



# North Dakota Department of Transportation

Thomas K. Sorel  
Director

Doug Burgum  
Governor

November 8, 2017

## ADDENDUM 1 – JOB 38

TO: All prospective bidders on project SU-6-986(121)125, Job No. 38 scheduled for the November 17, 2017 bid opening.

The following plan and request for proposal revisions shall be made:

### Plan Revisions:

See attached summary from Deon Wawrzyniak, PE, CPS, Ltd. dated November 7, 2017 for an explanation.

### Request for Proposal Revisions:

Remove and replace pages 5, 6, 7, 10 and 11 of 13 the Proposal pages located at the beginning of the Request for Proposal, with the enclosed pages revised 11/6/2017.

The following changes were made to the Bid Items:

Spec No.	Code No.	Description	Description of Change
216	0100	WATER	Increased from 735 to 744 M GAL
251	0300	SEEDING CLASS III	Increased from 2.11 to 2.19 ACRE
253	0201	HYDRAULIC MULCH	Increased from 5.28 to 5.36 ACRE
302	0101	SALVAGED BASE COURSE	Increased from 8,097 to 8,318 CY
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	Increased from 24,384 to 25,072 SY
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	Increased from 247 to 261.1 LF
762	0118	EPOXY PVMT MK CURB TOP & FACE	Added Bid Item at 27 LF
770	0320	1.5IN DIAMETER RIGID CONDUIT	Increased from 3,732 to 3,734 LF
770	0504	UNDERGROUND CONDUCTOR NO4-TYPE RHW	Increased from 6,348 to 6,826 LF
770	0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	Increased from 2,529 to 2,738 LF

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

  
PHILLIP MURDOFF – CONSTRUCTION SERVICES ENGINEER

80:jwj

Enclosure



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CIVIL ENGINEERING | PLANNING | SURVEYING

November 7, 2017

### ADDENDUM 1 – JOB 38

TO: All prospective bidders and suppliers on **Project SU-6-986(121)125, Job No. 38**, in Grand Forks County, City of Grand Forks, scheduled for the November 17, 2017 bid opening.

#### **Plan revisions for SU-6-986(121)125:**

##### **Remove and replace plan sheets:**

- |                             |                  |
|-----------------------------|------------------|
| • Section 2 Sheet 1         | Revised 10/26/17 |
| • Section 8 Sheet 1         | Revised 10/31/17 |
| • Section 120 Sheet 2       | Revised 10/31/17 |
| • Section 140 Sheet 7       | Revised 10/30/17 |
| • Section 140 Sheet 15      | Revised 11/07/17 |
| • Standard Drawing D-704-7  | Revised 10/13/17 |
| • Standard Drawing D-704-8  | Revised 10/13/17 |
| • Standard Drawing D-704-13 | Revised 10/13/17 |
| • Standard Drawing D-704-14 | Revised 10/13/17 |
| • Standard Drawing D-708-6  | Revised 10/17/17 |
| • Standard Drawing D-762-1  | Revised 10/17/17 |

**with the enclosed revised sheets. Electronic files will be available on NDDOT's Bid Opening Plans and Proposals page**

Proposal		Description of Change
Section	Sheet	Description of Change
2	1	Standard Drawing D-754-46 changed description from "Bike Route Signs-Punching, Stringer and Support Location Details for Regulatory, Warning and Guide Signs" to "Punching, Stringer, and Support Location Details for Regulatory, Warning and Guide Bike Route Signs".
8	1	Item 216 0100 WATER; quantity increased from 735 MGAL to 744 MGAL Item 251 0300 SEEDING CLASS III; quantity increased from 2.11 ACRE to 2.19 ACRE Item 253 0201 HYDRAULIC MULCH; quantity increased from 5.28 ACRE to 5.36 ACRE Item 302 0101 SALVAGED BASE COURSE; quantity increased from 8097 CY to 8318 CY Item 709 0151 GEOSYNTHETIC MATERIAL TYPE R1; quantity increased from 24384 SY to 25072 SY Item 754 0206 STEEL GALV POSTS-TELESCOPING PERFORATED TUBE; quantity increased from 247 LF to 261.1 LF Item 762 0118 EPOXY PVMT MK CURB TOP & FACE; Quantity added for 27 LF Item 770 0320 1.5IN DIAMETER RIGID CONDUIT; quantity decreased from 3732 LF to 3734 LF Item 770 0504 UNDERGROUND CONDUCTOR NO4-TYPE RHW; quantity increased from 6348 LF to 6826 LF Item 770 0605 UNDERGROUND CONDUCTOR NO6-TYPE THW; quantity increased from 2529 LF to 2738 LF
120	2	Item 762 0118 EPOXY PVMT MK CURB TOP & FACE added; Quantity shows 27 LF
140	7	Pay Item 770 0320 1.5IN DIAMETER RIGID CONDUIT; quantity increased from 492 LF to 529 LF.
140	15	The light standard detail was clarified to show that festoon outlets are not required; decorative brackets were also deleted from the light standard detail.
Standard Drawing	D-704-7	Updated to active voice
Standard Drawing	D-704-8	Updated to active voice
Standard Drawing	D-704-13	Updated to active voice
Standard Drawing	D-704-14	Updated to active voice
Standard Drawing	D-708-6	Updated to active voice
Standard Drawing	D-762-1	Updated to active voice

ADDENDUM 1  
SU-6-986(121)125  
November 7, 2017  
Page 3

This addendum is to be incorporated into bidder's proposal for this project.

Respectfully,  
CPS, Ltd.



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Deon Wawrzyniak, PE  
Project Engineer

Enclosures(s): Revised Plan Sheets for Project No. SU-6-986(121)125

Cc: Seng Marohl, NDDOT Local Government

**BID ITEMS**

**Project: SU-6-986(121)125 (PCN-21590)**

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

Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
001	103	0100	CONTRACT BOND	L SUM	1.				
002	107	0100	RAILWAY PROTECTION INSURANCE	L SUM	1.				
003	201	0352	REMOVAL OF TREES & BRUSH	L SUM	1.				
004	202	0114	REMOVAL OF CONCRETE PAVEMENT	SY	27,120.				
005	202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	49.				
006	202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	2,047.				
007	202	0210	REMOVAL OF MANHOLES	EA	7.				
008	202	0230	REMOVAL OF INLETS	EA	16.				
009	203	0101	COMMON EXCAVATION-TYPE A	CY	3,963.				
010	203	0109	TOPSOIL	CY	2,134.				
011	203	0113	COMMON EXCAVATION-WASTE	CY	10,697.				
012	203	0119	TOPSOIL-IMPORTED	CY	1,248.				
013	216	0100	WATER	M GAL	744.				
014	251	0300	SEEDING CLASS III	ACRE	2.190				
015	251	2000	TEMPORARY COVER CROP	ACRE	3.170				
016	252	0100	SOD	SY	7,416.				

**BID ITEMS**

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
017	253	0201	HYDRAULIC MULCH	ACRE	5.360				
018	260	0200	SILT FENCE SUPPORTED	LF	680.				
019	260	0201	REMOVE SILT FENCE SUPPORTED	LF	680.				
020	265	0100	STABILIZED CONSTRUCTION ACCESS	EA	1.				
021	265	0101	REMOVE STABILIZED CONSTRUCTION ACCESS	EA	1.				
022	302	0101	SALVAGED BASE COURSE	CY	8,318.				
023	302	0114	AGGREGATE BASE COURSE CL 3	CY	8,674.				
024	430	2000	PATCHING	TON	12.				
025	550	0112	8IN NON-REINF CONCRETE PAVEMENT CL AE	SY	1,628.				
026	550	0113	8IN REINF CONCRETE PAVEMENT CL AE	SY	2,777.				
027	550	0300	8IN NON-REINF CONCRETE PVMT CL AE-DOWELED	SY	14,047.				
028	702	0100	MOBILIZATION	L SUM	1.				
029	704	0100	FLAGGING	MHR	400.				
030	704	1000	TRAFFIC CONTROL SIGNS	UNIT	3,866.				
031	704	1052	TYPE III BARRICADE	EA	32.				
032	704	1054	SIDEWALK BARRICADE	EA	9.				

**BID ITEMS**

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
033	704	1055	PEDESTRIAN LONGITUDINAL BARRICADE	LF	164.				
034	704	1060	DELINEATOR DRUMS	EA	61.				
035	704	1067	TUBULAR MARKERS	EA	27.				
036	704	1080	STACKABLE VERTICAL PANELS	EA	29.				
037	704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2.				
038	708	1540	INLET PROTECTION-SPECIAL	EA	48.				
039	708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	48.				
040	709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	25,072.				
041	710	0250	TEMPORARY BYPASS DRAINAGE SYSTEM	EA	1.				
042	714	0110	PIPE CONC REINF 12IN CL III	LF	265.				
043	714	0205	PIPE CONC REINF 15IN CL III	LF	592.				
044	714	0310	PIPE CONC REINF 18IN CL III	LF	239.				
045	714	0400	PIPE CONC REINF 21IN CL III	LF	263.				
046	714	0615	PIPE CONC REINF 24IN CL III	LF	881.				
047	714	0820	PIPE CONC REINF 30IN CL III	LF	871.				
048	714	0905	PIPE CONC REINF 36IN CL III	LF	559.				

**BID ITEMS**

**Project: SU-6-986(121)125 (PCN-21590)**

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$	000	\$\$\$\$	00
081	754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	261.100				
082	762	0118	EPOXY PVMT MK CURB TOP & FACE	LF	27.				
083	762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	615.				
084	762	0131	EPOXY PVMT MK 6IN LINE-GROOVED	LF	1,225.				
085	762	0135	EPOXY PVMT MK 24IN LINE-GROOVED	LF	366.				
086	762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	5,913.				
087	762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	1,796.				
088	770	0025	SCREW IN BASE FOUNDATION	EA	22.				
089	770	0100	PULL BOX	EA	6.				
090	770	0320	1.5IN DIAMETER RIGID CONDUIT	LF	3,734.				
091	770	0330	2IN DIAMETER RIGID CONDUIT	LF	2,357.				
092	770	0503	UNDERGROUND CONDUCTOR NO2-TYPE RHW	LF	2,686.				
093	770	0504	UNDERGROUND CONDUCTOR NO4-TYPE RHW	LF	6,826.				
094	770	0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	2,738.				
095	770	0745	FEED POINT-TYPE IV-PAD MOUNTED	EA	1.				
096	770	1676	LT STD 6FT MA 40FT MT HT BREAKAWAY	EA	22.				



**BID ITEMS**

**Project: SU-6-986(121)125 (PCN-21590)**

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Item No.	Spec No.	Code No.	Description	Unit	Approx. Quantity	Unit Price		Amount	
						\$\$\$\$\$	000	\$\$\$\$\$	00
097	770	4210	LED LUMINAIRE	EA	23.				
098	770	4501	TEMPORARY LIGHTING SYSTEM	EA	1.				
099	770	4567	REMOVE LIGHTING SYSTEM	EA	1.				
100	772	9200	IT SYSTEM	EA	1.				
101	772	9811	TRAFFIC SIGNAL SYSTEM - SITE 1	EA	1.				
			<b>TOTAL SUM BID</b>						

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PLAN SECTIONS					LIST OF STANDARD DRAWINGS				
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2	1	Table of Contents	D-101-10	NDDOT Utility Company and Organization Abbreviations					
4	1	Scope of Work	D-101-20, 21	Line Styles					
6	1 - 12	Notes	D-101-30, 31, 32	Symbols					
8	1	Quantities	D-550-2	Longitudinal Joint Details					
10	1	Basis of Estimate	D-550-3	Transverse Contraction Joint Details					
11	1 - 2	Data Tables	D-550-4	Transverse Expansion Joint Detail					
20	1 - 22	General Details	D-704-4	Work Zone Business Sign Details					
30	1 - 2	Typical Sections	D-704-7	Breakaway Systems For Construction Zone Signs - Perforated Tube					
40	1 - 10	Removals	D-704-8	Breakaway Systems For Construction Zone Signs - U-Channel Post					
50	1 - 6	Inlet and Manhole Summary	D-704-9	Construction Sign Details - Terminal And Guide Signs					
55	1 - 10	Storm Sewer & Watermain	D-704-10	Construction Sign Details - Regulatory Signs					
60	1 - 11	Plan & Profile	D-704-11	Construction Sign Details - Warning Signs					
76	1 - 5	Temporary Erosion Control	D-704-13	Barricade And Channelizing Device Details					
77	1 - 5	Permanent Erosion Control	D-704-14	Construction Sign Punching And Mounting Details					
80	1 - 13	Grading Layouts	D-704-32	Sign Layout For One Lane Closure Divided Highway Moving Operation					
82	1	Survey Data Layouts	D-704-50	Portable Sign Support Assembly					
90	1 - 5	Paving Layouts	D-708-6	Erosion And Siltation Controls - Median Or Ditch Inlet Protection					
100	1 - 16	Work Zone Traffic Control	D-754-4	Multi-Directional Breakaway System for Standard Pipe - Stub Post					
110	1 - 15	Signing	D-754-7	Pipe Support And Sign Mounting Details					
120	1 - 5	Pavement Marking	D-754-9	Letter And Arrow Details For Variable Length Signs					
140	1 - 16	Lighting	D-754-23	Perforated Tube Assembly Details					
150	1 - 15	Signals	D-754-24, 25	Mounting Details Perforated Tube					
160	1	ITS	D-754-24A	Breakaway Coupler System For Perforated Tubes					
200	1 - 50	Cross Sections	D-754-26, 27,34	Sign Punching, Stringer And Support Location Details Regulatory, Warning, And Guide Signs					

