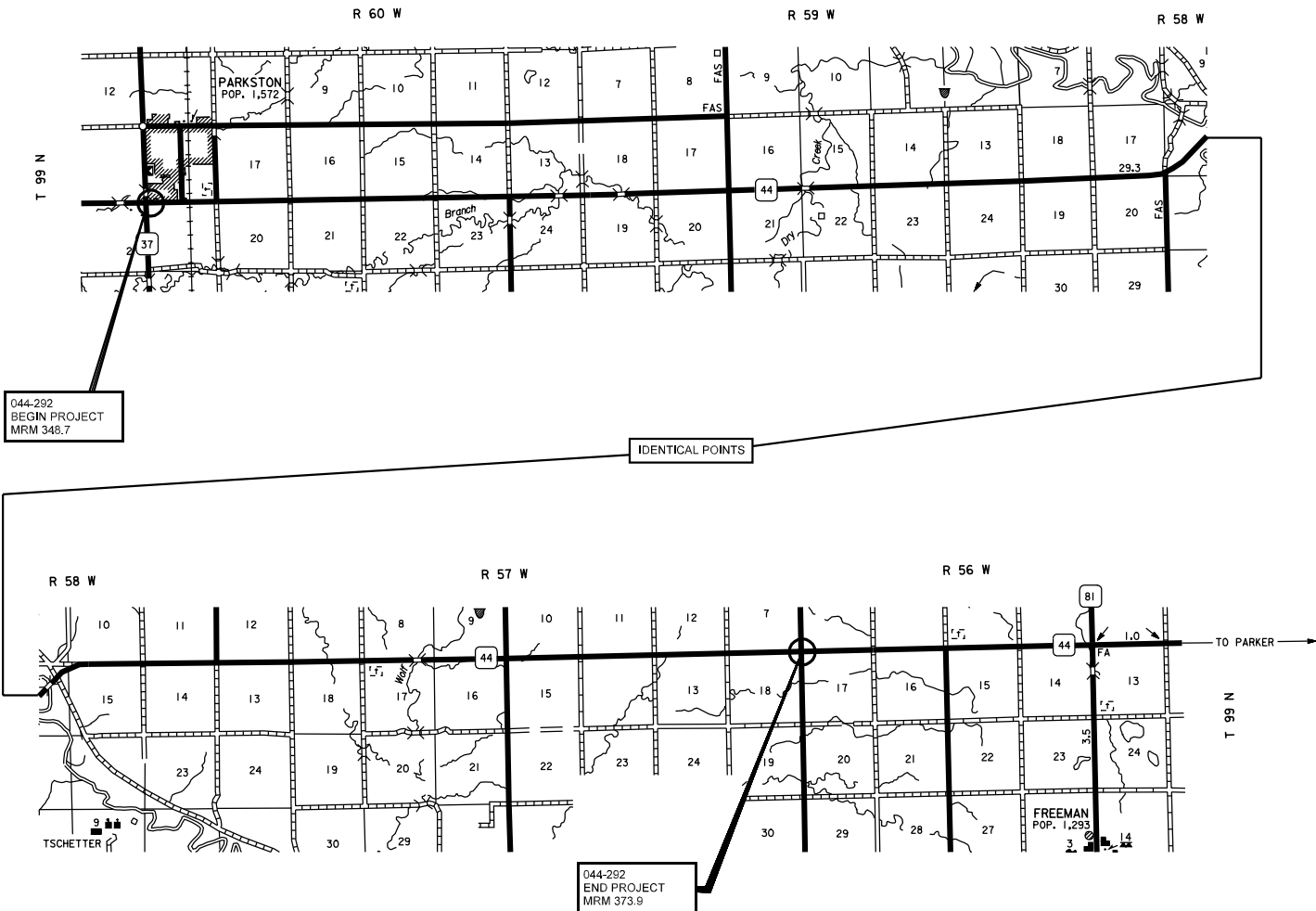
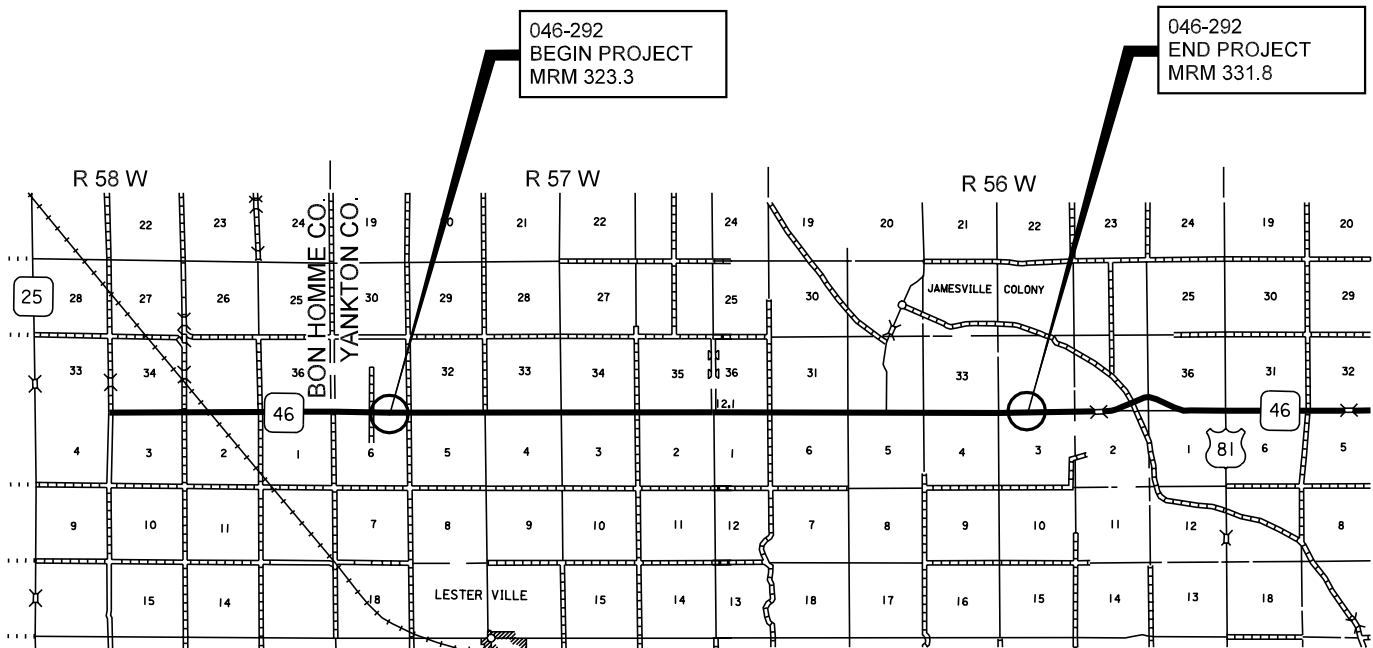


