeline, valves, fittings and hydrants) shall be tested for electrical continuity and current capacity. The electrical test shall be made after the hydrostatic test and while the line is at normal operating pressure. Backfilling shall have been completed. The line may be tested in sections of convenient length as approved by Engineer.

Direct current of 350 amperes plus or minus 10%, shall be passed through the pipeline for 5 minutes. Current flow through the pipe shall be measured continuously on a suitable ammeter and shall remain steady without interruption or fluctuation throughout the 5-minute test period.

Insufficient current or intermittent current or arcing, indicated by large fluctuation of the ammeter needle, shall be evidence of defective contact in the pipeline. The cause shall be isolated and corrected. Thereafter, the section in which the defective test occurred shall be retested as a unit and shall meet the requirements.

Sources of D.C. for these tests may be motor generators, arc welding machines, or other approved sources. All such equipment shall be furnished by the Contractor.

Cables from the power source to the section of system under test should be a sufficient size to carry the test current without overheating or excessive voltage drop.

After the test, the hydrant shall be shut off and cap loosened to allow hydrant drainage. Tighten cap after drainage.

3.13. FINAL INSPECTION

The Contractor and the City of Fargo representative will operate all main valves and inspect all stop boxes for access. This procedure will be accomplished after all clean up, etc. has been completed. This inspection will be made prior to the final payment for work performed. Any defects shall be promptly repaired by the Contractor at his cost.

PART 4
GUARANTEE, MEASUREMENT & PAYMENT

4.1. GUARANTEE

The guarantee shall be per the contract.

4.2. MEASUREMENT AND PAYMENT

4.2.1. GENERAL

The cost of excavation, trenching, and backfill shall be included as part of this specification.

4.2.2. WATER MAIN PIPE

Pipe will be measured by customary and conventional methods and paid for on a unit price basis for the actual length installed.

Measurement will be from the center of the fitting or valve to the center of the next fitting or valve. The unit price shall include the cost of the pipe, jointing material, tracer wire and tracer wire accessories, concrete thrust blocking or joint restraint and all other appurtenance costs except valves, hydrants, and fittings, completely installed in accordance with the Specifications.

4.2.3. FITTINGS

Unless otherwise noted on the plans, water main fittings will be measured by the pound without joint accessories or cement lining. The weight for fittings not listed in the tables below shall be in accordance with AWWA C153. The weight for fittings not listed in the tables below or in AWWA C153 shall be the actual weight of the fitting(s) furnished and installed based on acceptable documentation provided by the Contractor. The standard weight of water main fittings, for payment purposes, shall be as follows:

Bends, Caps, and Plugs							
Size	Fitting Weights, lbs. (AWWA C153)						
	Bends (degrees)				Caps	Plugs	Sleeves
	90	45	22.5	11.25			
4	25	22	18	16	9	10	20
6	39	32	31	30	15	16	29
8	57	46	46	42	22	26	45
10	89	70	64	58	32	36	61
12	108	86	80	67	42	46	76
14	210	160	136	93	66	75	128
16	264	202	172	148	92	95	159
20	400	305	310	245	125	135	236
24	565	405	412	315	166	175	306

Tees, Crosses, and Reducers									
Run	Branch	Fitting Weights, lbs. (AWWA C153)			Run	Branch	Fitting Weights, lbs. (AWWA C153)		
		Tee	Cross	Reducer			Tee	Cross	Reducer
Large	Small				Large	Small			
4	4	32	40		16	6	228	240	124
6	4	46	57	24	16	8	248	260	124
6	6	56	75		16	10	264	317	124
8	4	60	68	32	16	12	280	306	112
8	6	72	74	36	16	14	316		140
8	8	86	105		16	16	322	385	
10	4	78	112	46	20	6	315		
10	6	90	119	47	20	8	345	379	
10	8	105	124	50	20	10	370		220
10	10	120	145		20	12	395	413	205
12	4	94	119	58	20	14	440		200
12	6	110	126	58	20	16	465		200
12	8	125	149	57	20	20	535		
12	10	140	179	61	24	6	415		
12	12	160	213		24	8	445	481	
14	4	172			24	10	470		
14	6	182	200	100	24	12	500	529	305
14	8	206	228	100	24	14	550		306
14	10	228		100	24	16	580	576	320
14	12	234		100	24	20	660	1589	300
14	14	280	299		24	24	720		

4.2.4. VALVES

Valves will be paid for under the unit price bid per each complete in place. The unit price will include the valve, jointing material, valve box, valve box adaptor, concrete blocking, necessary extensions, and all other work necessary for a complete and workable valve installation.

4.2.5. HYDRANTS AND YARD HYDRANTS

Hydrants will be paid for under the unit price bid per each complete in place. The unit price will include the hydrant with hydrant marker, rock bedding, blocking, excess excavation and all other work necessary for a complete and workable hydrant installation.

4.2.6. POLYETHYLENE WRAP

Polyethylene wrap shall be included in the unit bid price for ductile iron pipe, fittings, hydrants, and valves. All material, labor, equipment and incidental costs necessary to install the plastic wrap shall be included.

4.2.7. DISINFECTION AND TESTING WATER MAINS

Disinfection and testing of water mains shall be incidental to the bid price for the water main. Payment will not be made for water main until such time as it has been successfully tested.

4.2.8. TAPPING SLEEVES AND VALVES

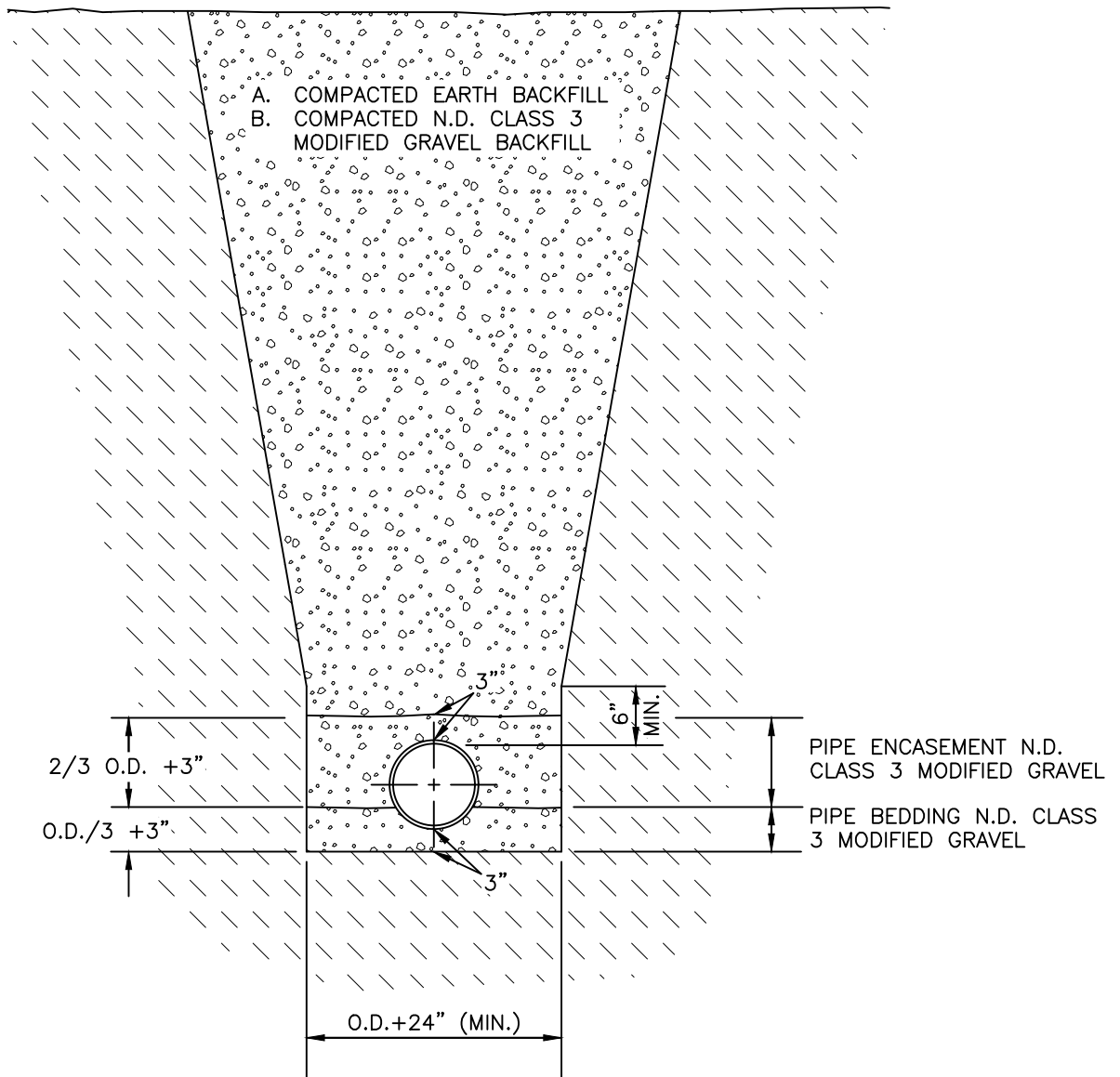
The unit bid price shall include the cost of furnishing and installing the tapping sleeve and valve. The City of Fargo Water Department will make the tap for 12" and smaller taps. On taps larger than 12", the Contractor shall make arrangements with other entities to make the tap. For connections made to the water main that are not made under city contract the Contractor will be billed for the connection by the City Water Department.

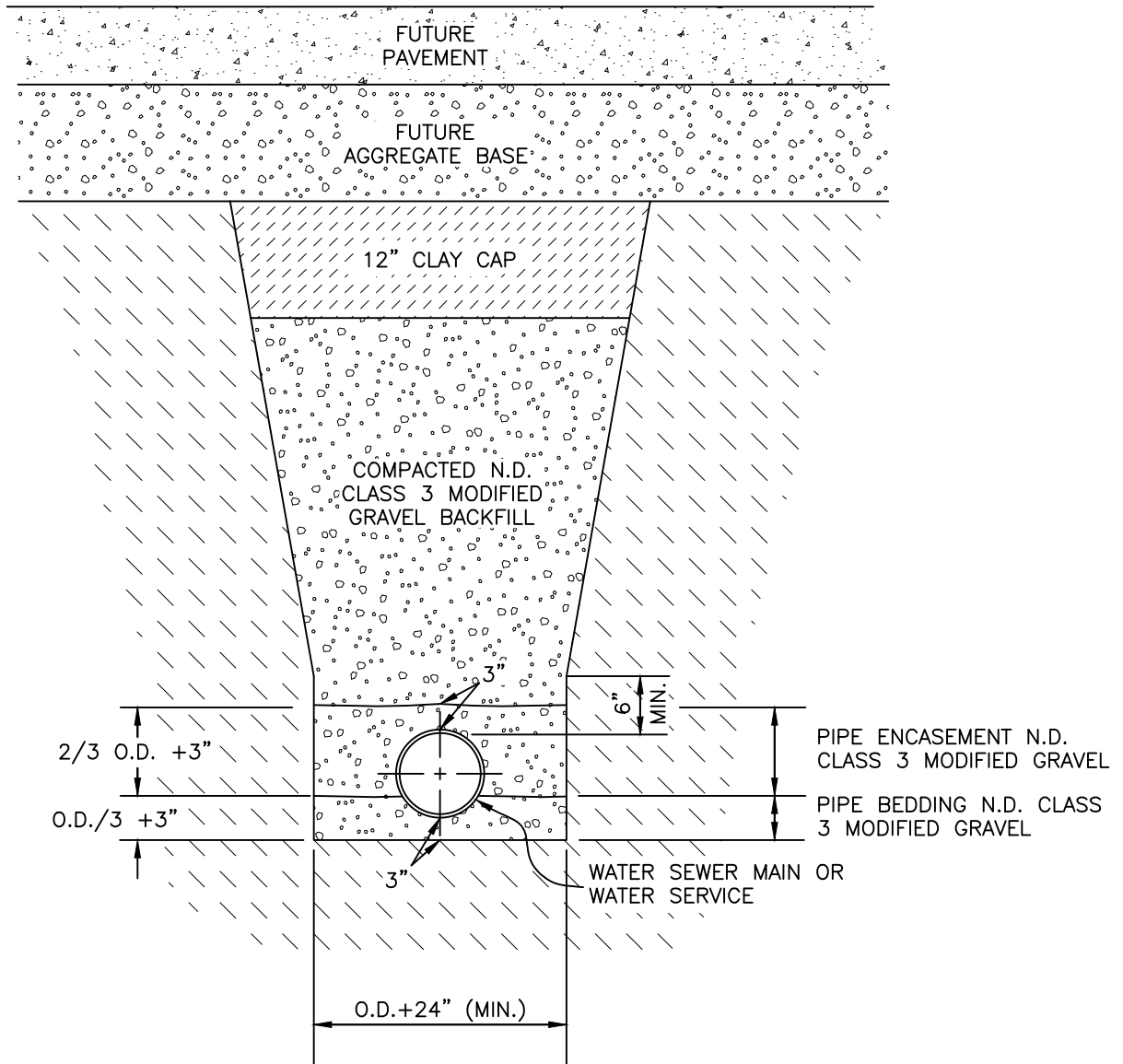
4.2.9. TRACER WIRE

The tracer wire system and electrical conductivity testing shall be considered incidental to water main construction.

4.2.10. OTHER COSTS

All other costs for work necessary to properly complete the work specified herein shall not be bid items; the costs shall be charged to other items unless a bid item is specifically included on the bid sheet.





NOTE:
THIS DETAIL APPLIES WHERE WATER MAIN IS INSTALLED UNDER FUTURE PAVING WITH EDGE DRAIN.

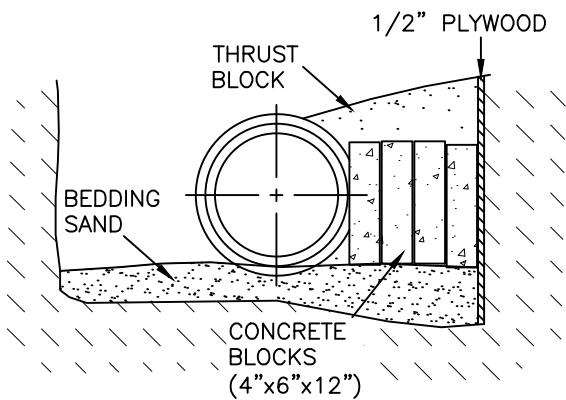
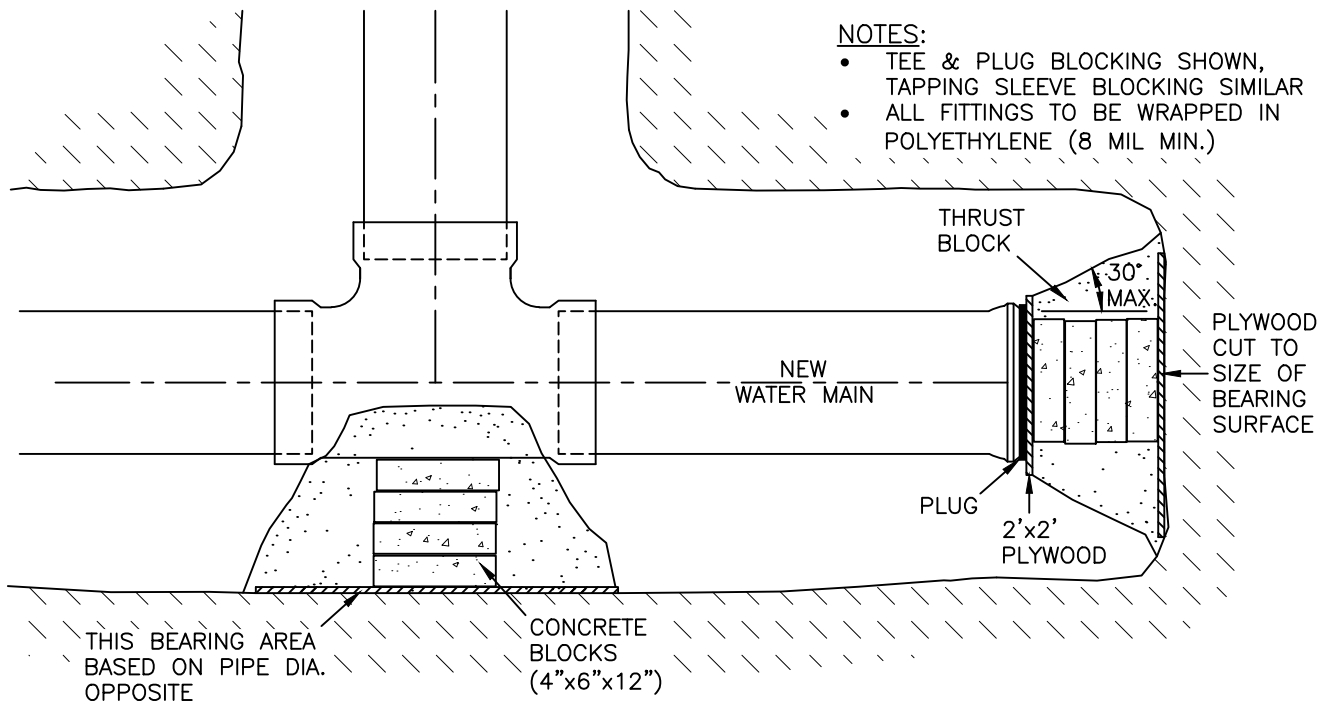
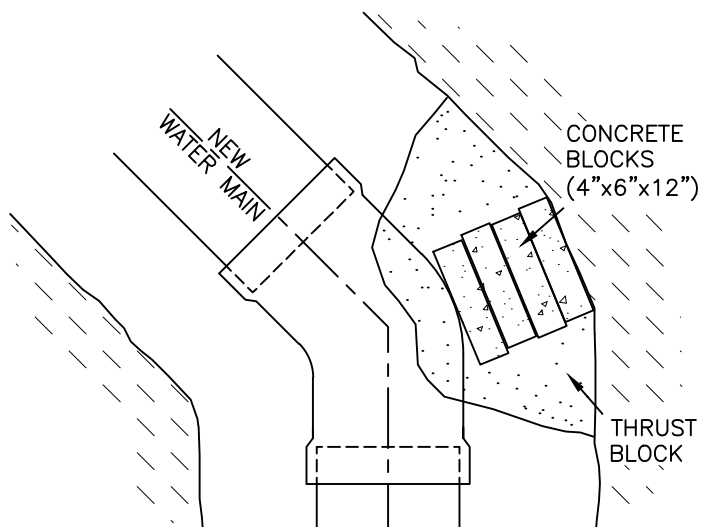


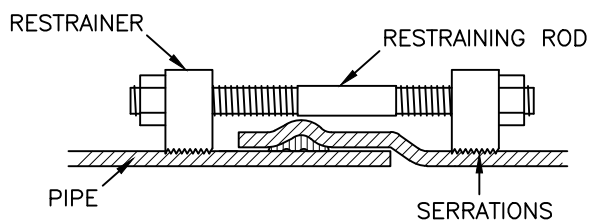
TABLE OF REQUIRED BEARING AREAS

PIPE SIZE	BEND ANGLE				TEE
	90°	45°	22-1/2°	11-1/4°	
4"	2' SQ.	2' SQ.	2' SQ.	2' SQ.	2' SQ.
6"	3' SQ.	2' SQ.	2' SQ.	2' SQ.	3' SQ.
8"	5' SQ.	3' SQ.	2' SQ.	2' SQ.	4' SQ.
10"	8' SQ.	4' SQ.	3' SQ.	2' SQ.	6' SQ.
12"	11' SQ.	6' SQ.	3' SQ.	2' SQ.	8' SQ.
16"	20' SQ.	11' SQ.	6' SQ.	4' SQ.	15' SQ.
18"	25' SQ.	14' SQ.	7' SQ.	4' SQ.	18' SQ.

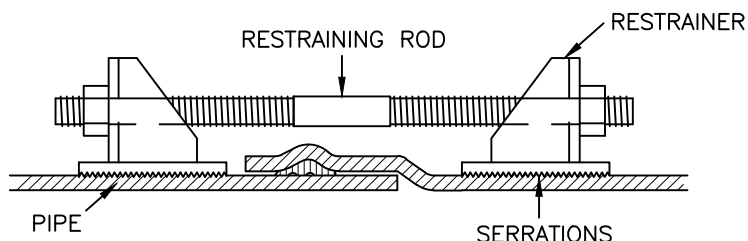
NOTES:

- CONCRETE BLOCKING TO BE POURED AGAINST UNDISTURBED EARTH. BELLS AND BOLTS TO BE KEPT FREE OF CONCRETE. CONCRETE IN PLACE TO BE INCLUDED IN PRICE BID FOR WATER MAIN.
- IF APPROVED BY THE ENGINEER, SOLID CONCRETE BLOCKS MAY BE USED FOR BLOCKING ON 8" DIA PIPE AND BELOW. 10" DIA. PIPE AND ABOVE WILL CONFORM TO CONCRETE POURED IN PLACE AREAS SHOWN ABOVE.

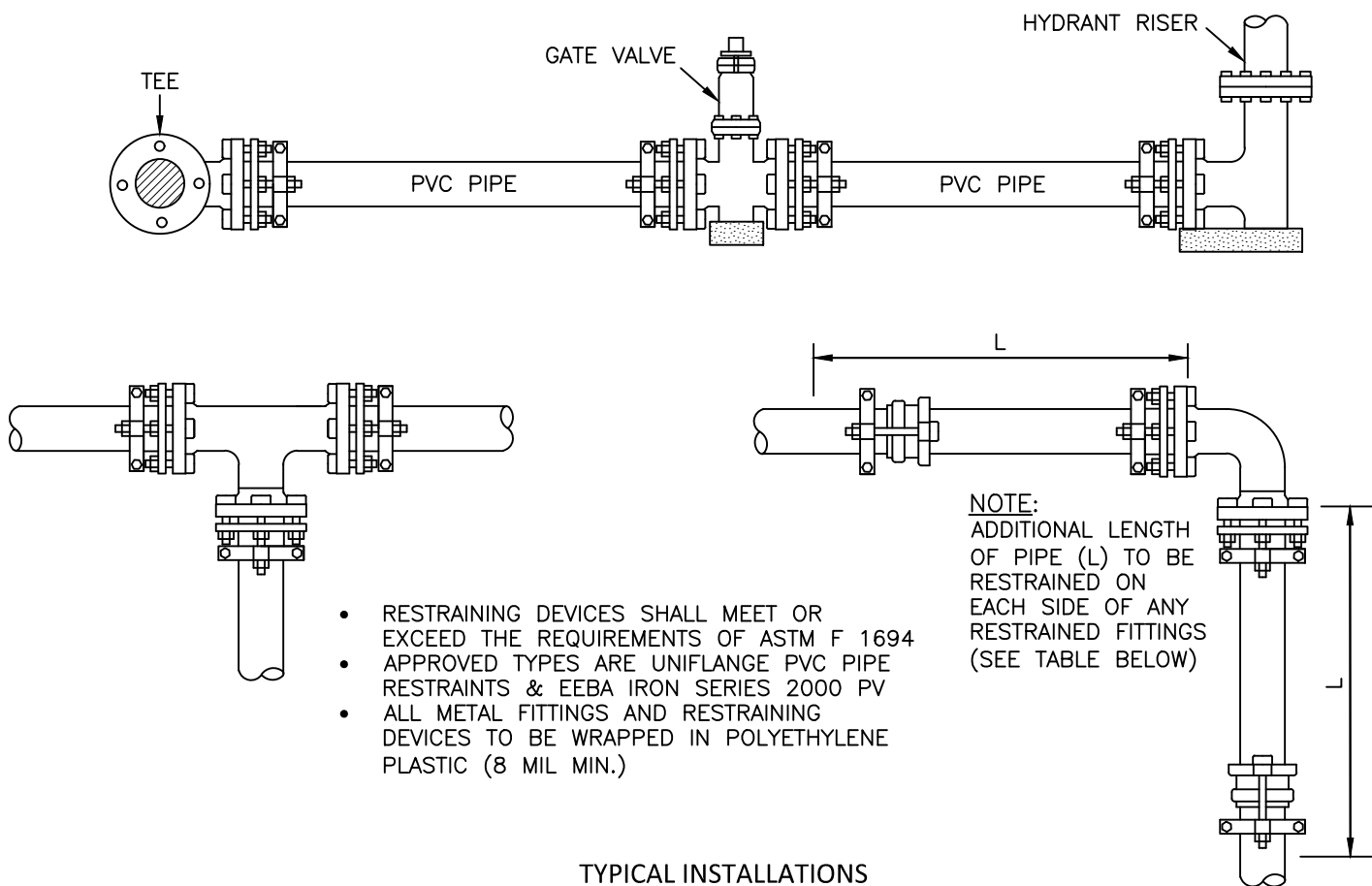




2" TO 12" DIA.



14" TO 36" DIA.



- RESTRAINING DEVICES SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM F 1694
- APPROVED TYPES ARE UNIFLANGE PVC PIPE RESTRAINTS & EEBA IRON SERIES 2000 PV
- ALL METAL FITTINGS AND RESTRAINING DEVICES TO BE WRAPPED IN POLYETHYLENE PLASTIC (8 MIL MIN.)

TYPICAL INSTALLATIONS

NOM. PIPE SIZE	90° BEND (L)	45° BEND (L)	22.5° BEND (L)	11.25° BEND (L)	SIZE ON SIZE TEE (L)*	VALVE/ DEAD-END (L)
6"	19'	8'	4'	2'	2'	35'
8"	25'	11'	5'	3'	13'	45'
10"	31'	13'	6'	3'	23'	55'
12"	36'	15'	8'	4'	33'	65'
16"	47'	20'	10'	5'	52'	84'

* RECOMMENDED RESTRAINED LENGTHS FOR TEES ARE FOR THE BRANCH OUTLET AND ASSUME A MINIMUM 10 FT. SECTION OF PIPE ATTACHED TO EACH SIDE OF THE RUN. RESTRAINT DEVICES ARE ALSO REQUIRED ON BOTH RUN JOINTS OF THE TEE ITSELF.

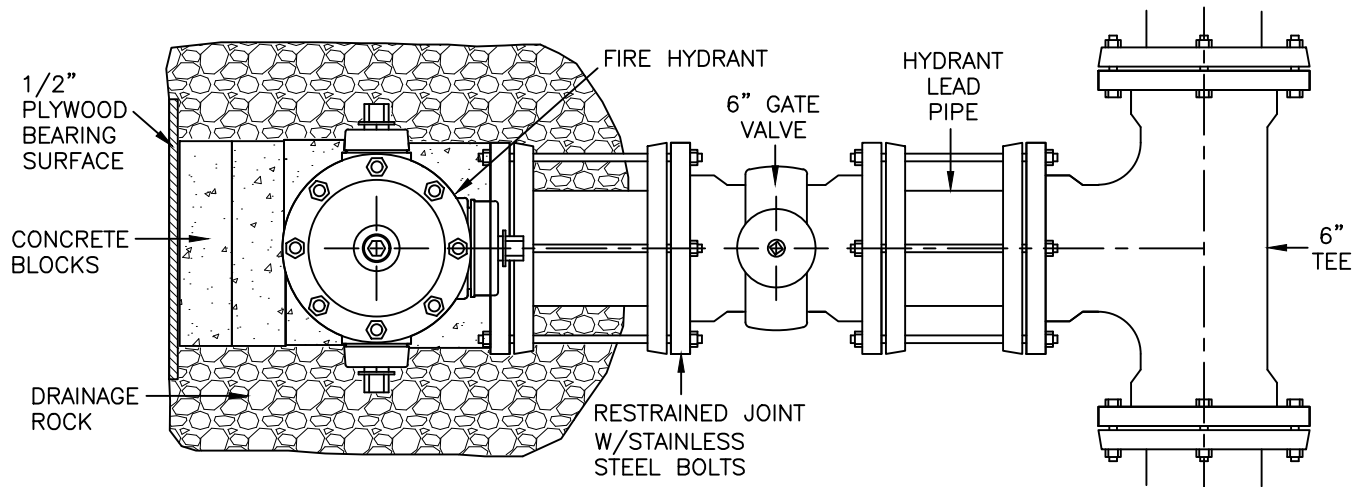
SIZE	45° VERT. OFFSET* (L)	22.5° VERT. OFFSET* (L)
6"	15'/8'	7'/4'
8"	19'/11'	9'/5'
10"	23'/13'	11'/6'
12"	27'/15'	13'/8'
16"	35'/20'	17'/10'

* FIRST NUMBER IS THE RECOMMENDED RESTRAINED LENGTH ON EACH SIDE OF THE DOWN BEND, THE SECOND NUMBER IS THE LENGTH FOR EACH SIDE OF THE UP BEND.