ESTIMATE OF QUANTITIES					
SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-6-986(121)125	100% CITY FUNDS
103	0100	CONTRACT BOND	L SUM	1	
107	0100	RAILWAY PROTECTION INSURANCE	L SUM	1	
201	0352	REMOVAL OF TREES & BRUSH	L SUM	1	
202	0114	REMOVAL OF CONCRETE PAVEMENT	SY	27120	
202	0132	REMOVAL OF BITUMINOUS SURFACING	SY	49	
202	0174	REMOVAL OF PIPE ALL TYPES AND SIZES	LF	2047	
202	0210	REMOVAL OF MANHOLES	EA	7	
202	0230	REMOVAL OF INLETS	EA	16	
203	0101	COMMON EXCAVATION-TYPE A	CY	3963	
203	0109	TOPSOIL	CY	2134	
203	0113	COMMON EXCAVATION-WASTE	CY	10697	
203	0119	TOPSOIL-IMPORTED	CY	1248	
216	0100	WATER	MGAL	744	
251	0300	SEEDING CLASS III	ACRE	2.19	
251	2000	TEMPORARY COVER CROP	ACRE	3.17	
252	0100	SOD	SY	7416	
253	0201	HYDRAULIC MULCH	ACRE	5.36	
260	0200	SILT FENCE SUPPORTED	LF	680	
260	0201	REMOVE SILT FENCE SUPPORTED	LF	680	
265	0100	STABILIZED CONSTRUCTION ACCESS	EA	1	
265	0101	REMOVAL STABILIZED CONSTRUCTION ACCESS	EA	1	
302	0101	SALVAGED BASE COURSE	CY	8318	
302	0114	AGGREGATE BASE COURSE CL 3	CY	8674	
430	2000	PATCHING	TON	12	
550	0112	8IN NON-REINF CONCRETE PAVEMENT CI AE	SY	1628	
550	0113	8IN REINF CONCRETE PAVEMENT CI AE	SY	2777	
550	0300	8IN NON-REINF CONCRETE PVMT CI AE-DOWELED	SY	14047	
702	0100	MOBILIZATION	L SUM	1	
704	0100	FLAGGING	MHR	400	
704	1000	TRAFFIC CONTROL SIGNS	UNIT	3866	
704	1052	TYPE III BARRICADE	EA	32	
704	1054	SIDEWALK BARRICADE	EA	9	
704	1055	PEDESTRIAN LONGITUDINAL BARRICADE	LF	164	
704	1060	DELINEATOR DRUMS	EA	61	
704	1067	TUBULAR MARKERS	EA	27	
704	1080	STACKABLE VERTICAL PANELS	EA	29	
704	4011	PORTABLE CHANGEABLE MESSAGE SIGN	EA	2	
708	1540	INLET PROTECTION-SPECIAL	EA	48	
708	1541	REMOVE INLET PROTECTION-SPECIAL	EA	48	
709	0151	GEOSYNTHETIC MATERIAL TYPE R1	SY	25072	
710	0250	TEMPORARY BYPASS DRAINAGE SYSTEM	EA	1	
714	0110	PIPE CONC REINF 12IN CL III	LF	265	
714	0205	PIPE CONC REINF 15IN CL III	LF	592	
714	0310	PIPE CONC REINF 18IN CL III	LF	239	
714	0400	PIPE CONC REINF 21IN CL III	LF	263	
714	0615	PIPE CONC REINF 24IN CL III	LF	881	
714	0820	PIPE CONC REINF 30IN CL III	LF	871	
714	0905	PIPE CONC REINF 36IN CL III	LF	559	
714	6590	PIPE PVC 6IN DRAIN	LF	10	
714	7025	PIPE PVC 8IN	LF	13	
714	9720	UNDERDRAIN PIPE PVC PERFORATED 4IN	LF	687	
722	0100	MANHOLE 48IN	EA	8	
722	0110	MANHOLE 60IN	EA	9	
722	0120	MANHOLE 72IN	EA	2	
722	0140	MANHOLE 96IN	EA	1	
722	1100	MANHOLE RISER 48IN	LF	68.2	

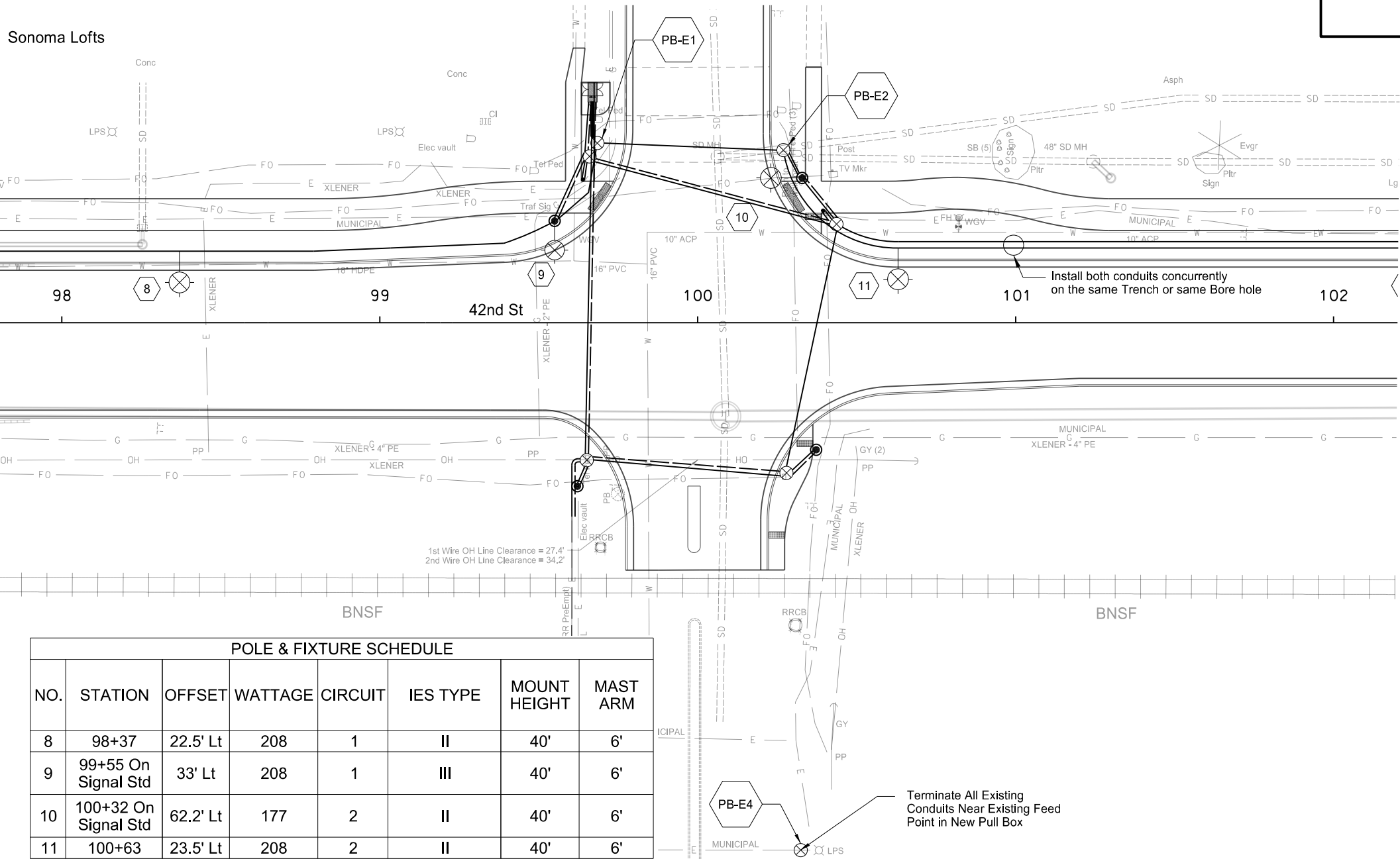
ESTIMATE OF QUANTITIES					
SPEC	CODE	ITEM DESCRIPTION	UNIT	SU-6-986(121)125	100% CITY FUNDS
722	1110	MANHOLE RISER 60IN	LF	43.4	
722	1120	MANHOLE RISER 72IN	LF	9.7	
722	1140	MANHOLE RISER 96IN	LF	11.2	
722	3500	INLET-TYPE 1	EA	12	
722	3520	INLET-TYPE 2 DOUBLE	EA	5	
722	4000	INLET CATCH BASIN-TYPE A	EA	1	
722	6140	ADJUST GATE VALVE BOX	EA	9	
722	6200	ADJUST MANHOLE	EA	4	
722	6240	ADJUST UTILITY APPURTENANCE	EA	3	
722	6256	ADJUST 10IN WATERMAIN	EA	1	
724	0411	6IN HYDRANT	EA	8	
724	0430	REMOVE HYDRANT	EA	8	
724	1025	UNDERGROUND IRRIGATION SYSTEM	L SUM	1	
748	0100	CURB & GUTTER	LF	47	
748	0140	CURB & GUTTER - TYPE I	LF	65	
748	0190	CURB & GUTTER - TYPE I 30IN	LF	7949	
750	0105	SIDEWALK CONCRETE BIKEWAY	SY	4077	
750	0115	SIDEWALK CONCRETE 4IN	SY	136	
750	0210	CONCRETE MEDIAN NOSE PAVING	SY	10	
750	1000	DRIVEWAY CONCRETE	SY	328	
750	2115	DETECTABLE WARNING PANELS	SF	274	
752	0911	TEMPORARY SAFETY FENCE	LF	75	
754	0110	FLAT SHEET FOR SIGNS-TYPE XI REFL SHEETING	SF	309	
754	0112	FLAT SHEET FOR SIGNS-TYPE IV REFL SHEETING	SF	22	
754	0206	STEEL GALV POSTS-TELESCOPING PERFORATED TUBE	LF	261.1	
762	0118	EPOXY PVMT MK CURB TOP & FACE	LF	27	
762	0122	PREFORMED PATTERNED PVMT MK-MESSAGE(GROOVED)	SF	615	
762	0131	EPOXY PVMT MK 6IN LINE-GROOVED	LF	1225	
762	0135	EPOXY PVMT MK 24IN LINE-GROOVED	LF	366	
762	1305	PREFORMED PATTERNED PVMT MK 4IN LINE-GROOVED	LF	5913	
762	1309	PREFORMED PATTERNED PVMT MK 8IN LINE-GROOVED	LF	1796	
770	0025	SCREW IN BASE FOUNDATION	EA	22	
770	0100	PULL BOX	EA	6	
770	0320	1.5IN DIAMETER RIGID CONDUIT	LF	3734	
770	0330	2IN DIAMETER RIGID CONDUIT	LF	2357	
770	0503	UNDERGROUND CONDUCTOR NO2-TYPE RHW	LF	2686	
770	0504	UNDERGROUND CONDUCTOR NO4-TYPE RHW	LF	6826	
770	0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	LF	2738	
770	0745	FEED POINT-TYPE IV-PAD MOUNTED	EA	1	
770	1676	LT STD 6FT MA 40FT MT HT BREAKAWAY	EA	22	
770	4210	LED LUMINAIRE	EA	23	
770	4501	TEMPORARY LIGHTING SYSTEM	EA	1	
770	4567	REMOVE LIGHTING SYSTEM	EA	1	
772	9200	IT SYSTEM	EA	1	
772	9811	TRAFFIC SIGNAL SYSTEM - SITE 1	EA	1	

Quantities

Reconstruction of North 42nd St  
University Ave to US 2 (Gateway Dr)  
Grand Forks, ND



Sonoma Lofts

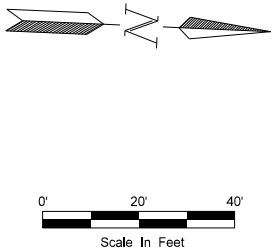


POLE & FIXTURE SCHEDULE							
NO.	STATION	OFFSET	WATTAGE	CIRCUIT	IES TYPE	MOUNT HEIGHT	MAST ARM
8	98+37	22.5' Lt	208	1	II	40'	6'
9	99+55 On Signal Std	33' Lt	208	1	III	40'	6'
10	100+32 On Signal Std	62.2' Lt	177	2	II	40'	6'
11	100+63	23.5' Lt	208	2	II	40'	6'

CONDUIT & CABLE SCHEDULE					
STATION/LOCATION	CONDUIT RUNS		CABLE RUNS		
	LENGTH	SIZE	LENGTH NO. 2 OR NO. 4 RHW-US	LENGTH NO. 4 RHW-USE OR NO. 6	TYPE
Sta 98+00 O/s 22.5' Lt to No. 8	37	1.5"	88	44	(2) No. 4 RHW-USE & (1) No. 6 THW
No. 8 to PB-E1	150	1.5"	326	163	(2) No. 4 RHW-USE & (1) No. 6 THW
PB-E1 to FP	14	1.5"	60	23	(2) No. 4 RHW-USE & (1) No. 6 THW
FP to PB-E1	14	1.5"	60	23	(2) No. 2 RHW-USE & (1) No. 4 RHW
FP to PB-E1	14	1.5"	0	0	Spare Conduit
FP to PB-E1	14	1.5"	0	0	Spare Conduit
PB-E1 to No. 9	29	1.5"	84	42	(2) No. 2 RHW-USE & (1) No. 4 RHW
PB-E1 to PB-E2	59	1.5"	130	65	(2) No. 2 RHW-USE & (1) No. 4 RHW
PB-E2 to No. 10	9	1.5"	44	22	(2) No. 2 RHW-USE & (1) No. 4 RHW
PB-E2 to No. 11	52	1.5"	130	65	(2) No. 2 RHW-USE & (1) No. 4 RHW
No. 11 to Sta 102+00 O/s 23.5' Lt	137	1.5"	288	144	(2) No. 2 RHW-USE & (1) No. 4 RHW
PB 2 to Sta 102+00 O/s 23.5' Lt	157	2.0"	0	0	Spare Conduit