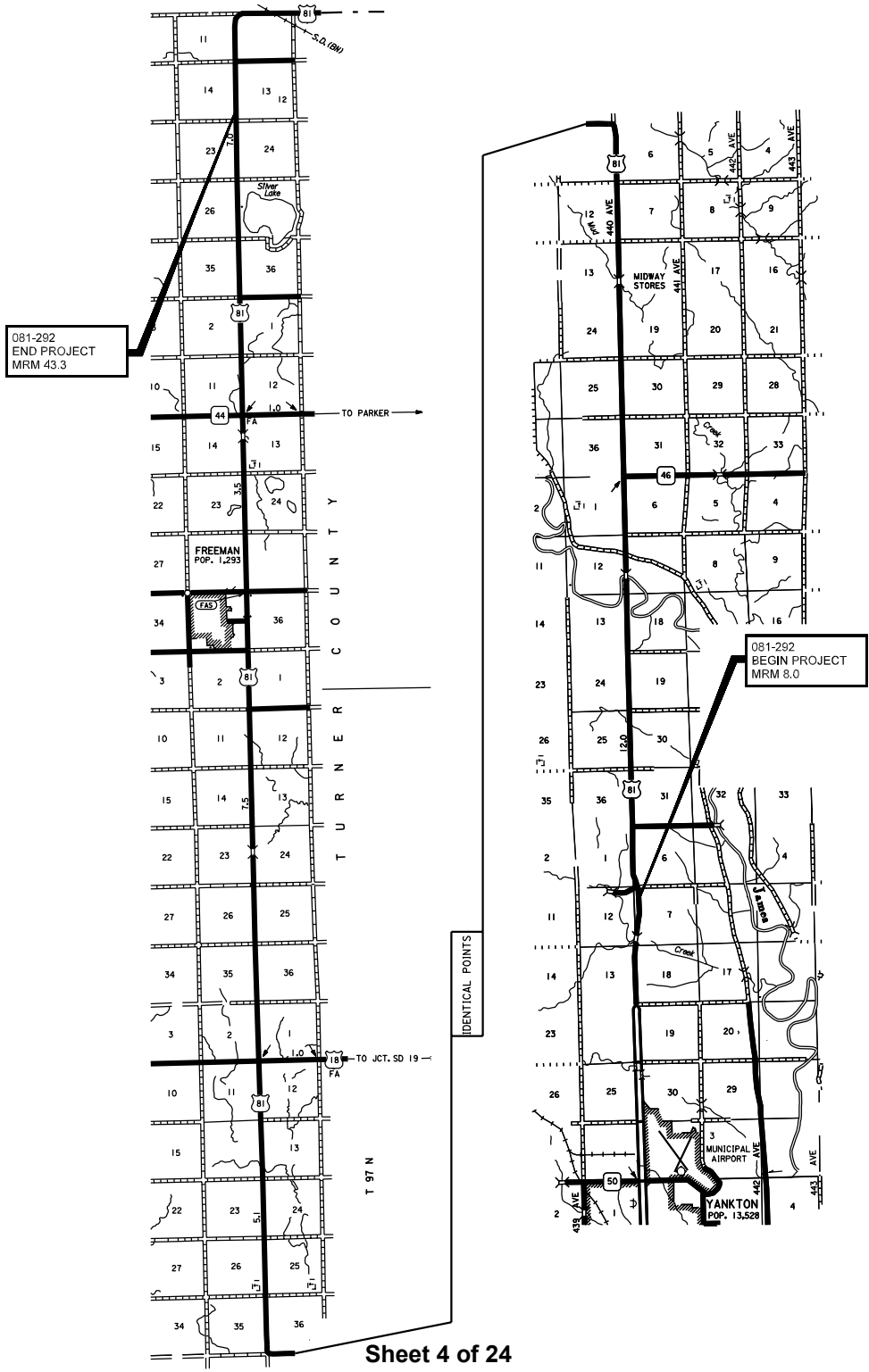
044-292 HUTCHINSON COUNTY PIPE REPAIR PCN I07Q



046-292 YANKTON COUNTY PIPE REPAIR PCN I07S



081-292 HUTCHINSON & YANKTON COUNTIES PIPE REPAIR PCN I07U



**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**

INDEX OF PLANS SHEETS

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Sheet 7	Table of Pipe Repair
Sheet 8 to 10 (Incl.)	Plan Notes
Sheet 11	Itemized List for Traffic Control
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**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**

ESTIMATE OF QUANTITIES

BID ITEM NUMBER	DESCRIPTION	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0600	Remove Fence	180	FT
110E7500	Remove Pipe For Reset	250	FT
110E7510	Remove Pipe End Section For Reset	23	EACH
110E7530	Remove Cattle Pass For Reset	6	FT
110E7540	Remove Cattle Pass End Section For Reset	5	EACH
120E0600	Contractor Furnished Borrow	61	CUYD
250E0010	Incidental Work	Lump Sum	LS
450E9000	Reset Pipe	250	FT
450E9001	Reset Pipe End Section	23	EACH
560E5100	Reset Reinforced Concrete Cattle Pass	6	FT
560E5101	Reset Reinforced Concrete Cattle Pass End Section	5	EACH
620E0020	Type 2 Right-of Way Fence	180	FT
620E1020	2 Post Panel	7	EACH
620E1030	3 Post Panel	5	EACH
634E0010	Flagging	400	HOUR
634E0100	Traffic Control	442	UNIT
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
720E1015	Bank and Channel Protection Gabion	56	CUYD
730E0204	Type C Permanent Seed Mixture	94	LB
732E0100	Mulching	11	TON
734E0154	12" Diameter Erosion Control Wattle	100	FT