RESTRAINED LENGTHS OF PVC PIPE

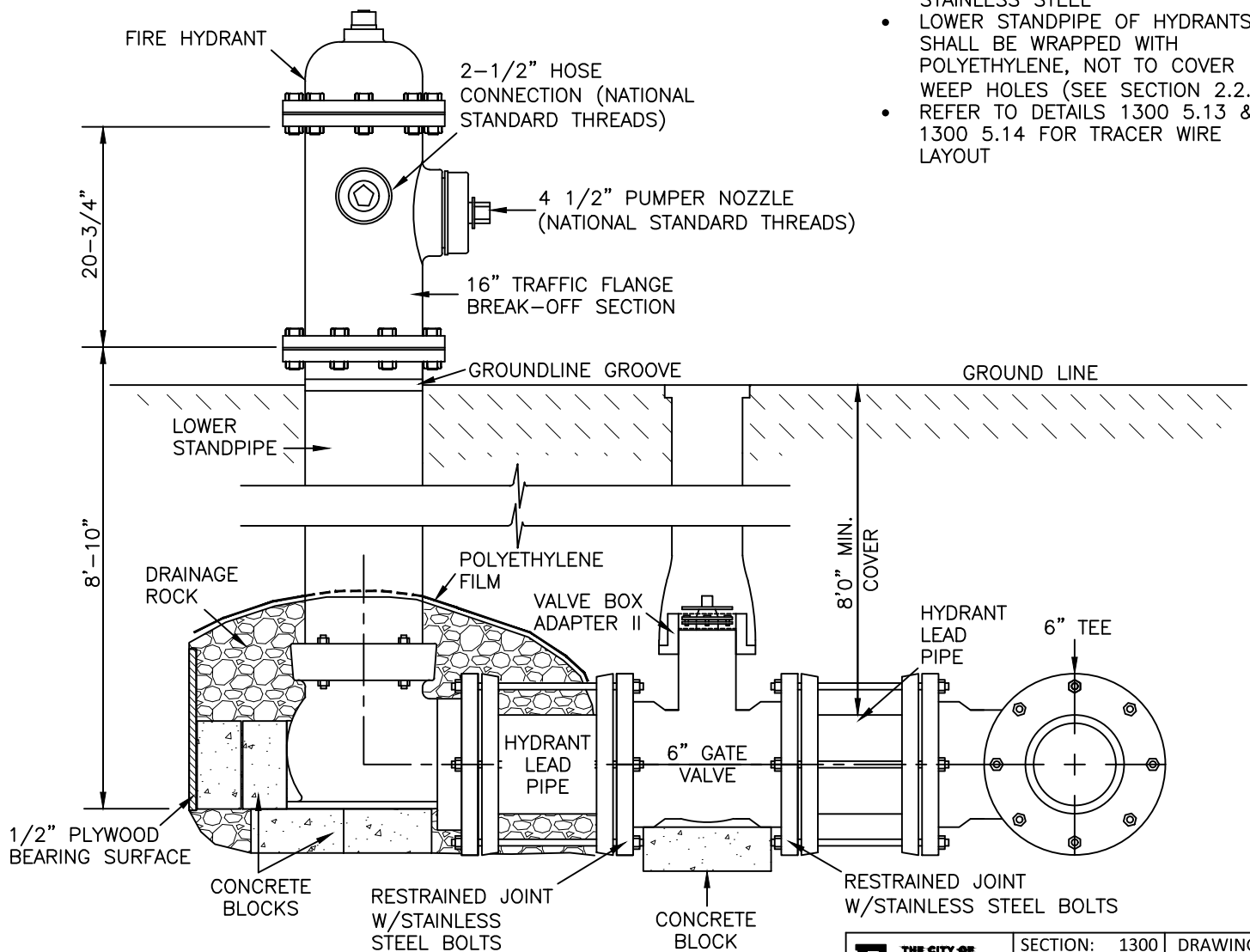
THE CITY OF
Fargo
FAR MORE
ENGINEERING
DEPARTMENT

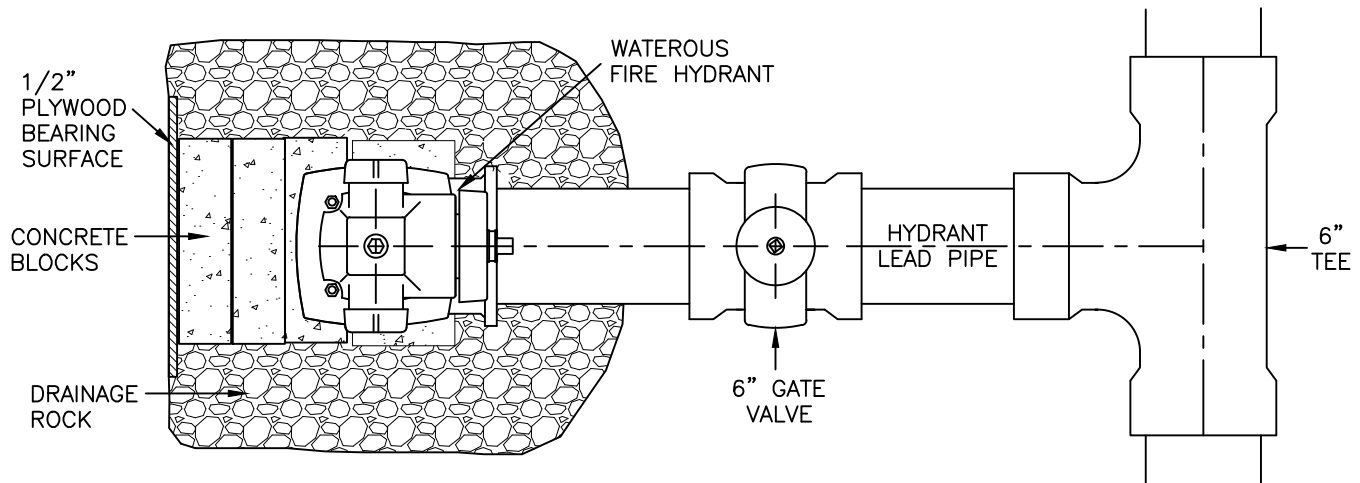
SECTION: 1300	DRAWING: 5.4
REVISION: 1999	
RESTRAINT DEVICE FOR PVC PIPE BELL JOINTS	
APPROVED:	DATE:



NOTES:

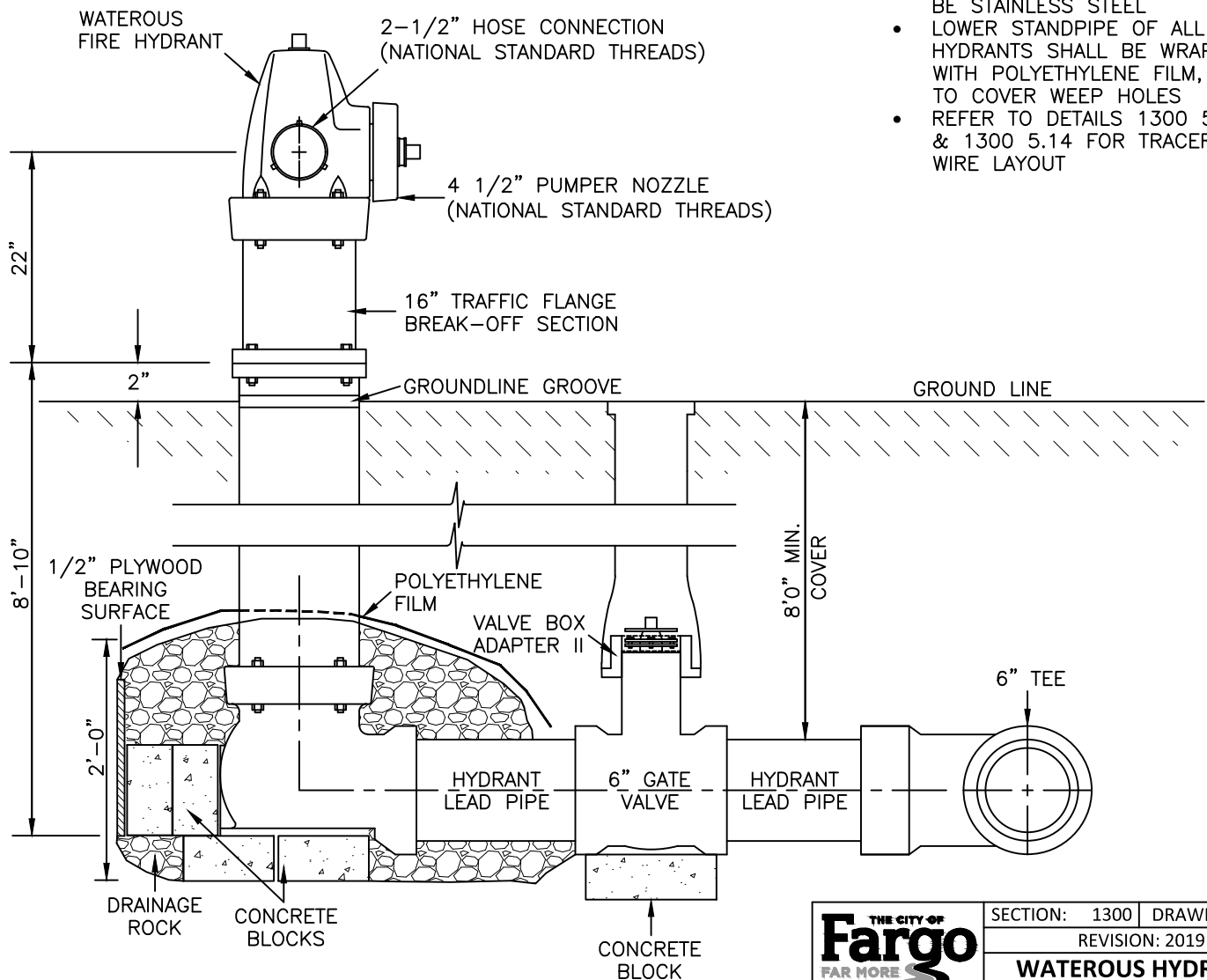
- OPERATING & CAP NUTS: CITY OF FARGO STANDARDS
- BOLTS BELOW GROUND SHALL BE STAINLESS STEEL
- LOWER STANDPIPE OF HYDRANTS SHALL BE WRAPPED WITH POLYETHYLENE, NOT TO COVER WEEP HOLES (SEE SECTION 2.2.6)
- REFER TO DETAILS 1300 5.13 & 1300 5.14 FOR TRACER WIRE LAYOUT

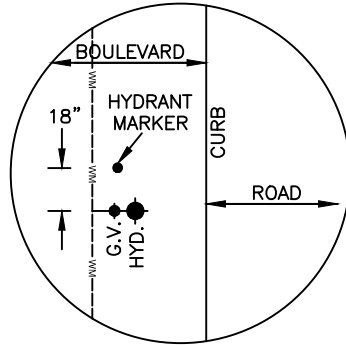




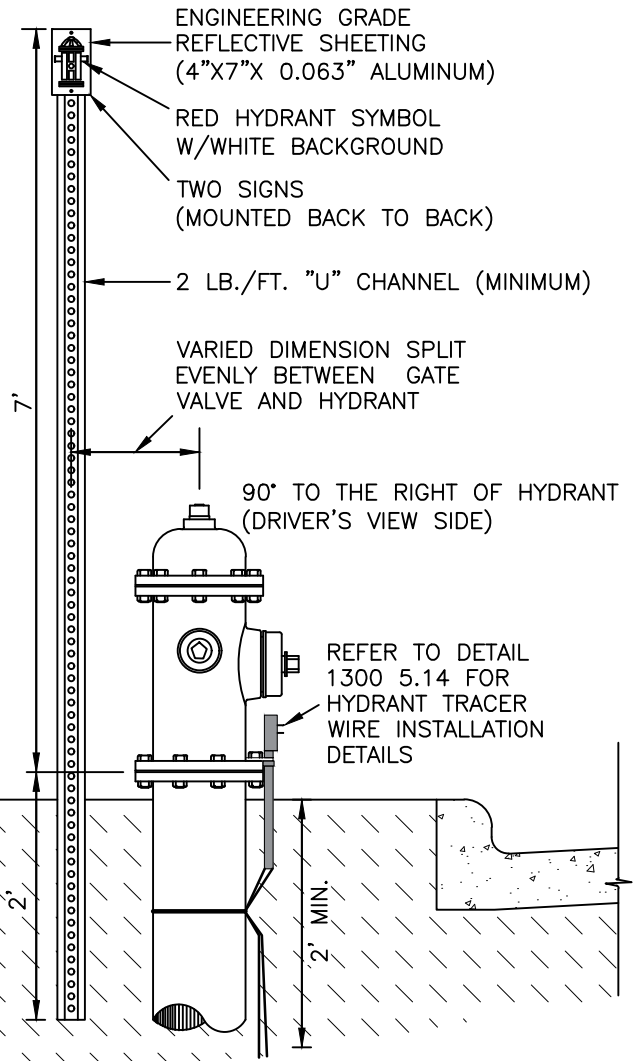
NOTES:

- OPERATING & CAP NUTS: CITY OF FARGO STANDARDS
- BOLTS BELOW GROUND SHALL BE STAINLESS STEEL
- LOWER STANDPIPE OF ALL HYDRANTS SHALL BE WRAPPED WITH POLYETHYLENE FILM, NOT TO COVER WEEP HOLES
- REFER TO DETAILS 1300 5.13 & 1300 5.14 FOR TRACER WIRE LAYOUT

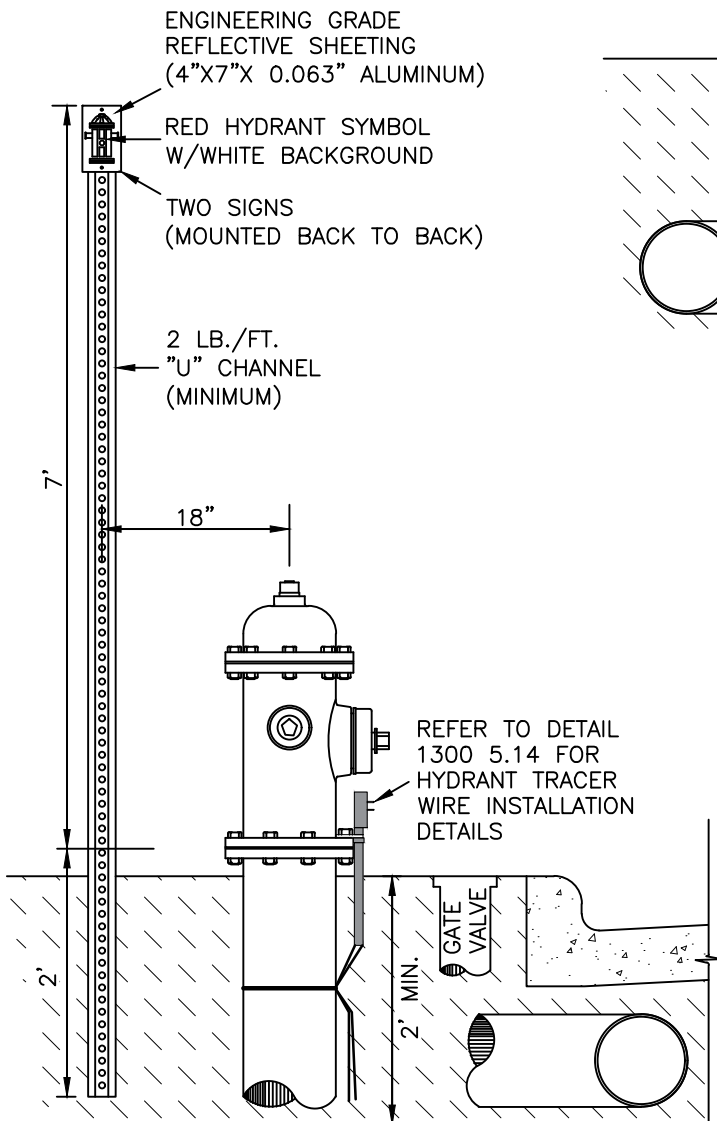




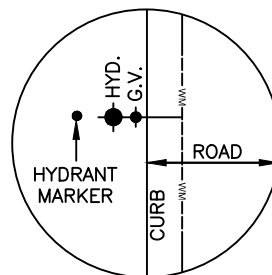
PLAN VIEW



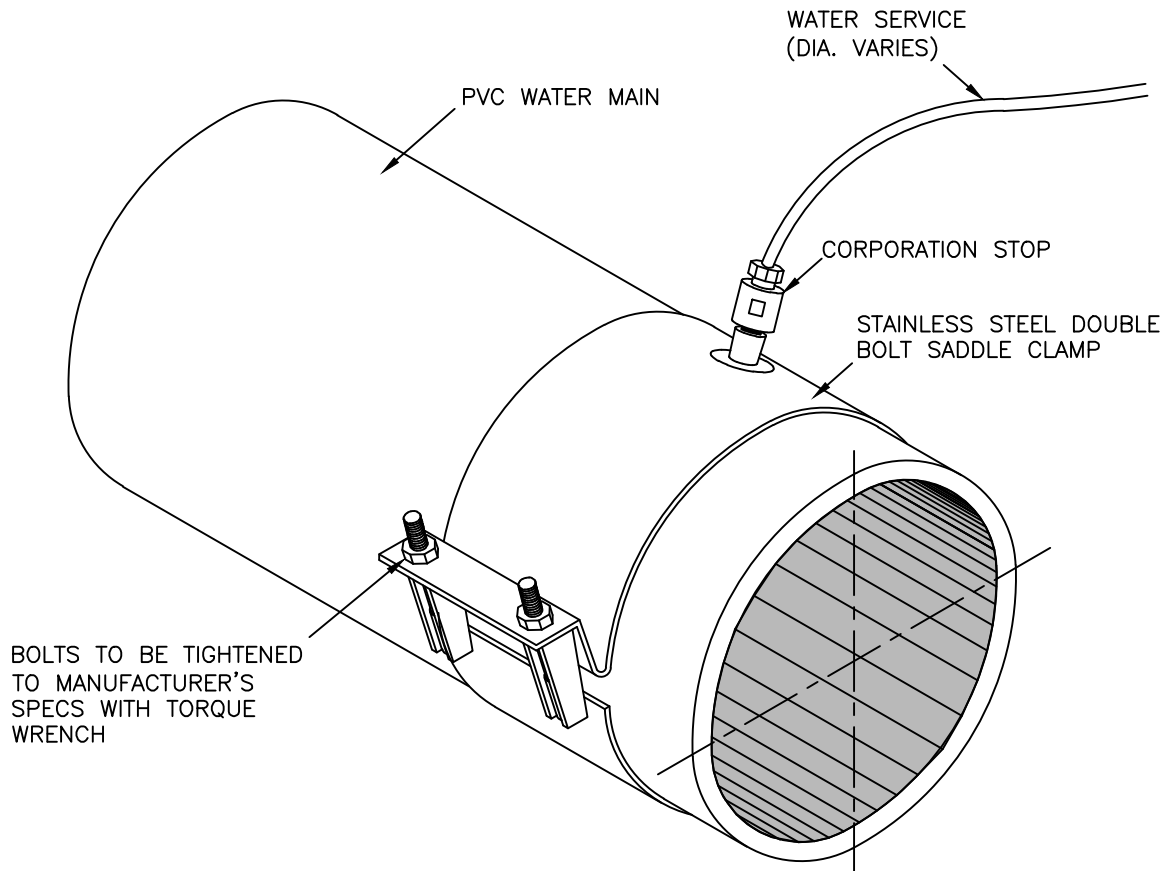
WATERMAIN IN BOULEVARD



WATERMAIN UNDER ROADWAY

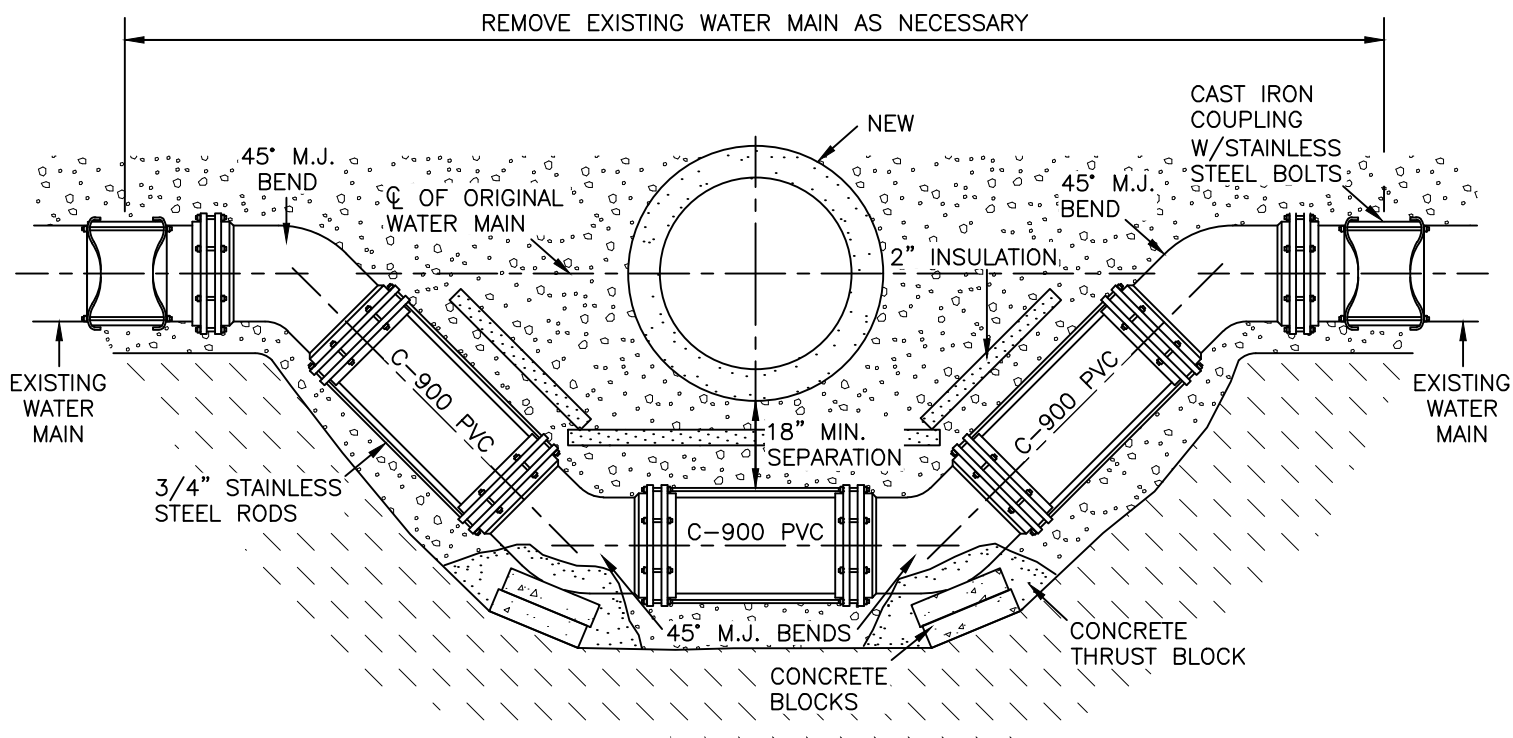


PLAN VIEW



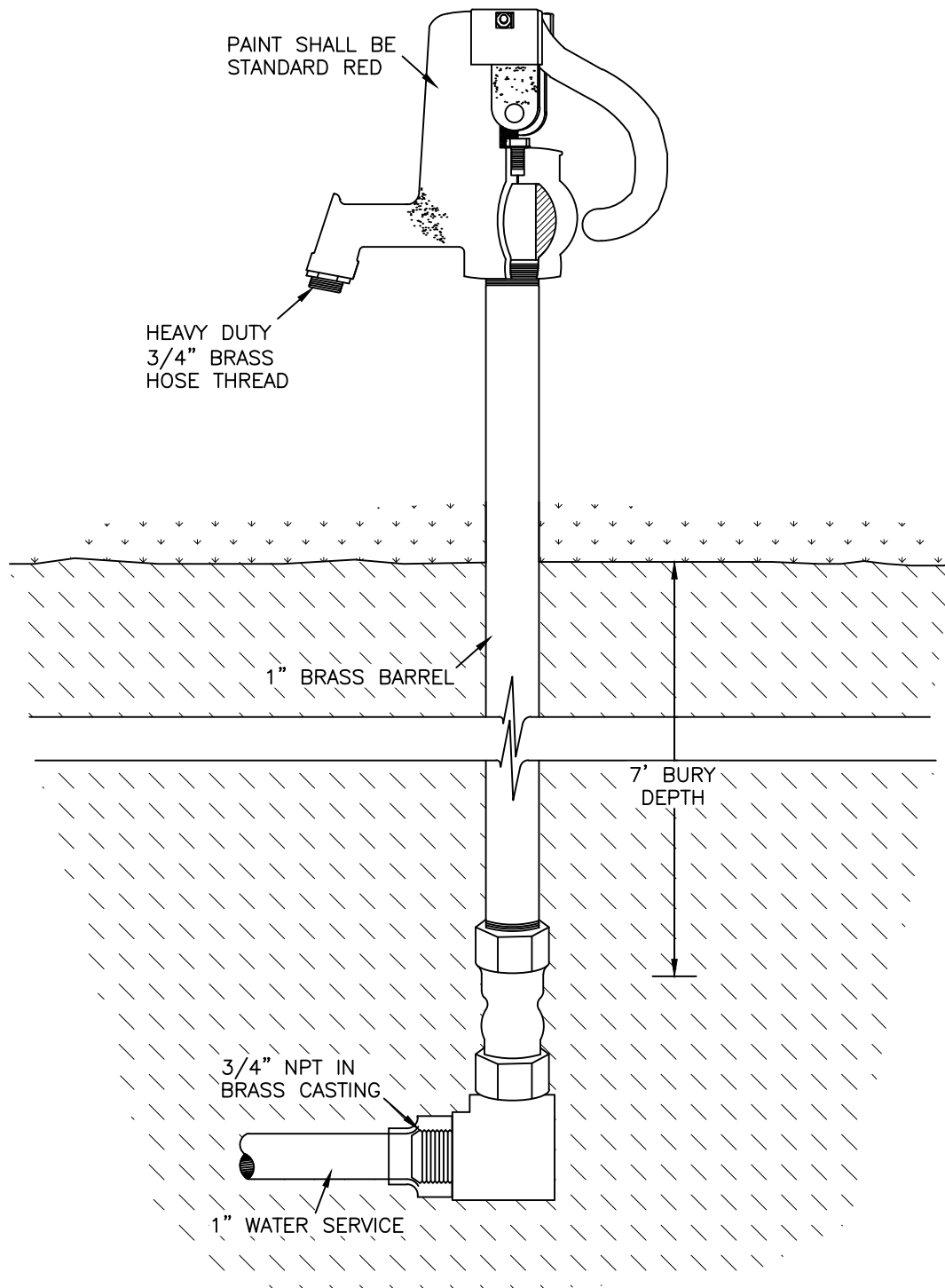
NOTES:

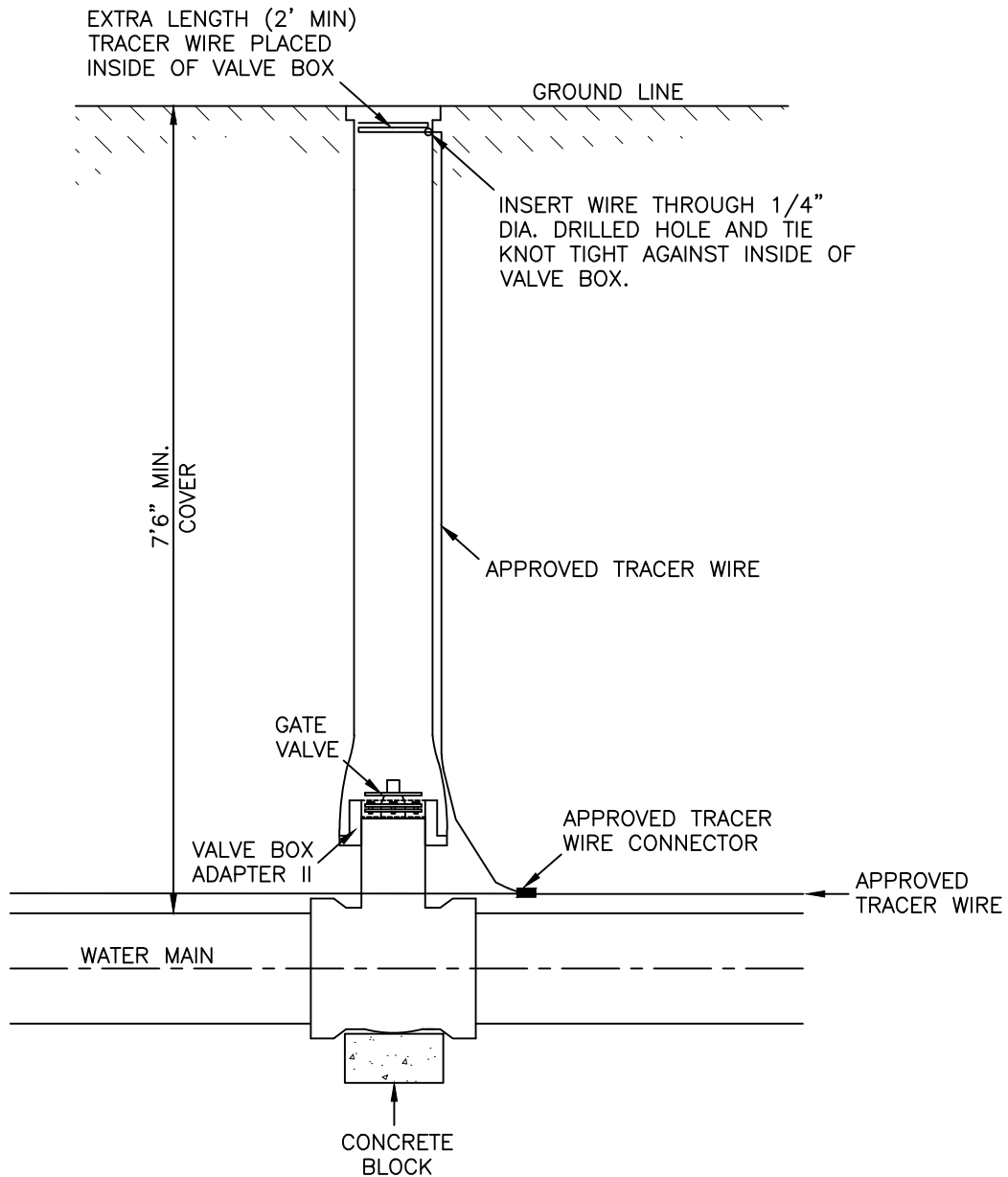
- THE CONTRACTOR WILL BE REQUIRED TO USE ALL STAINLESS STEEL SADDLE SERVICES. DIRECT TAPS WILL NOT BE PERMITTED.
- REFER TO DETAILS 1300 5.13 & 1300 5.14 FOR TRACER WIRE LAYOUT.