SPEC CODE	BID ITEM	QTY	UNIT
770 0025	SCREW IN BASE FOUNDATION	1	EA
770 0100	PULL BOX	3	EA
770 0320	1.5IN DIAMETER RIGID CONDUIT	529	LF
770 0330	2IN DIAMETER RIGID CONDUIT	157	LF
770 0503	UNDERGROUND CONDUCTOR NO2-TYPE RHW	736	LF
770 0504	UNDERGROUND CONDUCTOR NO4-TYPE RHW	835	LF
770 0605	UNDERGROUND CONDUCTOR NO6-TYPE THW	230	LF
770 0745	FEED POINT-TYPE IV-PAD MOUNTED	1	EA
770 1676	LT STD 6FT MA 40FT MT HT BREAKAWAY	1	EA
770 4210	LED LUMINAIRE	1	EA

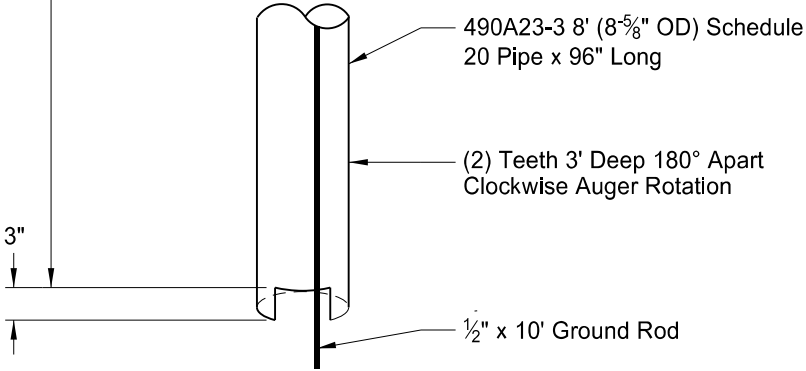
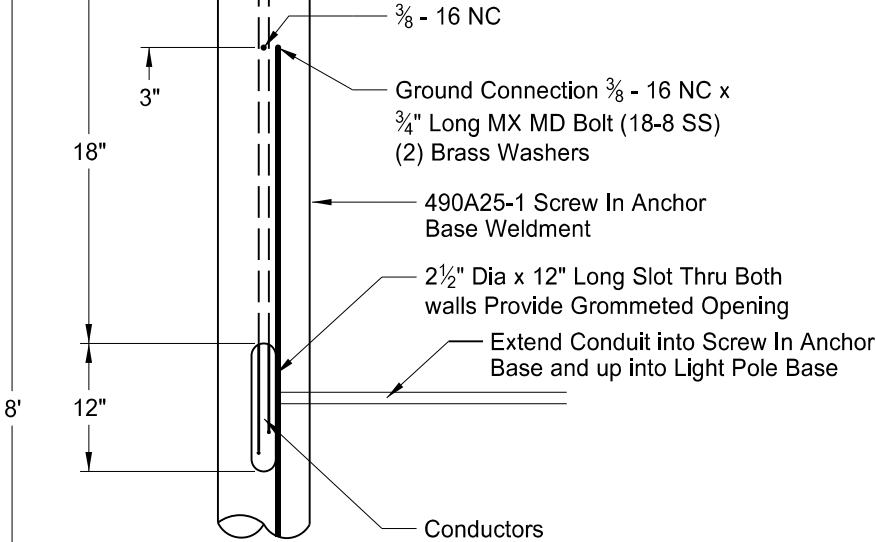
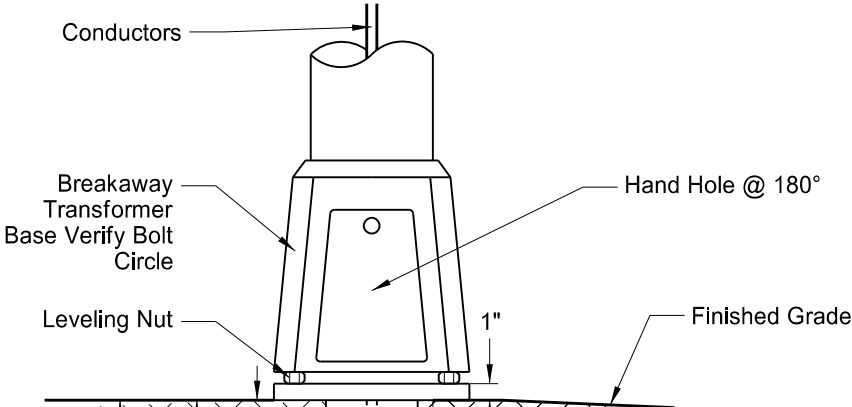
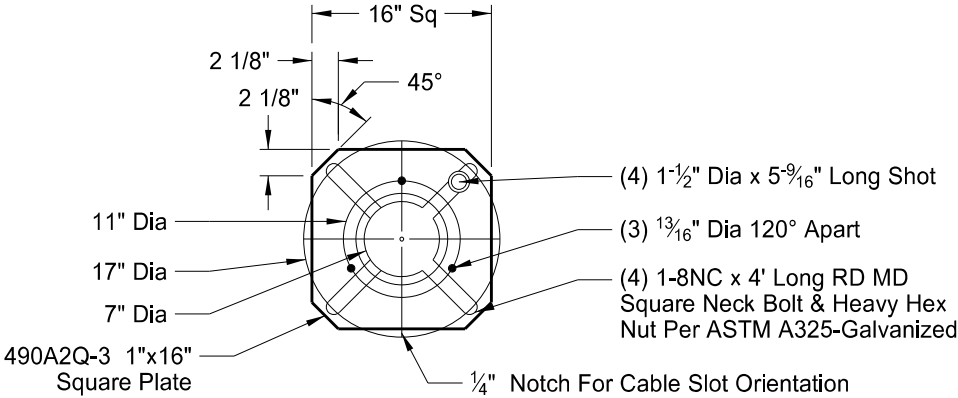
- Notes:
- See Section 150 for additional details regarding traffic signal pull boxes. These pull boxes shall be included in the bid item "Traffic Signal System - Site 1".
  - Luminaires and pole extensions for light fixture locations 9 and 10 shall be included in the bid item "Traffic Signal System - Site 1".
  - Connect Existing Conduit Beneath RR Crossing to Traffic Signal Pull Box 3.



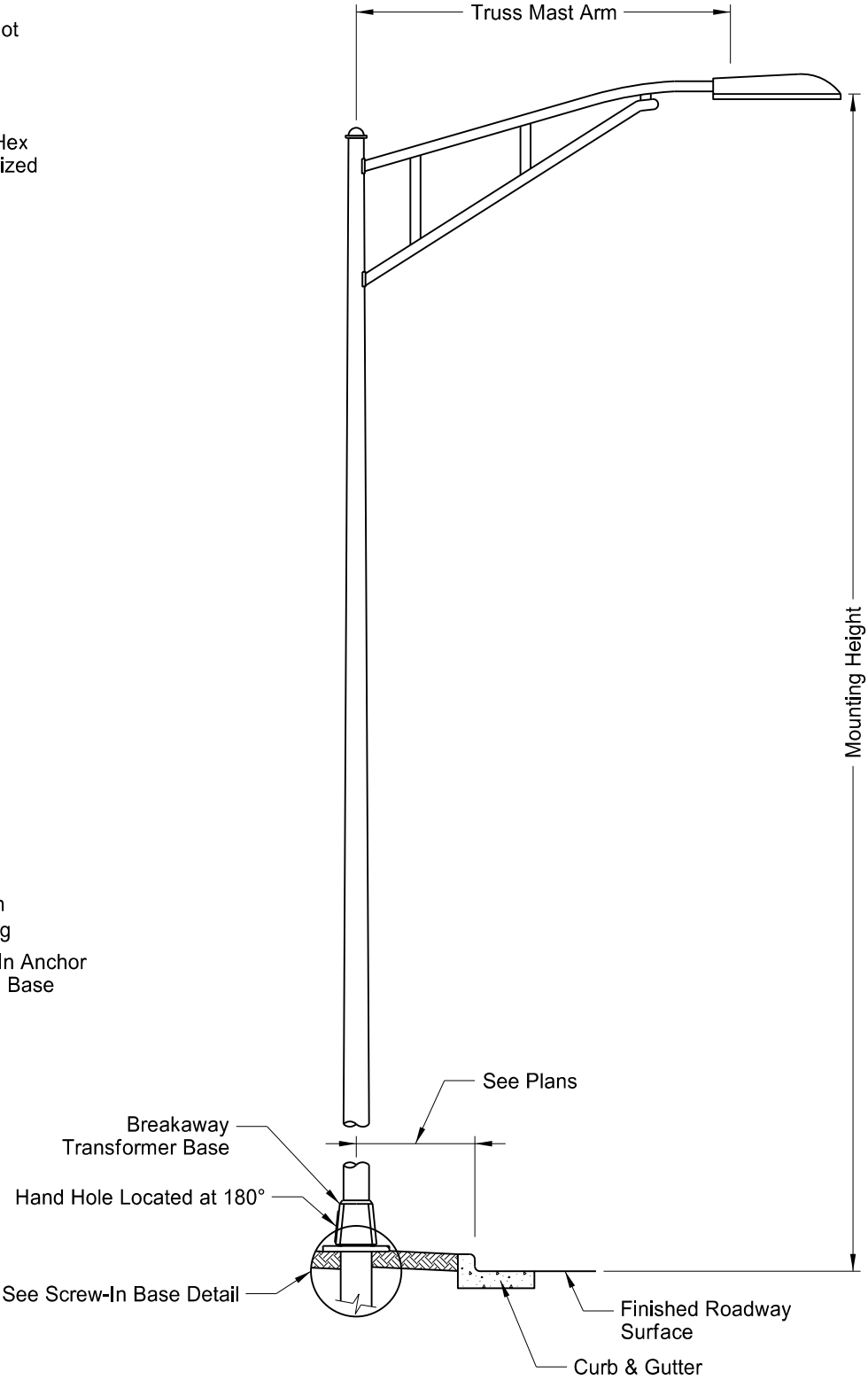
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Lighting  
Sta 98+00 to Sta 102+00  
  
Reconstruction of North 42nd St  
University Ave to US 2 (Gateway Dr)  
Grand Forks, ND

Revised	11/7/17	STATE	PROJECT NO.	SECTION NO.	SHEET NO.
		ND	SU-6-986(121)125	140	15



Screw-In Base Detail



Light Standard Detail

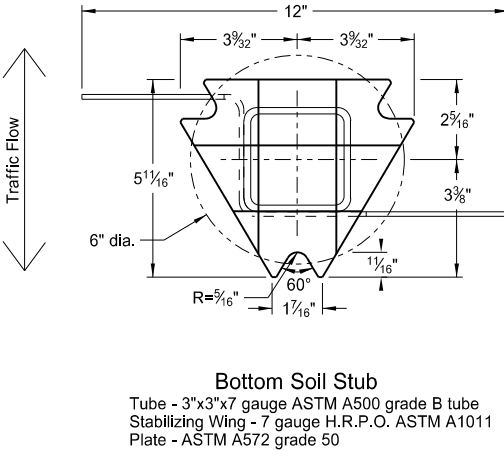
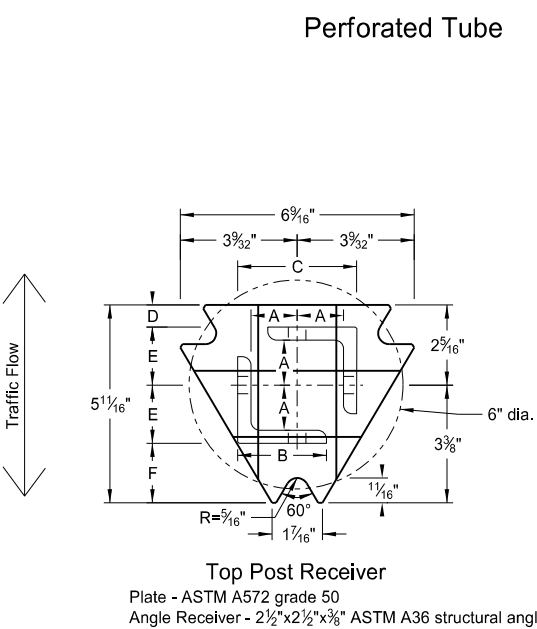
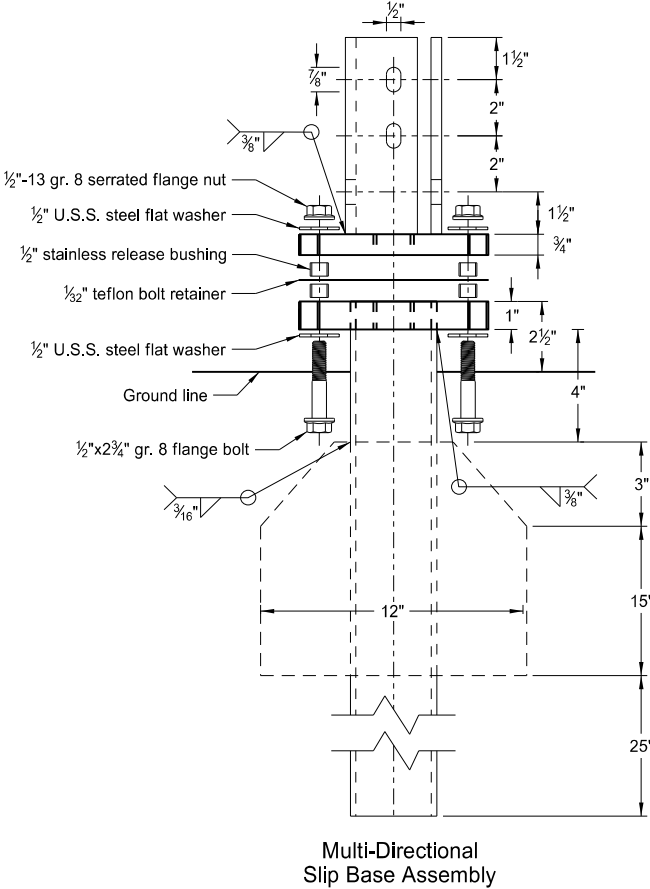
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Grand Forks, ND

Lighting Details

Reconstruction of North 42nd St  
University Ave to US 2 (Gateway Dr)  
Grand Forks, ND

Perforated Tube

- Notes:
1. Torque slip base bolts as specified by manufacturer.
  2. Use anchor with 43.9 KSI yield strength and 59.3 KSI tensile strength.
  3. Provide 4" vertical clearance for anchor or breakaway base. Measure the 4"x60" measurement above and below post location and back and ahead of post.
  4. In concrete sidewalk, use same anchor without wings.
  5. Provide more than 7' between the first and fourth posts of a four post sign.