**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**

TABLE OF PIPE REPAIR

PROJECT NUMBER	MILAGE REFERENCE MARKER	SIZE AND TYPE	110E7500	110E7510	110E7530	110E7540	120E0600	450E9000	450E9001	560E5100	560E5101	720E1015
			REMOVE PIPE FOR RESET (FT)	REMOVE PIPE END SECTION FOR RESET (EACH)	REMOVE CATTLE PASS FOR RESET (FT)	REMOVE CATTLE PASS END SECTION FOR RESET (EACH)	CONTRACTOR FURNISHED BORROW (CU. YD.)	RESET PIPE (FT)	RESET PIPE END SECTION (EACH)	RESET REINFORCED CONCRETE CATTLE PASS (FT)	RESET REINFORCED CONCRETE CATTLE PASS END SECTION (EACH)	BANK AND CHANNEL PROTECTION GABIONS (CU.YD.)
046-292	323.3	24" CMP		1					1			
046-292	329.6	18" RCP		1					1			
046-292	331.8	CATTLE PASS				1	1				1	
046-292 SUBTOTAL			0	2	0	1	1	0	2	0	1	0
081-292	8.04	CATTLE PASS			6	1	2			6	1	
081-292	8.4	36" RCP	12	1			1	12	1			
081-292	11.1	30" RCP	6	1			1	6	1			
081-292	11.4	18" RCP	12	2			1	12	2			
081-292	31.9	36"RCP										16
081-292	33.5	24" RCP	12	2			1	12	2			
081-292	43.3	18" RCP	12	1				12	1			
081-292 SUBTOTAL			54	7	6	1	6	54	7	6	1	16
018-292	374.4	18" RCP		1			2		1			
018-292	377.75	18" RCP	8				4	8				
018-292	377.8	18" RCP	16				6	16				
018-292	378.2	18" RCP	24				8	24				
018-292	378.5	18" RCP	16				6	16				
018-292	380.5	24" RCP	16				4	16				
018-292	381.4	18" RCP	20				4	20				
018-292	382.7	24" RCP	8				2	8				
018-292	384.6	24" RCP	16				2	16				
018-292	385.7	24" RCP	8				2	8				
018-292	405.4	24" RCP	4				2	4				
018-292	410.3	BOX CULVERT										28
018-292	414.8	BOX CULVERT										4
018-292	419.05	BOX CULVERT										8
018-292 SUBTOTAL			136	1	0	0	42	136	1	0	0	40
044-292	348.7	24" RCP		1			1		1			
044-292	349.5	Twin 24" RCP		1					1			
044-292	352.3	Triple 30" RCP	6	5			3	6	5			
044-292	353.5	CATTLE PASS				1	1				1	
044-292	353.9	Triple 48" RCP	8	5			4	8	5			
044-292	363.1	CATTLE PASS					1				2	
044-292	363.7	18" CMP	40					40				
044-292	373.9	36" RCP	6	1			2	6	1			
044-292 SUBTOTAL			60	13	0	3	12	60	13	0	3	0
PROJECT TOTALS			250	23	6	5	61	250	23	6	5	56

**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**

SPECIFICATIONS

Standard Specifications for Road and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

SCOPE OF WORK

The scope of work on these projects shall include, but is not limited to the following:

1. Remove and reset separated pipe culvert sections.
2. Install tie bolts on pipe sections.
3. Clean silt from ditches adjacent to pipe culverts.
4. Clean silt from inside pipe culverts.
5. Install erosion control as required.
6. Seed and mulch disturbed areas and install erosion control wattles.

COMPLETION DATE

All work shall be completed on or before November 2, 2007.

CONTRACTOR FURNISHED BORROW

The Contractor shall provide a suitable site for Contractor Furnished Borrow material. The Contractor Furnished Borrow may be attained from ditch cleanout at the pipe end in most locations.

The borrow material shall be approved by the Engineer.

Compaction of the fill material shall be to the satisfaction of the Engineer.

It is not anticipated that water for compaction will be required; however, if in the opinion of the Engineer the fill material is extremely dry, water may be ordered and placed to the satisfaction of the Engineer. Cost for water shall be incidental to the contract unit price per cubic yard for Contractor Furnished Borrow.

The basis for payment for Contractor Furnished Borrow will be plans quantity. Additional quantities will be included for payment only in the event that work sites other than those shown on the plans are added to the contract.

Restoration of the Contractor furnished borrow site shall be the responsibility of the Contractor.

The Contractor is responsible for obtaining all required permits and clearances for the borrow site.

To obtain State Historic Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. The Contractor shall arrange and pay for this survey. In lieu of a cultural resources survey, the Contractor could request a literature search on the site (contact Jim Donohue, State Archaeological Research Center (1-605-394-1937) for the literature search) and provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that no artifacts have been found on the site.

To facilitate prompt SHPO response, the Contractor should submit either a cultural resources survey report or the results of the literature search, a legal description of the site, a topographical map with the site clearly marked, along with evidence of prior site disturbance to: Dave Graves, SDDOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (1-605-773-5727). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO approval.

SALVAGING, STOCKPILING, AND PLACING TOPSOIL

Prior to starting construction operations, a sufficient volume of topsoil shall be removed from the construction limits to cover the disturbed areas to the required thickness as indicated in these plans.

Following completion of grading operations, topsoil shall be spread evenly over the disturbed areas. The thickness will be approximately 4 inches.

Removal and replacement of topsoil will not be measured for payment but shall be incidental to the contract unit prices for the various bid items.

**018-292, 044-292, 046-292 & 081-292
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CLEANING OF EXISTING PIPE – INCIDENTAL WORK

Material in the existing pipe culverts shall be cleaned out by water flushing or other approved methods.

The ditches shall be excavated in each direction from pipe ends to obtain proper water flow through the pipe. The average length of excavation from the end of the pipe is 50 feet. Excavated material may be used as Contractor Furnished Borrow if soil is determined acceptable by the Engineer. Unacceptable soil shall be wasted outside the right-of-way by the Contractor.

Cleaning of existing pipe, ditch grading, and disposal of soil shall be included in the bid item for Incidental Work.

REINFORCED CONCRETE PIPE

All reinforced concrete pipe used on this project is Class II unless otherwise noted in the plans. The existing Cattle Pass on the project is 4' x 6' RC Cattle Pass however the Contractor is responsible for verifying the dimensions and weights.

TIE BOLTS FOR RCP/RCP ARCH CULVERTS

Tie Bolts shall be installed at the inlet and outlet on the first three sections of new/reset culvert and on new/reset culvert ends (requires connection from existing culvert to new end section).

For informational purposes:

Field drilling will be required to install the tie bolts on reset culvert, on reset culvert ends and on existing culvert when installing a new/reset end section.

Cost for removing tie bolts for reuse, drilling tie bolt holes and providing, installing and reinstalling tie bolts shall be incidental to the contract unit prices for installing or resetting RCP Culverts and End Sections.

FENCE

Included in the Estimate of Quantities is fence to be removed between the cattle pass ends and the Right-of-Way line. Upon completion of the pipe work, new Type 2 Right-of-Way Fence, two post panels, and three post panels shall be installed to replace the fence.

BANK AND CHANNEL PROTECTION GABION

The dimensions to be stabilized with the Bank and Channel Protection Gabions shall be marked by the Engineer at the locations listed in the Table of Pipe Repair.

PERMANENT SEEDING

The areas to be seeded and mulched include all disturbed areas within the right-of-way resulting from the work required by this contract.

All permanent seed shall be planted in the topsoil at a depth of ¼" to ½".

All seed broadcast must be raked or dragged in (incorporated) within the top ¼" to ½" of topsoil when possible. This requirement may be waived by the Engineer during construction when raking or dragging is deemed not feasible by conventional methods.

South Dakota native grown seed is an acceptable alternative to any of the seed varieties listed below. South Dakota native grown seeds used as an alternative shall conform to the same specification and requirements for that individual seed type.