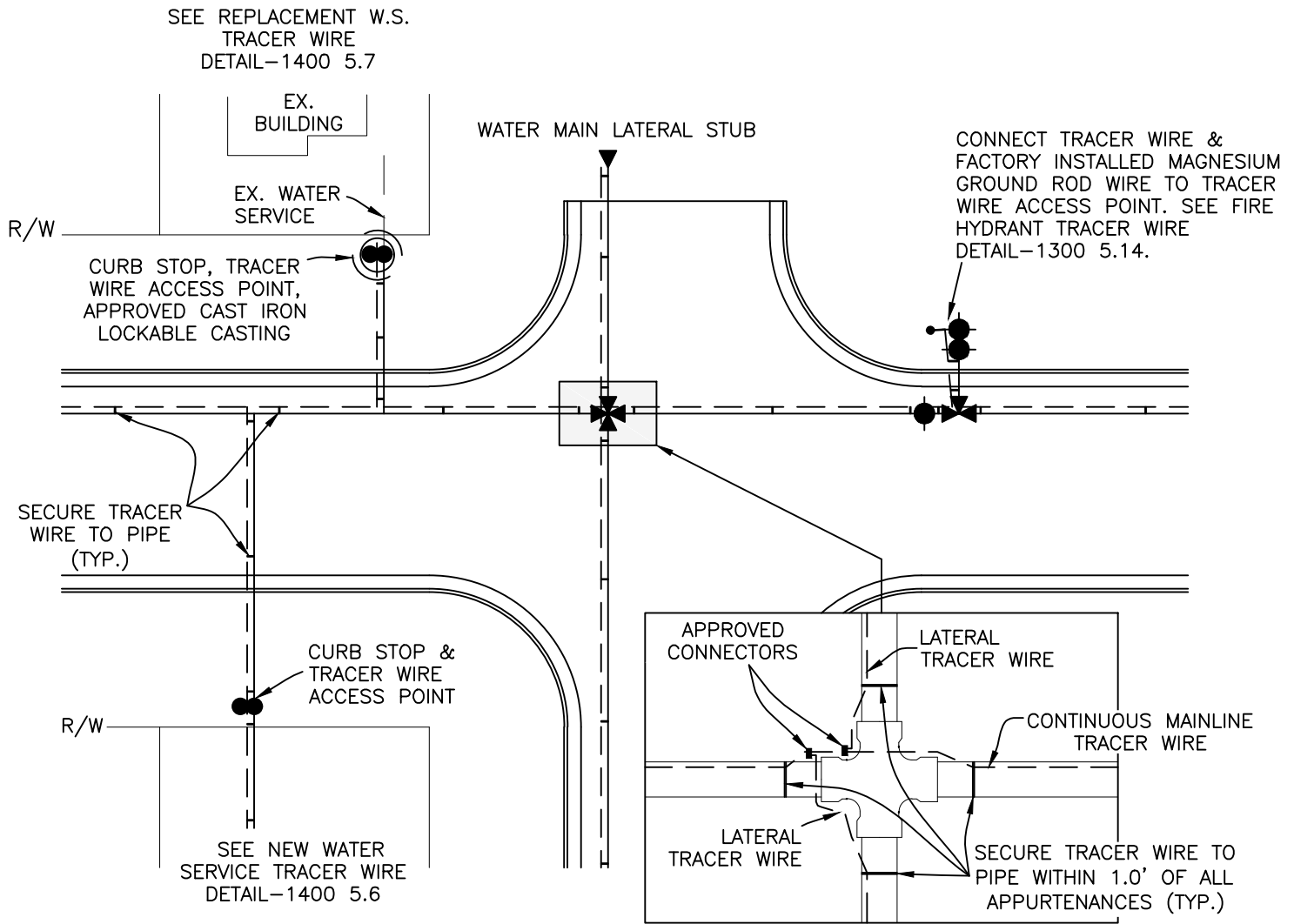
NOTES:

- ALL FITTINGS TO BE WRAPPED IN POLYETHYLENE PLASTIC (8 MIL MIN.)
- BELLS AND BOLTS TO BE KEPT FREE OF CONCRETE.
- ALL JOINTS TO HAVE RESTRAINING GLANDS WITH $\frac{3}{4}$ " STAINLESS RODS.



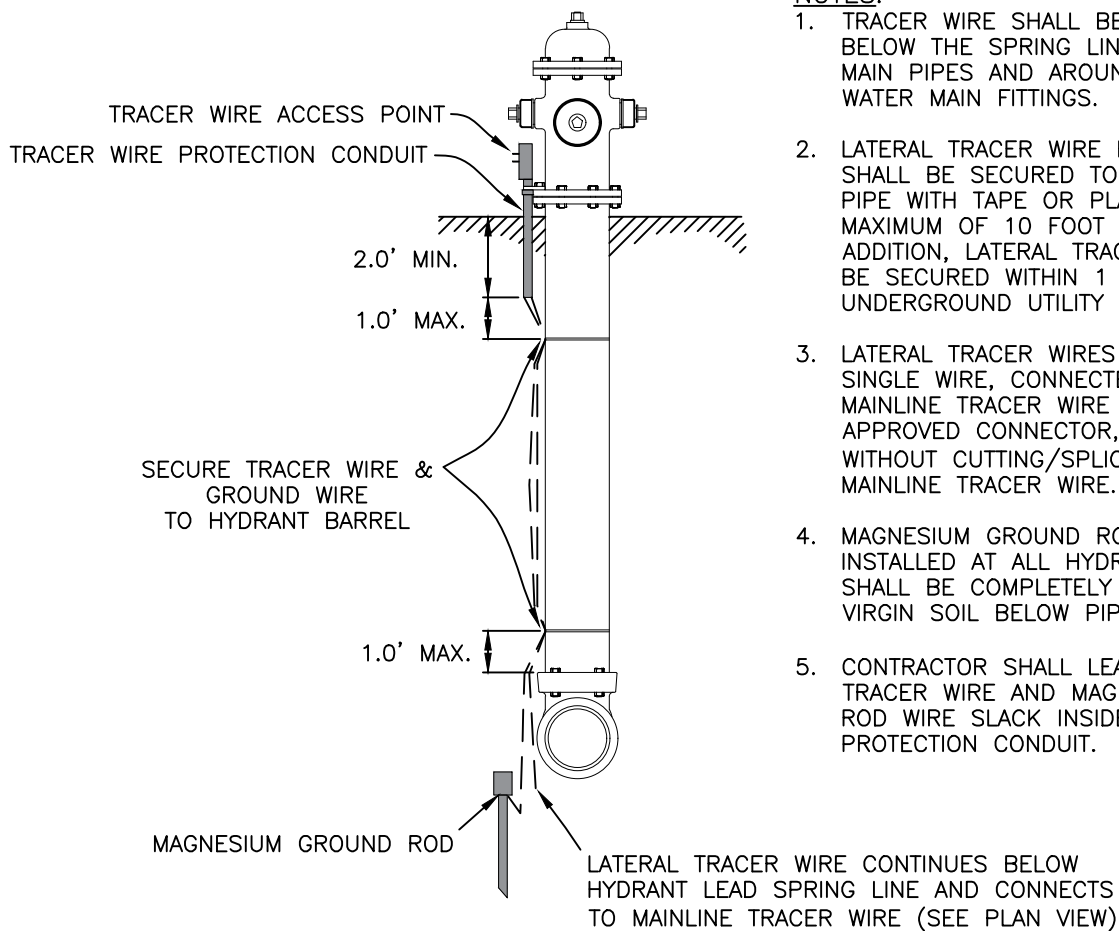


NOTE:
TRACER WIRE WILL NOT NORMALLY BE INSTALLED
VERTICALLY UP VALVE BOXES AS SHOWN. THIS
DETAIL APPLIES ONLY WHERE SPECIFICALLY
CALLED FOR ON THE PLANS OR AS DIRECTED
BY THE ENGINEER.



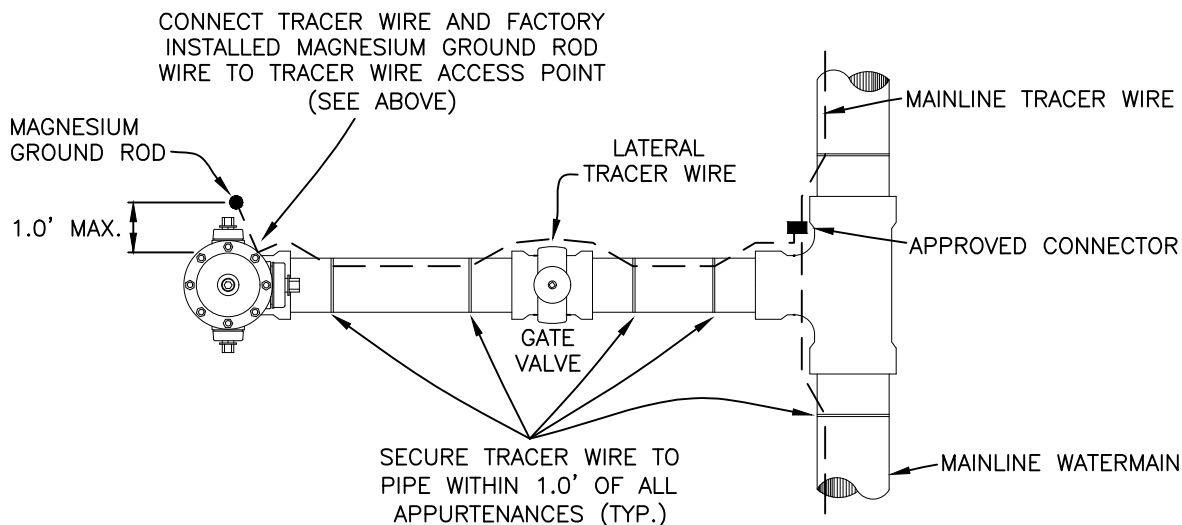
NOTES:

1. TRACER WIRE SHOWN AWAY FROM PIPE FOR CLARITY.
2. TRACER WIRE SHALL BE INSTALLED BELOW THE SPRING LINE OF WATER MAIN PIPES AND AROUND THE SIDE OF WATER MAIN FITTINGS.
3. MAINLINE TRACER WIRE SHALL BE SECURED TO THE MAINLINE PIPE WITH TAPE OR PLASTIC TIES AT EVERY PIPE BELL OR AT 20 FOOT INTERVALS, WHICHEVER IS LESS. IN ADDITION, MAINLINE TRACER WIRE SHALL BE SECURED WITHIN 1 FOOT OF ALL UNDERGROUND UTILITY APPURTENANCES.
4. LATERAL TRACER WIRE FOR WATER SERVICES SHALL BE SECURED TO THE WATER SERVICE PIPE WITH TAPE OR PLASTIC TIES AT A MAXIMUM OF 10 FOOT INTERVALS. IN ADDITION, LATERAL TRACER WIRE SHALL BE SECURED WITHIN 1 FOOT OF ALL UNDERGROUND UTILITY APPURTENANCES.
5. MAINLINE TRACER WIRE SHALL BE INSTALLED AS A SINGLE CONTINUOUS WIRE. SPLICES SHALL NOT OCCUR MORE FREQUENTLY THAN ONE PER 500 FEET.
6. LATERAL TRACER WIRES SHALL BE A SINGLE WIRE, CONNECTED TO THE MAINLINE TRACER WIRE USING AN APPROVED CONNECTOR, INSTALLED WITHOUT CUTTING/SPLICING THE MAINLINE TRACER WIRE.
7. MAGNESIUM GROUND RODS SHALL BE INSTALLED AT ALL HYDRANTS AND SHALL BE COMPLETELY DRIVEN INTO VIRGIN SOIL BELOW PIPE BEDDING.
8. ALL NEW CONSTRUCTION WATER SERVICES SHALL INCLUDE AN APPROVED TRACER WIRE ACCESS POINT.
9. WHEN CURB STOP BOX AND/OR TRACER WIRE ACCESS POINT ARE LOCATED IN A HARD SURFACED AREA THEY SHALL BE PLACED INSIDE AN APPROVED CAST IRON LOCKABLE CASTING.



HYDRANT - PROFILE VIEW
NOT TO SCALE

- NOTES:**
1. TRACER WIRE SHALL BE INSTALLED BELOW THE SPRING LINE OF WATER MAIN PIPES AND AROUND THE SIDE OF WATER MAIN FITTINGS.
 2. LATERAL TRACER WIRE FOR HYDRANTS SHALL BE SECURED TO THE WATER PIPE WITH TAPE OR PLASTIC TIES AT A MAXIMUM OF 10 FOOT INTERVALS. IN ADDITION, LATERAL TRACER WIRE SHALL BE SECURED WITHIN 1 FOOT OF ALL UNDERGROUND UTILITY APPURTENANCES.
 3. LATERAL TRACER WIRES SHALL BE A SINGLE WIRE, CONNECTED TO THE MAINLINE TRACER WIRE USING AN APPROVED CONNECTOR, INSTALLED WITHOUT CUTTING/SPlicing THE MAINLINE TRACER WIRE.
 4. MAGNESIUM GROUND RODS SHALL BE INSTALLED AT ALL HYDRANTS AND SHALL BE COMPLETELY DRIVEN INTO VIRGIN SOIL BELOW PIPE BEDDING.
 5. CONTRACTOR SHALL LEAVE 24" OF TRACER WIRE AND MAGNESIUM GROUND ROD WIRE SLACK INSIDE TRACER WIRE PROTECTION CONDUIT.



HYDRANT - PLAN VIEW
NOT TO SCALE

**CITY OF FARGO SPECIFICATIONS
STORM SEWERS**

**PART 1
DESCRIPTION OF WORK**

The work to be done under this section of the Specifications and the accompanying plans consists of the furnishing of all labor, material, accessories and equipment necessary to construct storm sewers in the City of Fargo. The work includes excavation, removal and replacement of paving where encountered; furnishing, laying and jointing pipe; making connections to existing storm sewers and manholes and inlets as necessary; constructing new manholes and inlets; protecting existing utilities and public and private property; backfilling trenches and other work as may be necessary in order that the work may be completed in accordance with these Specifications and the plans accompanying them.

PART 2
MATERIAL

2.1. REINFORCED CONCRETE PIPE (RCP)

2.1.1. MATERIAL

Material, manufacture and testing of RCP shall comply with ASTM C76 latest edition. RCP joints shall have rubber gaskets conforming to ASTM C 443.

2.1.2. MANUFACTURE

Pipe shall be furnished in four to eight foot lengths. Unless otherwise stated in the plans or special instructions, pipe 12" to 18" in diameter shall be Class V, 21" to 36" in diameter shall be Class III, 42" and larger diameter shall be Class II. All pipes shall be marked with the date of manufacture and class of pipe, and no pipe shall be laid before it is at least five days old. Special coatings or lining, if required, shall be as specified in the Special Instructions on the particular project.

2.1.3. JOINTS

Joints shall be of the tongue and groove type and shall be designed to be self-centering. Joints shall be furnished with an all weather butyl rubber gasket in flexible rope form meeting or exceeding the requirements of Federal Specification SS-S-210 A and AASHTO M-198. Where conditions warrant, an approved primer shall be used to obtain a sufficient seal, as directed by the Engineer. All lift holes shall be plugged with a nonshrink concrete plug and a mortar mix or asphaltic sealer to fill voids.

2.2. SOLID WALL POLYVINYLCHLORIDE (PVC) SEWER PIPE

2.2.1. MATERIAL

The material shall conform to "Standard Specifications for Rigid Polyvinyl chloride Compounds", ASTM D-1784, Class 12454-B or 12454-C or 12364-C. The pipe shall be produced using a continuous extrusion process employing a prime grade of unplasticized polyvinyl chloride.

2.2.2. PIPE MANUFACTURE

The PVC sewer pipe and fittings 15 inches in diameter or smaller shall meet the requirements of ASTM D 3034 SDR 35 minimum; pipe and fittings larger than 15 inches in diameter shall meet the requirements of ASTM F 679, wall thickness T-1, pipe stiffness of 46 psi.

2.2.3. JOINTING

The joint system shall be an integral bell gasketed joint, which forms a watertight seal.

2.3. POLY VINYL CHLORIDE (PVC) RIBBED SEWER PIPE

2.3.1. MATERIAL

The material shall conform to “Standard Specifications for Rigid Polyvinyl chloride Compounds”, ASTM D-1784, Class 12454-B or 12454-C or 12364-C. The pipe shall be produced using a continuous extrusion process employing a prime grade of unplasticized polyvinyl chloride.

2.3.2. PIPE MANUFACTURE

The PVC ribbed sewer pipe and fittings 30 inches in diameter or smaller shall be seamless profile wall and meet the requirements of ASTM F794 Standard Specification for PVC Ribbed Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter. The pipe interior shall be smooth walled and shall have a minimum pipe stiffness of 60 psi for pipe diameters 12 inches or less and a minimum pipe stiffness of 46 psi for 15-30” diameter pipe. Pipe shall meet requirements of ASTM D2444 for impact resistance. Exterior ribs shall be perpendicular to the axis of the pipe to allow placement of sealing gaskets without additional cutting or machining.

2.3.3. JOINTING

The joint system shall be an integral bell gasketed joint, which forms a watertight seal and meets the requirements of ASTM D3212 and F477.

2.3.4. MARKING

Each length of pipe shall be marked with the following information: Size, Company name or logo, PVC Sewer Pipe, ASTM F794 Manufacturers code, Cell Classification.

2.3.5. APPROVED MANUFACTURER

PWEAGLE ULTRA-RIB is an approved product.

2.4. CLOSED PROFILE POLYVINYL CHLORIDE (PVC) SEWER PIPE

2.4.1. MATERIAL

The pipe and fittings be made of PVC plastic meeting the requirements of ASTM D-1784 having a minimum cell classification of 12364 -A.

2.4.2. MANUFACTURE

The PVC profile wall pipe and fittings shall meet the requirements of ASTM F 794 latest edition and have a minimum pipe stiffness of 46 psi. Closed cell PVC pipe will only be allowed in 21-inch diameter or larger.

2.4.3. JOINTING

The joint system shall be of the bell and spigot type with a gasket that meets the requirement of ASTM D3212 & F477 to form a watertight seal. Gaskets shall be factory installed and chemically bonded to the bell end of the pipe. Field cuts and field installed gaskets shall be done in accordance with the manufacturer's instructions and his recommended equipment and materials.

2.4.4. APPROVED MANUFACTURERS

Vylon High Capacity and Diamond Plastics Pro-21 closed profile PVC pipe are approved products.

2.5. POLYPROPYLENE (PP) PIPE

2.5.1. MATERIAL

Polypropylene compound for pipe and fittings production shall be impact modified copolymer meeting the material requirements of ASTM F2736, Section 4, ASTM F2881, Section 5 and AASHTO MP-21-11, Section 6.1 for the respective diameters. Pipes shall have a min. stiffness of 46 psi – ASTM D2412.

2.5.2. MANUFACTURE

Under 30 inch diameter pipe shall be dual-wall pipe, and shall have a smooth interior and annular exterior corrugations and meet or exceed ASTM F2736 and AASHTO MP-21-11.

30 to 60 inch diameter pipe shall be triple-wall pipe and shall have a smooth interior and exterior walls and meet or exceed ASTM F2881 and AASHTO MP-21-11.

2.5.3. JOINTING

Pipe shall be joined with a gasketed integral bell & spigot joint meeting the requirements of ASTM F2736 & F2881, for the respective diameters.

All pipe joints shall be watertight according to the requirements of ASTM D3212. Spigots shall have gaskets meeting the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant, available from the manufacturer, shall be used on the gasket and bell during assembly.

Pipes shall have a reinforced bell with a polymer composite band installed by the manufacturer.

2.6. MANHOLES

2.6.1. MATERIAL

Precast manholes shall meet the requirements of ASTM C478. Precast segmental blocks shall be manufactured in accordance with ASTM C-139. The blocks shall form an 8" wall thickness. Brick shall be clay or concrete, uniform in size and texture and meeting ASTM Specifications for sewer brick. Brick manholes shall have prior approval from the Engineer.

Either monolithic manhole style boot connectors factory installed at the proper elevation and direction or concrete to PVC pipe adapters shall be used to connect PVC pipe to the manhole. PVC manhole adapter shall be GPK Products or approved equal.

2.6.2. MANUFACTURE

The manholes shall be constructed in accordance with ASTM C478 and the detail drawings included as part of this section of the Specifications. The main sewer shall be carried through manholes by split pipe whenever practicable. The concrete manhole shelves shall slope from the top edges of the invert at a rate of 2" per foot. When split pipe is not possible due to breaks in grade or elevation, the sewer invert shall be made of concrete. The shape of the invert shall conform exactly to the lower 1/2 of the pipe it connects and be left smooth and clean. Side branch inverts shall be constructed with as large radius of curvature as possible.

Mortar for concrete block manholes shall be mixed in the proportions of one part by volume of Portland Cement and two parts by volume of sand. Cement and sand shall be thoroughly mixed dry and only enough water added to form a mortar of proper consistency for block laying. All mortar shall be used within 40 minutes of mixing, and all mortar that has begun to take on its initial set shall be discarded and shall not be mixed with additional cement or new mortar. When connecting pipe to manholes, regular concrete (not grout) shall be used to mortar around the pipes on both the inside and outside of the manhole or inlet.

2.6.3. JOINTS

Joints shall be of the tongue and groove type and shall be designed to be self-centering. Joints shall meet the requirements of ASTM C990 unless otherwise specified in the Special Instructions. Joints shall be an all weather butyl rubber gasket in flexible rope form, meeting or exceeding the requirements of federal specification 55.5-210A and AASHTO M-198. Where conditions warrant, an approved primer shall be used to obtain a sufficient seal as directed by the Engineer.

2.6.4. MANHOLE AND INLET ADJUSTING RINGS

Manhole and inlet adjusting rings shall be composed of engineered polymer; either injection molded High Density Polyethylene (HDPE) as manufactured by Ladtech, Inc., or IPEX, Inc, or Expanded Polypropylene (EPP) as manufactured by JSP, or approved equal. Fine adjustments shall be made with thin and/or tapered adjustment rings (no steel shims allowed). All rings shall meet or exceed AASHTO HS-20 loading and be properly installed and sealed in accordance with the manufacturer's recommendations. HDPE materials shall conform to ASTM D-4976 using 100% recycled material.

Precast reinforced concrete adjusting rings will only be allowed upon the Division Engineer's approval where the size required is not manufactured in engineered polymer.

2.6.5. LIFT HOLES

Lift holes shall be manufactured to provide a watertight seal.

2.7. INLETS

The inlets shall be constructed in accordance with the detailed drawings included as part of these Specifications. Concrete and reinforcing used in the construction of these inlets shall also meet the requirements of ASTM C-478.

Concrete to PVC pipe adapters shall be used to connect PVC pipe to the inlet. PVC manhole adapter shall be GPK Products or approved equal.

All gutter-line inlets shall be installed complete with holes, either precast or core-drilled, and boots for watertight edge drain connections. Boots shall be flexible synthetic rubber, certified to ASTM C-923, with no plastic parts, welds, nor rivets. Any/all fastening components shall be stainless steel.

2.8. CASTINGS

2.8.1. MANHOLE CASTINGS

Manhole casting shall be Neenah R-1733, EJ1205Z, or approved equal with a vented lid with the word "STORM" (or the words "STORM SEWER") cast into the center of the lid in letters at least 1 inch high.

2.8.2. *INLET CASTINGS*

RDI - Round Inlet

DBI - Double Box Inlet

MHI - Manhole Inlet

SPI - Special Inlet

SBI - Single Box Inlet

CHART 1 - INLET CASTINGS, GRATES, ETC.

Curb Type	Inlet Location	Inlet Type	Frame Type		Grate Type		Curb Box		Fargo Designation
			Neenah Foundry	EJ	Neenah Foundry	EJ	Neenah Foundry	EJ	
Standard (Type 2)	Low Point	DBI	R-3295-2	7031	V	M4	3290-0040	T5	DBI-V2
	Low Point	SBI	R-3067-VB	7030	VB	M11	3290-0040	T5	SBI-VB2
	Not LPT	SBI	R-3067-V	7030	V	M4	3290-0040	T5	SBI-V2
	Any	RDI or SPI	R-3404	5113	L	M1	none	none	RDI-L2 or SPI-L2
Mountable (Type 1)	Any	SBI	R-3067-C	7030Z2	L	M6	none	none	SBI-L1
	Any	RDI or SPI	R-3404	5113	L	M1	none	none	RDI-L1 or SPI-L1
Flat	ADA Ramp	SBI	R-3067-C	7030Z2	Q	M10	none	none	SBI-Q
none	Non-Street	RDI, SPI, or MHI	none		R-4342	6489	N/A		RDI, SPI, or MHI

Note: Gutter line MHI frame, grate, and curb box designations shall be as shown on the plans.

2.8.3. *BEEHIVE CASTING (WHERE SPECIFIED)*

Beehive casting (6" high) shall be Neenah R-2561-A, EJ 1205Z/M2 or approved equal.

2.8.4. *FLOATING CASTINGS (WHERE REQUIRED)*

Floating casting shall be per section 2100 of these Specifications.

PART 3
CONSTRUCTION

3.1. GENERAL

Excavation, trenching and backfilling shall be done in accordance with Section 1000 of these Specifications. Pipe shall be handled and laid in accordance with the Manufacturer's or Industry standards, ASTM C1479. Pipe and manholes shall be laid in the location shown on the plans, the exact location being designated by the Engineer. With PVC and/or PP pipe, both ends shall be wiped clean and sufficient lubrication placed on the gasket and spigot end before the pipe is fully pushed into the bell. Field cut spigot ends shall be beveled prior to being pushed into the bell. With RCP, both ends shall be cleaned and the asphaltic joint sealer applied in sufficient quantity to be extruded from the joint as the pipe is pushed home. If butyl rubber gaskets are used, they shall be installed as per the manufacturer's recommendations. Every part of the pipe shall be bedded uniformly throughout its length. Pipe shall be laid upgrade with the spigot end pointing in the direction of flow. All sewers must be kept thoroughly clean. When the trench is left at night or the pipe laying stopped, the upper end of the pipe must be closed with an end board or cap to prevent dirt and sand from entering the pipe.

Pipe shall not be trimmed except for closures, and pipe not making a good fit shall be plainly marked and removed from the site. Permissible defects (minor chips or broken sockets with a depth of fracture less than 1" deep as measured from the end of the socket (RCP only)) shall be placed in the top of the line.

PVC and/or PP pipe used as storm sewer will only be allowed on backyard inlet lead runs where the pipe is located outside the future street section unless approved by the Engineer. Material change can only be made at a structure.

All 60" or larger RCP shall be laid on a bed of 6-inches of 1 1/4" crushed rock. The six inches of crushed rock shall be incidental to the pipe bid price. Additional rock shall be used as directed by the Engineer to backfill unstable bedding areas. The cost of excavating and placing the additional (more than 6-inches) shall be paid for per cubic yard of 1 1/4" crushed rock.

3.2. ALIGNMENT

The Engineer will provide line and grade for all storm sewer pipes. Grade and alignment shall be maintained by the use of a line parallel to the grade and line of the sewer, this line to be supported above the ground on batter boards spaced 50 feet or less apart and rigidly anchored to and supported by steel post driven into the ground.

Not less than 3 batter boards shall be maintained at all times. The Engineer shall be immediately notified of any misalignment of the batter boards set in accordance with the grade and alignment of the tacked offset stakes provided.

Electronic grade control is allowed, however the Contractor will be required to periodically check the alignment and grade from the offset stakes provided. In no instance will the Contractor be allowed to change the alignment or grade without the permission of the Engineer.

3.3. MANHOLES/INLETS

The manhole/inlet bases shall be set at the proper grade and alignment to provide a smooth transition from the incoming pipe(s) to the outgoing pipe. Manhole/inlet bases shall be set on four inches of bedding sand in a dry trench condition. In wet or unstable trench conditions the manhole/inlet base shall be bedded in 6" of 1 1/4" crushed rock. The area that is over-excavated adjacent to the manhole/inlet base and under the pipe shall be filled with concrete to prevent settlement and provide for support for the pipe from the manhole/inlet edge to the regular trench excavation. Care shall be taken that the connection between the manhole/inlet and the pipe is watertight and the invert is smooth and continuous as it enters and exits the manhole/inlet. Mortar around the pipe connection shall be regular concrete (not grout) conforming to the requirements for sidewalks outlined in Section 2300. The concrete shall be placed on both the inside and outside of the manhole/inlet concurrently. The concrete below the spring line of the pipe at both the exterior and interior of the manhole/inlet shall be vibrated. The interior shall have a wood trowel finish. When non-RCP is used, a manhole connection adapter will be required to be installed to achieve a watertight condition - installation shall be per the pipe manufacturer recommendations. Contractor shall protect manhole/inlet from washouts by plugging holes for edge drain. If edge drain is not part of the contract, plugs shall remain in place at completion of project.

3.4. CASTING TO GRADE (BOULEVARD)

This item applies to inlets located outside the paving section and for manholes/inlets that will not be adjusted with a planned future project, and shall include all labor, materials and equipment necessary to

adjust the various manhole/inlet castings to the proper line and grade. Changes in grade shall be made as follows:

All adjustments, including fine adjustments, shall be made with engineered polymer adjustment rings as specified herein (no steel shims allowed). All adjustment rings shall be properly sealed or wrapped with nonwoven geotextile fabric in accordance with the manufacturer's recommendations.

Where casting adjustment requirements cannot be met by the use of engineered polymer adjustment rings and upon the Division Engineer's approval, the Contractor shall provide precast reinforced concrete adjusting rings. For fine adjustments of less than two (2) inches, steel shims shall be used to temporarily support the casting. The castings and rings shall be laid in a full bed of mortar. The rings and structure section shall be cleaned to assure a flat seating surface and the rings shall be installed in alignment with no noticeable offsets. After smoothing the protruding grout around the interior and exterior of the rings, nonwoven geotextile fabric shall be placed and secured around the outside of the rings from three (3) inches below the top of the manhole/inlet structure to the top of the rings, overlapping the frame casting.

Care shall be taken to adjust the casting to the elevation determined by the Engineer. Any castings not satisfying these requirements shall be redone to the satisfaction of the Engineer.

3.5. TELEVISIONING

All gravity sewers shall be televised by the City of Fargo Street Department. Any abnormalities such as, but not limited to, deviations of grade, misaligned joints, cracked/defected pipe, rolled gaskets shall be repaired by the Contractor at his expense. Sections requiring repair shall be re-televised to verify conditions of repair. It is the Contractor's responsibility to provide drivable access to each manhole for the City of Fargo camera truck. Televising requires a 7-day advance notice and shall be scheduled through the inspectors on site, and will be completed during normal City of Fargo Street Department hours. If the camera operator deems the pipe unsuitable for televising, the Contractor shall clean the sewer by means of jetting. All costs to accommodate televising shall be included in other bid items.

3.6. DEFLECTION TESTING

All flexible conduit pipe used in urban storm sewers shall be tested for deflection in accordance with Section 1200 of these Specifications.