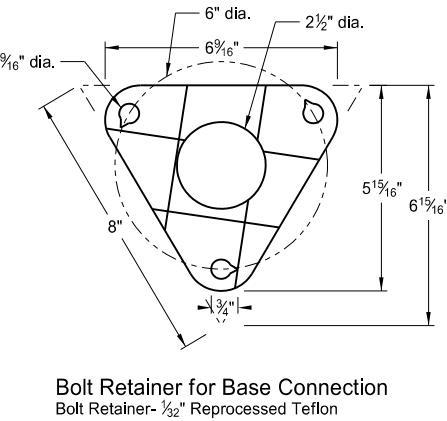
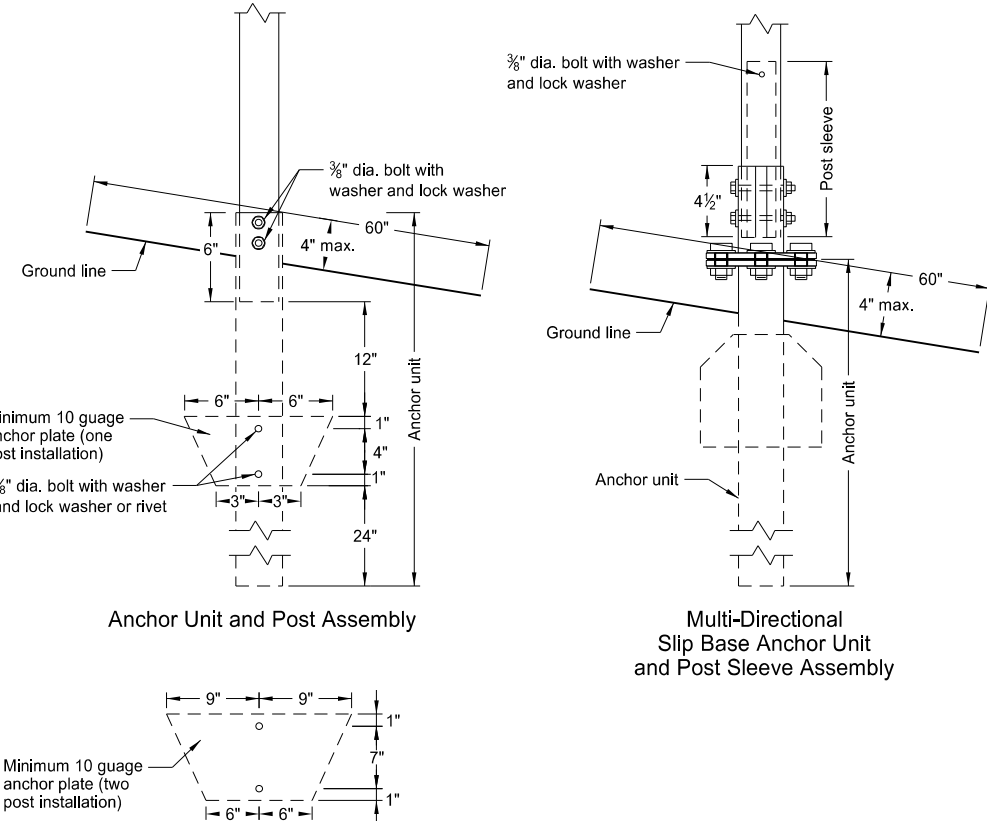


Telescoping Perforated Tube						
Number of Posts	Post Size in.	Wall Thick-ness Gauge	Sleeve Size in.	Wall Thick-ness Gauge	Slip Base	Anchor Size without Slip Base in.
1	2	12			No	2 1/4
1	2 1/4	12			No	2 1/2
1	2 1/2	12			(A)	3
1	2 1/2	10			Yes	
1	2 1/4	12	2	12	Yes	
1	2 1/2	12	2 1/4	12	Yes	
2	2	12			No	2 1/4
2	2 1/4	12			No	2 1/2
2	2 1/2	12			Yes	
2	2 1/2	12			Yes	
2	2 1/4	10	2	12	Yes	
2	2 1/2	12	2 1/4	12	Yes	
3 & 4	2 1/2	12			Yes	
3 & 4	2 1/2	10			Yes	
3 & 4	2 1/2	12	2 1/4	12	Yes	
3 & 4	2 1/4	12	2	12	Yes	
3 & 4	2 1/2	10	2 3/16	10	Yes	

Properties of Telescoping Perforated Tube						
Tube Size in.	Wall Thickness in.	U.S. Standard Gauge	Weight per Foot lbs.	Moment of Inertia in. <sup>4</sup>	Cross Sec. Area in. <sup>2</sup>	Section Modulus in. <sup>3</sup>
1 1/2 x 1 1/2	0.105	12	1.702	0.129	0.380	0.172
2 x 2	0.105	12	2.416	0.372	0.590	0.372
2 1/4 x 2 1/4	0.105	12	2.773	0.561	0.695	0.499
2 3/8 x 2 3/8	0.135	10	3.432	0.605	0.841	0.590
2 1/2 x 2 1/2	0.105	12	3.141	0.804	0.803	0.643
2 1/2 x 2 1/2	0.135	10	4.006	0.979	1.010	0.785

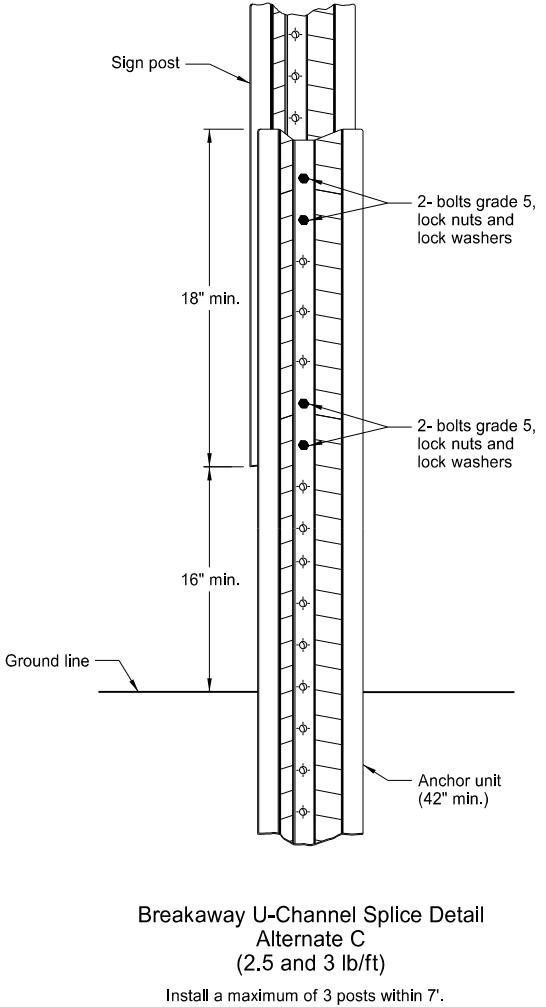
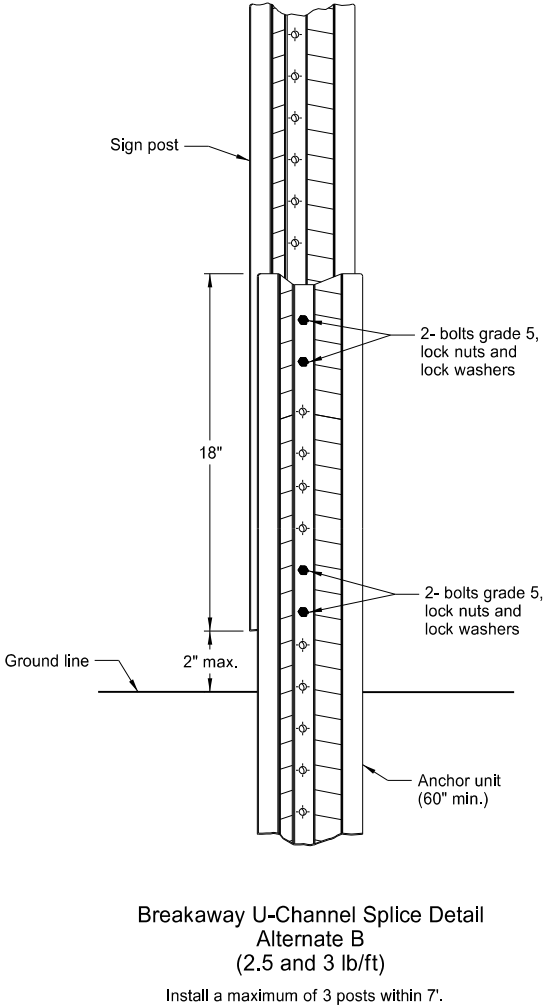
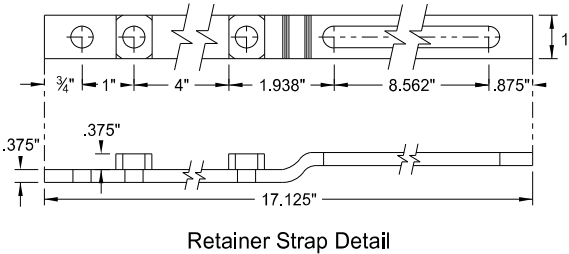
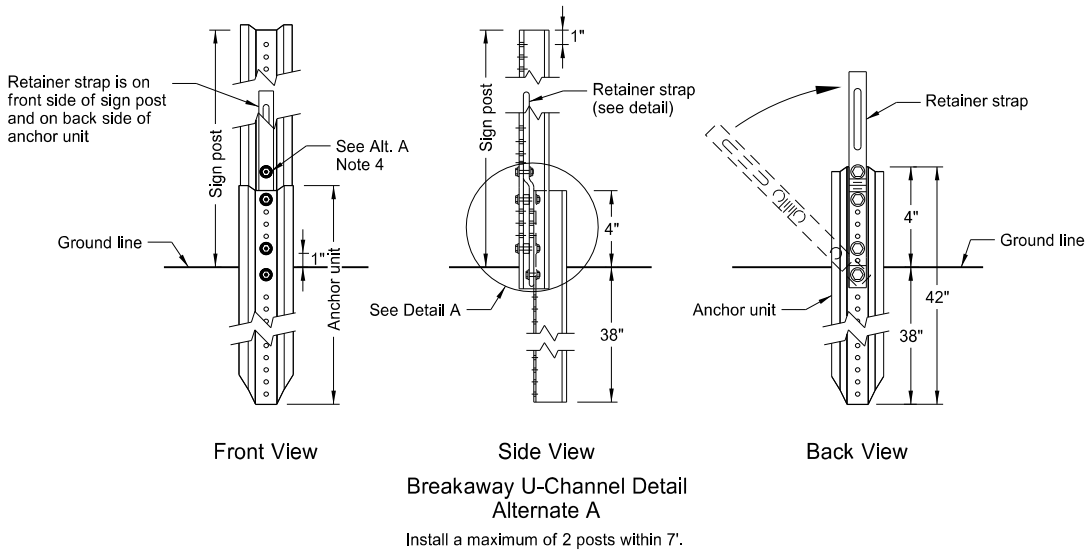
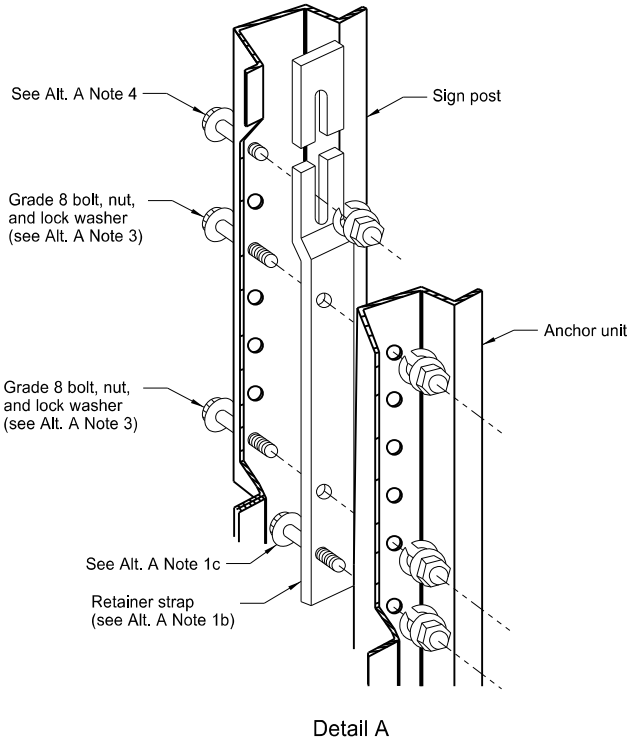
Top Post Receiver Data Table						
Square Post Sizes (B)	A	B	C	D	E	F
2 3/16"x10 ga.	1 5/16"	2 1/2"	3 1/2"	2 5/32"	1 33/64"	1 7/8"
2 1/2"x10 ga.	1 3/32"	2 1/2"	3 5/16"	5/8"	1 21/32"	1 3/4"

- (A) Use breakaway base when support is placed in weak soils. Engineer determines if soils are weak.
- (B) For additional wind load, insert the 2 3/8"x10 ga. into 2 1/2"x10 ga.