Type C Permanent Seed Mixture shall consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Flintlock, Rodan, Rosanna	16
Slender Wheatgrass	Adanac, Pryor, Primar, Revenue	2
Total:		18

The areas to be seeded and mulched are estimated at 5.2 acres.

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MULCHING (GRASS HAY OR STRAW)

Following permanent seeding, a mulch consisting of grass hay or straw shall be blown on at the rate of 2 tons per acre and punched in on slopes 3:1 and flatter and on 2:1 slopes where equipment can be operated without rutting the slope due to slippage. Mulch shall be substantially free of noxious weed seeds and objectionable foreign matter.

EROSION CONTROL WATTLE

Included in the Estimate of Quantities is 100 feet of Erosion Control Wattles for restraining the flow of runoff and sediment to be installed at locations determined by the Engineer during construction.

The Contractor shall provide certification that the erosion control wattles contain no noxious weed seeds.

The erosion control wattle provided shall be from the list shown below:

<u>Product</u>	<u>Manufacturer</u>
Curlex Sediment Log	American Excelsior Company Arlington, TX Phone: 1-800-777-7645 www.amerexcel.com
Aspen Fiber Logs and Straw Logs	Western Excelsior Corporation Mancos, CO Phone: 1-800-833-8573 www.westernexcelsior.com
Earth Saver Rice Straw Wattles	R.H. Dyck Inc. Winters, CA Phone: 1-530-795-4751 www.earth-savers.com
Bio Logs	Flaxtech, LLC Rock Lake, ND Phone: 1-866-444-3529 www.flaxtech.com

GENERAL MAINTENANCE OF TRAFFIC

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation and culvert end markers, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

Sufficient traffic control devices have been included in these plans to sign one workspace. If the Contractor elects to work on additional sites simultaneously, the cost for additional traffic control devices shall be incidental to the contract unit price per unit for Traffic Control.

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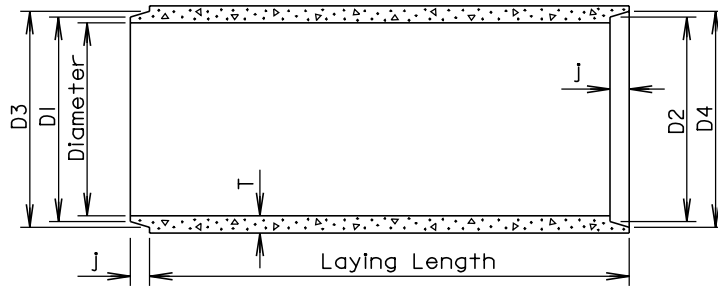
ITEMIZED LIST FOR TRAFFIC CONTROL

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-1	48" x 24"	ROAD WORK NEXT ## MILES	0	24	
G20-2A	36" x 18"	END ROAD WORK	2	17	34
W6-3	48" x 48"	TWO WAY TRAFFIC (SYMBOL)	0	34	
W8-1	36" x 36"	BUMP	0	27	
W8-6	48" x 48"	TRUCK CROSSING	0	34	
W8-7	36" x 36"	LOOSE GRAVEL	0	27	
W8-9a	48" x 48"	SHOULDER DROP-OFF	0	34	
W13-1	24" x 24"	ADVISORY SPEED PLATE	0	16	
W20-1	48" x 48"	ROAD WORK ##### FT. OR AHEAD	4	34	136
W20-4	48" x 48"	ONE LANE ROAD ##### FT. OR AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	4	34	136
W20-7b	48" x 48"	BE PREPARED TO STOP	0	34	
W21-1a	48" x 48"	WORKERS (SYMBOL)	0	34	
W21-3	48" x 48"	ROAD MACHINERY AHEAD	0	34	
W21-5	48" x 48"	SHOULDER WORK	2	34	68
W21-5a	48" x 48"	RIGHT SHOULDER CLOSED	0	34	
W21-5b	48" x 48"	RIGHT SHOULDER CLOSED AHEAD	0	34	
TOTAL UNITS					442

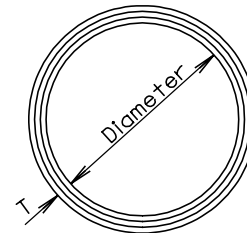
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TOLERANCES IN DIMENSIONS

Diameter: $\pm 1.5\%$ for 24" Dia. or less and $\pm 1\%$ or $\frac{3}{8}$ " whichever is more for 27" Dia. or greater.
 Diameters at Joints: $\pm 3/16$ " for 30" Dia. or less and $\pm 1/4$ " for 36" or greater.
 Length of joint (J): $\pm 1/4$ ".
 Wall thickness (T): not less than design T by more than 5% or $\frac{3}{16}$ ", whichever is greater.
 Laying length: shall not underrun by more than $\frac{1}{2}$ ".



LONGITUDINAL SECTION



END VIEW

GENERAL NOTES:

Construction of R.C.P. shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.

Not more than 2 four foot sections shall be permitted near the ends of any culvert. Four foot lengths shall be used only to secure the required length of culvert.

Diam. (in.)	Approx. Wt. /Ft. (lb.)	T (in.)	J (in.)	D1 (in.)	D2 (in.)	D3 (in.)	D4 (in.)
12	92	2	1 3/4	13 1/4	13 5/8	13 7/8	14 1/4
15	127	2 1/4	2	16 1/2	16 7/8	17 1/4	17 5/8
18	168	2 1/2	2 1/4	19 5/8	20	20 3/8	20 3/4
21	214	2 3/4	2 1/2	22 7/8	23 1/4	23 3/4	24 1/8
24	265	3	2 3/4	26	26 3/8	27	27 3/8
27	322	3 1/4	3	29 1/4	29 5/8	30 1/4	30 5/8
30	384	3 1/2	3 1/4	32 3/8	32 3/4	33 1/2	33 7/8
36	524	4	3 3/4	38 3/4	39 1/4	40	40 1/2
42	685	4 1/2	4	45 1/8	45 5/8	46 1/2	47
48	867	5	4 1/2	51 1/2	52	53	53 1/2
54	1070	5 1/2	4 1/2	57 7/8	58 3/8	59 3/8	59 7/8
60	1296	6	5	64 1/4	64 3/4	66	66 1/2
66	1542	6 1/2	5 1/2	70 5/8	71 1/8	72 1/2	73
72	1810	7	6	77	77 1/2	79	79 1/2
78	2098	7 1/2	6 1/2	83 3/8	83 7/8	85 5/8	86 1/8
84	2410	8	7	89 3/4	90 1/4	92 1/8	92 5/8
90	2740	8 1/2	7	95 3/4	96 1/4	98 1/8	98 5/8
96	2950	9	7	102 1/8	102 5/8	104 1/2	105
102	3075	9 1/2	7 1/2	109	109 1/2	111 1/2	112
108	3870	10	7 1/2	115 1/2	116	118	118 1/2