PART 4
GUARANTEE, MEASUREMENT & PAYMENT

4.1. GUARANTEE

The guarantee shall be per the contract.

4.2. MEASUREMENT AND PAYMENT

4.2.1. GENERAL

The cost of excavating and trenching shall be included as part of this specification.

4.2.2. STORM SEWER PIPE

Pipe will be measured by customary and conventional methods and paid for on a unit price basis for the actual length installed. Measurement will be from center of manhole to center of manhole or from end of existing pipe to center of manhole or end of pipe stubout. No additional payment will be made for the manhole connections or cutting of pipe for closures. Where bid items are provided, plugs will be paid on a per each basis, otherwise they shall be incidental to the work.

4.2.3. STORM SEWER MANHOLES & INLETS

The cost of furnishing and installing the manholes and inlets will be paid for on a lump sum bid per each manhole or inlet installed. Costs shall include all excavation, bedding, backfilling, constructing, furnishing and installing the casting in place, connections to the sewer, installing inverts and sealing the manhole or inlet connections, joints, and lift holes, and plugging the holes for edge drain.

4.2.4. CASTING TO GRADE (BOULEVARD)

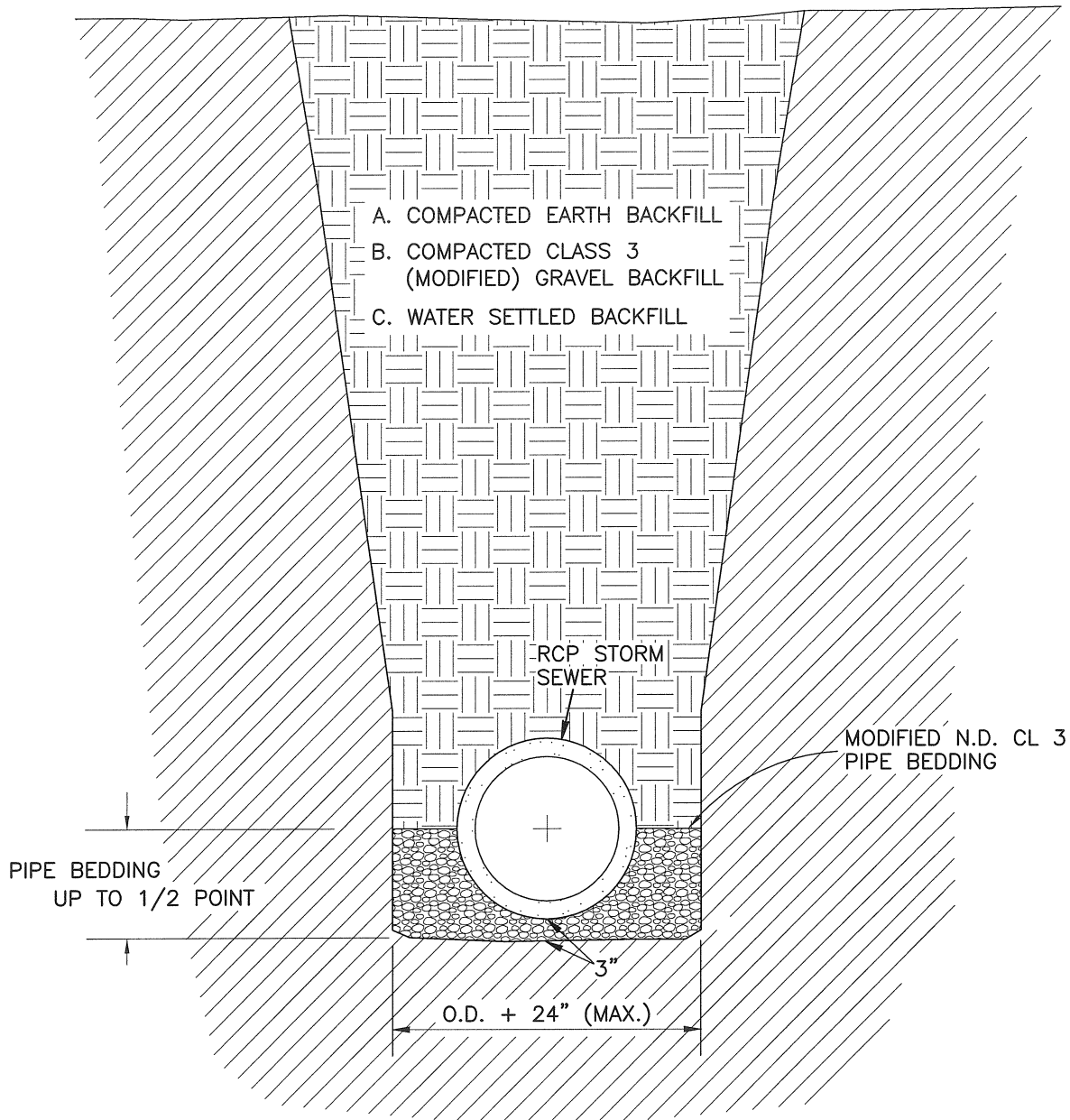
This bid item shall be paid for at the contract unit price per each, and shall include adjusting the castings with up to 4 adjusting rings, including all sealant, wrap, or chimney seals as specified herein.

4.2.5. FLARED-END SECTION (FES)

The length of a Flared End Section (FES) shall not be included in the measurement of the associated storm sewer size. A FES shall be paid on a per each basis. Trash racks shall be incidental to the FES bid item.

4.2.6. OTHER COSTS

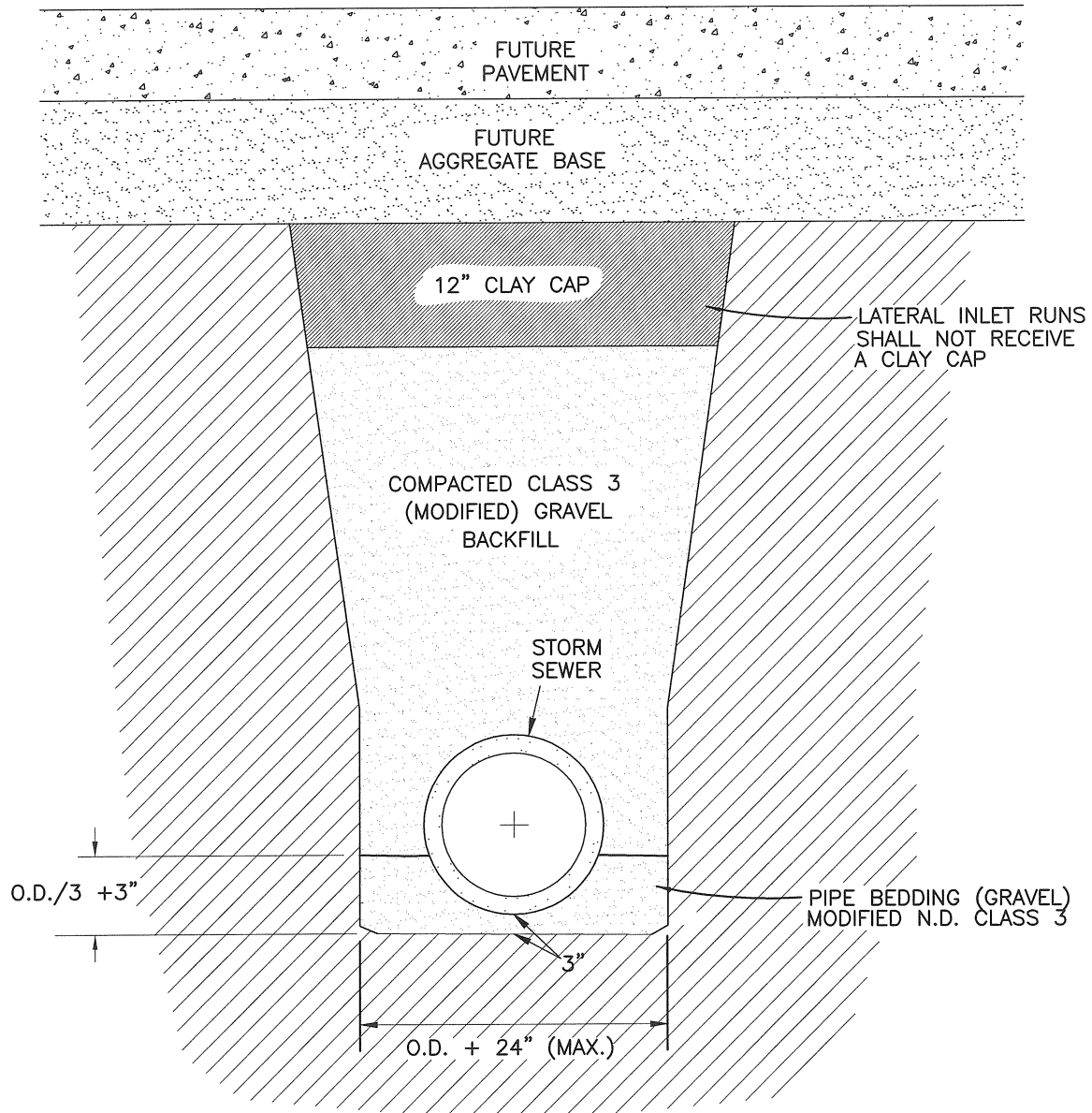
All other costs for work necessary to properly complete the work specified herein shall not be bid items; the costs shall be charged to other items unless a bid item is specifically included on the bid sheet.



NOTES:

1. MAXIMUM TRENCH WIDTH FOR 60", 66" & 72" RCP NOT TO EXCEED OUTSIDE DIAMETER OF PIPE + 12" FROM BOTTOM OF TRENCH TO A POINT 2' ABOVE PIPE.
2. ALL LIFTING HOLES TO BE PLUGGED & MORTARED.
3. PVC PIPE — GRAVEL BEDDING/ENCASEMENT REQUIRED TO 3" ABOVE PIPE.
4. OTHER PIPE — GRAVEL BEDDING/ENCASEMENT PER DIRECTION OF ENGINEER.

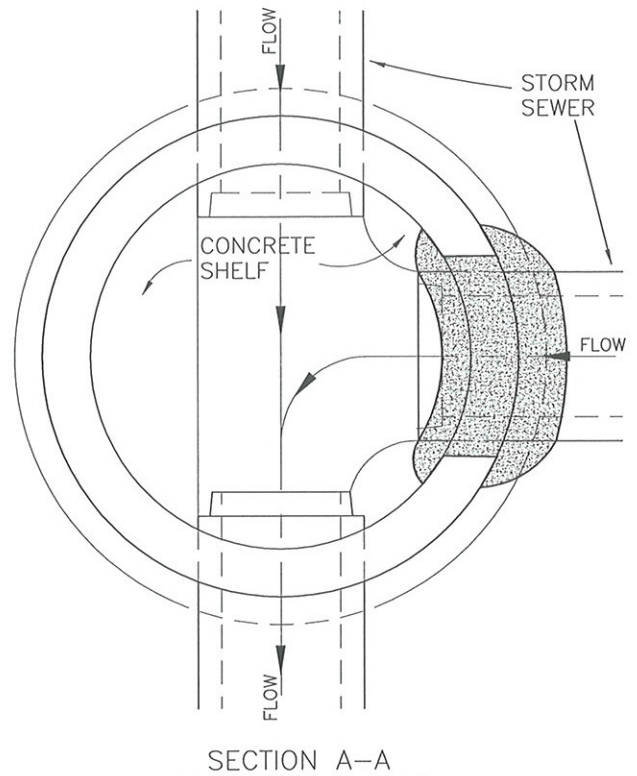
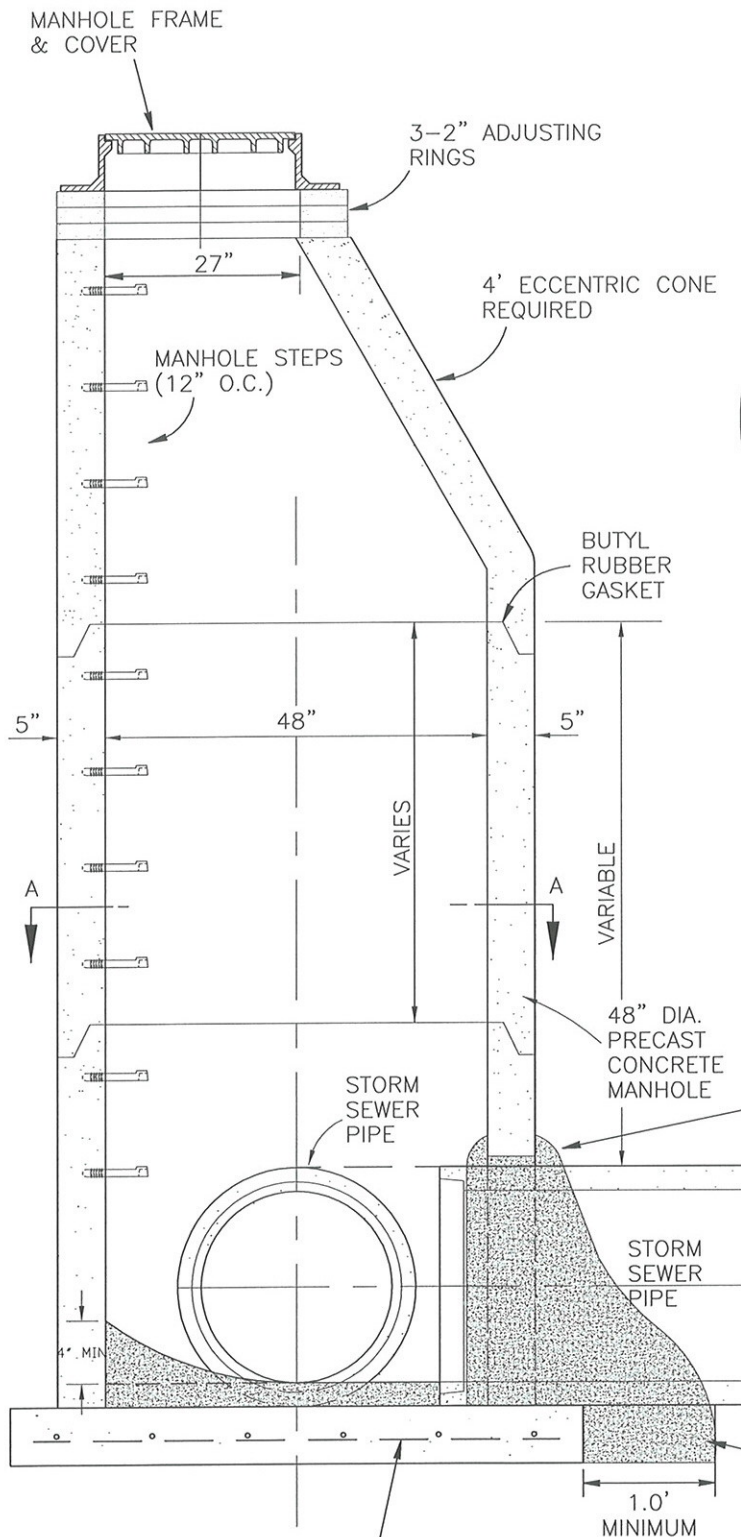
SECTION NO.	1500	DRAWING NO.	5.1
REV.D.	2012		
<p><i>STORM SEWER TRENCH BACKFILL</i></p>			
<p>CITY OF FARGO ENGINEERING DEPARTMENT</p>			
APPROVED	BED	DATE	2-21-2012



NOTES:

1. MAXIMUM TRENCH WIDTH FOR 60", 66" & 72" RCP NOT TO EXCEED OUTSIDE DIAMETER OF PIPE + 12" FROM BOTTOM OF TRENCH TO A POINT 2' ABOVE PIPE.
2. ALL LIFTING HOLES SHALL BE PLUGGED & MORTARED.
3. THIS DETAIL APPLIES WHERE STORM SEWER IS INSTALLED UNDER FUTURE PAVING WITH EDGE DRAIN.

SECTION NO.	1500	DRAWING NO.	5.2
REV.D.			
<i>STORM SEWER TRENCH UNDER NEW PAVEMENT</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012



MINIMUM 2" VOID AROUND PIPE

SEAL VOID AROUND PIPE WITH
MINIMUM 6" CONCRETE FILLET

NOTE:
BUTYL RUBBER GASKET ON
ALL JOINTS (JOINT TO MEET
ASTM 433 REQUIREMENT)

5'4" DIA.x 6" REINFORCED CONC.
BASE SLAB (NO. 4 BARS 12" O.C.)

NOTES:

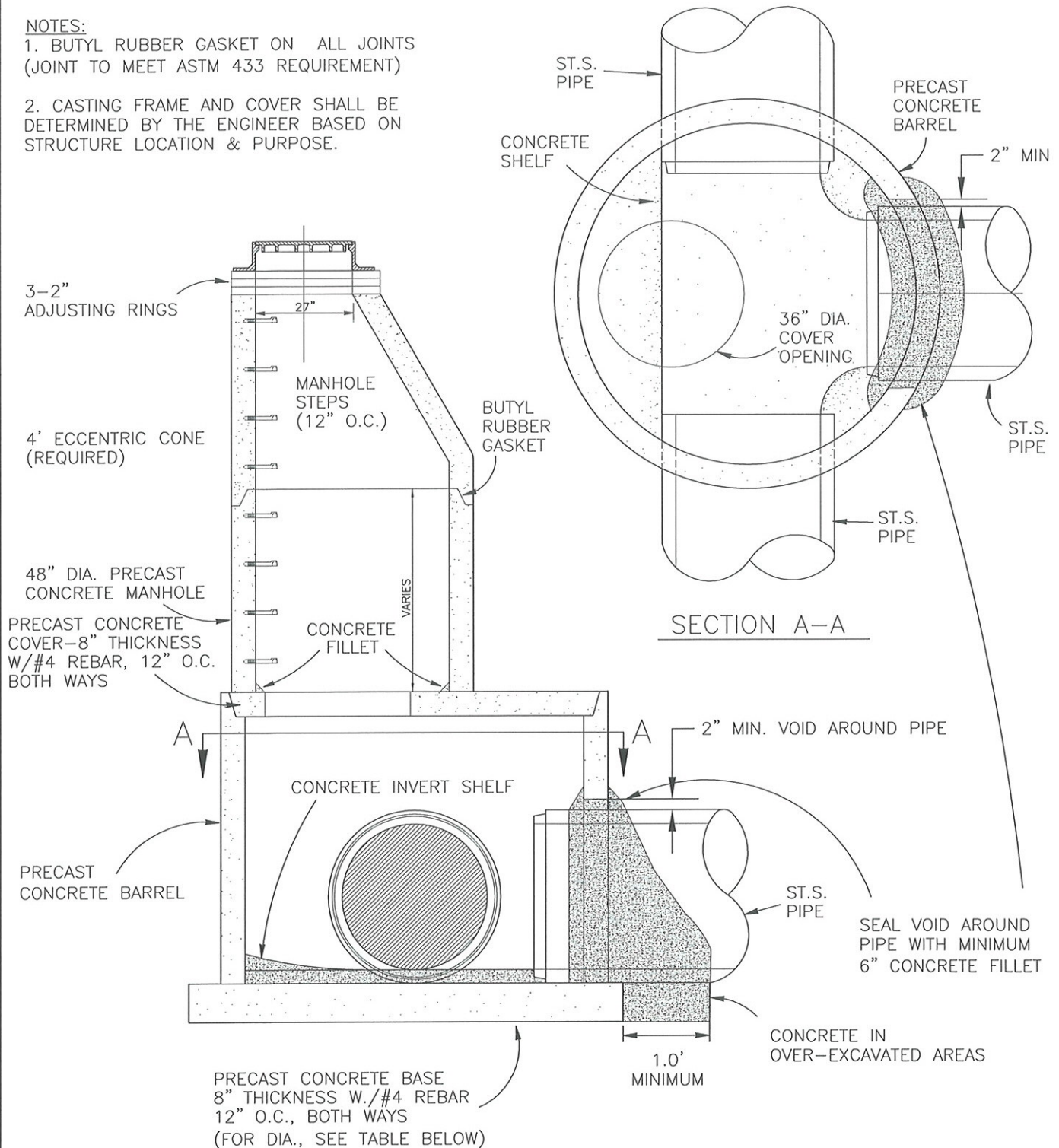
1. CASTING FRAME AND COVER SHALL BE DETERMINED BY THE ENGINEER.
2. MAXIMUM RCP DIA.-27" STRAIGHT THRU.
MAXIMUM RCP DIA.-18" AT RIGHT ANGLES.
3. ALL JOINTS AND LIFTING HOLES SHALL BE MORTARED.

SECTION NO.	1500	DRAWING NO.	5.3
REV.D.	2013		
STORM SEWER STANDARD MANHOLE			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	<i>ME</i>	DATE	1-2-13

NOTES:

1. BUTYL RUBBER GASKET ON ALL JOINTS
(JOINT TO MEET ASTM 433 REQUIREMENT)

2. CASTING FRAME AND COVER SHALL BE DETERMINED BY THE ENGINEER BASED ON
STRUCTURE LOCATION & PURPOSE.

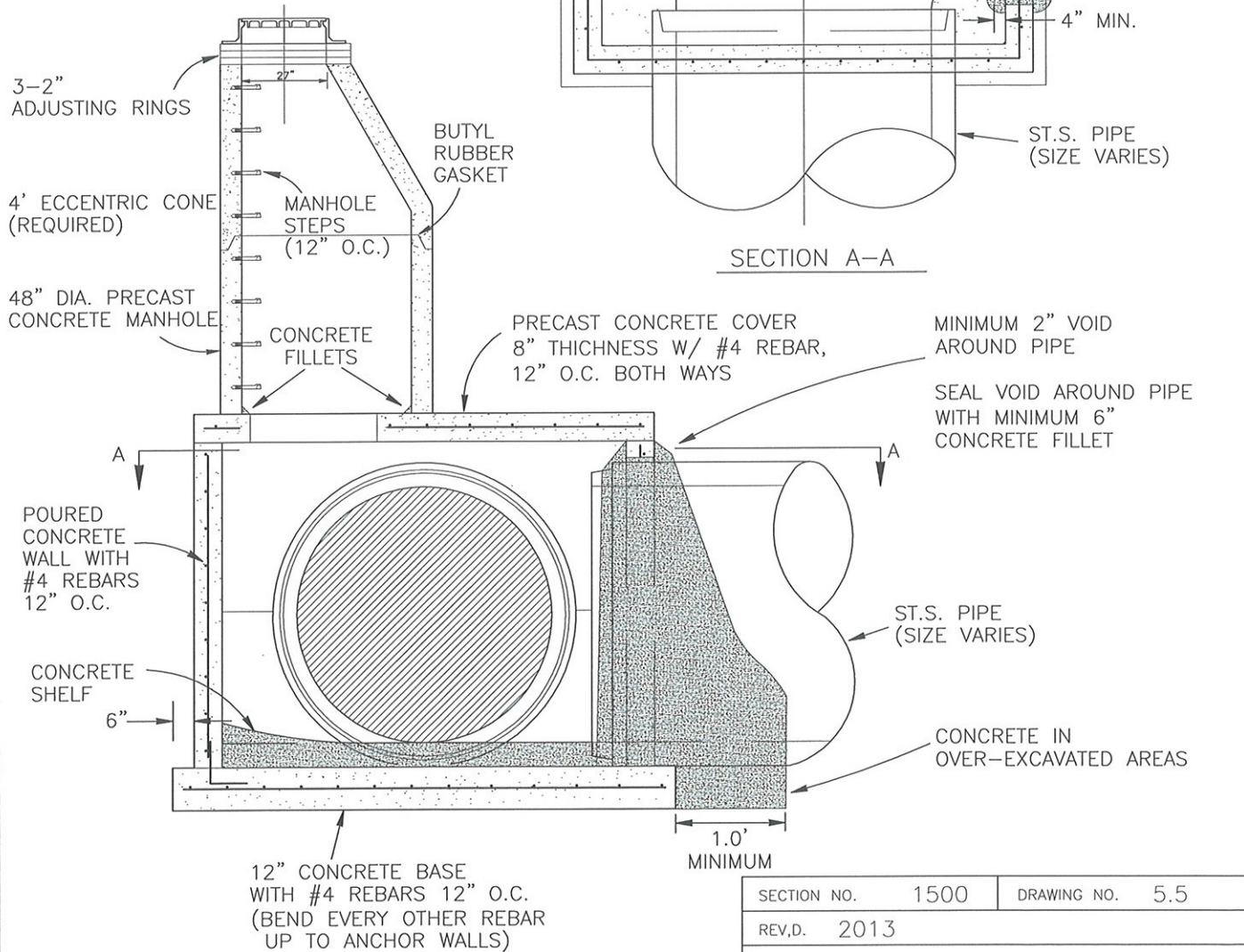


MANHOLE TYPE	(A) MANHOLE INSIDE DIA.	(B) MANHOLE OUTSIDE DIA.	MAXIMUM PIPE SIZES		
			0° ±	90° ±	135° ±
A	60"	7'-0"	36"	24"	36"
B	72"	8'-0"	42"	33"	42"
C	84"	9'-4"	48"	36"	48"
D	96"	10'-6"	60"	42"	60"

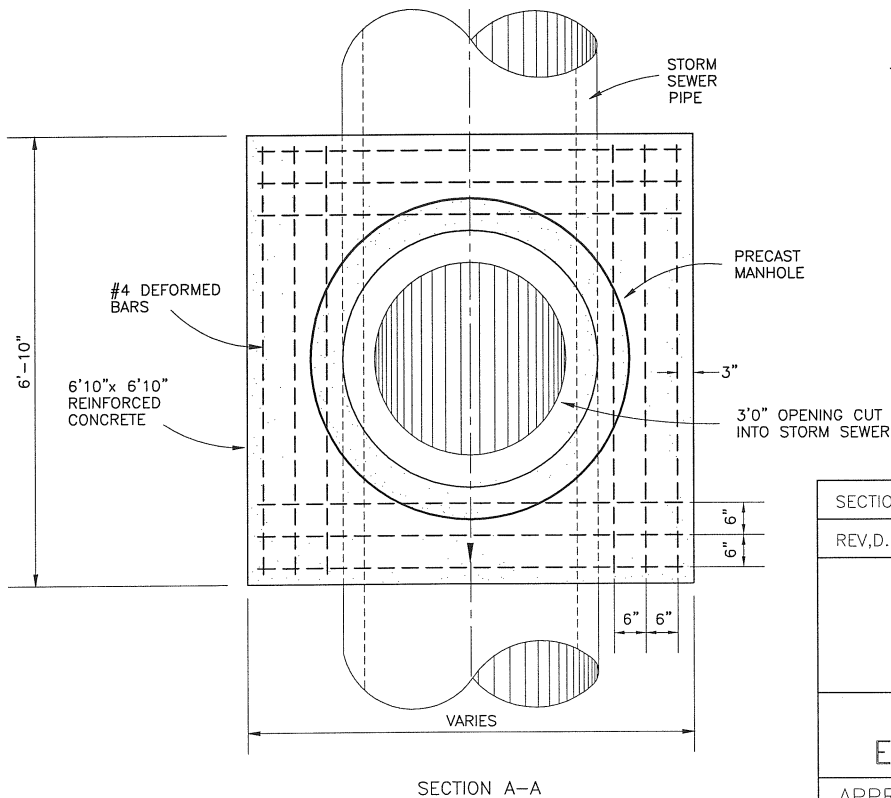
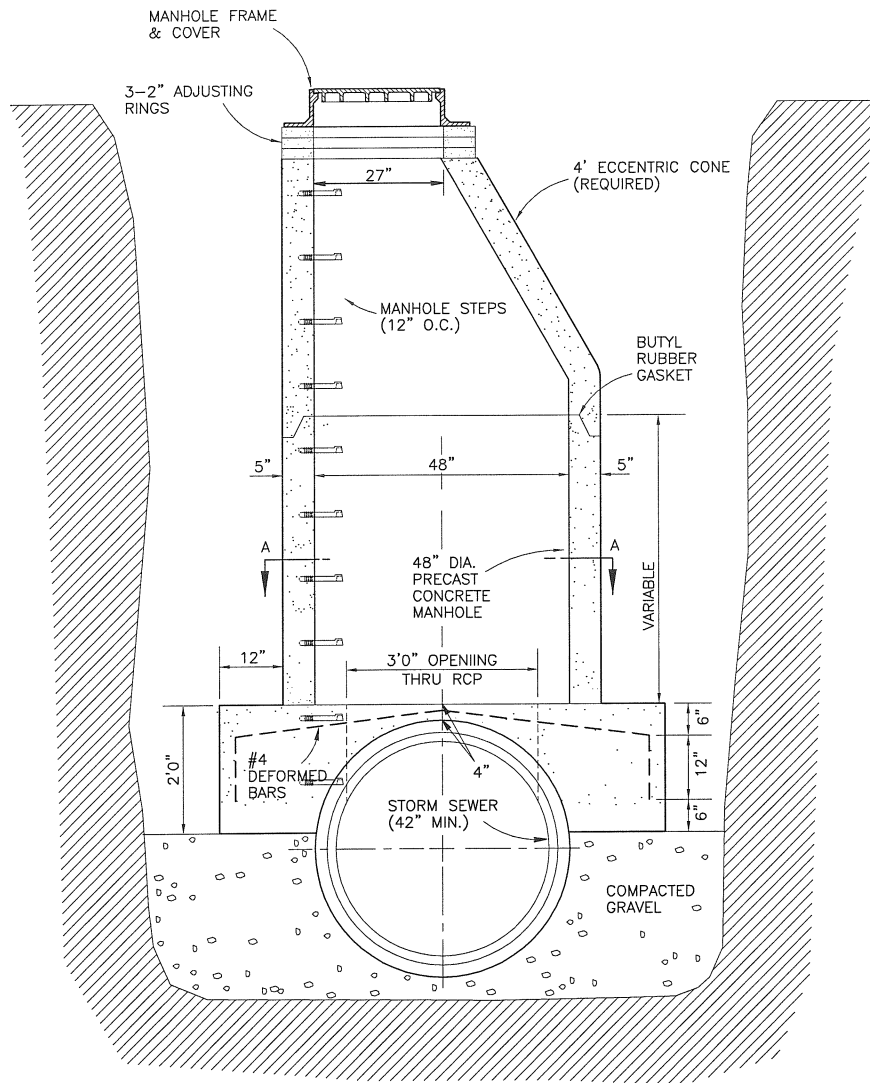
SECTION NO. 1500	DRAWING NO. 5.4
REV.D. 2013	
STORM SEWER MANHOLE	
TYPE "A - D"	
CITY OF FARGO ENGINEERING DEPARTMENT	
APPROVED <i>CME</i>	DATE 1-2-13

NOTES:

1. CASTING FRAME AND COVER SHALL BE DETERMINED BY THE ENGINEER BASED ON STRUCTURE LOCATION & PURPOSE.
2. BUTYL RUBBER GASKET ON ALL JOINTS (JOINTS TO MEET ASTM 433 REQUIREMENT).
3. TYPE "E" MANHOLE SHALL BE BUILT TO THE DIMENSIONS SHOWN ON THE PLANS. THE WALLS SHALL BE REINFORCED WITH #4 REBAR 12" O.C.