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U-Channel Post



Alternate A Steps of Installation:

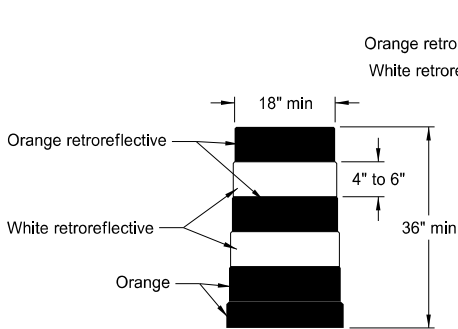
- a) Drive anchor unit to within 12" of ground level.  
b) Establish proper assembly by lining up bottom hole of retainer strap with 6th hole from the top of the anchor unit.  
c) Assemble strap to back of anchor unit using 5/16"x2" bolt, lock washer and nut.  
d) Rotate strap 90° to left.
- a) Drive anchor unit to 4" above ground.  
b) Rotate strap to vertical position.
- a) Place 5/16"x2" bolt, lock washer and nut in bottom of sign post to facilitate alignment of sign post with proper hole in anchor unit.  
b) Alternately tighten two connector bolts.
- Complete assembly by tightening 5/16"x2" bolt (this fastens sign post to retainer strap).
- Properly nest base post, strap, and sign post. Proper nesting occurs when all flat surfaces of the base post, strap, and sign post at the bolts have full contact across the entire width.

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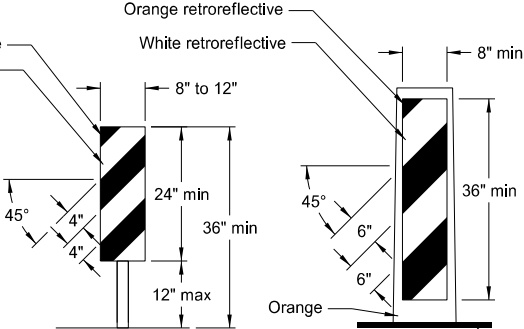


BARRICADE AND CHANNELIZING DEVICE DETAILS



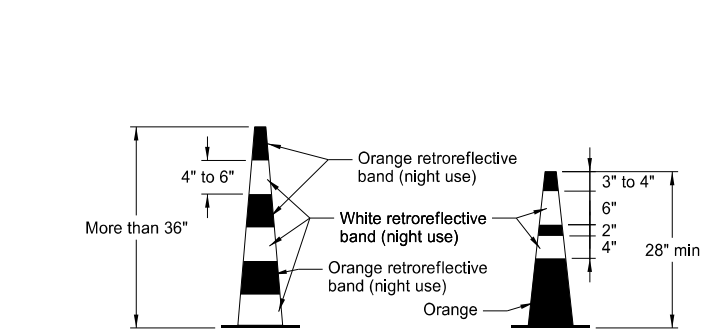
DELINEATOR DRUM

Provide horizontal, circumferential, alternating orange and white retroreflective stripes 4" to 6" wide for drum markings. Use a minimum of two orange and two white stripes with the top stripe being orange for each drum. Do not exceed 3" nonretroreflectORIZED spaces between the horizontal orange and white stripes. Avoid placement of stripes on drum ribs or indentations. Use closed top drums that will not allow collection of debris. Do not place ballast on the top of drum.



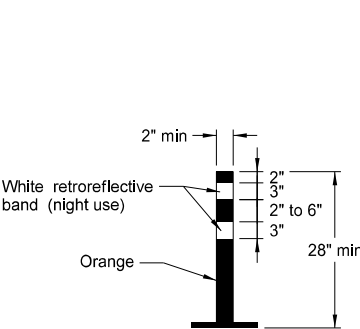
VERTICAL PANEL

Provide alternating orange and white retroreflective stripes, sloping downward in direction vehicular traffic is to pass. Place retroreflective sheeting on both sides of panel with a minimum of 270 square inches of retroreflective area facing vehicular traffic. Where the height of the retroreflective material on the vertical panel is 36 inches or more, use a stripe width of 6 inches.



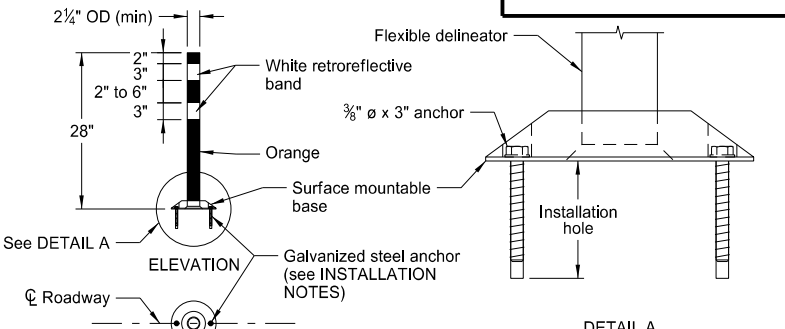
TRAFFIC CONE

Provide retroreflectORIZATION of cones more than 36" in height by alternating orange and white retroreflective stripes. Use a minimum of two orange and two white stripes for each cone with the top stripe being orange. Use maximum 3" nonretroreflectORIZED space between the orange and white stripes.



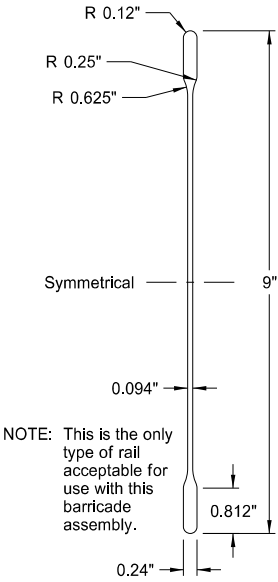
TUBULAR MARKER

Provide retroreflectORIZATION of tubular markers more than 42" in height by alternating four 4" to 6" wide orange and white stripes with the top stripe being orange.



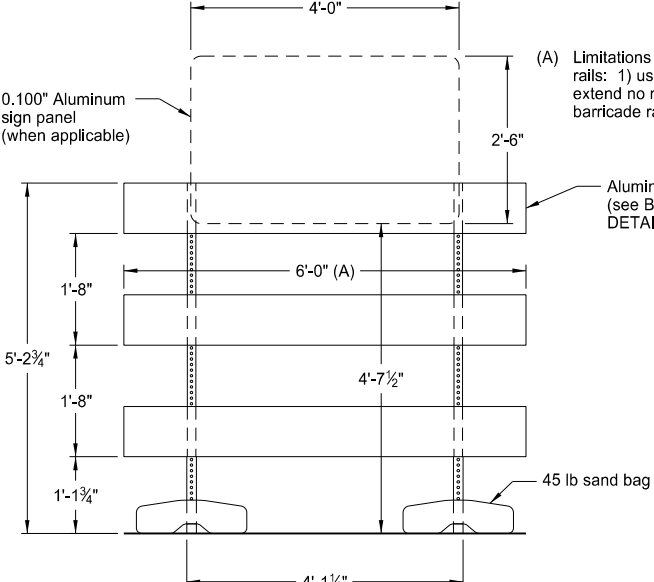
FLEXIBLE DELINEATOR

- INSTALLATION NOTES:
1. Drill installation holes to diameter and depth required by manufacturer's specifications.
  2. For removal, remove anchors and fill installation hole with an epoxy designed to bond to pavement surface.
  3. In lieu of bolted down base, use an 8" x 8" butyl pad or hot melt butyl. Remove butyl as close as possible to pavement surface.

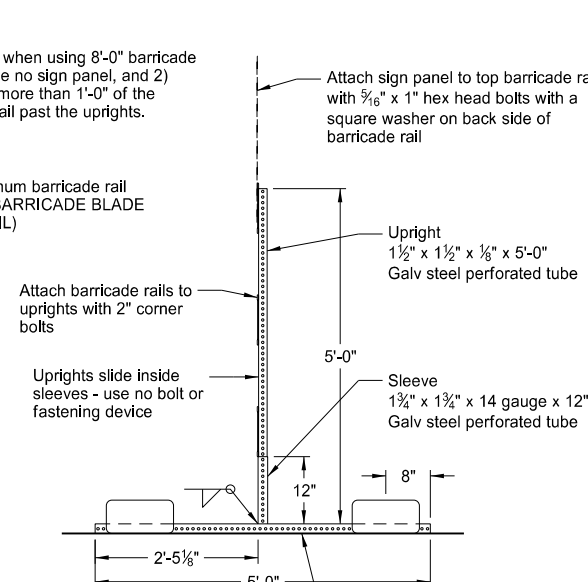


BARRICADE BLADE DETAIL

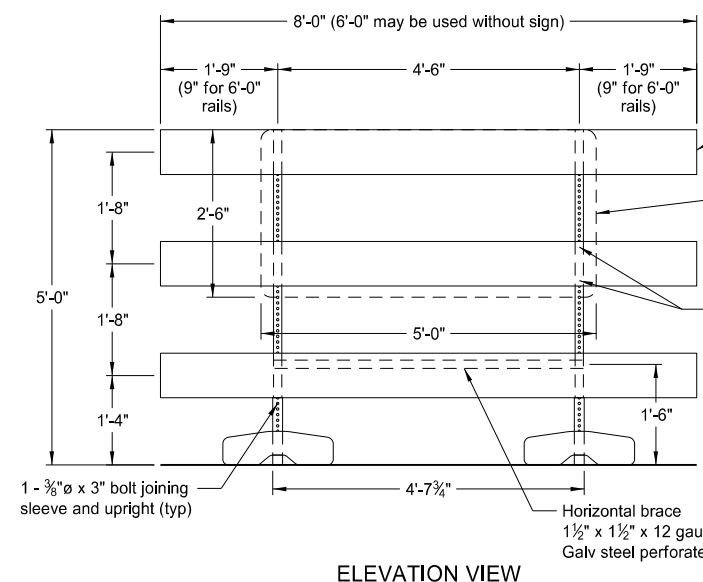
NOTE: This is the only type of rail acceptable for use with this barricade assembly.



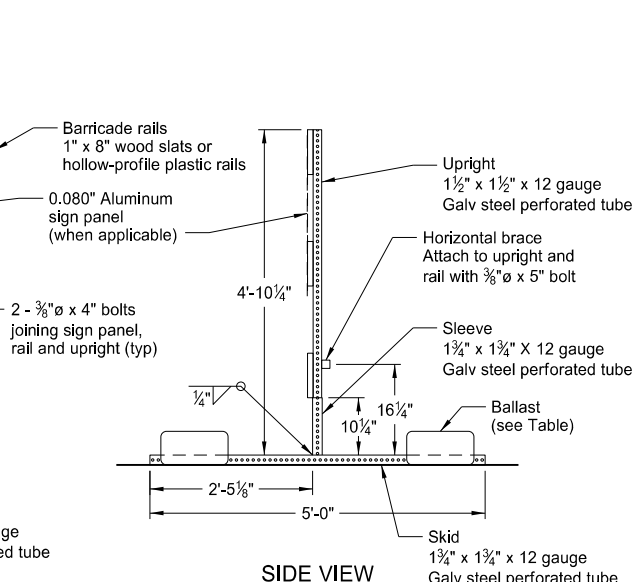
ELEVATION VIEW  
BARRICADE ASSEMBLY DETAIL  
(Aluminum Barricade Rails)



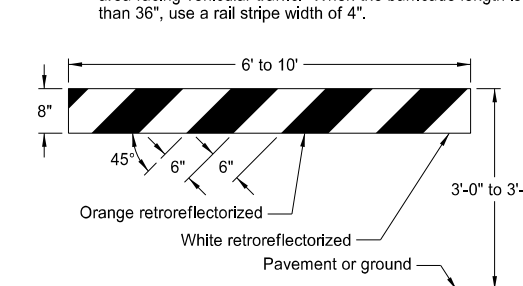
SIDE VIEW  
BARRICADE ASSEMBLY DETAIL  
(Wood or Plastic Rails)



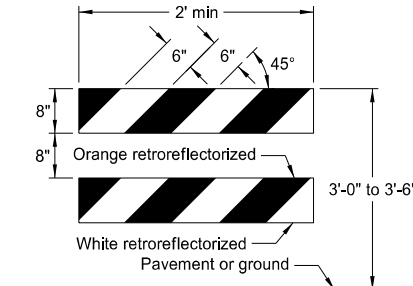
ELEVATION VIEW  
BARRICADE ASSEMBLY DETAIL  
(Wood or Plastic Rails)



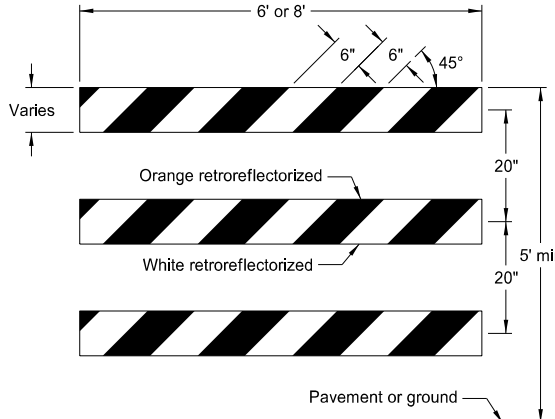
SIDE VIEW  
BARRICADE ASSEMBLY DETAIL  
(Wood or Plastic Rails)