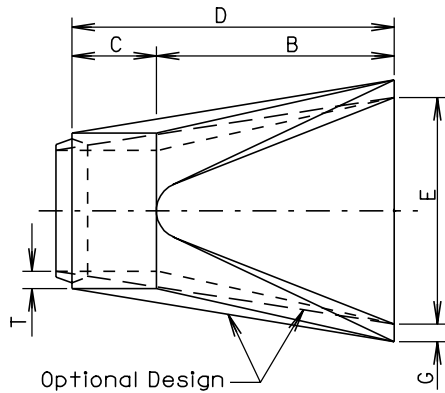
March 31, 2000

S D D O T	REINFORCED CONCRETE PIPE	PLATE NUMBER 450.01
		Sheet 1 of 1

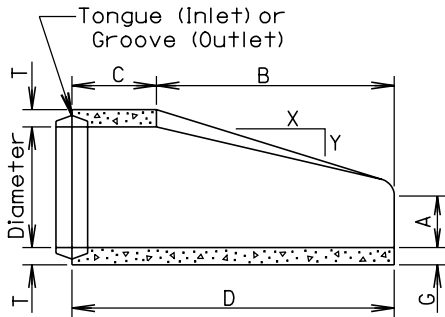
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Plotting Date: 19-MAR-2007

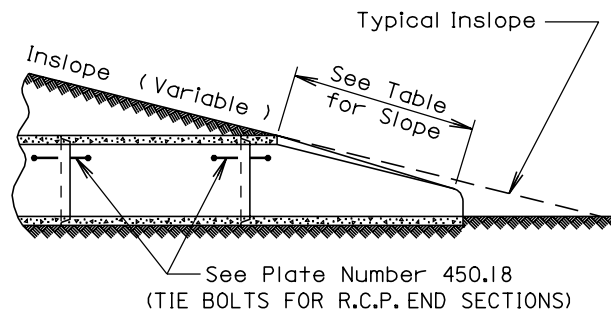
**018-292, 044-292, 046-292 & 081-292
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TOP VIEW



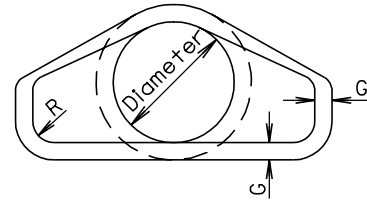
LONGITUDINAL SECTION



SLOPE DETAIL

GENERAL NOTES:

Lengths of concrete pipe shown on Plan Sheets are between flared Ends only.
Construction of R.C.P. Flared End shall conform to the requirements of Section 990 of the Standard Specifications for Roads and Bridges.



END VIEW

Dia. (in.)	Approx. Wt. of Section (lbs.)	Approx. Slope (X to Y)	T (in.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	G (in.)	R (in.)
12	530	2.4: 1	2	4	24	48 ⁷ / ₈	72 ⁷ / ₈	24	2	1 ¹ / ₂
15	740	2.4: 1	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	1 ¹ / ₂
18	990	2.3: 1	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	1 ¹ / ₂
21	1280	2.4: 1	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	1 ¹ / ₂
24	1520	2.5: 1	3	9 ¹ / ₂	43 ¹ / ₂	30	73 ¹ / ₂	48	3	1 ¹ / ₂
27	1930	2.5: 1	3 ¹ / ₄	10 ¹ / ₂	49 ¹ / ₂	24	73 ¹ / ₂	54	3 ¹ / ₄	1 ¹ / ₂
30	2190	2.5: 1	3 ¹ / ₂	12	54	19 ³ / ₄	73 ³ / ₄	60	3 ¹ / ₂	1 ¹ / ₂
36	4100	2.5: 1	4	15	63	34 ³ / ₄	97 ³ / ₄	72	4	1 ¹ / ₂
42	5380	2.5: 1	4 ¹ / ₂	21	63	35	98	78	4 ¹ / ₂	1 ¹ / ₂
48	6550	2.5: 1	5	24	72	26	98	84	5	1 ¹ / ₂
54	8240	2: 1	5 ¹ / ₂	27	65	33 ¹ / ₄	98 ¹ / ₄	90	5 ¹ / ₂	1 ¹ / ₂
60	8730	1.9: 1	6	35	60	39	99	96	5	1 ¹ / ₂
66	10710	1.7: 1	6 ¹ / ₂	30	72	27	99	102	5 ¹ / ₂	1 ¹ / ₂
72	12520	1.8: 1	7	36	78	21	99	108	6	1 ¹ / ₂
78	14770	1.8: 1	7 ¹ / ₂	36	90	21	111	114	6 ¹ / ₂	1 ¹ / ₂
84	18160	1.6: 1	8	36	90 ¹ / ₂	21	111 ¹ / ₂	120	6 ¹ / ₂	1 ¹ / ₂
90	20900	1.5: 1	8 ¹ / ₂	41	87 ¹ / ₂	24	111 ¹ / ₂	132	6 ¹ / ₂	6

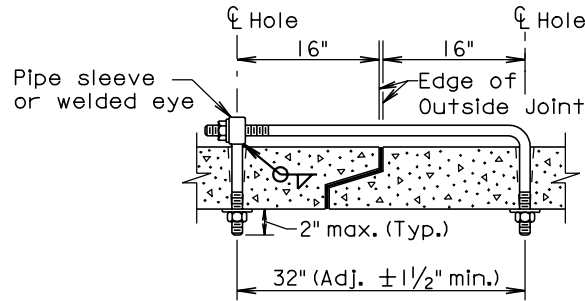
March 31, 2000

S D D O T	R. C. P. FLARED ENDS	PLATE NUMBER 450.10
		Sheet 1 of 1

Published Date: 1st Qtr. 2007

Plotting Date: 19-MAR-2007

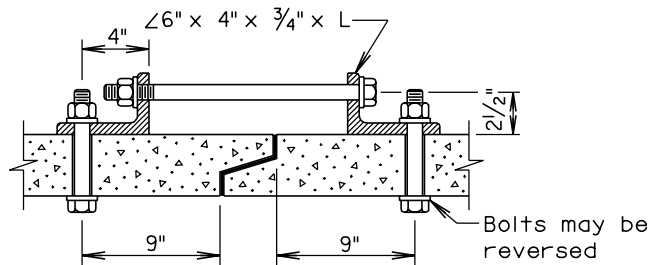
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ADJUSTABLE EYE BOLT TIE

GENERAL NOTES:

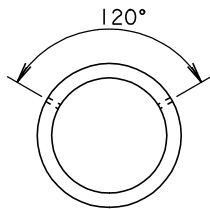
Tie bolts to be furnished with 2 washers and 2 nuts except for the $\frac{9}{16}$ " rod which has unthreaded legs.
 Use $\frac{9}{16}$ " rod diameter and $\frac{5}{8}$ " thread diameter for pipe wall thickness of 2" to $3\frac{1}{4}$ ".
 Use $\frac{1}{16}$ " rod diameter and $\frac{3}{4}$ " thread diameter for pipe wall thickness of $3\frac{1}{2}$ " to $6\frac{1}{2}$ ".
 Use $\frac{29}{32}$ " rod diameter and 1" thread diameter for pipe wall thickness of 7" and larger.