SECTION NO.	1500	DRAWING NO.	5.5
REV.D.	2013		
STORM SEWER MANHOLE TYPE "E"			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	<i>ME</i>	DATE	1-2-13



NOTES:

1. BUTYL RUBBER GASKET ON ALL JOINTS (JOINTS TO MEET ASTM 433 REQUIREMENT).
2. 3'0" OPENING THRU TOP OF R.C.P. SHALL BE GIVEN A SMOOTH MORTAR FINISH TO PERMIT ENTRY INTO STORM SEWER.
3. CASTING FRAME AND COVER SHALL DETERMINED BY THE ENGINEER BASED ON STRUCTURE LOCATION AND PURPOSE.
4. ALL JOINTS AND LIFTING HOLES SHALL BE MORTARED.

SECTION NO. 1500 DRAWING NO. 5.6

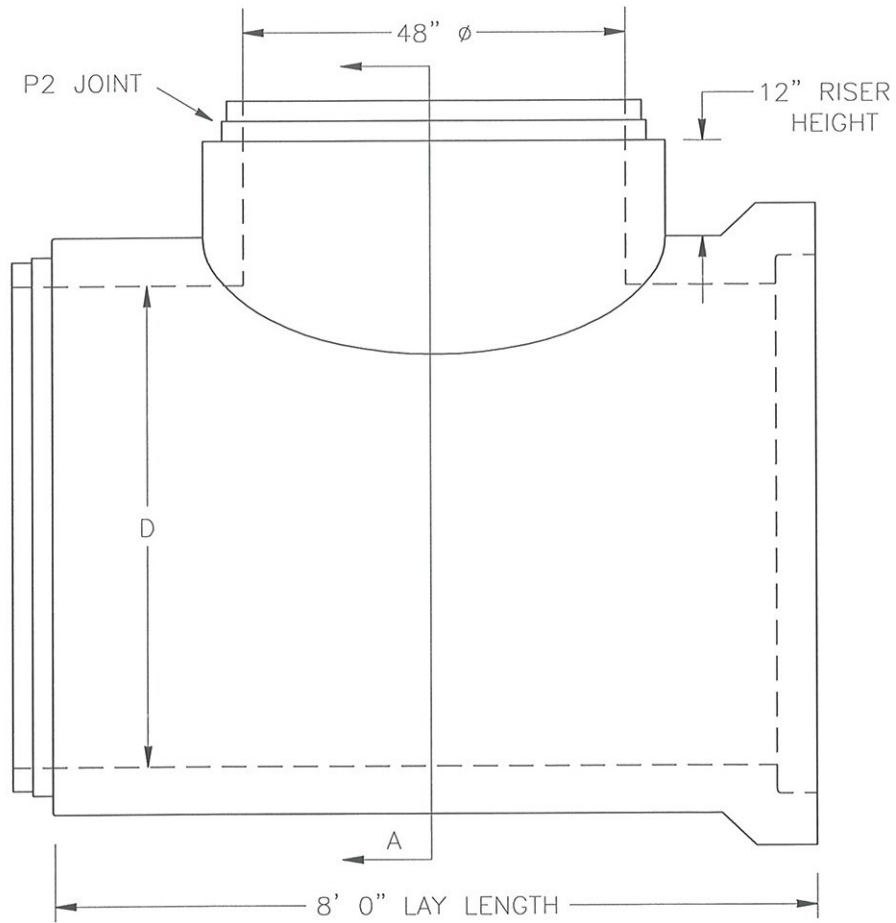
REV.D. 2012

STORM SEWER SADDLE MANHOLE

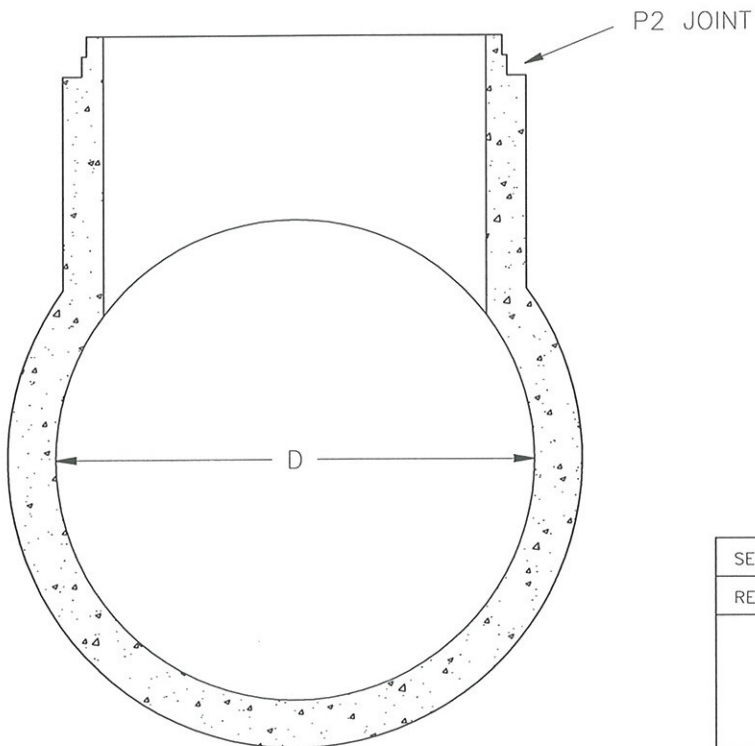
CITY OF FARGO
ENGINEERING DEPARTMENT

APPROVED *BED*

DATE *2-21-2012*



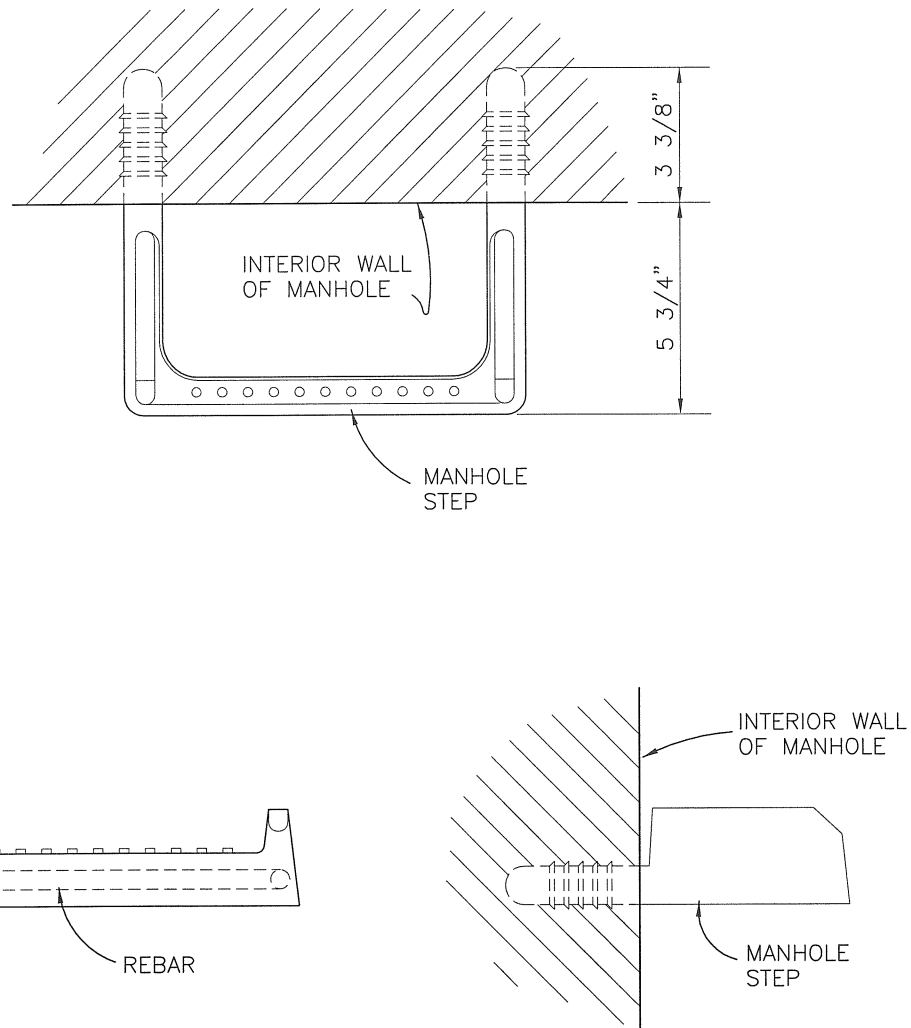
SIDE VIEW



SECTION A-A

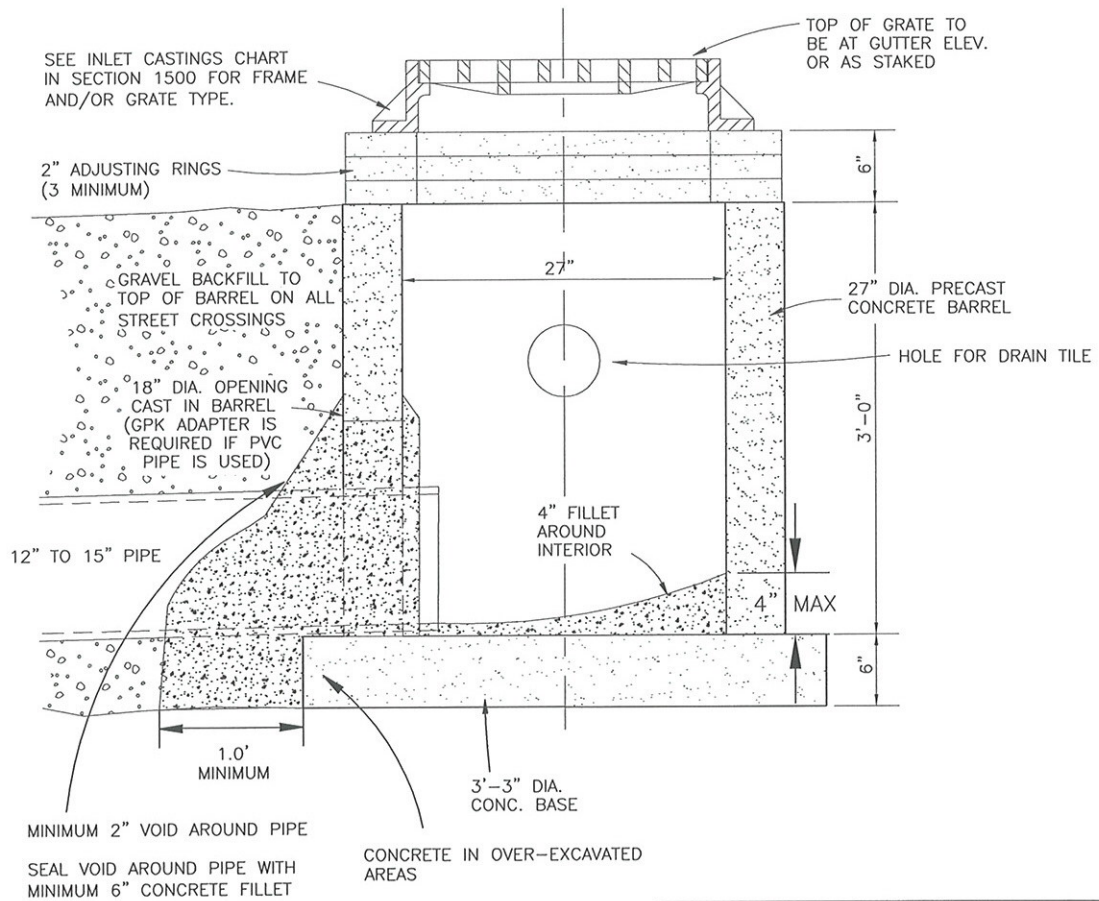
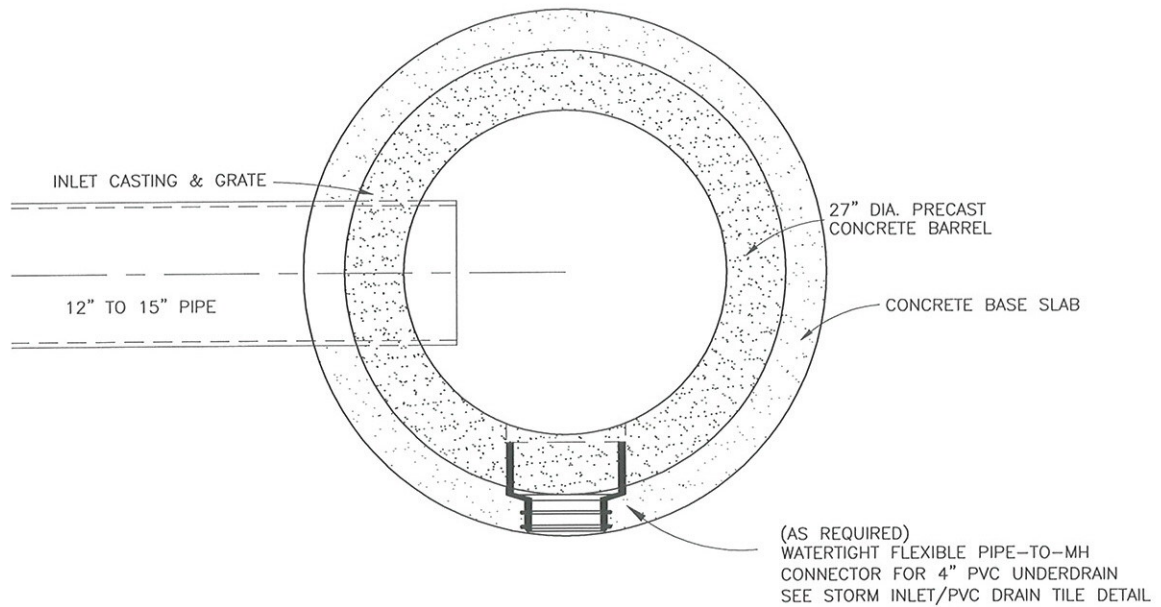
D
PIPE DIAMETER
48"
54"
60"
66"
72"
78"
84"
96"
102"
108"
120"

SECTION NO.	1500	DRAWING NO.	5.6B
REV.D.			
INLINE TEE MANHOLE			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	JME	DATE	1-2-13

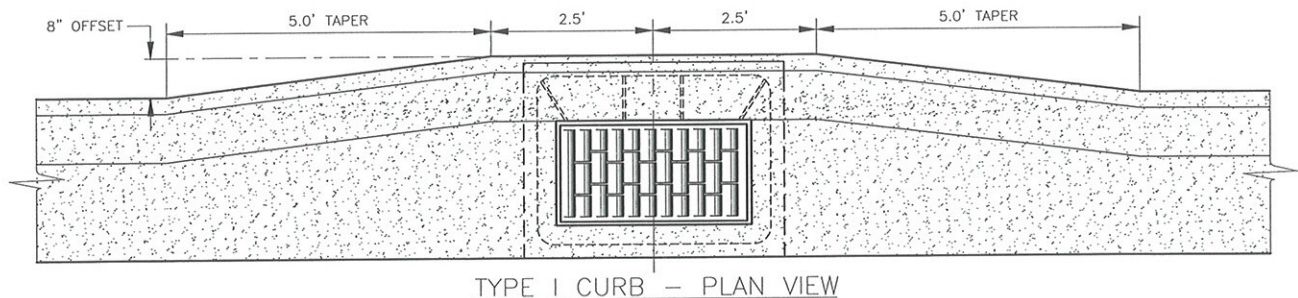
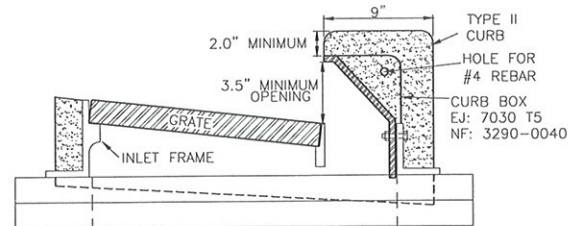
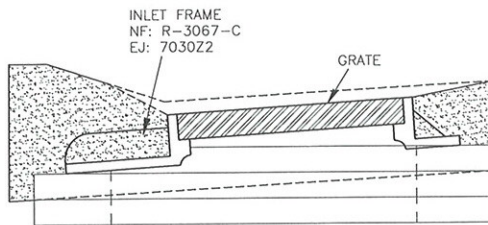
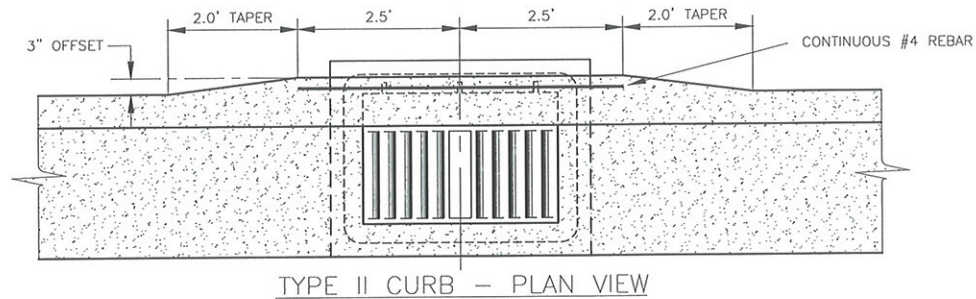
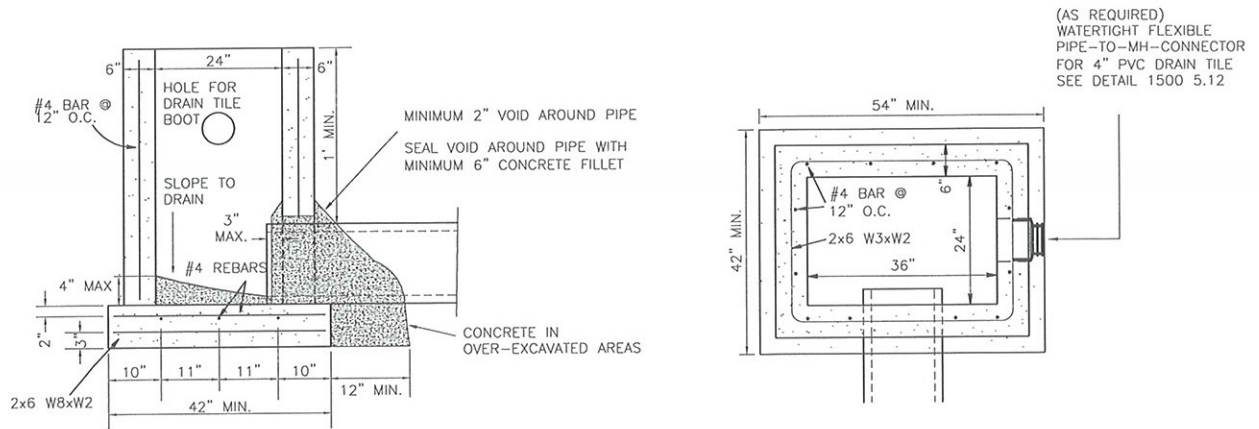


NOTE:
 STEP SHALL BE CONSTRUCTED OF 1/2" REINFORCING
 ROD AND COMPLETELY ENCASED IN A CORROSION
 RESISTANT RUBBER OR POLYPROPYLENE PLASTIC,
 WHICH WILL RESIST DETERIORATION FROM HYDROGEN
 SULFIDE OR OTHER CHEMICALS AND GASES
 ENCOUNTERED IN MANHOLE APPLICATION.
 ALSO, STEP SHALL HAVE A VERTICAL RESISTANCE OF
 400 LBS., AND A PULLOUT RESISTANCE OF 1000 LBS.
 SUCH AS: THE WEDG-LOC STEP BY DELTA PIPE
 PRODUCTS OR APPROVED EQUAL.

SECTION NO.	1500	DRAWING NO.	5.7
REV.D.	March, 2000		
<i>MANHOLE STEP DETAIL</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	<i>BEO</i>	DATE	<i>2-21-2012</i>



SECTION NO.	1500	DRAWING NO.	5.8
REV.D.	2013		
<p><i>STORM SEWER ROUND INLET (RDI)</i></p>			
<p>CITY OF FARGO ENGINEERING DEPARTMENT</p>			
APPROVED	<i>AME</i>	DATE	<i>1-2-13</i>



NOTES:

1. VERIFY FRAME, GRATE, & CURB BOX WITH INLET CASTINGS CHART IN SECTION 1500.
2. METAL USED IN THE MANUFACTURE OF CASTINGS SHALL CONFORM TO AASHTO M-105, CLASS 35B.
3. THE CONTRACTOR SHALL HAVE THE OPTION OF USING PRECAST OR POURED IN PLACE BASES. CLASS OF CONCRETE SHALL BE AE. THE AGGREGATE SIZE SHALL BE APPROVED BY THE ENGINEER IN THE FIELD.
4. PRECAST RISERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199.
5. ON PROJECTS WITH P.C.C. PAVEMENT ALL INLET RISERS OR BARRELS SHALL BE CONSTRUCTED 4 TO 5 INCHES BELOW FINAL ELEVATION AND ADJUSTED TO FINAL GRADE AFTER THE PAVING. ADJUSTMENT MAY BE DONE WITH ADJUSTMENT RINGS, MASONRY OR CAST-IN-PLACE. ALL COSTS FOR THIS ADJUSTMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE INLET.

CURB BOX
STANDARD CURB — NEENAH 3290-0040 or EAST JORDAN T5

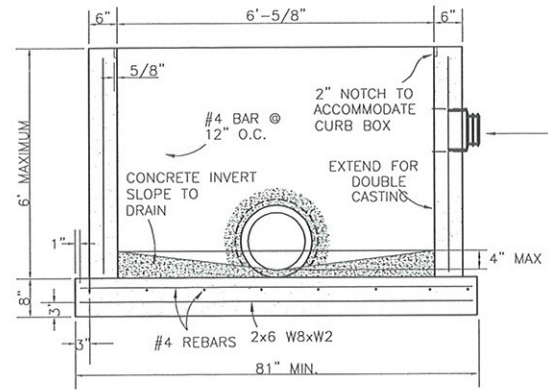
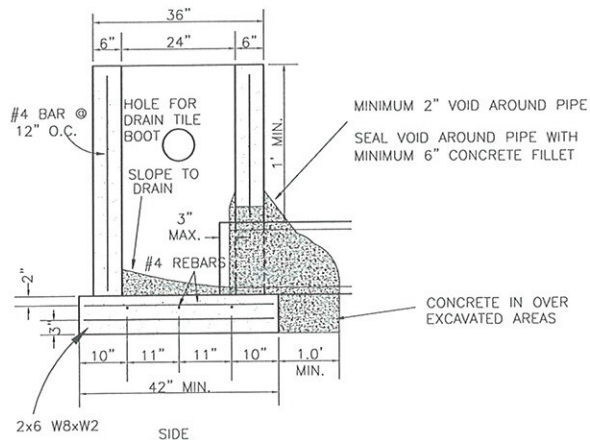
SECTION NO. 1500 DRAWING NO. 5.9

REV.D. 2013

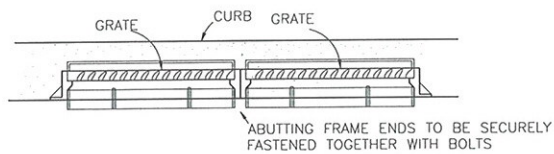
SINGLE BOX INLET (SBI) DETAIL

CITY OF FARGO
ENGINEERING DEPARTMENT

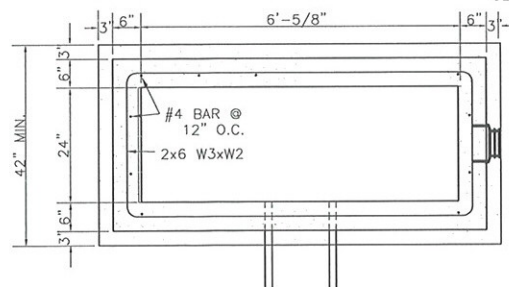
APPROVED *CME* DATE 1-2-13



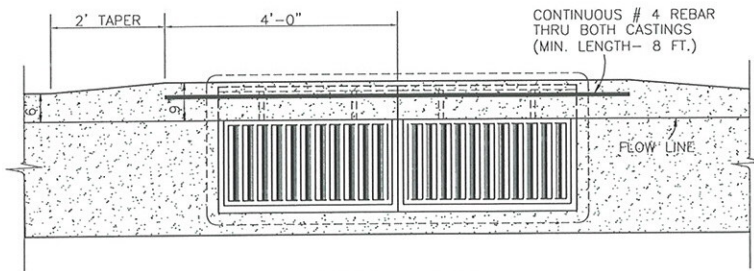
(AS REQUIRED)
WATERTIGHT FLEXIBLE
PIPE-TO-MH-CONNECTOR
FOR 4" PVC DRAIN TILE
SEE DETAIL 1500 5.12



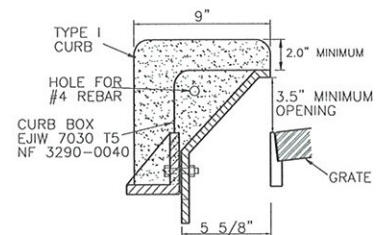
FRONT



PLAN

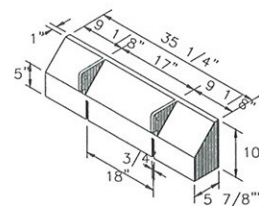


DOUBLE INLET PLAN
TYPE II CURB



TYPE II CURB

CURB BOX
STANDARD CURB - NEENAH 3290-0040 or E.J. T5
MOUNTABLE CURB - NEENAH 3067-7009 or E.J. T7
OR APPROVED EQUAL



NOTES:

1. SEE INLET CASTINGS CHART IN SECTION 1500 FOR FRAME AND/OR GRATE TYPE.
2. METAL USED IN THE MANUFACTURE OF CASTINGS SHALL CONFORM TO AASHTO M-105, CLASS 35B.
3. THE CONTRACTOR SHALL HAVE THE OPTION OF USING PRECAST OR POURED IN PLACE BASES. CLASS OF CONCRETE SHALL BE AE. THE AGGREGATE SIZE SHALL BE APPROVED BY THE ENGINEER IN THE FIELD.
4. PRECAST RISERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH AASHTO M199.
5. ON PROJECTS WITH P.C.C. PAVEMENT ALL INLET RISERS OR BARRELS SHALL BE CONSTRUCTED 4 TO 5 INCHES BELOW FINAL ELEVATION AND ADJUSTED TO FINAL GRADE AFTER THE PAVING. ADJUSTMENT MAY BE DONE WITH ADJUSTMENT RINGS, MASONRY OR CAST-IN-PLACE. ALL COSTS FOR THIS ADJUSTMENT SHALL BE INCLUDED IN THE BID PRICE FOR THE INLET.

SECTION NO. 1500 DRAWING NO. 5.10

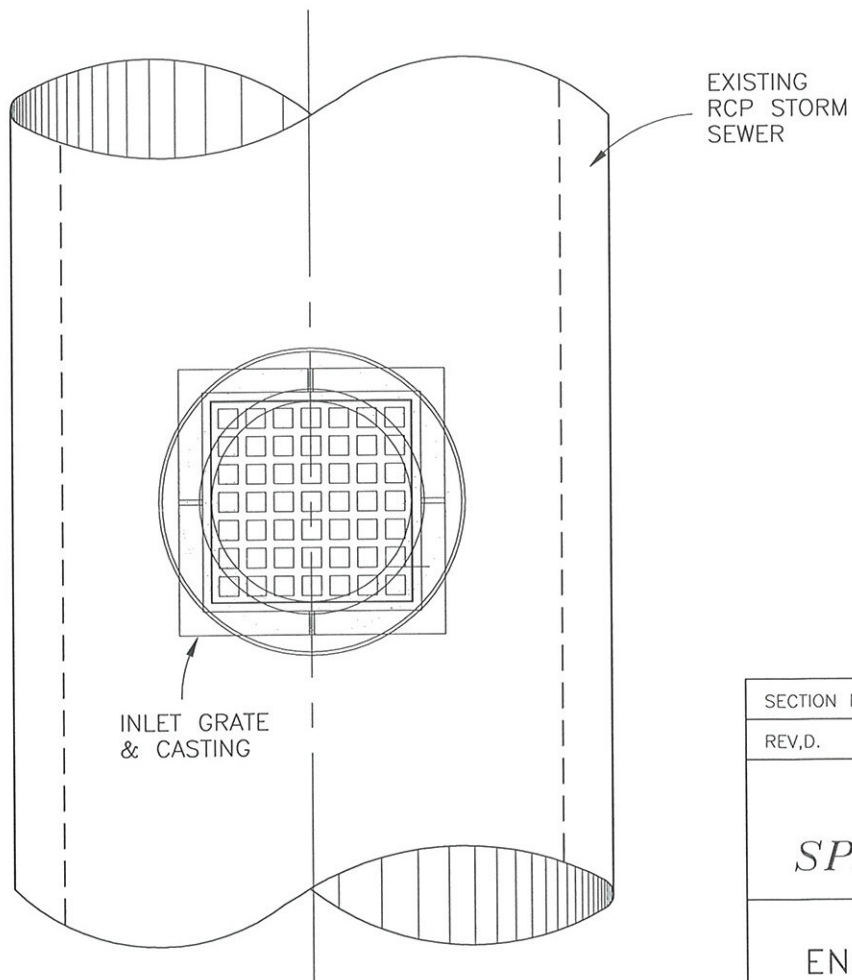
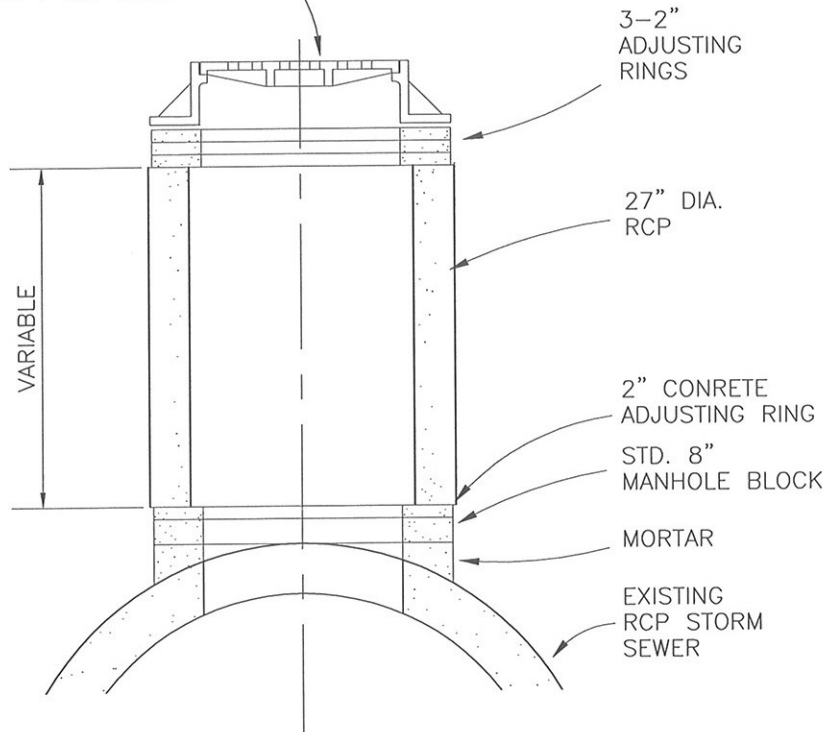
REV.D. 2013

**DOUBLE BOX INLET
(DBI) DETAIL**

CITY OF FARGO
ENGINEERING DEPARTMENT

APPROVED *CME* DATE *1-2-13*

CASTING FRAME AND
COVER SHALL
DETERMINED BY THE
ENGINEER BASED ON
STRUCTURE LOCATION
AND PURPOSE.