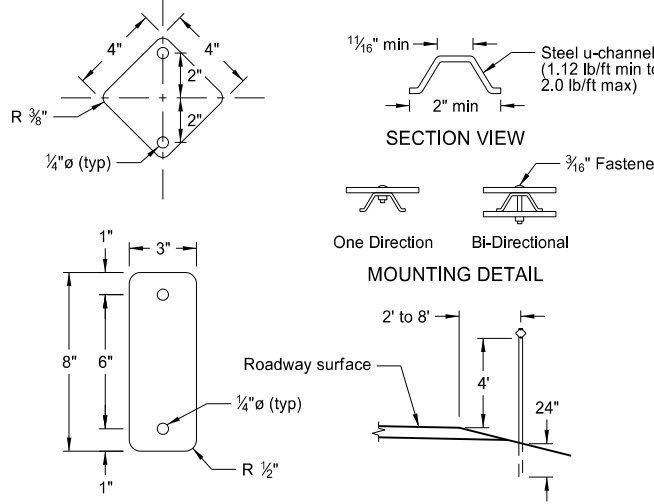
TYPE I BARRICADE



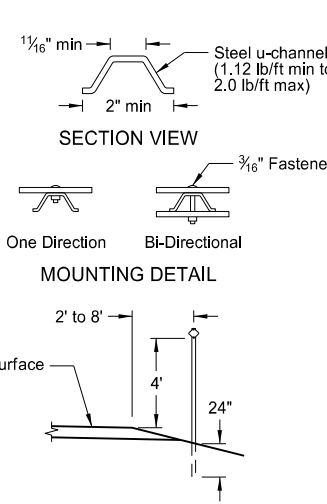
TYPE II BARRICADE  
BARRICADE RAIL DETAILS



TYPE III BARRICADE



REFLECTOR DETAIL



DELINEATORS

MINIMUM BALLAST  
(For each side of barricade support)

Without Sign	4 - 25 lb sandbags
With Sign	6 - 25 lb sandbags

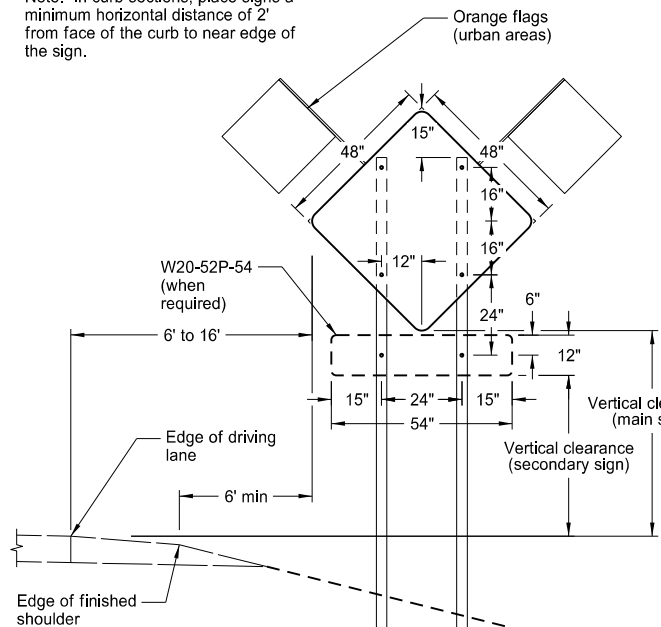
Note: Number of sandbags based on a wind speed of 55 MPH. Sandbags assumed to be placed at or near the ends of the skids.

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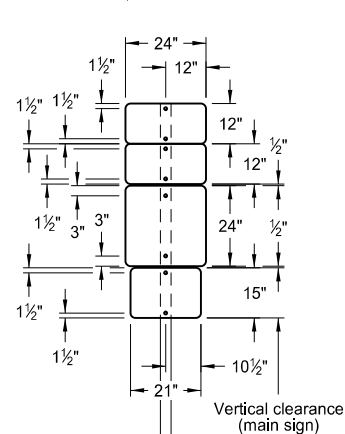
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CONSTRUCTION SIGN PUNCHING AND MOUNTING DETAILS

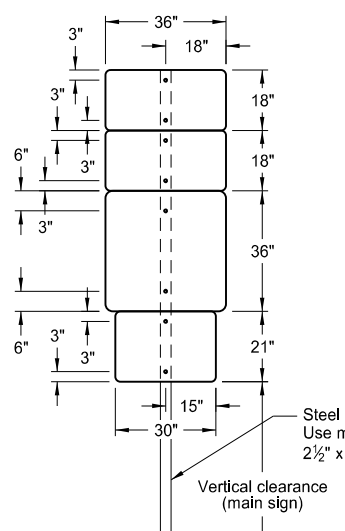
Note: In curb sections, place signs a minimum horizontal distance of 2' from face of the curb to near edge of the sign.



TYPICAL SECTION  
(48" x 48" diamond warning sign shown)

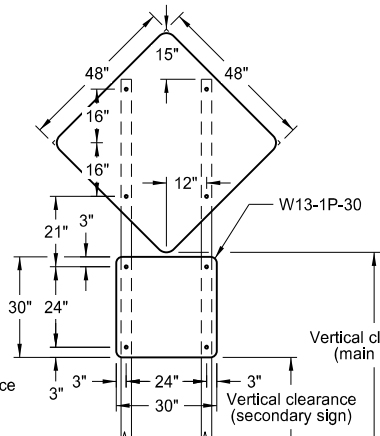


24" x 24"  
ROUTE MARKER  
ASSEMBLY

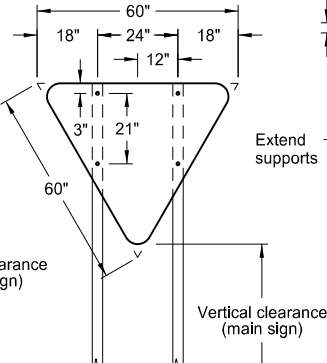


36" x 36"  
ROUTE MARKER  
ASSEMBLY

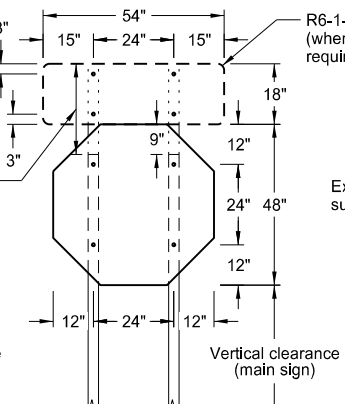
Orange flags  
(urban areas)



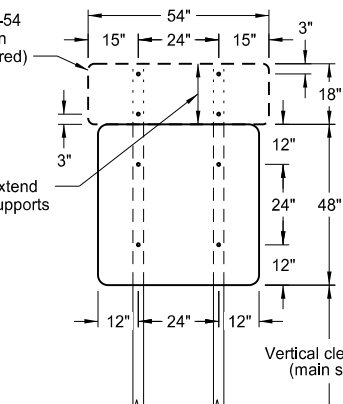
48" x 48" DIAMOND SIGN  
(with 30" x 30" secondary sign)



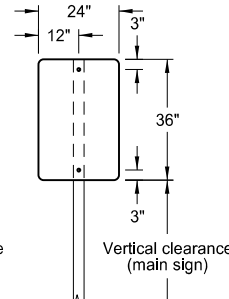
R1-2-60 - YIELD SIGN



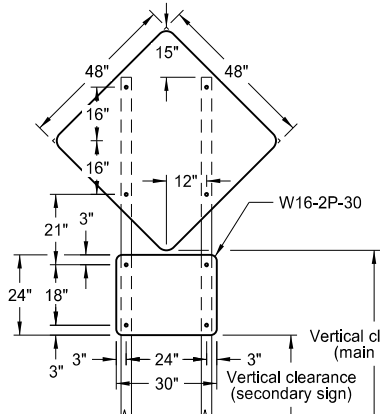
R1-1-48 - STOP SIGN  
(with R6-1-54 sign as required)



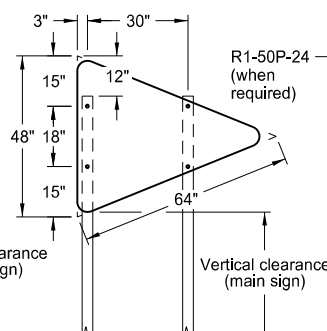
48" x 48" SIGN  
(with R6-1-54 sign as required)



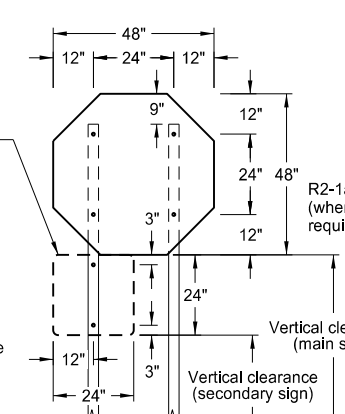
24" x 36" SIGN



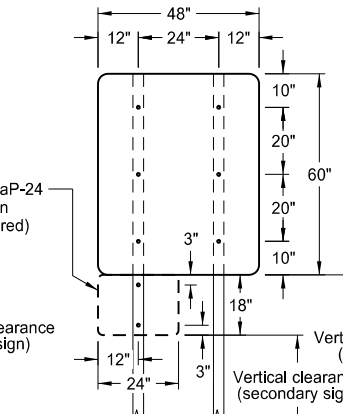
48" x 48" DIAMOND SIGN  
(with 30" x 24" secondary sign)



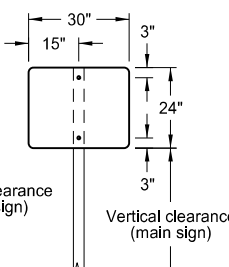
W14-3-64 - PENNANT SIGN



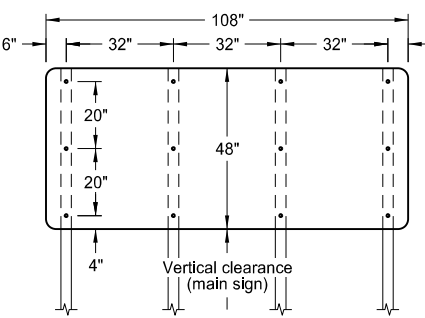
R1-1-48 - STOP SIGN  
(with R1-50P-24 sign as required)



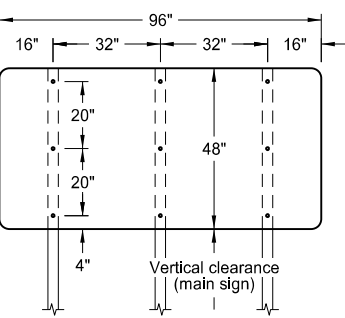
48" x 48" SIGN  
(with R2-1aP-24 sign as required)



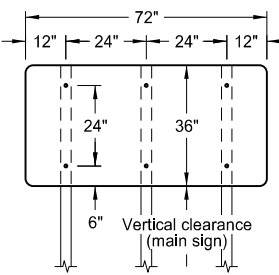
30" x 24" SIGN



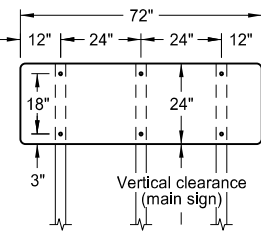
108" x 48" SIGN



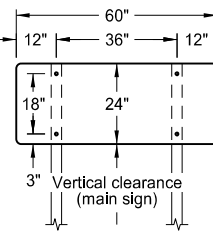
96" x 48" SIGN



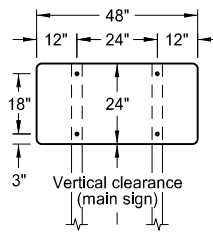
72" x 36" SIGN



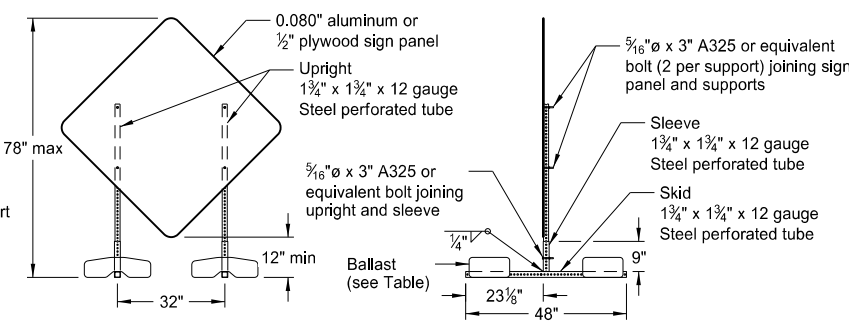
72" x 24" SIGN



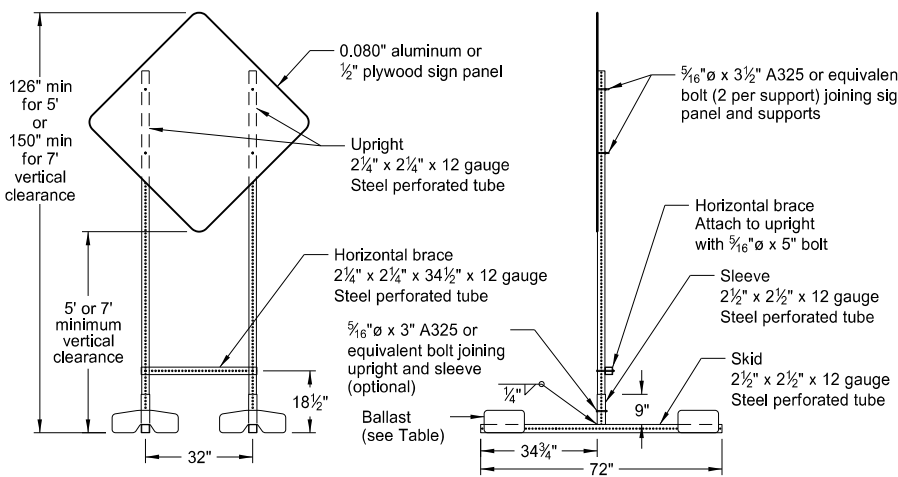
60" x 24" SIGN



48" x 24" SIGN



PORTABLE SIGN SUPPORT  
LOW-MOUNTING HEIGHT



PORTABLE SIGN SUPPORT  
HIGH-MOUNTING HEIGHT

NOTES:

1. Sign Supports: Galvanize or paint supports. Minimum post sizes are 2.5 lb/ft u-channel or 2" x 2" x 12 gauge steel perforated tube, except where noted. When installing signs on u-channel, minimum post size for assemblies containing a secondary sign is 3.0 lb/ft. Post sizes based on a wind speed of 55 MPH.  
  
Place signs over 50 square feet on 2½" x 2½" perforated tube supports as a minimum.  
  