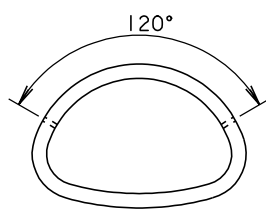
ANGLE AND BOLT TIE

GENERAL NOTES:

L = 4" for $\frac{3}{4}$ " Bolt. L = 6" for 1" Bolt.
 Use $\frac{3}{4}$ " Tie Bolts for pipe diameters less than 48".



**END VIEW
"CIRCULAR"**



**END VIEW
"ARCH"**

GENERAL NOTES:

In lieu of Tie Bolts detailed above, Tecktonius Fasteners or other type Tie Bolt connections may be installed if approved by the Engineer.
 There will be no separate measurement or payment for Tie Bolts.
 The cost of the Tie Bolts shall be incidental to the contract unit price per Foot for the corresponding Bid Item for R.C.P. and/or R.C.P. Arch.
 The first three Sections (both inlet and outlet) on R.C.P. and R.C.P. Arch up to and including the 78" diameter or equivalent pipe shall be tied with Tie Bolts. Pipe sizes above 78" diameter or equivalent diameter shall have all Sections tied. Each End Section is considered as one section.

March 31, 2000

Published Date: 1st Qtr. 2007

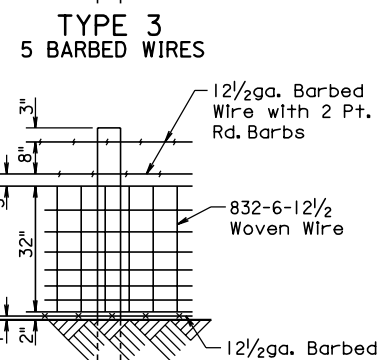
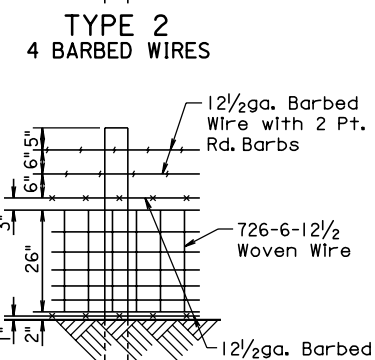
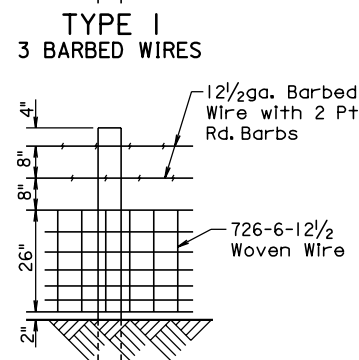
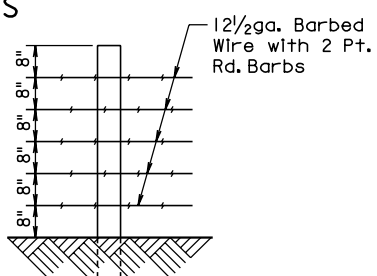
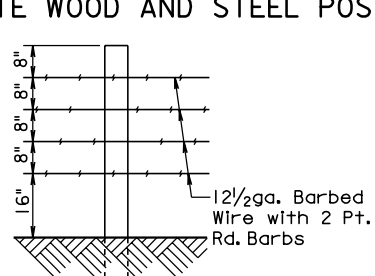
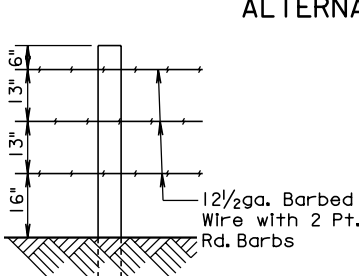
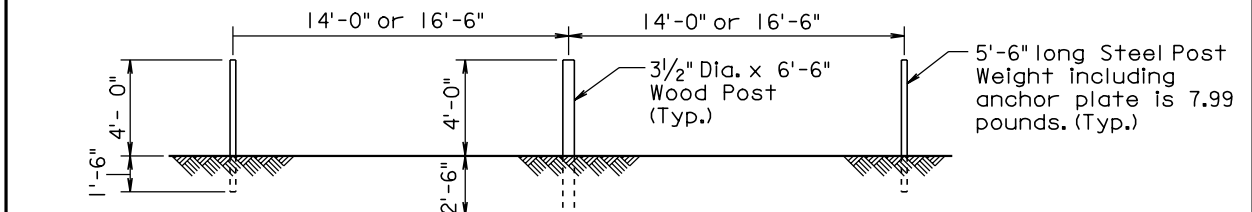
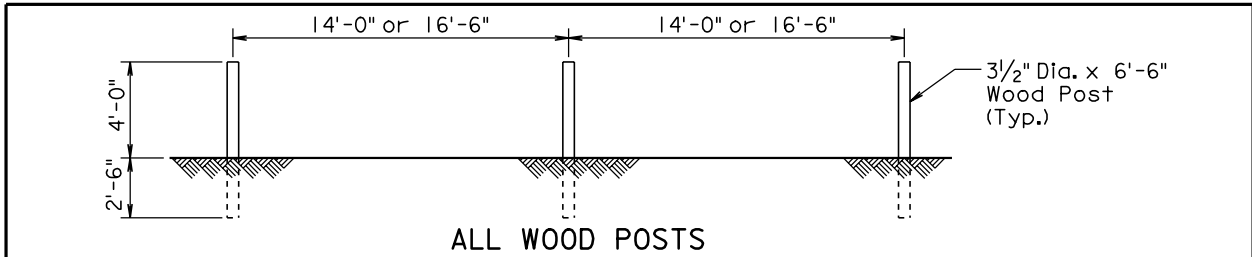
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**TIE BOLTS FOR
R.C.P. END SECTIONS**