NOTES:

1. BUTYL RUBBER GASKET ON ALL JOINTS (JOINTS TO MEET ASTM 433 REQUIREMENT).
2. TOP OF INLET GRATE TO BE AT GUTTER ELEVATION OR 1.5' BELOW NATURAL GROUND IN NEW ADDITIONS.
3. 27" RCP BARREL TO BE A.S.T.M. DESIG. C76.
4. 27" OPENING THRU TOP OF R.C.P. SHALL BE GIVEN A SMOOTH MORTAR FINISH TO PERMIT SAFE ENTRY INTO STORM SEWER.
5. SPECIAL INLETS MAY ONLY BE INSTALLED ON 36" DIA. RCP OR LARGER PIPE.

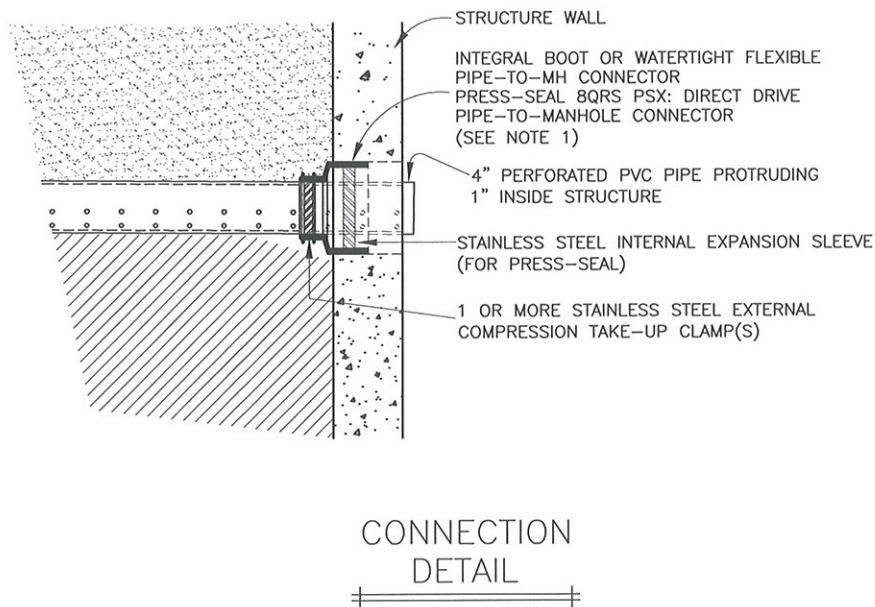
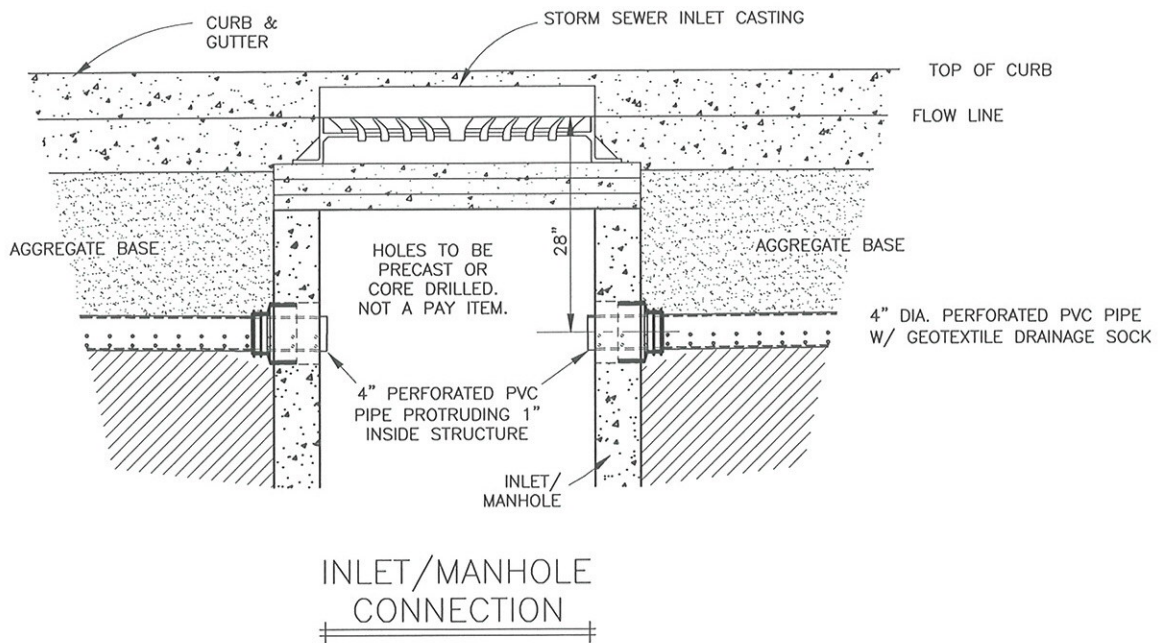
SECTION NO.	1500	DRAWING NO.	5.11
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REV.D.	2013
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STORM SEWER SPECIAL INLET (SPI)

CITY OF FARGO
ENGINEERING DEPARTMENT

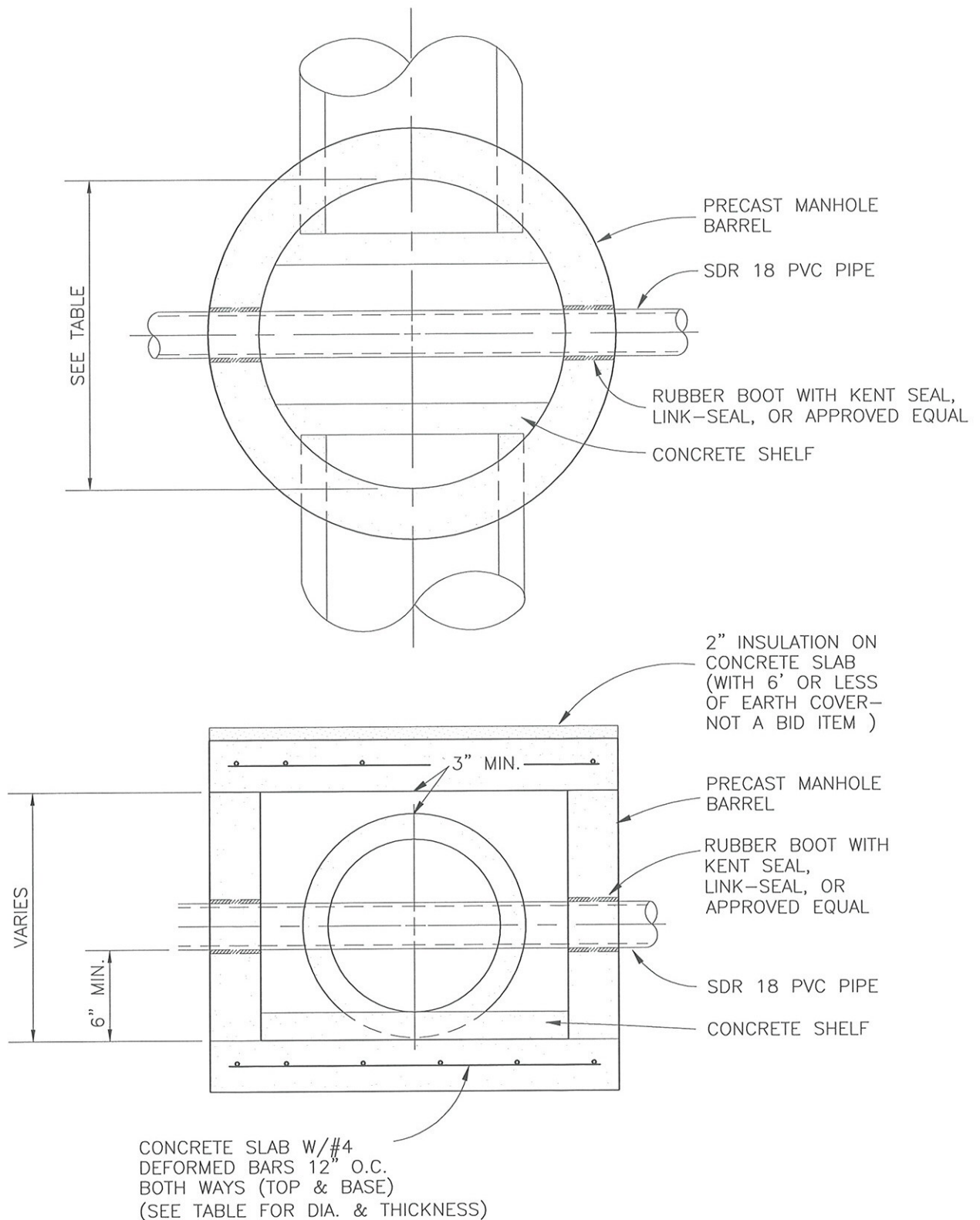
APPROVED	<i>OME</i>	DATE	1-2-13
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NOTES:

1. INSERTA TEE, LINK-SEAL, OR OTHER APPROVED EQUAL MAY BE UTILIZED WITH ENGINEER APPROVAL.
2. SEE 4" PVC EDGE DRAIN DETAIL IN SECTION 2100 FOR ADDITIONAL DETAILS.

SECTION NO. 1500	DRAWING NO. 5.12
REV.D. 2013	
<i>STORM INLET/PVC DRAIN PIPE DETAIL</i>	
CITY OF FARGO ENGINEERING DEPARTMENT	
APPROVED <i>CME</i>	DATE 1-2-13



RCP DIAMETER (MAXIMUM)	BASE (INSIDE DIA.)	BASE (THICKNESS)
15"	2'-0"	6"
27"	4'-0"	8"
54"	6'-0"	8"

SECTION NO.	1500	DRAWING NO.	5.13
REV.D.	2013		
UTILITY CROSSING CHAMBER			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	CME	DATE	1-2-13

1- NO. 4 BAR (31" DIA.)
FOR EACH MAT OF
REINFORCING

3- RECESSED LIFT
HOOKS AT 120°,
18" FROM CENTER

A

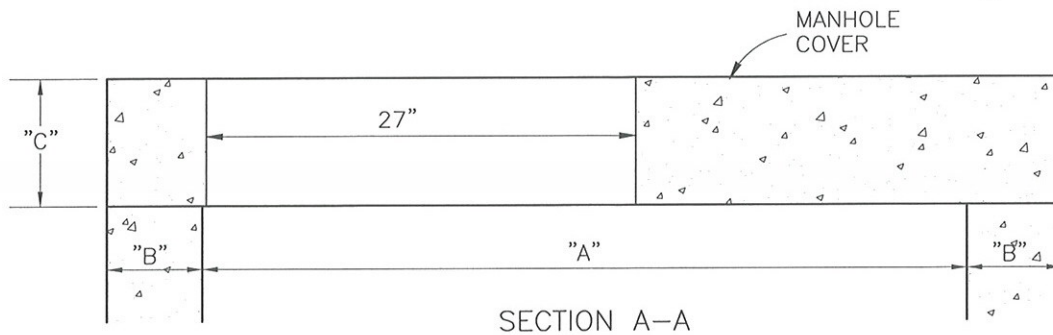
A

27" DIA.
OPENING

MANHOLE
COVER

NO. 4 REBARS AT 6" O.C.
EACH WAY, 3" UP FROM
BOTTOM OF COVER FOR
48" DIA.

NO. 4 REBARS AT 6" O.C.
EACH WAY, 2" UP FROM
BOTTOM OF COVER AND
2" DOWN FROM TOP OF
COVER FOR 60" DIA.
DT

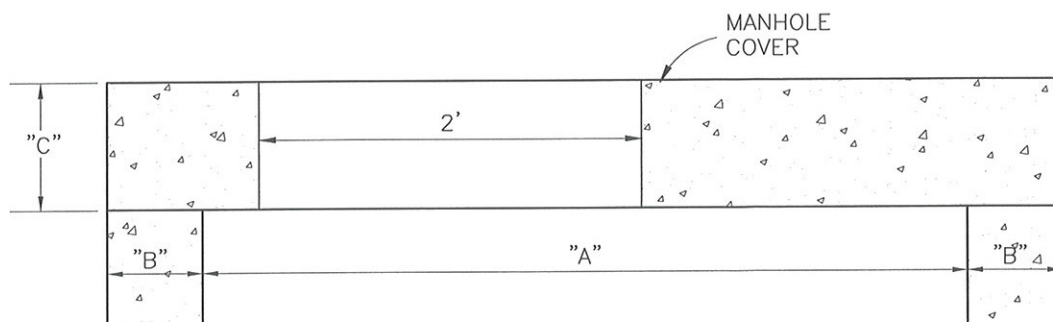
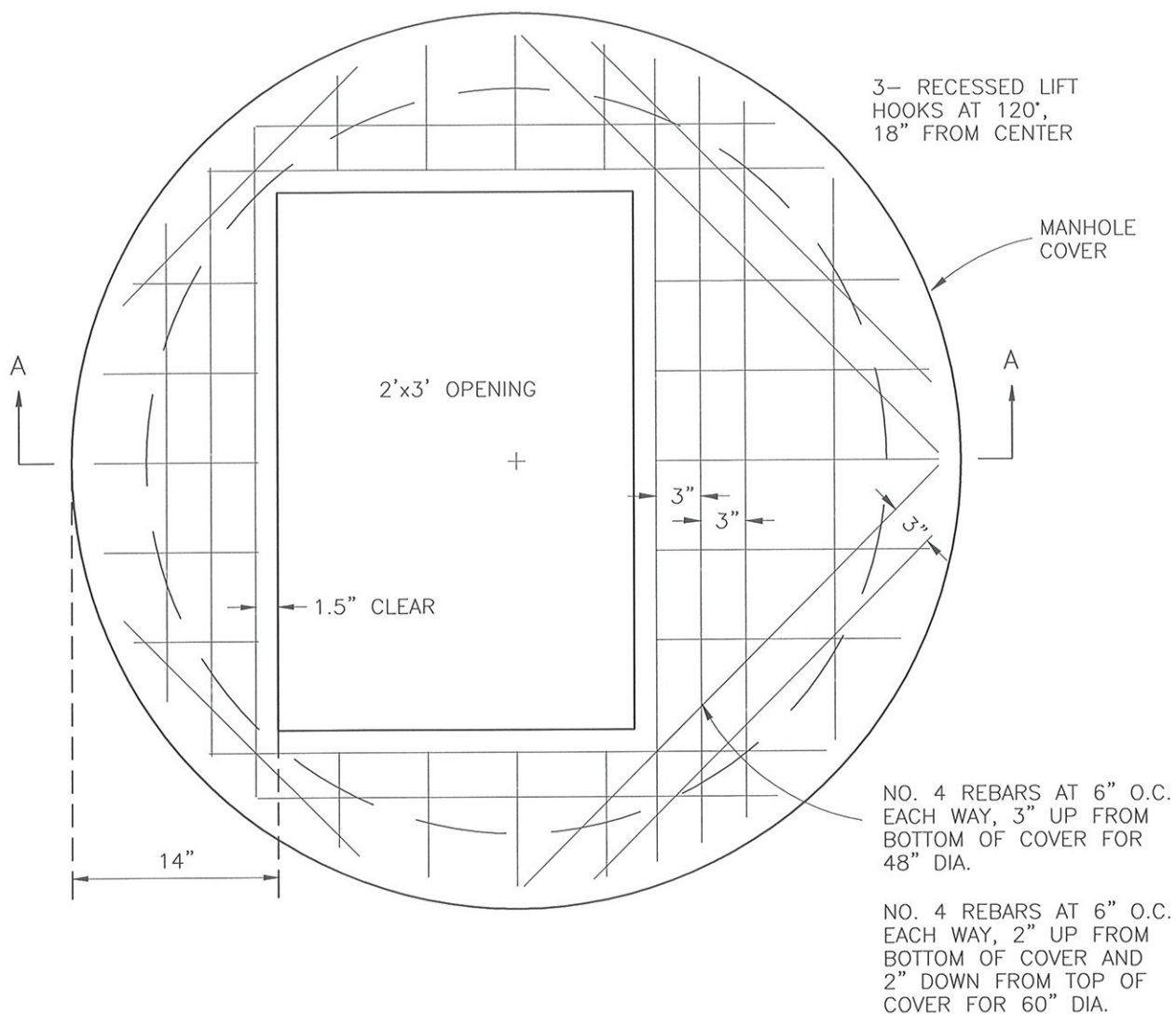


DIMENSION TABLE

A	B	C
48"	5"	6"
60"	6"	7"
72"	7"	8"
84"	8"	9"
96"	9"	9"

TO BE USED WHEN
STRUCTURE IS LOCATED
OUTSIDE GUTTER LINE

SECTION NO. 1500	DRAWING NO. 5.14
REV.D. January 2013	
MANHOLE COVER DETAIL	
CITY OF FARGO ENGINEERING DEPARTMENT	
APPROVED <i>CME</i>	DATE 1-2-13



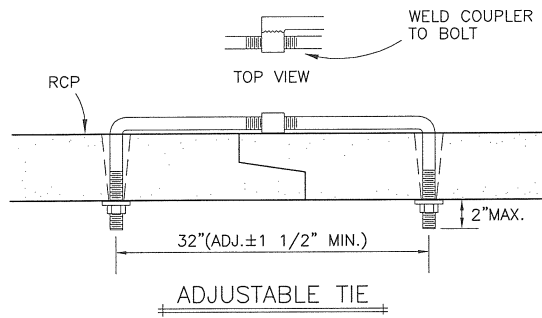
SECTION A-A

DIMENSION TABLE

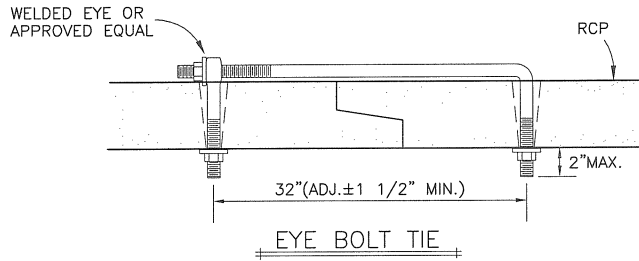
A	B	C
48"	5"	6"
60"	6"	7"
72"	7"	8"
84"	8"	9"
96"	9"	9"

TO BE USED WHEN
STRUCTURE IS LOCATED
IN GUTTER LINE

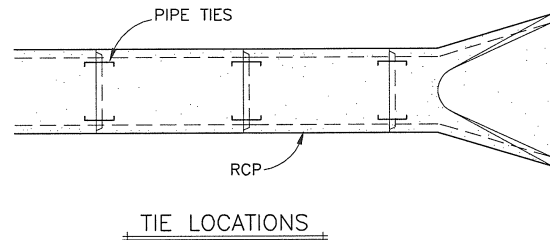
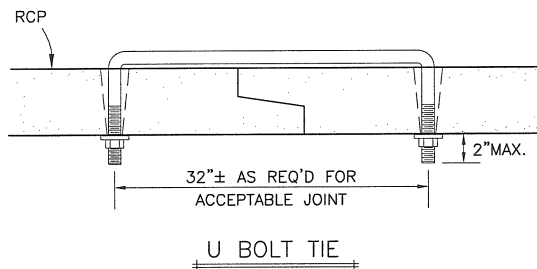
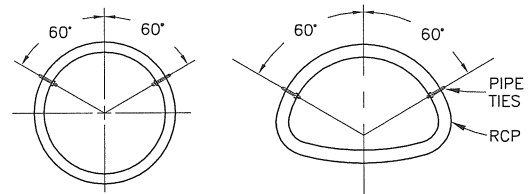
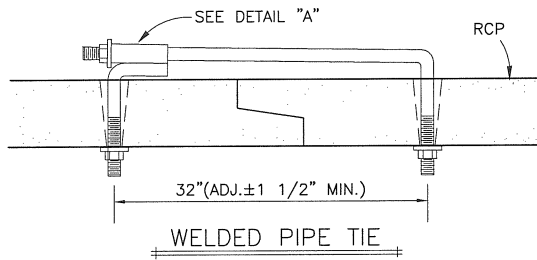
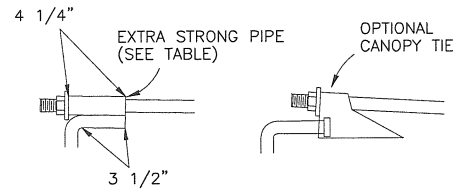
SECTION NO.	1500	DRAWING NO.	5.14B
REV.D.			
<i>MANHOLE COVER DETAIL (GUTTER)</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	<i>CME</i>		DATE <i>1-2-13</i>



REQUIRED SIZE OF TIE BOLTS					
PIPE SIZE (INCHES)	THREAD DIA.	PIPE SIZE (INCHES)	THREAD DIA.	PIPE SIZE (INCHES)	THREAD DIA.
12	5/8"	30	3/4"	72	1"
15		33		78	
18		36		84	
21		42		90	
24		48		96	
27		54		102	
	SEE NOTE TWO	60		108	
		66		120	
				132	



THREAD DIA.	E.S. PIPE DIA
5/8"	3/4"
3/4"	1"
1"	1 1/4"



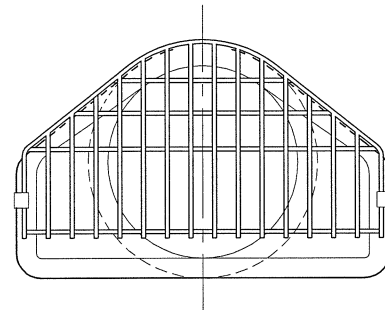
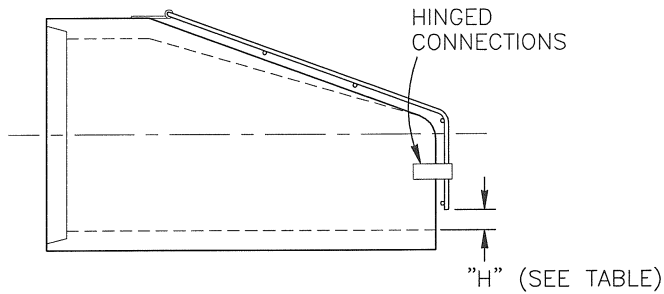
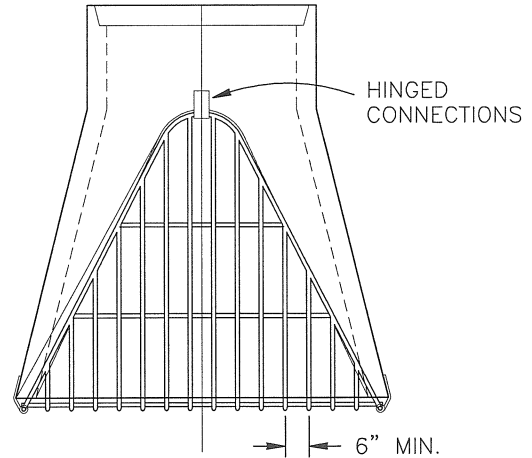
NOTES

- PIPE SIZE LISTED IS INSIDE DIAMETER OF ROUND PIPE OR EQUIVALENT DIAMETER OF PIPE ARCH.
- NUTS AND WASHERS ARE NOT REQUIRED ON INSIDE OF 21" DIAMETER PIPE OR LESS.
- TIES TO BE USED ONLY TO HOLD PIPE SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT.
- TIE BOLTS SHALL BE PAINTED AFTER FABRICATION WITH ONE COAT OF ZINC CHROMATE IRON OXIDE PAINT. THREADED PORTION OF RODS DO NOT HAVE TO BE PAINTED.
- HOLES IN PIPE TO ACCOMMODATE THE TIE BOLTS CAN BE PRECAST OR DRILLED. TAPERED HOLES WILL BE PERMITTED WHEN PRECAST. WHEN EXISTING PIPE ARE EXTENDED OR SALVAGED AND RELAYED, THE CONTRACTOR WILL BE REQUIRED TO DRILL THE NECESSARY HOLES.
- THE CONTRACTOR HAS THE OPTION OF SELECTING THE TYPE OF TIE BOLT TO BE USED. THE TYPE SELECTED SHALL BE APPROVED BY THE ENGINEER.
- THE COST OF PRECASTING OR DRILLING THE REQUIRED HOLES AND FURNISHING AND INSTALLING THE TIE BOLTS SHALL BE INCLUDED IN THE PRICE BID FOR REINFORCED CONCRETE PIPE CULVERTS.
- TIE BOLTS ARE NOT REQUIRED ON STORM SEWER PIPE UNLESS SPECIFICALLY NOTED IN THE PLANS.
- TIE BOLTS ARE REQUIRED ON END SECTIONS (4 SECTIONS) FOR ALL R.C.P. CULVERTS. ON CULVERTS WITHOUT FLARED END SECTIONS, THE THREE END SECTIONS OF THE CULVERT SHALL BE TIED TOGETHER IN THE SAME MANNER FOR EACH END.