Do not attach guy wires to sign supports. Attach wind beams behind sign panels when used with u-posts.
2. Sign Panels: Provide sign panels made of 0.100" aluminum, ½" plywood, or other approved material, except where noted. Punch all holes round for ⅝" bolts.
3. Alternate Messages: Install and remove alternate message signs on reflectorized plate (without borders) as required. (i.e. "Left" and "Right" message on lane closure sign)
4. Route Marker Auxiliary Signs: Provide route marker auxiliary signs, such as the cardinal direction and directional arrows, with a background and legend that match the route marker they are used with:

Interstate - white legend on blue background  
Interstate Business Loop - white legend on green background  
US and State - black legend on white background  
County - yellow legend on blue background

5. Vertical Clearance: Install signs with a vertical clearance of 5'-0" (see TYPICAL SECTION). In areas where parking or pedestrian movements are likely or the view of the sign may be obstructed, install signs with a vertical clearance of 7'-0" from the top of the curb or from the near edge of the driving lane in absence of a curb.

The vertical clearance to secondary signs is 1'-0" less than the vertical clearance stated above.

Provide a minimum clearance of 7'-0" from the ground at the post for signs with an area exceeding 50 square feet.

6. Portable Signs: Provide portable signs that meet the vertical clearance stated above when it is necessary to place signs within the pavement surface.

Use of low-mounting height (minimum 12" vertical clearance) portable signs for 5 days or less, is allowed as long as the view of the sign is not obstructed. Time delays caused by unforeseen circumstances, such as equipment breakdown, rain, subgrade failures, etc., will not accrue towards the 5 day period. Use of R9-8 through R9-11a series, W1-6 through W1-8 series, M4-10, and E5-1 is allowed for longer than 5 days.

Restrict signs mounted on portable sign supports shown in the LOW-MOUNTING HEIGHT and HIGH-MOUNTING HEIGHT details to a maximum surface area of 16 square feet.

MINIMUM BALLAST  
(For each side of sign support base)

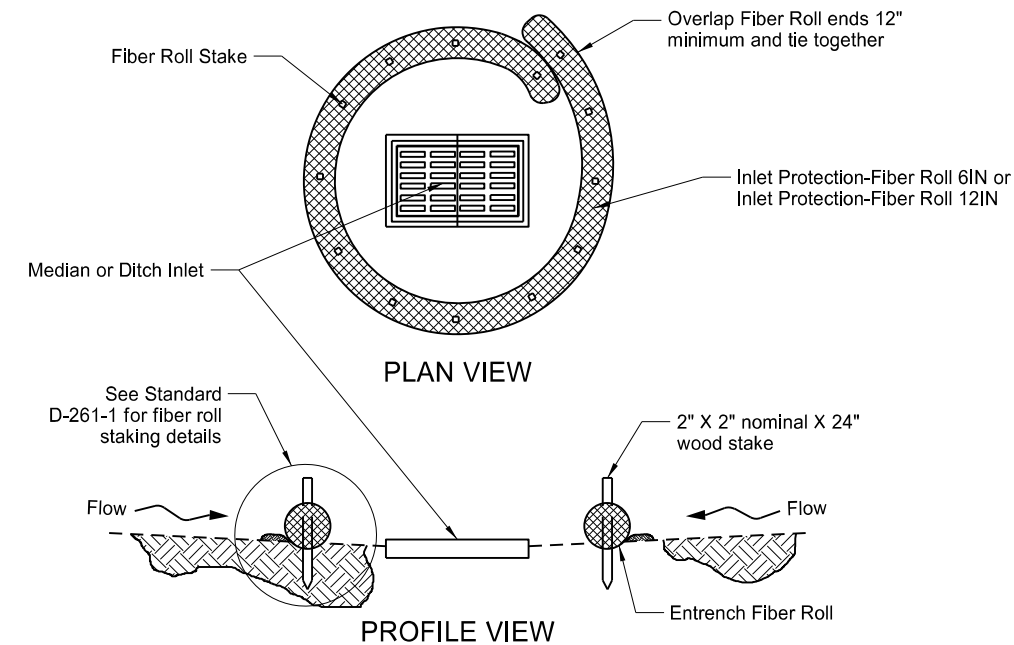
Sign Panel Mounting Height (ft)	Number of 25 lb sandbags for 4' x 4' sign panel
1'	6
5'	8
7'	10

Note: The number of sandbags are based on a wind speed of 55 MPH. Place sandbags at or near the ends of skids.

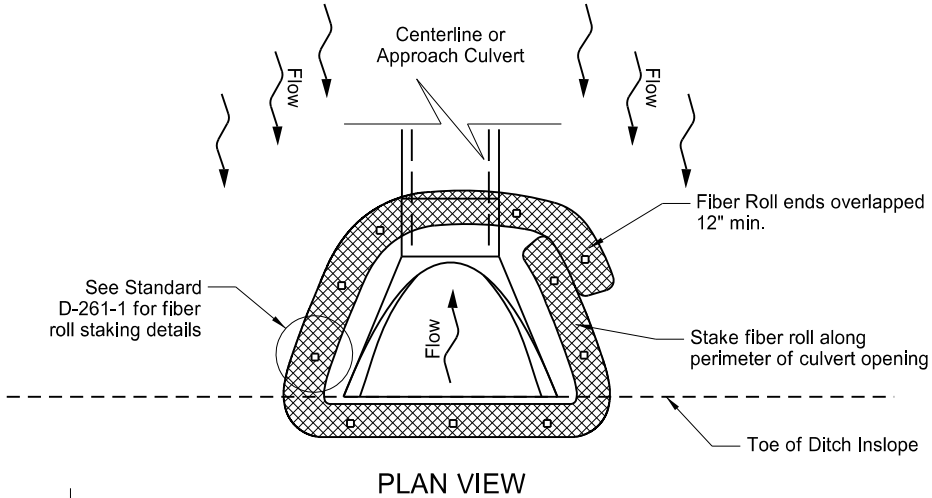
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Roger Weigel,  
Registration Number  
PE-2930,  
on 9/27/2017 and the original document is stored at the  
North Dakota Department  
of Transportation

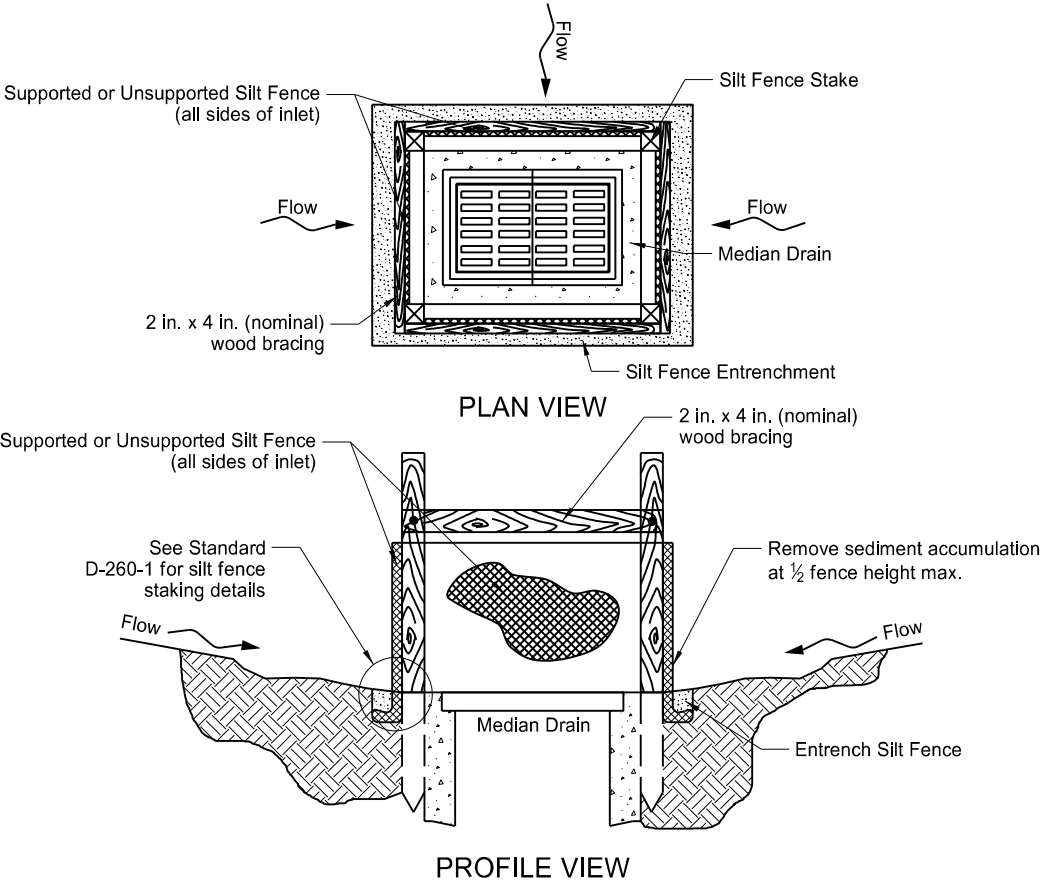
EROSION AND SILTATION CONTROLS  
MEDIAN OR DITCH INLET PROTECTION



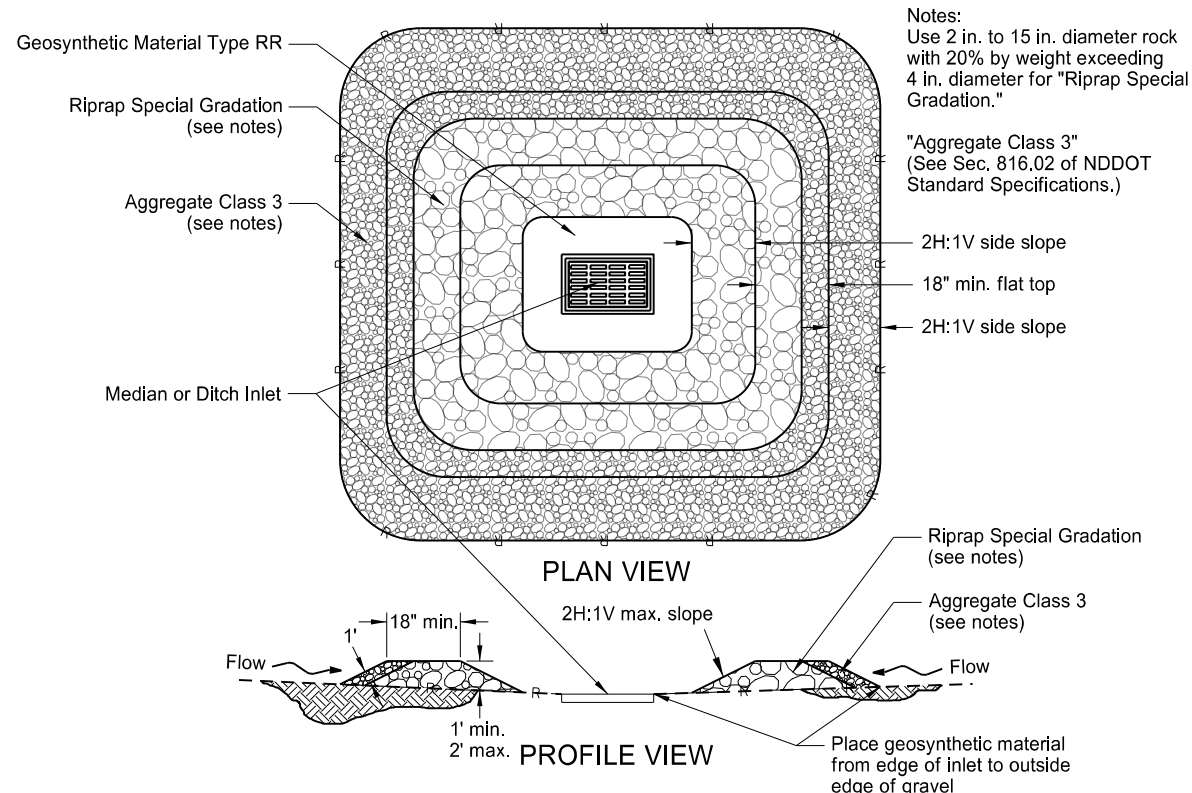
FIBER ROLL PROTECTION  
(MEDIAN OR DITCH INLET)



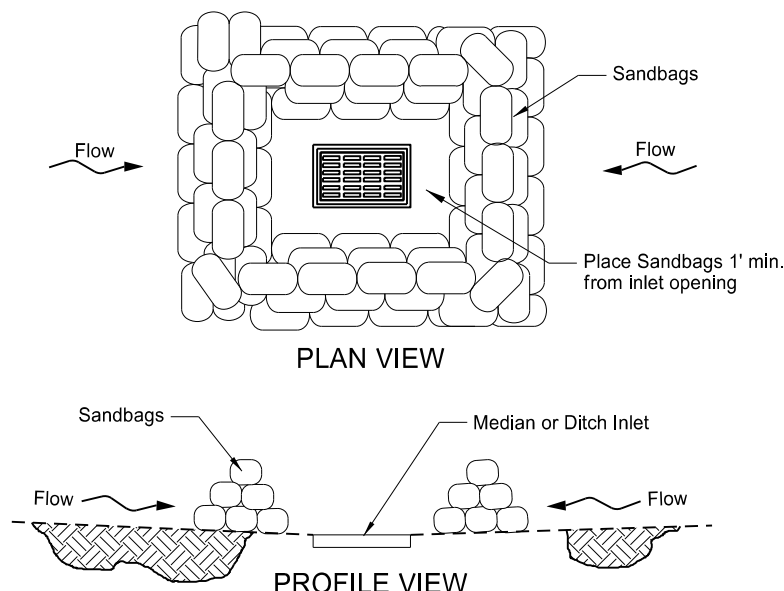
FIBER ROLL PROTECTION  
(INLET OF CULVERT)