**PLATE NUMBER
450.18**

Sheet 1 of 1

**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**



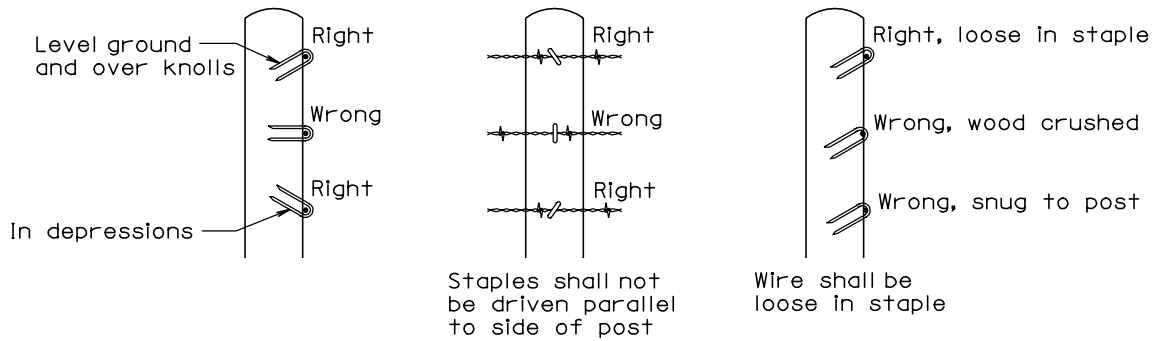
TYPE OF FENCE		BARBED WIRE		WOVEN WIRE	
		LINE POST SPACING	WIRE GAGE	NUMBER AND SHAPE OF BARBS	STYLE OR DESIGN NO.
1	3 Barbed Wires	16'-6"	12 1/2	2 Point Round	---
2	4 Barbed Wires	16'-6"	12 1/2	2 Point Round	---
3	5 Barbed Wires	16'-6"	12 1/2	2 Point Round	---
4	26" Woven Wire with 2 Barbed Wires	14'-0"	12 1/2	2 Point Round	726-6-12 1/2
5	26" Woven Wire with 4 Barbed Wires	14'-0"	12 1/2	2 wires with 2 Pt. Rd., 2 wires with 4 Pt. Rd.	726-6-12 1/2
6	32" Woven Wire with 3 Barbed Wires	14'-0"	12 1/2	2 wires with 2 Pt. Rd., 1 wire with 4 Pt. Rd.	832-6-12 1/2

GENERAL NOTES:
 Fence types designated on the plans that are followed by the letter S shall have smooth (barbless) wires.
 When type 5S or 6S is designated the bottom wire may be barbed, smooth, or left off.
 All degrees of curvature stated for fence are at centerline of roadway.
 December 23, 2004

S D D O T	RIGHT-OF-WAY FENCE	PLATE NUMBER 620.01
		Sheet 1 of 1

UserName - TRYAIN45

**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**



STAPLE INSTALLATION

GENERAL NOTES:

The Right-of-Way fence shall consist of barbed wire or a combination of woven wire and barbed wire. The barbed wire and/or woven wire shall be fastened to all wood posts or fastened to alternating wood and steel posts. Only wood posts shall be used for brace panels. Gates shall be of the type designated in the plans or as otherwise directed by the Engineer. Fence shall be constructed conforming to the details on the standard plates and in the plans unless otherwise directed by the Engineer.

Right-of-Way fence on Interstate Projects shall be constructed one foot within the Interstate Right-of-Way lines except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

Right-of-Way fence other than on Interstate Projects shall be constructed within one foot of the Right-of-Way on the Landowner's side except at bridge openings, cattle passes, and as otherwise directed by the Engineer.

Barbs shall be fabricated from zinc coated 14 ga. wire. Two point barbs shall be wrapped twice around one main strand at 4" spacings and the four point barbs shall be interlocked and wrapped around both main strands at 5" spacings.

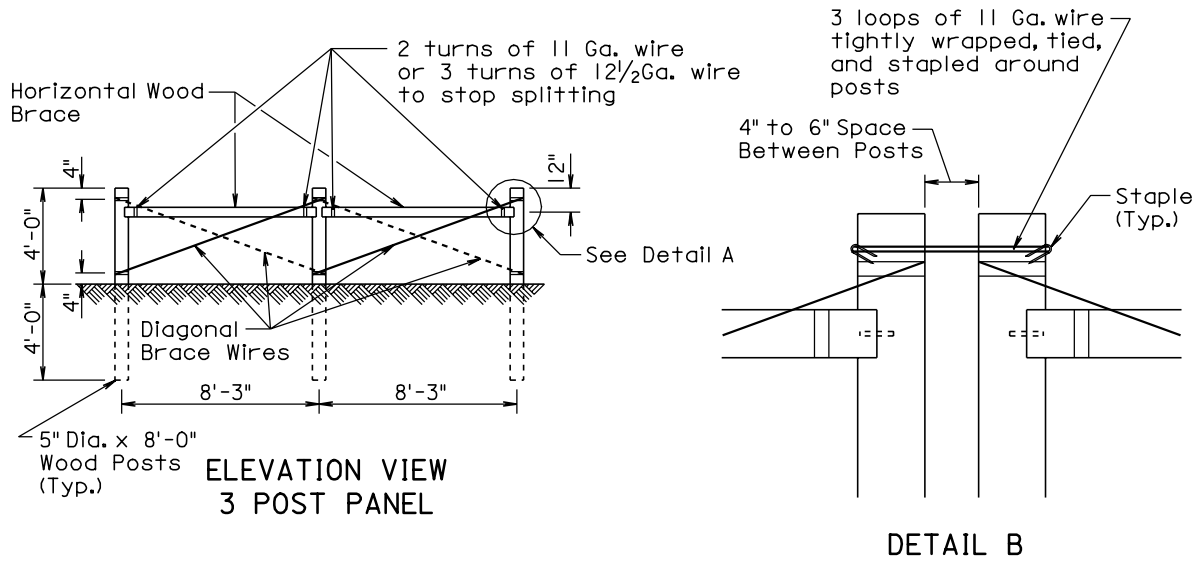
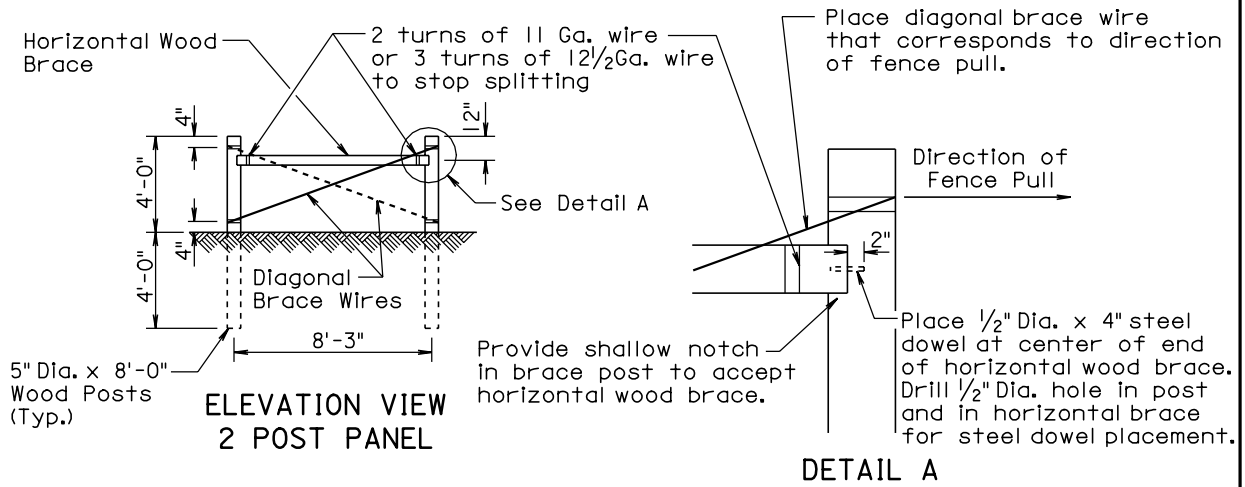
The gages of wire and wood post lengths and sizes are the minimum acceptable unless otherwise specified in the plans. The tolerances for steel posts shall be as stated in AASHTO M281. Woven wire shall conform to design and specifications of ASTM A116 and barbed wire shall conform to ASTM A121.