SECTION NO.	1500	DRAWING NO.	5.15
REV.D.	March, 1999		
<i>CONCRETE PIPE TIES DETAILS</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BEO	DATE	2-21-2012

ALL TRASH GUARDS TO HAVE (1) CROSS BAR
60" DIA. & UP TO HAVE (2) BARS EQUALLY
SPACED

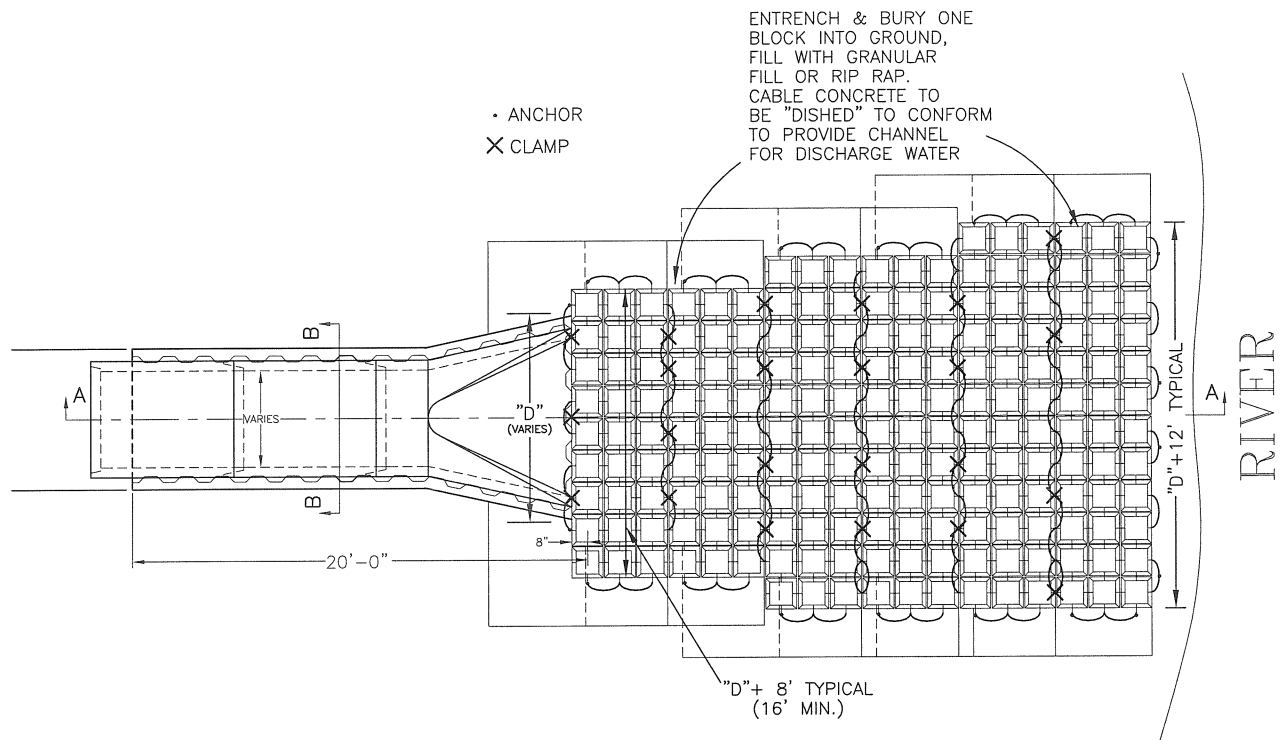
HOT DIP GALVANIZED PER MN/DOT 3392
OR ASTM-A153



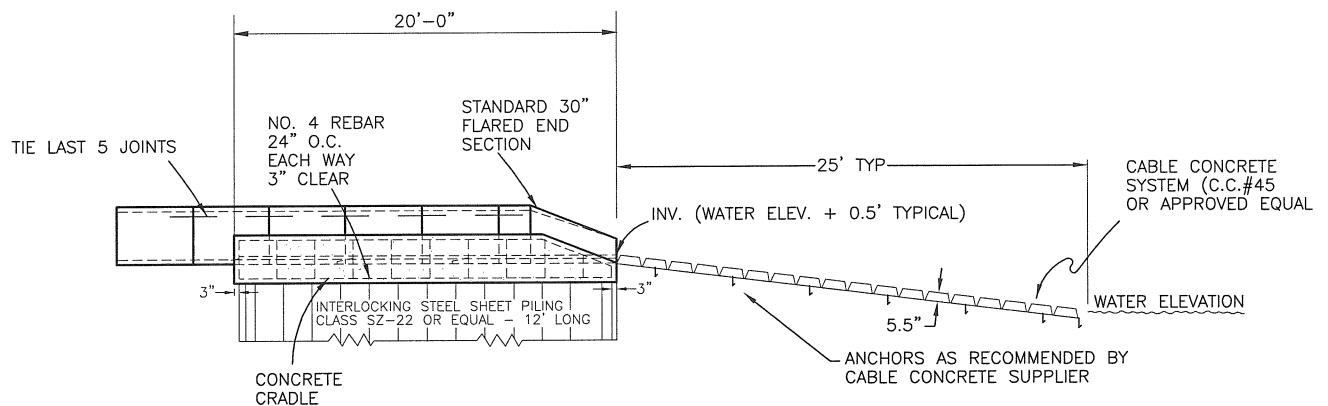
BAR SIZES									
STANDARD DESIGN					HEAVY DESIGN				
	PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE		PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE
ROUND	12"—24"	3/4"	5/8"	5/8"	ROUND	12"—18"	3/4"	5/8"	3/4"
	27"—48"	7/8"	3/4"	3/4"		21"—42"	7/8"	3/4"	1"
	54"—90"	1 1/8"	1"	1"		48"—90"	1 1/8"	1"	1 1/4"
ARCH	22"—29"	3/4"	5/8"	5/8"	ARCH	22"	3/4"	5/8"	3/4"
	36"—59"	7/8"	3/4"	3/4"		29"—51"	7/8"	3/4"	1"
	65"—88"	1 1/8"	1"	1"		59"—88"	1 1/8"	1"	1 1/4"
BOLT LG. = PIPEWALL THICKNESS + 2 1/2"									

VALUES FOR "H"			
ROUND PIPE		ARCH PIPE	
PIPE SIZE	H	PIPE SIZE	H
12"	2 1/2"	22"-29"	4"
15"	3"	36"-44"	5"
18"-24"	4"	51"-55"	6"
27"-36"	5"	73"-88"	7"
42"-54"	6"		
60"-72"	7"		
78"-90"	8"		

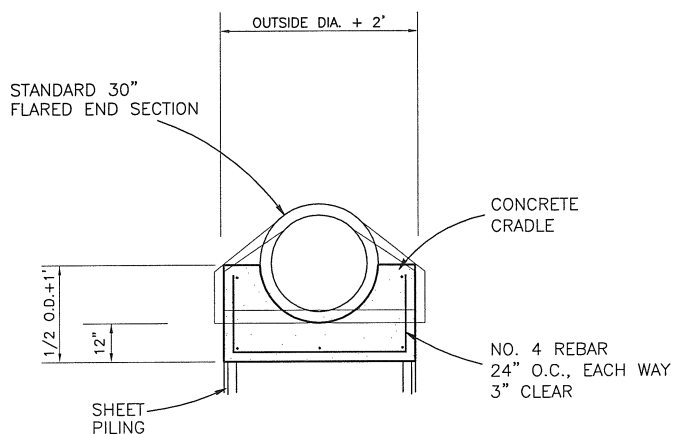
SECTION NO.	1500	DRAWING NO.	5.16
REV.D.	March, 1999		
<i>TRASH GUARD FOR FLARED END SECTIONS</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BEO	DATE	2-21-2012



OUTFALL DETAIL



SECTION A-A

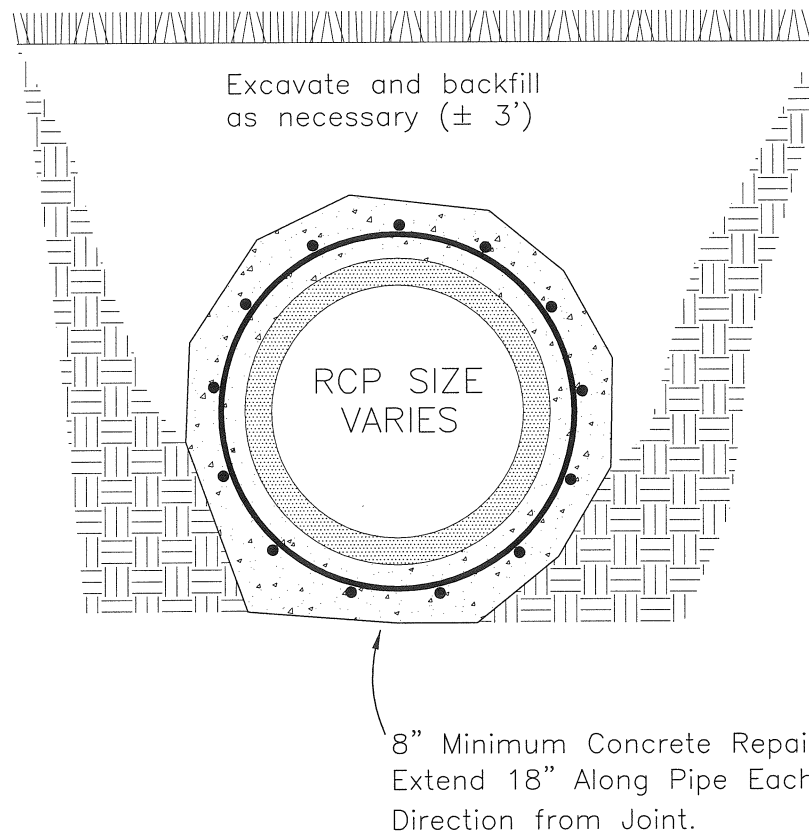


SECTION B-B

SECTION NO. 1500	DRAWING NO. 5.17
REV.D. MARCH, 2007	
OUTFALL DETAIL	
CITY OF FARGO ENGINEERING DEPARTMENT	
APPROVED <i>BEO</i>	DATE <i>2-21-2012</i>

Reinforcing:

- 5 — No. 4 Deformed Bars (Circumferential)
- No. 4 Deformed Bars 12" O.C. (Transverse across joint)



SECTION NO.	1500	DRAWING NO.	5.18
REV.D.	2012		
<i>PIPE JOINT REPAIR BAND DETAIL</i>			
CITY OF FARGO ENGINEERING DEPARTMENT			
APPROVED	BED	DATE	2-21-2012

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

CONDITIONS OF CONTRACT AWARD

Project: SU-8-984(153)156 - PCN 21564

DESCRIPTION

This Contract includes two mandatory bidding options as described below.

BIDDING OPTIONS

A. General.

The Bidder must bid both Options to be considered a responsive bid.

A "zero" bid for any option will not be considered a responsive bid. Bids that are not responsive fail to meet the requirements of the "Invitation to Bid" and will not be accepted.

B. Option 1.

Bid Option 1 is for modifying the Pedestrian Fence on the bridge. Modifications consist of the addition of the curved rail and curved plate as shown in Section 170, Sheets 29-32. Include the added costs to incorporate the curved rail and curved plate into the Pedestrian Fence in the unit price bid for item 624-0151, Railing.

C. Option 2.

Bid Option 2 replaces the base bid formliner on the traffic barriers and pedestrian wall of the bridge with custom formliners specified in Section 170, Sheets 33-35. Include the added costs to provide the custom formliners in the unit price for bid for item 602-7050, Architectural Surface Finish.

D. Award.

The Contract will be awarded to the lowest responsible bidder, defined as the bidder with the lowest base bid. Options 1 and 2 will not be used to determine the lowest responsible bidder.

The City of Fargo reserves the right to construct the project with or without the options of their choice after award of the Contract.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION

PERMITS AND ENVIRONMENTAL CONSIDERATIONS

Project: SU-IM-8-984(153)156 - PCN 21564

This Special Provision incorporates the US Army Corps of Engineers (USACE) Section 404 Permit and the Floodplain Development Permit obtained by the City of 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 Section 404 Permit number NOW-2019-00089-BIS authorizes fill within USACE jurisdictional waters. The 404 Permit authorizes 0.36 acres of temporary and 0.63 acres of permanent jurisdictional wetland impacts resulting from construction activities that require mitigation. 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.

- **Asbestos Report**

The existing silo and building foundation called out for removal at station 121+49, 111' RT has had an asbestos inspection completed. The report has determined that no asbestos containing materials are present. The report is attached for reference.

The Contractor is responsible for impacts not authorized by the attached Permits obtained by the City of Fargo.



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
3319 UNIVERSITY DRIVE
BISMARCK, NORTH DAKOTA 58504-7565

October 15, 2020

NWO-2019-00089-BIS

City of Fargo
Attn: Mr. Jeremy Gorden
225 - 4th Street North
Fargo, North Dakota 58102

Dear Mr. Gorden:

We are responding to your August 24, 2020 request for a Department of the Army permit for the City of Fargo Project No. BN-21-A1 64th Ave S Improvements from 33rd St S to 38th St S, SU-8-984(153)156, PCN 21564 (Phase II). The project site is located in Sections 2, 3, 10, and 11, Township 138 North, Range 49 West, Latitude 46.789561° North, Longitude -96.843056° West, Fargo, Cass County, North Dakota.

Based on the City of Fargo/KLJ preliminary engineering plan sheets, dated 8/20/2020, this project involves the enhancement of approximately 0.85 miles of 64th Ave S to accommodate the growth and development in the surrounding areas. This authorization pertains to Phase II of 64th Avenue Reconstruction project from 33rd to 38th Street. 64th Ave S will be realigned and widened to include turn lanes, shared use paths, and a pedestrian underpass. A 400 linear foot 2-span overpass with a shared use path and two driving lanes will be constructed over I-29. Three PCC driving lanes will be constructed along with a shared use path and pedestrian underpass west of I-29, utilizing a 12' by 9' concrete box culvert. New storm drains, sanitary sewers, watermain, and roadway lighting will also be installed. The specific activities that require discharges into waters of the United States include the filling of multiple wetlands to increase the footprint of 64th Ave S and construct shared use paths; the placement of the box culvert west of I-29; and the placement of foundational layers for the DMS conduit lines, new water mains, and storm sewers. Permanent impacts will total 0.63 acre; temporary impacts to 0.36 acre of aquatic resources will be restored to preconstruction contours following project completion. In lieu fee credits will be purchased from Ducks Unlimited in the amount of 0.72 acre; mitigation bank credits will be purchased from Kirkeby/Schuster NDDOT mitigation bank in the amount of 0.27 acre.

We have determined activities in waters of the U.S. associated with the project are authorized by Nationwide Permit Number (NWP) 23 Approved Categorical Exclusions, found in the January 6, 2017 Federal Register (82 FR 1860), Reissuance of Nationwide Permits. Enclosed is a fact sheet that fully describes this Nationwide Permit and lists the General, Regional and Water Quality Conditions that must be adhered to for this

authorization to remain valid. **Please note that deviations from the original plans and specifications of your project could require additional authorization from this office.**

This determination is applicable only to the permit program administered by the Corps of Engineers. It does not eliminate the need to obtain other Federal, state, tribal and local approvals before beginning work.

You are responsible for all work accomplished in accordance with the terms and conditions of the Nationwide Permit, **including the Regional Conditions specific to projects undertaken in North Dakota.** Information about the NWP and regional conditions are available at <http://www.nwo.usace.army.mil/Missions/Regulatory-Program/North-Dakota/>. If a contractor or other authorized representative will be accomplishing the work authorized by the Nationwide Permit on your behalf, it is strongly recommended that they be provided a copy of this letter and the attached conditions so that they are aware of the limitations of the applicable Nationwide Permit. Any activity that fails to comply with all of the terms and conditions of the Nationwide Permit will be considered unauthorized and subject to appropriate enforcement action.

In addition, your work must comply with the following special conditions:

1. This permit verification is based on the attached Preliminary Plan Sheets dated August 20, 2020 for Project number (BN-21-A1, SU-8-984(153)156, PCN 21564). Any deviations from these preliminary plan sheets shall be submitted to the North Dakota Regulatory Office prior to construction and approved in writing.
2. To compensate for the loss of 0.63 acre of aquatic resources, you shall purchase 0.72 resource credit from the Ducks Unlimited, Inc. for the Red River Basin Regional Service Area and 0.27 resource credit from Kirkeby/Schuster NDDOT Mitigation Bank. Evidence of these purchases shall be provided to this office prior to initiation of construction activities in waters of the U.S. authorized by this verification.
3. Within 60 days following completion of the authorized work or at the expiration of the construction window of this permit, whichever occurs first, you shall submit as- built drawings or stamped final construction plans showing any changes that occurred during construction and a description of the work conducted on the project site AND/OR avoidance areas to this office for review. The drawings shall be signed and sealed by a registered professional engineer and include the following:
 - a. The Department of the Army Permit number
 - b. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings. The drawing should show all "earth disturbance," wetland impacts, structures, and avoidance

- areas. The drawings shall contain, at a minimum, 1-foot topographic contours of the entire site.
- c. Ground and aerial photographs of the completed work. The camera positions and view-angles of the ground photographs shall be identified on a map, aerial photograph, or project drawing.
 - d. A description and list of all minor deviations between the work as authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings the location of any deviations that have been listed.
4. At least 10 days prior to initiation of construction activities in waters of the U.S. authorized by this permit/verification, you shall submit to this office pre-construction site and aerial photographs of the project site, which have been taken no more than one year prior to initiation of construction activities in waters of the U.S. authorized by this permit/verification. Within 60 days following completion of construction activities in waters of the U.S. authorized by this permit/verification, you shall submit post-construction site and aerial photographs/satellite imagery of the project site, showing the work conducted, to this office. Aerial photographs/satellite imagery submitted, including those publicly available, must be taken no more than one year prior to initiation of construction activities in waters of the U.S. authorized by this permit/verification. The camera positions and view angles of post-construction photographs shall be identified on a map, aerial photo, or project drawing. Construction locations shall include all major project features and waters of the U.S. including avoidance and compensatory mitigation areas.
5. At least 10 days prior to initiation of construction activities in waters of the U.S. authorized by this permit/verification, you shall notify this office in writing of the anticipated start date for the work. No later than 30 calendar days following completion of construction activities in waters of the U.S. authorized by this permit/verification, you shall sign and return the attached Project Compliance Certification verifying that construction activities have been completed.
6. You and your authorized contractor shall allow representatives from this office to inspect the activity authorized by this permit/verification and all avoidance areas at any time deemed necessary to ensure that work is being or has been accomplished in accordance with the terms and conditions of this permit verification.
7. The permittee is responsible for ensuring that the Corps is notified of the location of any borrow site that will be used in conjunction with the construction of the authorized activity so that the Corps may evaluate the site for potential impacts to aquatic resources, historic properties, and endangered species. For projects where there is another lead Federal agency, the permittee shall provide the Corps documentation indicating that the lead Federal agency has complied with the National Historic Preservation Act and Endangered Species Act for the borrow

site. The permittee shall not initiate work at the borrow site in conjunction with the authorized activity until approval is received from the Corps.

Within 30 days after completion of the authorized work, you must sign the enclosed Compliance Certification and return it to this office.

This verification will be valid until **March 18, 2022**. If the nationwide permit is modified, suspended, or revoked prior to this date, but is reissued without modification or the activity complies with any subsequent modification, this authorization remains valid until the expiration date. All of the existing nationwide permits are scheduled to be modified, reissued, or revoked prior to **March 18, 2022**. It is incumbent upon you to remain informed of changes to the nationwide permits. We will issue a public notice when the nationwide permits are reissued. Furthermore, if you commence or are under contract to commence this activity before the date that the relevant nationwide permit is modified or revoked, you will have twelve (12) months from the date of the modification or revocation to complete the activity under the present terms and conditions.

The Omaha District, North Dakota Regulatory Office is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete our Customer Service Survey found on our website at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. If you do not have Internet access, you may call and request a paper copy of the survey that you can complete and return to us by mail or fax.

Please refer to identification number NWO-2019-00089-BIS in any correspondence concerning this project. If you have any questions, please contact Amber Inman by email at Amber.L.Inman@usace.army.mil, or telephone at (701) 255-0015, extension 2009.

Sincerely,

Toni R. Erhardt
Senior Project Manager
North Dakota

Enclosures

COMPLIANCE CERTIFICATION

Permit File Name: NDDOT; KLJ; City of Fargo; Project No. BN-20-C1; 64th Ave S
Improvements from 25th St S to 45th St S, SU-8-984(153)156,
PCN 21564, Cass County Phase II

Action ID: NWO-2019-00089-BIS

Nationwide Permit Number: 23 Approved Categorical Exclusions

Permittee: City of Fargo
Attn: Mr. Jeremy Gorden
225 4th Street North
Fargo, North Dakota 58102

County: Cass County

Date of Verification: October 15, 2020

Within 30 days after completion of the activity authorized by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers, Omaha District
North Dakota Regulatory Office
3319 University Drive
Bismarck, North Dakota 58504
CENWO-OD-RND@usace.army.mil

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of the permit your authorization may be suspended, modified, or revoked. If you have any questions about this certification, please contact the U.S. Army Corps of Engineers.

* * * * *

I hereby certify that the work authorized by the above-referenced permit, including all the required mitigation, was completed in accordance with the terms and conditions of the permit verification.

Permittee Signature

Date

**FACT SHEET
NATIONWIDE PERMIT 23
(2017)**

APPROVED CATEGORICAL EXCLUSIONS

Activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in part, by another Federal agency or department where:

(a) That agency or department has determined, pursuant to the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act (40 CFR part 1500 et seq.), that the activity is categorically excluded from the requirement to prepare an environmental impact statement or environmental assessment analysis, because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment; and

(b) The Office of the Chief of Engineers (Attn: CECW-CO) has concurred with that agency's or department's determination that the activity is categorically excluded and approved the activity for authorization under NWP 23.

The Office of the Chief of Engineers may require additional conditions, including pre-construction notification, for authorization of an agency's categorical exclusions under this NWP.

Notification: Certain categorical exclusions approved for authorization under this NWP require the permittee to submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 32). The activities that require pre-construction notification are listed in the appropriate Regulatory Guidance Letters. (Sections 10 and 404)

Note: The agency or department may submit an application for an activity believed to be categorically excluded to the Office of the Chief of Engineers (Attn: CECW-CO).

Prior to approval for authorization under this NWP of any agency's activity, the Office of the Chief of Engineers will solicit public comment. As of the date of issuance of this NWP, agencies with approved categorical exclusions are: the Bureau of Reclamation, Federal Highway Administration, and U.S. Coast Guard. Activities approved for authorization under this NWP as of the date of this notice are found in Corps Regulatory Guidance Letter 05-07, which is available at: <http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl05-07.pdf>. Any future approved categorical exclusions will be announced in Regulatory Guidance Letters and posted on this same Web site.

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/ or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain

permit authorization under one or more NWP, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation.

- (a) No activity may cause more than a minimal adverse effect on navigation.
- (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
- (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements.

No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas.

Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas.

Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds.

No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material.

No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes.

No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects from Impoundments.

If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows.

To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains.

The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment.

Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls.

Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills.

Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance.

Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project.

The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers.

(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <http://www.rivers.gov/>.

17. Tribal Rights.

No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species.

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre- construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non- Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species- specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt,

shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide Web pages at <http://www.fws.gov/> or [http:// www.fws.gov/ipac](http://www.fws.gov/ipac) and [http:// www.nmfs.noaa.gov/pr/species/esa/](http://www.nmfs.noaa.gov/pr/species/esa/) respectively.

19. Migratory Birds and Bald and Golden Eagles.

The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties.

(a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may

be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any

views obtained from the applicant, SHPO/ THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts.

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters.

Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation.

The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre- construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally

appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre- construction notification, the district engineer may determine on a case-by- case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult- to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns.

Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses. (f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the

United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures.

To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality.

Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not

result in more than minimal degradation of water quality. *Specifically for North Dakota, the North Dakota Department of Health has denied water quality certification for all projects proposed to affect Class 1 and 1A rivers and streams, and classified lakes in Appendix I and II of the standards, and individual certification must be obtained. For projects proposed to affect any other waters, the North Dakota Department of Health has issued water quality certification provided the attached Construction and Environmental Disturbance Requirements are followed. The Standards may be found at <http://www.legis.nd.gov/information/acdata/pdf/33-16-02.1.pdf?2016031115632>*

On Tribal Lands, Water Quality Certification is denied for all Nationwide Permits. Applicants must work with EPA to obtain individual water quality certification. Contact: USEPA, Region 8, 401 Certification Program – 8WP-AAP, 1595 Wynkoop Street, Denver, Colorado 80202-1129. (303-312-6909)

26. Coastal Zone Management.

In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions.

The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits.

The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications.

If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ (Transferee) _____ (Date)

30. Compliance Certification.

Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

- (a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;
- (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and
- (c) The signature of the permittee certifying the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States.

If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a “USACE project”), the prospective permittee must submit a pre- construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification.

- (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of

receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no

more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act.

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the “study river” (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it

is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) All NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or email that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

**2017 NATIONWIDE PERMITS
REGIONAL CONDITIONS
OMAHA DISTRICT
STATE OF NORTH DAKOTA**

The following Nationwide Permit Regional Conditions will be used in the State of North Dakota. Regional conditions are placed on Nationwide Permits to ensure projects result in no more than minimal adverse impacts to the aquatic environment and to address local resource concerns.

1. Wetlands Classified as Peatlands – Revoked for use

All Nationwide Permits, with the exception of 3, 5, 20, 32, 38 and 45, are revoked for use in peatlands. Peatlands are permanently or seasonally saturated and inundated wetlands where conditions inhibit organic matter decomposition and allow for the accumulation of peat. Under cool, anaerobic, and acidic conditions, the rate of organic matter accumulation exceeds organic decay.

2. Wetlands Classified as Peatlands – Preconstruction Notification Requirement

For Nationwide Permits 3, 5, 20, 32, 38 and 45 permittees must notify the Corps in accordance with General Condition 32 (Pre-Construction Notification) prior to initiating any regulated activity impacting peatlands.

3. Waters Adjacent to Natural Springs – Preconstruction Notification Requirement

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 32 (Pre-Construction Notification) for regulated activities located within 100 feet of the water source in natural spring areas. For purposes of this condition, a spring source is defined as any location where there is flow emanating from a distinct point at any time during the growing season. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

4. Missouri River, including Lake Sakakawea and Lake Oahe – Pre-construction Notification Requirement

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 32 (Pre-Construction Notification) prior to initiating any regulated activity occurring in or under the Missouri River, including Lake Sakakawea and Lake Oahe. In addition, any activity occurring in an off channel area (marinas, bays, etc.) of any of these waterbodies, a preconstruction notification is required.

5. Spawning Areas

Spawning restrictions and important fish habitat areas, if applicable, can be accessed on the North Dakota Game & Fish Department's website at:

<http://gf.nd.gov/gnf/conservation/docs/spawning-restriction-exclusions.pdf>

No regulated activity within the Red River of the North shall occur between 15 April and 1 July. Spawning season restrictions do not apply to projects involving dredging or other discharges of less than 25 cubic yards of material in any jurisdictional water.

6. Counter-Sinking Culverts and Associated Riprap – All Nationwide Permits

In streams with intermittent or perennial flow and a stable stream bed, culvert stream crossings shall be installed with the culvert invert set below the natural streambed according to the table below. This regional condition does not apply in instances where the lowering of the culvert invert would allow a headcut to migrate upstream of the project into an unaffected stream reach or result in lowering the elevation of the stream reach.

Riprap inlet and outlet protection shall be placed to match the height of the culvert invert.

Culvert Type	Drainage Area	Minimum Distance Culvert Invert Shall Be Lowered Below Stream Flow Line
All culvert types	≤ 100 acres	Not required
Pipe diameter <8.0 ft	100 to 640 acres	0.5 ft
Pipe diameter <8.0 ft	>640 acres	1.0 ft
Pipe diameter ≥ 8.0 ft	All drainage sizes	1.0 ft
Box culvert	All drainage sizes	1.0 ft

REGIONAL CONDITIONS APPLICABLE TO SPECIFIC NATIONWIDE PERMITS

Nationwide Permit 7 – Outfall Structures and Associated Intake Structures and Nationwide Permit 12 – Utility Line Activities.

Intake Structures – Intake screens with a maximum mesh opening of ¼-inch must be provided, inspected annually, and maintained. Wire, Johnson-like, screens must have a maximum distance between wires of 1/8-inch. Water velocity at the intake screen shall not exceed ½-foot per second.

Pumping plant sound levels will not exceed 75 dB at 50 feet.

Intakes located in Lake Sakakawea, above river mile 1519, and on the Yellowstone River, are subject to the following conditions:

- The intakes shall be floating.
- At the beginning of the pumping season, the intake shall be placed over water with a minimum depth of 20 feet.
- If the 20-foot depth is not attainable, then the intake shall be located over the deepest water available.

- If the water depth falls below six feet, the intake shall be moved to deeper water or the maximum intake velocity shall be limited to ¼ foot per second.

Intakes located in Lake Sakakawea, below river mile 1519, and the Missouri River below Garrison Dam are subject to the following conditions:

- The intakes shall be submerged.
- At the beginning of the pumping season, the intake will be placed at least 20 vertical feet below the existing water level.
- The intake shall be elevated 2 to 4 feet off the bottom of the river or reservoir bed.
- If the 20-foot depth is not attainable, then the intake velocity shall be limited to ¼-foot per second with intake placed at the maximum practicable attainable depth.

Intakes and associated utility lines that are proposed to cross sandbars in areas designated as piping plover critical habitat are prohibited.

Utility Lines

- Any temporary open trench associated with utility lines are to be closed within 30 days of excavation. This time limit may be extended by notifying the North Dakota Regulatory Office and receiving a written response that the extension is acceptable.

Nationwide Permit 11 – Temporary Recreational Structures – Boat Docks

To ensure that the work or structure shall not cause unreasonable obstruction to the free navigation of the navigable waters, the following conditions are required:

- No boat dock shall be located on a sandbar or barren sand feature. The farthest point riverward of a dock shall not exceed a total length of 30 feet from the ordinary high watermark. Information Note: Issuance of this permit does not supersede authorization required by the North Dakota State Engineer's Office.
- Any boat dock shall be anchored to the top of the high bank.
- Any boat dock located within an excavated bay or marina that is off the main river channel may be anchored to the bay or marina bottom with spuds.

Section 10 Waters located in the State of North Dakota are:

Bois de Sioux River
James River
Missouri River
Red River of the North
Upper Des Lacs Lake
Yellowstone River

Nationwide Permit 13 – Bank Stabilization

Permittees must notify the Corps in accordance with General Condition No. 32 (Pre-Construction Notification) prior to initiating any regulated activity. The notification must also include photo evidence of erosion in the area. Prohibited materials found at

<http://www.nwo.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/2034/Article/487696/prohibited-restricted-materials.aspx> cannot be used in waters of the United States.

Nationwide Permit 23 – Approved Categorical Exclusions

Permittees must notify the Corps in accordance with General Condition No. 32 (Pre-Construction Notification) prior to initiating any regulated activity. In addition to information required by General Condition 32 (Pre-Construction Notification), permittees must identify the approved categorical exclusion that applies and provide documentation that the project fits the categorical exclusion.

GENERAL CONDITIONS (REGIONAL ADDITIONS)

General Condition 32 Notification– Pre-construction Notification

Prospective permittees should be aware that a field aquatic resources delineation may be required for applications where notification is required in accordance with General Condition 32 (Pre-Construction Notification) and/or mitigation may be required. Specific guidelines outlining the aquatic resources delineation process in the State of North Dakota and the Corps 1987 Wetland Delineation Manual and applicable Regional supplements to the Manual can be accessed on the North Dakota Regulatory Office's website at:

<http://www.nwo.usace.army.mil/Missions/RegulatoryProgram/NorthDakota.aspx>



NORTH DAKOTA
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov



Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.



Floodplain Development Permit Application

Lama 2009-0166-FLDP

PERMIT # 20-13

Please complete all items on this page.

Applicant City of Fargo Date: 8/26/2020
Address 225 4th Street North, Fargo, ND 58102
Proposed development address or 64 Avenue South & US I-29 (Stanley Township/Selkirk Place, 1st Addition)
Legal Description: S10-T138-R49 /S3-T138-R49

Project Contact Person: Jason Leonard - coordinator with NDDOT Telephone 701-241-1545
Email JLeonard@FaergoND.Gov

Note: all buildings/structures 120 Square Feet or more must be permitted by the Building Inspections Department.

SECTION 1: DEVELOPMENT ACTIVITY

What permit are you applying for? ☒ Floodplain ☒ 41 WSEIA ☐ MDZS/ LDZS

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)

Construct interchange at 34 Avenue South and US I-29, install underground infrastructure, import fill, grading, paving, street lighting and incidentals.

Attach plans, description, etc., as appropriate to this application.