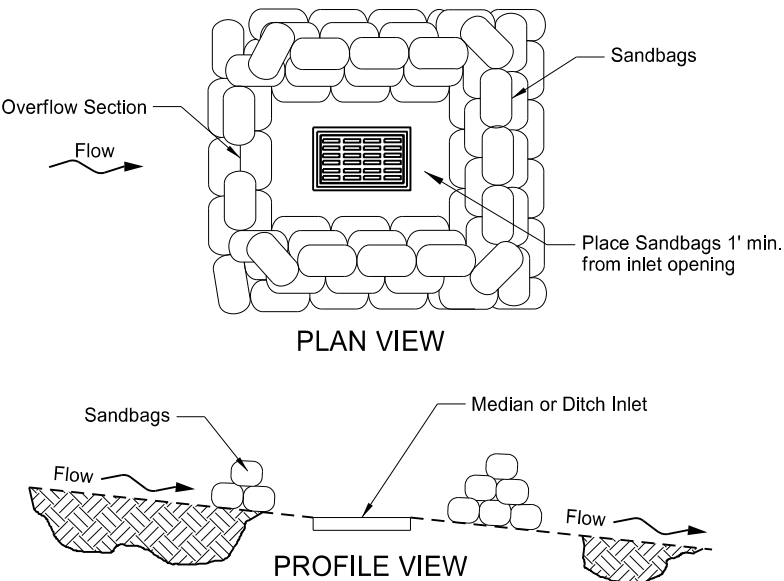
SILT FENCE PROTECTION  
(MEDIAN OR DITCH INLET)



GRAVEL INLET PROTECTION  
(MEDIAN OR DITCH INLET)



SANDBAG PROTECTION  
(LOW POINT)

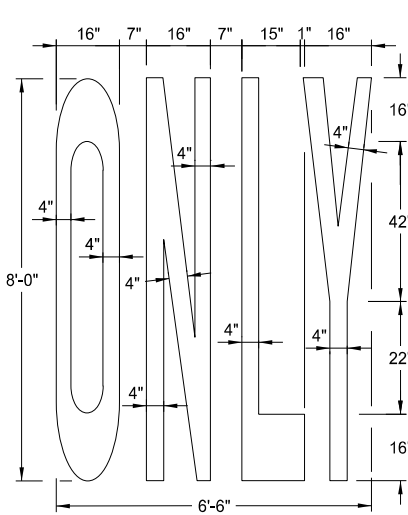


SANDBAG PROTECTION  
(ON SLOPE)

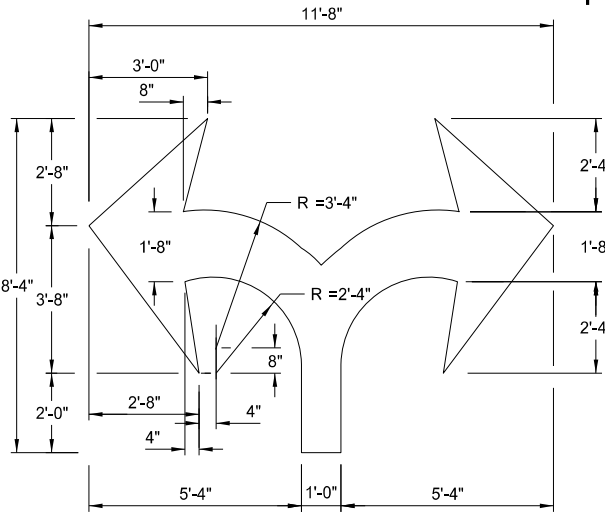
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION		This document was originally issued and sealed by Roger Weigel Registration Number PE- 2930 , on 10-17-2017 and the original document is stored at the North Dakota Department of Transportation
10-03-13		
REVISIONS		
DATE	CHANGE	
06-26-14	Updated reference to standard drawing number for fiber roll staking details,	
10-01-14	Updated reference to standard drawing number for silt fence,	
10-17-17	Updated to active voice,	

Pavement Marking Message Details

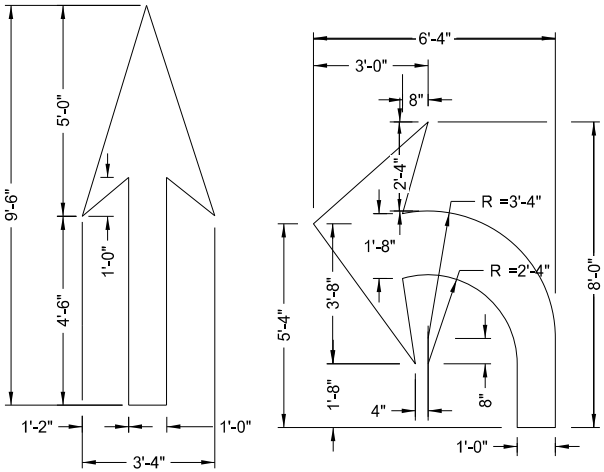
D-762-1



22 S. F.

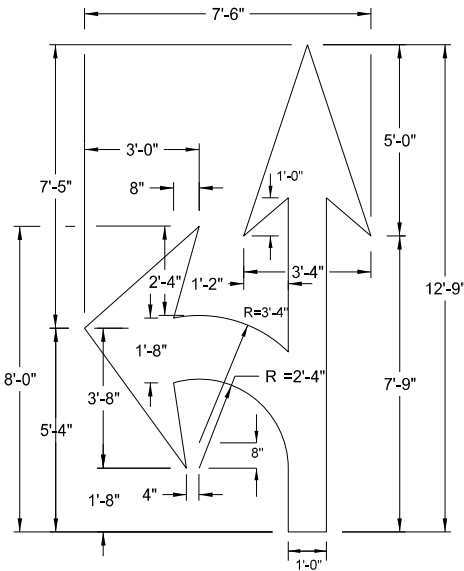


29 S. F.

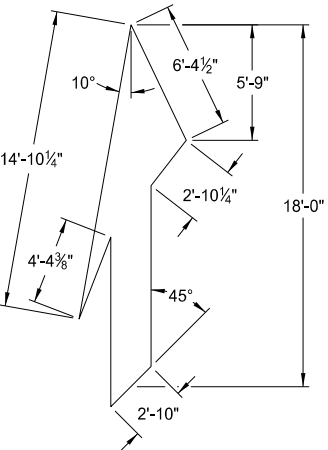


12 S. F.

16 S. F.

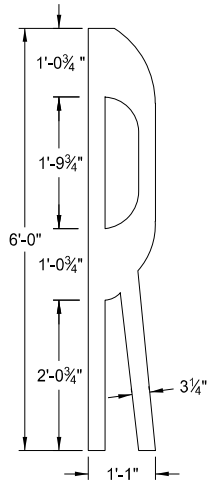


27 S. F.

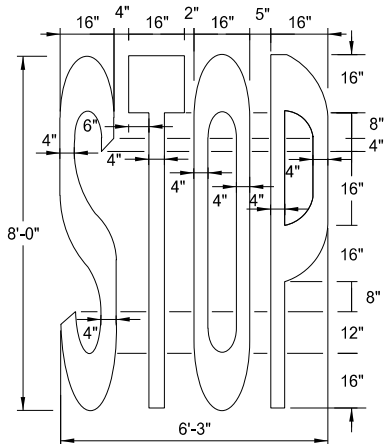


41 S. F.

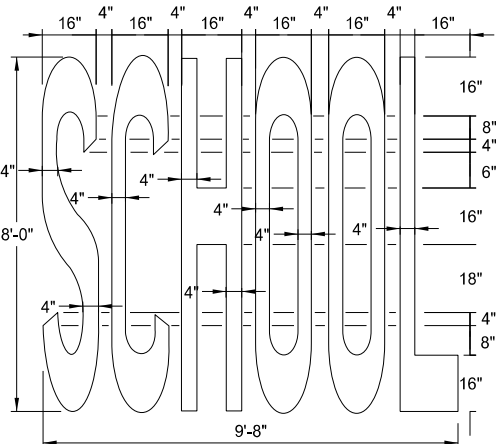
Note: Rotate merge arrow 20° from edge of roadway.



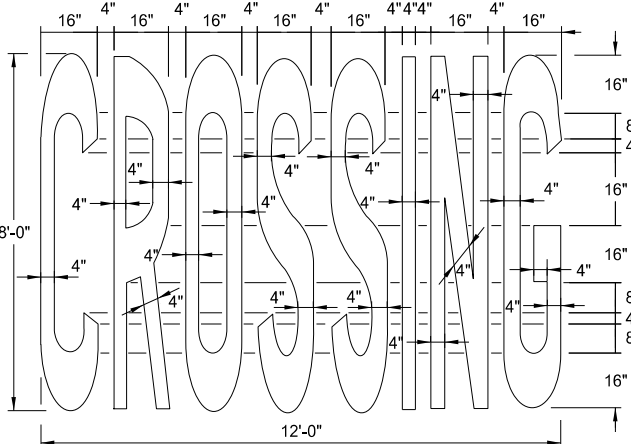
4 S. F.



22 S. F.



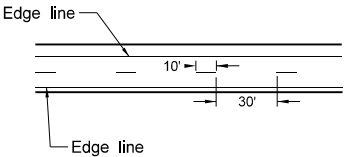
34.5 S. F.



46 S. F.

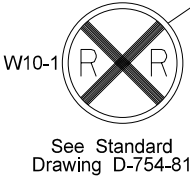
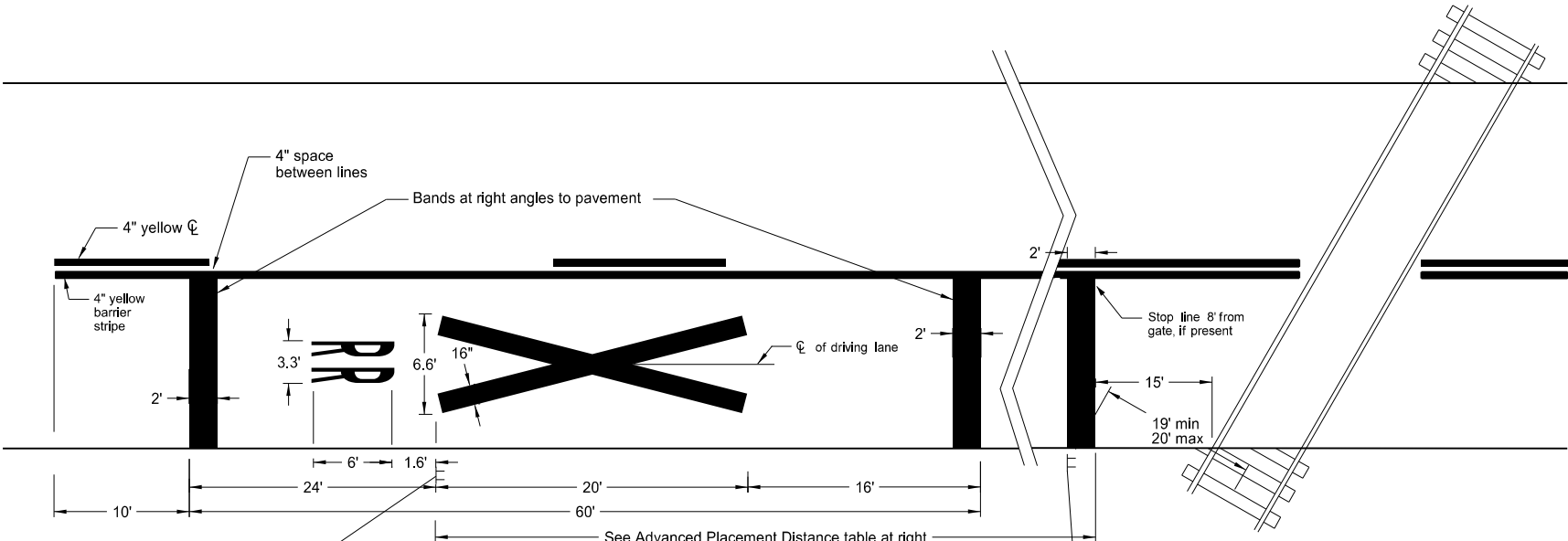
Speed Limit	Chevron Width	Chevron Spacing 45° to Traffic
0-25 mph	8"	5'
30-40 mph	8"	15'
45 mph and above	12"	25'

Chevron Crosshatching Table

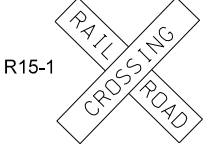


Centerline Pavement Marking Skip Spacing Detail

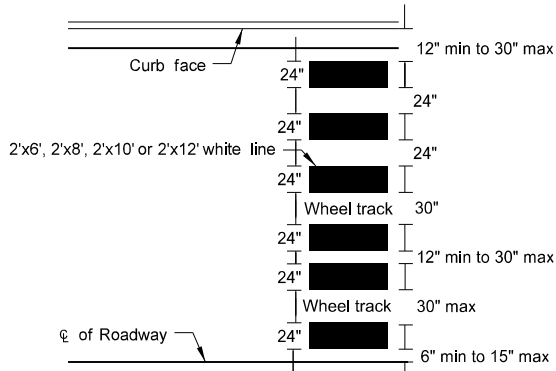
Advance Placement Distance for Railroad Warning Signs	
Posted or 85th Percentile Speed	Advance Distance
20 mph	min. 100 ft
25 mph	min. 100 ft
30 mph	min. 100 ft
35 mph	min. 100 ft
40 mph	125 ft
45 mph	175 ft
50 mph	250 ft
55 mph	325 ft
60 mph	400 ft
65 mph	475 ft
70 mph	550 ft



Notes:  
Mark a three lane roadway with a centerline for two-lane approach operation on the approach to a crossing. On multi-lane roads, extend the transverse bands across all approach lanes, and use individual R X R symbols in each approach lane.  
See plans for correct message. Use white pavement markings unless noted otherwise.



Railroad cross & 2 R's 60.5 S.F.  
3 Bands (12' lane) 72 S.F.



Continental Crosswalk Detail

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
12-6-11	
REVISIONS	
DATE	CHANGE
10-17-17	Updated to active voice.

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