SECTION 2: FLOODPLAIN DETERMINATION

Community Number 385364	<input checked="" type="checkbox"/> Floodplain (SFHA)	<input checked="" type="checkbox"/> 41 WSEIA
	<input type="checkbox"/> Floodway (No-rise Certificate Required)	<input type="checkbox"/> Project is not located in a SFHA
FIRM Panel 38017C0	787	Site Elevations (Use only NAVD 1988)
FIRM ZONE	AE	Existing Grade 908.0'
Index and Map Date 1/16/2015		BFE (SFHA) 905.7'-906.8'
		41' WSEIA 906.8'-907.3'

SECTION 3: LDZS /LDZS CONDITIONS

<input type="checkbox"/> Bike Path / Walking Trail / Multi-use Path	Waiver Process	
<input type="checkbox"/> Building / Structure under 120 Square Feet (LDZS)	<input type="checkbox"/> Completed Setback Waiver Eligibility Form / backup	
<input type="checkbox"/> Flood Protection Levee / Floodwall	<input type="checkbox"/> Engineer comment letter	
<input type="checkbox"/> Public Facility / Rest Room, Shelter, Etc.	MDZS Improvement	LDZS Improvement
<input type="checkbox"/> Road / Bridge / Trail / Storm Drainage	<input type="checkbox"/> Flood Protection	<input type="checkbox"/> Previously Platted
<input type="checkbox"/> Stairway / Lift / Landing / Ramp / Mobility Path	<input type="checkbox"/> Geotech	<input type="checkbox"/> No Impact (Flood Control)
	<input type="checkbox"/> Stairs <input type="checkbox"/> Trail	<input type="checkbox"/> Expansion
		<input type="checkbox"/> 120 ft.

Other City of Fargo Permits that are Required as a condition of this permit:

Notice:
Federal and ND State Permits may also
be required before construction begins.
Other permits are the responsibility of
the applicant.

- ☒ Erosion and Sediment Control (ESC)
☐ Other

SECTION 4: ACTION / APPROVAL / CONDITIONAL APPROVAL / DENIAL

Fargo City Commission Action

<input type="checkbox"/> Approved << Commission Decision >>
<input type="checkbox"/> Denied << Commission Decision >>

Date

<input checked="" type="checkbox"/> Permit is Approved	
<input type="checkbox"/> Permit is Denied	

SIGNATURE  Stormwater Engineer

Date 9/1/2020

DESIGN DATA - 64TH AVENUE SOUTH			
Traffic	Average Daily		
Current 2020	Pass: 395	Trucks: 15	Total: 410
Forecast 2045	Pass: 17,250	Trucks: 350	Total: 17,600
Clear Zone Distance: 18' (4:1)	Design Speed: 35 MPH		
Minimum Sight Dist. for Stopping: 250 FT	Bridges: HL-93		
Sight Dist. for No Passing Zone: 550 FT			
Pavement Design Life: 30 (years)			

STATE	ND	PROJECT NO.	SU-8-984(153)156	PCN	21564	SECTION NO.	1	SHEET NO.	1
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JOB # NORTH DAKOTA

DEPARTMENT OF TRANSPORTATION

SU-8-984(153)156

City of Fargo Improvement District BN-21-A1

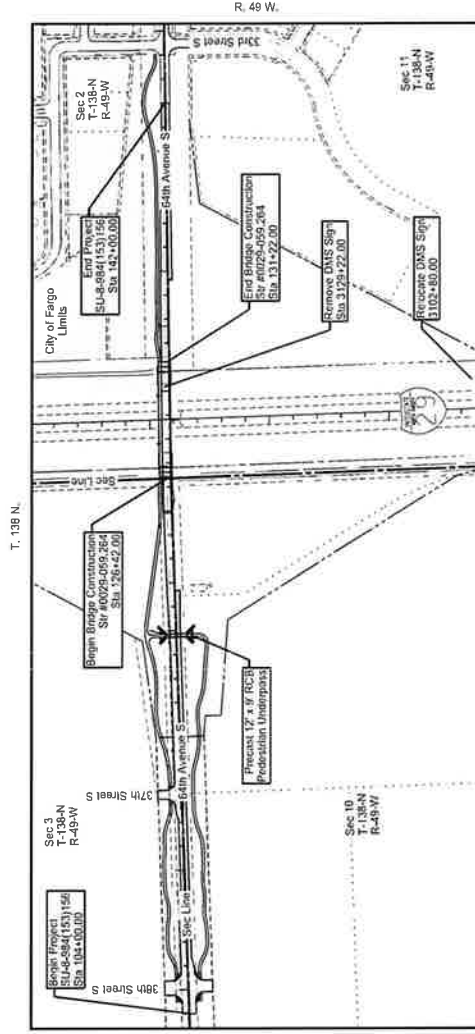
Cass County

64th Ave S - 38th St S to 33rd St S

Grading, Aggregate Base, PCC Pavement, Hot Mix Asphalt Pavement, Structures, Underground Utilities, Box Culvert, Shared Use Path, Signing, Pavement Markings, Bridge, Street Lighting, Digital Message Sign & Incidentals

GOVERNING SPECIFICATIONS:
(2020) Standard Specifications adopted by the North Dakota Department of Transportation and the Supplemental Specifications effective on the date the project is advertised.

PROJECT NUMBER \ DESCRIPTION SU-8-984(153)156
NET MILES 0.720
GROSS MILES 0.720



STATE COUNTY MAP

DESIGNER	Kevin Krotz, PE
DESIGNER	Eric Giberson, PE
DESIGNER	Traci Slemoe, PE
DESIGNER	Scott Middaugh, PE
DESIGNER	Todd Hummel, PE
DESIGNER	Jordan Gerber, PE

3.31.22 PN jonathanhecker

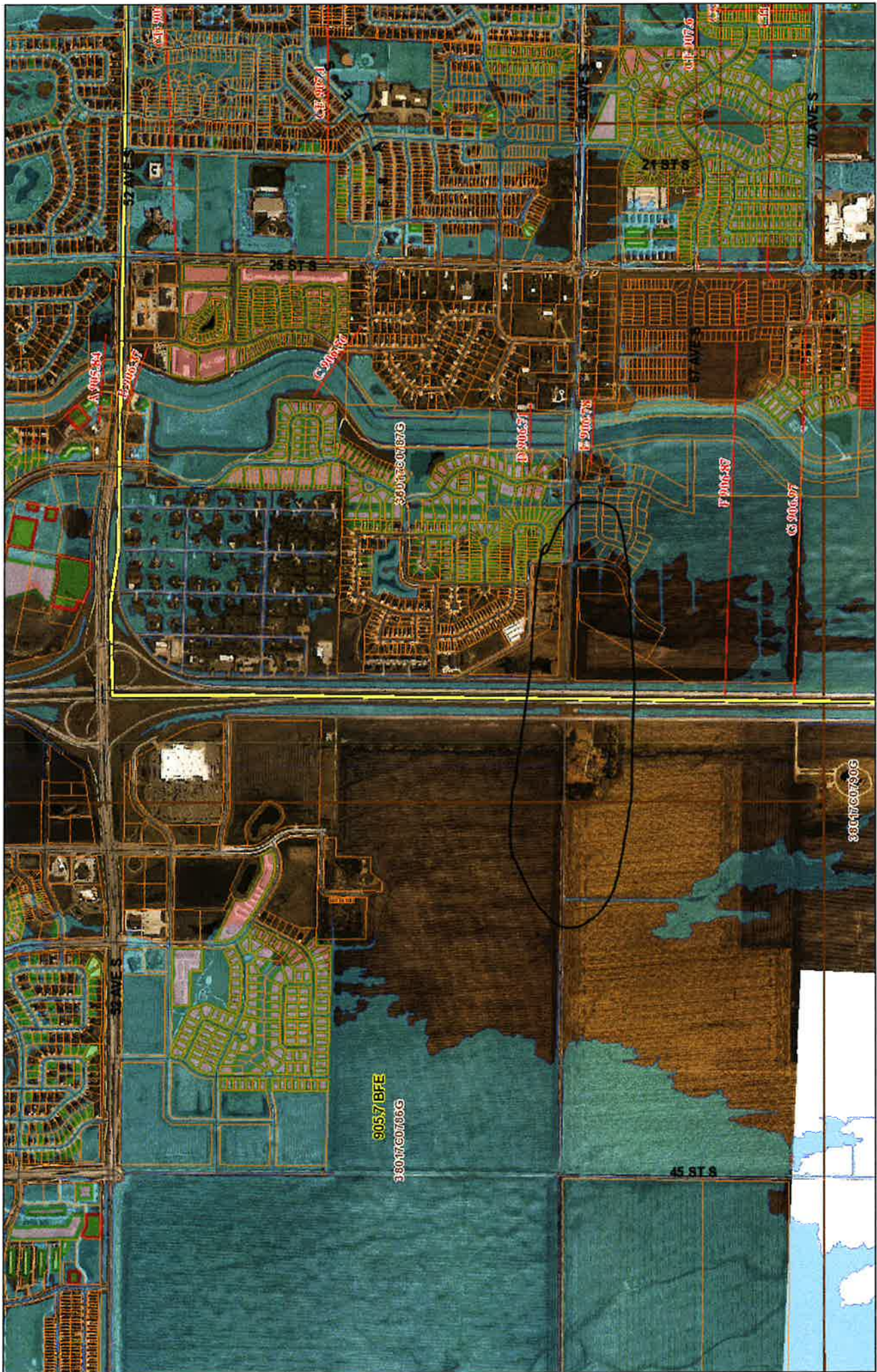
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KLU

CITY OF FARGO

ND DEPARTMENT OF TRANSPORTATION
OFFICE OF PROJECT DEVELOPMENT

This document is preliminary and not for construction or implementation purposes.



3057 BFE

3001760786G

45 ST S

3011760790G

52 AVE S

25 ST S

C 900.76

3001760787G

D 900.57

E 900.75

F 900.53

G 900.57

H 900.46

I 900.46

J 900.46

50 AVE S

25 ST S

52 AVE S

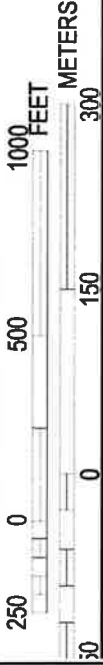
C 900.74

A 900.59

B 900.57



MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP CASS COUNTY, NORTH DAKOTA (ALL JURISDICTIONS)

PANEL 787 OF 995
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FARGO, CITY OF	385364	0787	G
FRONTIER, CITY OF	380347	0787	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.

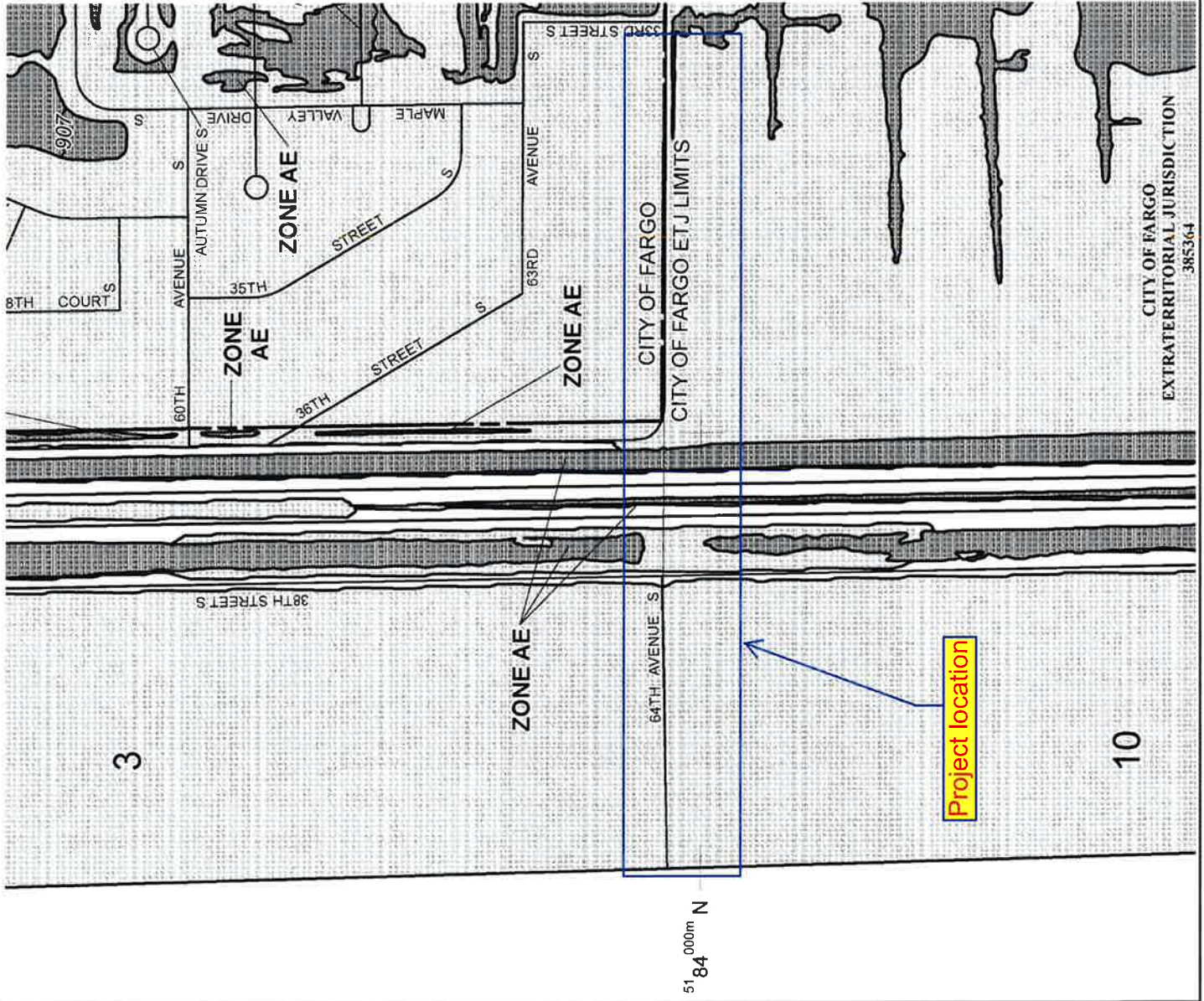


MAP NUMBER
38017C0787G

EFFECTIVE DATE
JANUARY 16, 2015

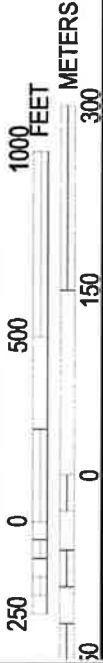
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using FIMette - Desktop version 3.0. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. Further information about National Flood Insurance Program flood hazard maps is available at <http://www.msc.fema.gov/>.





MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

FIRM FLOOD INSURANCE RATE MAP CASS COUNTY, NORTH DAKOTA (ALL JURISDICTIONS)

PANEL 786 OF 995
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FARGO, CITY OF	385384	0786	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
38017C0786G

EFFECTIVE DATE
JANUARY 16, 2015

Federal Emergency Management Agency

38 Street South

64TH AVENUE 'S'

Project location (west of I-29)

10

Asbestos Survey Report

June 2020

**SU-8-984(153)156/PCN 21564
64th Avenue Overpass**

Prepared for:
City of Fargo
200 North Third Street
Fargo, North Dakota 58102

Prepared by:
KLJ
PO Box 9767
Fargo, North Dakota 58106



CONTENTS

Scope of Services1

General Site Conditions.....3

Asbestos Inspection Procedure.....3

Results.....3

General.....4

FIGURES

Figure 1, Project Location Map 2

APPENDICES

- Appendix A: Site Photos
- Appendix B: Licenses and Certifications

SCOPE OF SERVICES

KLJ was contracted by the City of Fargo to conduct an asbestos inspection survey on the remains of a farmstead located in the northeast quarter of the northeast quarter of Section 10, Township 138N, Range 49W in Cass County, North Dakota. Please refer to **Figure 1, Project Location Map**. This asbestos survey serves to facilitate compliance with North Dakota Administrative Code Chapter 33.1-15-13 of the North Dakota Air Pollution Control Rules that require sampling of any suspect building or structure materials that will be disturbed as part of a renovation or demolition activity. It is KLJ's understanding that structures and materials located on the property is scheduled for demolition and removal.

The farmstead was surveyed for asbestos-containing materials (ACM) on June 23, 2020. The remains of a concrete silo, metal grain bin and multiple debris piles were identified and surveyed. Based on visual inspection of the site, no building or structure materials were determined to contain asbestos.

No other inaccessible and/or assumed ACMs were identified.





Figure 1, Project Location Map

GENERAL SITE CONDITIONS

The property is located at the intersection of 64th Avenue South and County Road 21 in Cass County, North Dakota just outside of the city limits of Fargo, North Dakota. The surveyed property consisted of approximately 6.5 acres of an abandoned farmstead. One concrete silo, one grain bin, two concrete foundations, and three debris piles were identified during the inspection of the property. Please refer to **Appendix A, Site Photos**. It is KLJ's understanding that the identified structures and materials are scheduled for demolition and removal.

ASBESTOS INSPECTION PROCEDURE

The asbestos inspection of the farmstead location was conducted on June 23, 2020 by Inspector Jeff Moss (ND License # 6225) of KLJ. He was allowed full access to the property and any structures located on the property. Please refer to **Appendix B: Licenses and Certifications**.

Data for this inspection and report utilized the following procedures:

- ◆ Existing design drawings and asbestos reports for the structure were reviewed, if available.
- ◆ Accessible suspect ACMs were identified using Environmental Protection Agency (EPA) Asbestos Hazard Emergency Response Act (AHERA) protocols.
- ◆ ACMs were quantified if present.

The remains of one concrete silo, one grain bin, two concrete foundations, and three debris piles were visually inspected for the presence of materials that were suspected to contain asbestos. The asbestos survey consisted of two basic steps: 1) conduct a visual survey of the proposed space; and 2) identify homogeneous areas of suspect surfacing, thermal system insulation, and miscellaneous materials.

RESULTS

Based on visual inspection of the site, no building or structure materials were determined to contain asbestos. No samples were collected for laboratory analysis.



GENERAL

Services performed by these North Dakota Certified Asbestos Inspectors, employed by KLJ, for this project have been conducted in a professional manner consistent with the level of care and skill ordinarily exercised by members of this profession currently practicing in this area under similar time and budget restraints. The findings and conclusions presented herein apply to the conditions at the time of the survey. The report is designed to aid the building owner, architect, construction manager, general contractor(s) and asbestos abatement contractor(s) in locating ACMs. No warranty, expressed or implied, is made.



Jeff Moss

Certified Asbestos Inspector #6225

06/29/2020



Date








Appendix A

Site Photos


		
Photograph #1	64th Avenue Overpass	Concrete Silo
Date Taken:	June 23, 2020	
Direction:	North	
Description:	Interior Concrete Silo	

		
Photograph #2	64th Avenue Overpass	Concrete Silo
Date Taken:	June 23, 2020	
Direction:	Northwest	
Description:	Exterior and opening, metal bracing and support	




Photograph #3	64th Avenue Overpass	Concrete Silo
Date Taken:	June 23, 2020	
Direction:	Northwest	
Description:	Interior and foundation	




Photograph #4	64th Avenue Overpass	Debris
Date Taken:	June 23, 2020	
Direction:	Northeast	
Description:	Concrete piles near silo	




Photograph #5	64 th Avenue Overpass	Concrete Foundation
Date Taken:	June 23, 2020	
Direction:	North	
Description:	Small concrete foundation near silo with pipe	




Photograph #6	64 th Avenue Overpass	Debris
Date Taken:	June 23, 2020	
Direction:	Southwest	
Description:	Wood and debris from a shed or garage	




Photograph #7	64 th Avenue Overpass	Concrete Foundation
Date Taken:	June 23, 2020	
Direction:	Northwest	
Description:	Foundation near grain bin	



Photograph #8	64 th Avenue Overpass	Grain Bin
Date Taken:	June 23, 2020	
Direction:	East	
Description:	Remains of a grain bin	



Photograph #9	64th Avenue Overpass	Debris
Date Taken:	June 23, 2020	
Direction:	South	
Description:	Wood and garbage debris pile near grain bin	



Appendix B

Licenses and Certification



**North Dakota Department of
Environmental Quality**

Certificate of No. 6225
Asbestos Abatement

This is to certify that Jeffrey Paul Moss has met the
requirements of Chapter 33.1-15-13 of the North Dakota Air Pollution Control
Rules for certification in the following asbestos abatement discipline(s):

Supervisor

Worker

☒ Inspector

Exp: 1/3/2021

Management Planner

Project Designer

Project Monitor


Asbestos Control Program



UND Environmental Training Institute
4201 James Ray Drive
Grand Forks, ND 58202
(701) 777-0384

Hereby certifies that

Jeff Moss

KLJ
PO Box 4130
Bismarck, 58502

Has attended and successfully completed the training class:

**Asbestos - Inspector
Refresher**

In compliance with Toxic Substances Control Act (TSCA) Title II
and approved under Chapter 33-15-13 of the North Dakota Air
Pollution rules and by the State of Minnesota under Minnesota
Rules 4620.3702 to 4620.3722

On

January 3, 2020

Course Location: Grand Forks ND
Exam Date: January 3, 2020
Certificate #: ABIR-20-01-017-1201
Expiration Date: January 3, 2021

A handwritten signature in black ink, appearing to be "J. A. [unclear]", is written over a horizontal line.

TRAINING DIRECTOR
UND ENVIRONMENTAL TRAINING
INSTITUTE



North Dakota
Department of Environmental Quality

Asbestos Abatement
Contractor License

This is to certify that KADRMAS, LEE & JACKSON, INC. is licensed in accordance with Chapter 33.1-15-13 of the North Dakota Air Pollution Control Rules to perform Asbestos Abatement Work in the State of North Dakota.

Expires on December 31, 2020

Certificate No. ND 453

Dale P. Patrick

Dale P. Patrick, Manager
Asbestos Control Program

January 23, 2020

M. Cass Helling
Kadmas, Lee & Jackson, Inc.
PO Box 4130
Bismarck, ND 58502

Dear M. Helling:

Enclosed is your firm's Asbestos Abatement Contractor License. This license is issued by the North Dakota Department of Environmental Quality.

The license is valid until December 31, 2020 and authorizes your firm to perform asbestos abatement work in the State of North Dakota in accordance with Chapter 33.1-15-13 of the North Dakota Air Pollution Control Rules. You must ensure that any of your employees performing asbestos abatement work are certified by this Department in the disciplines in which they are performing the work.

In addition to an asbestos abatement contractor's license, your firm may also be required to have a North Dakota general contractor's license. This license can be obtained from the office of the North Dakota Secretary of State. If your firm does not have a general contractor's license, contact the Secretary of State at 701-328-2905 to obtain the license, if necessary, before any abatement work is done in North Dakota.

If you have any questions concerning the Asbestos Abatement Contractor License, feel free to contact me at 701-328-5246.

Sincerely,



Justin Otto
Environmental Scientist
Asbestos Control Program

JO:csc

Enc:

xc: Lorie Feldman, Secretary of State's Office

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:

Fuel Ratio_(x, y, z) = Affidavit Cost_(x, y, z) / Original Contract Amount_(x, y, z)		
(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
Fuel Ratio _(x, y, z)	=	Fuel ratio of the contract for each respective fuel type
Affidavit Cost _(x, y, z)	=	Fuel costs from Fuel Adjustment Affidavit (SFN 58393)
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.
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:

Cost Change_(x, y, z) = (CFI_(x, y, z) - BFI_(x, y, z)) / BFI_(x, y, z)		
(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel (use diesel prices)
Cost Change _(x, y, z)	=	The relative change in the current CFI and the BFI for each fuel type
CFI _(x, y, z)	=	Current Fuel Index for each fuel type
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:

$FCA_{(x, y, z)} = \text{Fuel Ratio}_{(x, y, z)} \times \text{Estimate}_{(x, y, z)} \times (\text{Cost Change}_{(x, y, z)} - 0.10)$		
(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$FCA_{(x, y, z)}$	=	Fuel Cost Adjustment for each of the fuel types
$\text{Fuel Ratio}_{(x, y, z)}$	=	Fuel Ratio for each of the fuel types
$\text{Estimate}_{(x, y)}$	=	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.
$\text{Estimate}_{(z)}$	=	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.
$\text{Cost Change}_{(x, y, z)}$	=	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:

$FCA_{(x, y, z)} = \text{Fuel Ratio}_{(x, y, z)} \times \text{Estimate}_{(x, y, z)} \times (\text{Cost Change}_{(x, y, z)} + 0.10)$		
(x)	=	Motor Fuel (Diesel)
(y)	=	Motor Fuel (Unleaded)
(z)	=	Burner Fuel
$FCA_{(x, y, z)}$	=	Fuel Cost Adjustment for each of the fuel types
$\text{Fuel Ratio}_{(x, y, z)}$	=	Fuel Ratio for each of the fuel types
$\text{Estimate}_{(x, y)}$	=	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.
$\text{Estimate}_{(z)}$	=	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.
$\text{Cost Change}_{(x, y, z)}$	=	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)

SP Fuel Cost Adjustment Clause
6 of 6

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. <input type="checkbox"/> Diesel <input type="checkbox"/> Unleaded <input type="checkbox"/> 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 . <input type="checkbox"/> Yes <input type="checkbox"/> 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)	

**CITY OF FARGO
FEDERAL AID CONTRACT**

This agreement made between the City of Fargo (hereinafter called City), and

(hereinafter called contractor), WITNESSETH:

1. That in consideration of the payments to be made by the NDDOT on behalf of the City, the contractor agrees to provide all labor, equipment, and materials; to pay or cause to be paid, all claims for work, labor, materials, equipment, including equipment rental or repair, and other supplies or insurance premiums, all of which are attributable to or utilized in the improvement and construction of City's

PROJECT NO. AND TYPE

Job No. _____

all in accordance and in conformity with this contract and bond, the project proposal, the standard specifications, supplemental specifications, special provisions, and the plans approved _____, all of which are incorporated as a part of this contract.

DATE

2. On behalf of the City of Fargo, the NDDOT agrees to pay the contractor for the work, when completed and accepted in accordance with this contract, the price stated in the proposal, amounting to approximately _____

Dollars (\$_____).

Payments are to be made as per specifications upon presentation of the proper certification to the City Engineer, or his representative, and by the terms of this contract. NDDOT payment process is outlined in NDDOT Standard Specifications for Road and Bridge Construction.

3. The work shall be done pursuant to this contract and the laws of the State of North Dakota, and to the satisfaction of the City, subject at all times to the inspection and approval of the U.S. Department of Transportation, its agents and representatives and in accordance with the rules and regulations made pursuant to City, State, and federal law.
4. The decision of the City Engineer upon any question connected with the execution of this agreement or any failure or delay in the prosecution of the work by the contractor shall be final and conclusive.
5. The contractor, in employing and maintaining labor, shall do so in conformity with the City, State, and federal law and this contract.
6. The contractor shall begin work as required by this contract or when ordered by the City and shall maintain the maximum and efficient work force on the project necessary to complete the work within the time established by this contract.

IN WITNESS THEREOF, the parties to this contract have hereunder set their hands and seal this _____ day of _____, 20____.

CITY OF FARGO

MAYOR

WITNESS TO CONTRACTOR'S SIGNATURE

CONTRACTOR

By _____

CONTRACT BOND

KNOW ALL PERSONS BY THESE PRESENTS: That we,

(hereinafter called the principal),

(hereinafter called the surety), are held firmly bound unto

(hereinafter called the owner), in the sum of

\$ _____, for the payment whereof the principal and the surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the principal has, by means of a written agreement, dated _____, 20 _____, entered into a contract with the owner for

_____Improvement District No. _____
in accordance with plans and specifications, a copy of which agreement is by reference made a part hereof.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, that the principal will well and faithfully perform the work bid for in accordance with the terms of and within the time provided for in the contract, and pursuant to the plans and specifications for such work on file in the office of the City Auditor; that they will pay for all labor and material used in such work including all demands of subcontractors; that the principal will pay or cause to be paid all sales and use taxes payable as a result of the performance of the contract, as well as the payment of gasoline and special motor fuel taxes used in the performance of the contract, and all motor vehicle fees required for commercial motor vehicles used in connection with the performance of such contract, and shall pay all state income taxes to the State of North Dakota upon income derived from such work or project, and that in case of a default on the part of the principal in the performance of the work as provided in their contract, the sum named in the bond shall be taken and held to be fixed and liquidated damages in favor of the owner, and that the full amount thereof may be recovered from said principal and their sureties in an action by the owner against them on said bond; that the said principal has made, or will make prior to the commencement of any work by themselves or any subcontractor under such contract, full and true report to the Worker's Compensation Bureau of the payroll expenditures for the employees to be engaged in such work, and that the principal has paid or will pay the premium thereon prior to the commencement of said work.

The term of this bond shall expire on _____ and no suit, action, or proceeding by reason of any default whatever shall be brought on this bond after six (6) years from the date on which the final payment under the contract falls due.

PROVIDED, that any alterations which may be made in the terms of the contract, or in the work to

be done under it, or giving by the owner of any extension of time for the performance of the contract, or any other forbearance on the part of either the owner or the principal to the other shall not in any way release the principal and the surety, or either or any of them, their heirs, executors, administrators, successors, or assigns from their liability hereunder, notice to the surety of any such alteration, extension or forbearance being hereby waived.

Signed and sealed this ____ day of _____, 20 ____.

WITNESSES:

By _____
Principal

As to Principal

By _____
Attorney-in-Fact

Countersigned:

By _____
North Dakota Resident Agent

(Acknowledgement by both principal and surety required.)

INDIVIDUAL ACKNOWLEDGEMENT

STATE OF _____)
COUNTY OF _____) ss

On this _____ day of _____ in the year _____
before me, _____, a Notary Public, personally appeared
_____, known to me (or proved to me
on the oath of _____) to be the person who is described in and who
executed the within instrument and acknowledged to me that is executed the same.

(SEAL)

Notary Public

CORPORATION ACKNOWLEDGEMENT

STATE OF _____)
COUNTY OF _____) ss

On this _____ day of _____ in the year _____
before me, _____, a Notary Public, personally appeared
_____, known to me (or proved to me
on the oath of _____) to be the president (or other officer or
person) of the corporation that is described in and that executed the within instrument, and acknowledged to
me that such corporation executed the same.

(SEAL)

Notary Public

ACKNOWLEDGEMENT OF SURETY

STATE OF _____)
COUNTY OF _____) ss

On this _____ day of _____ in the year _____
before me, _____, a Notary Public, personally appeared
_____, known to me (or proved to me
on the oath of _____) to be the person who is described in and
whose name is subscribed to the within instrument as the attorney-in-fact of
_____ and acknowledged to me that they subscribed the
name of _____ thereto as surety and their own name as attorney-in-fact.

(SEAL)

Notary Public