December 23, 2004

<i>Published Date: 1st Qtr. 2007</i>	S D D O T	STAPLE INSTALLATION AND GENERAL RIGHT-OF-WAY FENCE NOTES	PLATE NUMBER 620.02
			Sheet 1 of 1

Plotting Date: 19-MAR-2007

**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**



GENERAL NOTES:

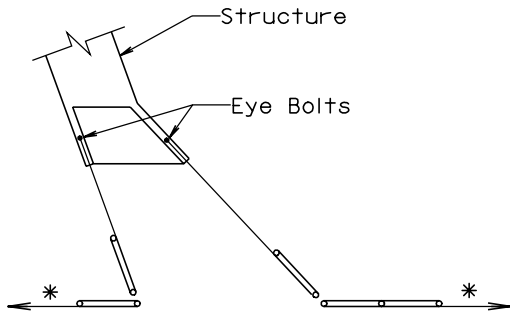
- Two Post Panels shall be installed at least every 1320' between corners.
- Two Post Panels shall be installed at any sharp vertical angle crest points and as directed by the Engineer.
- Horizontal wood braces shall consist of 4" dia. x 8' wood posts or rough 4" x 4" x 8' timbers.
- Diagonal brace wires shall be fabricated with 4 strands of 9 Ga. galvanized wire twisted tight. The diagonal brace wires shall be installed in accordance with the direction of the fence pull. Two diagonal brace wires are required if fence pull is in both directions.

December 23, 2004

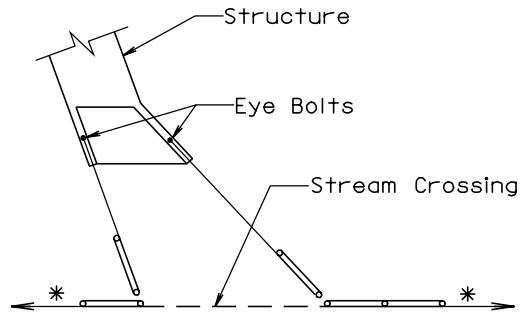
<p>S D D O T</p>	<p>BRACE PANELS AND APPLICATIONS OF BRACE PANELS</p>	<p>PLATE NUMBER 620.03</p>
		<p>Sheet 1 of 3</p>

Published Date: 1st Qtr. 2007

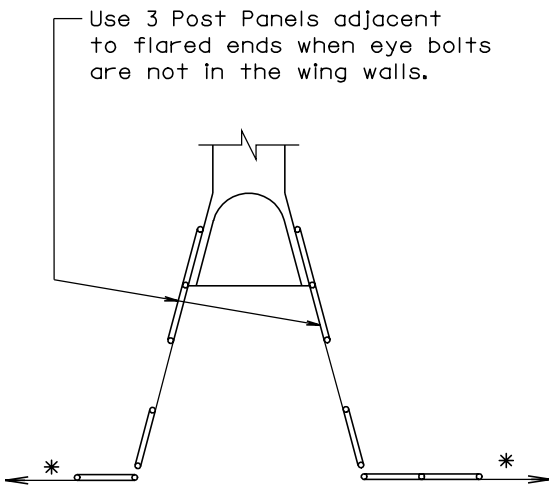
Plotting Date: 19-MAR-2007



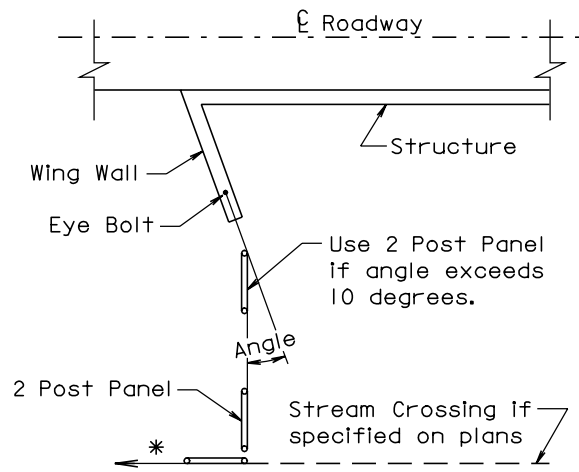
R.C. BOX CULVERT
 OR CATTLE PASS



STRUCTURE WITH STREAM
 CROSSING FENCE



R.C. BOX CULVERT
 OR CATTLE PASS



BRIDGE

* If fence length is less than 600' to next corner use a 2 post panel.
 * If fence length is greater than 600' use a 3 post panel.

March 31, 2000

Published Date: 1st Qtr. 2007

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BRACE PANEL APPLICATIONS AT STRUCTURES

PLATE NUMBER
 620.04

Sheet 1 of 1

Plotting Date: 19-MAR-2007

**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**

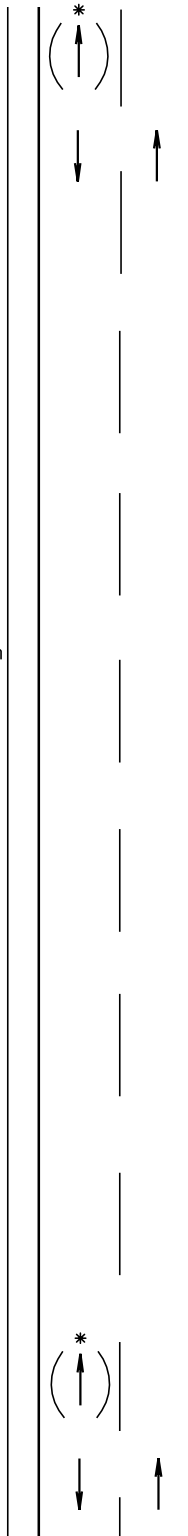
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000





July 1, 2005

<p><i>Published Date: 1st Qtr. 2007</i></p>	<p>S D D O T</p>	<p>GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER</p>	<p>PLATE NUMBER 634.01</p>
			<p>Sheet 1 of 1</p>

Plotting Date: 19-MAR-2007

**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45 - 50	500	50
55	750	50
60 - 65	1000	50

-  Flagger
-  Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) shall be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer. During daylight hours, 42" cones may be used in lieu of drums or type II barricades along the centerline.

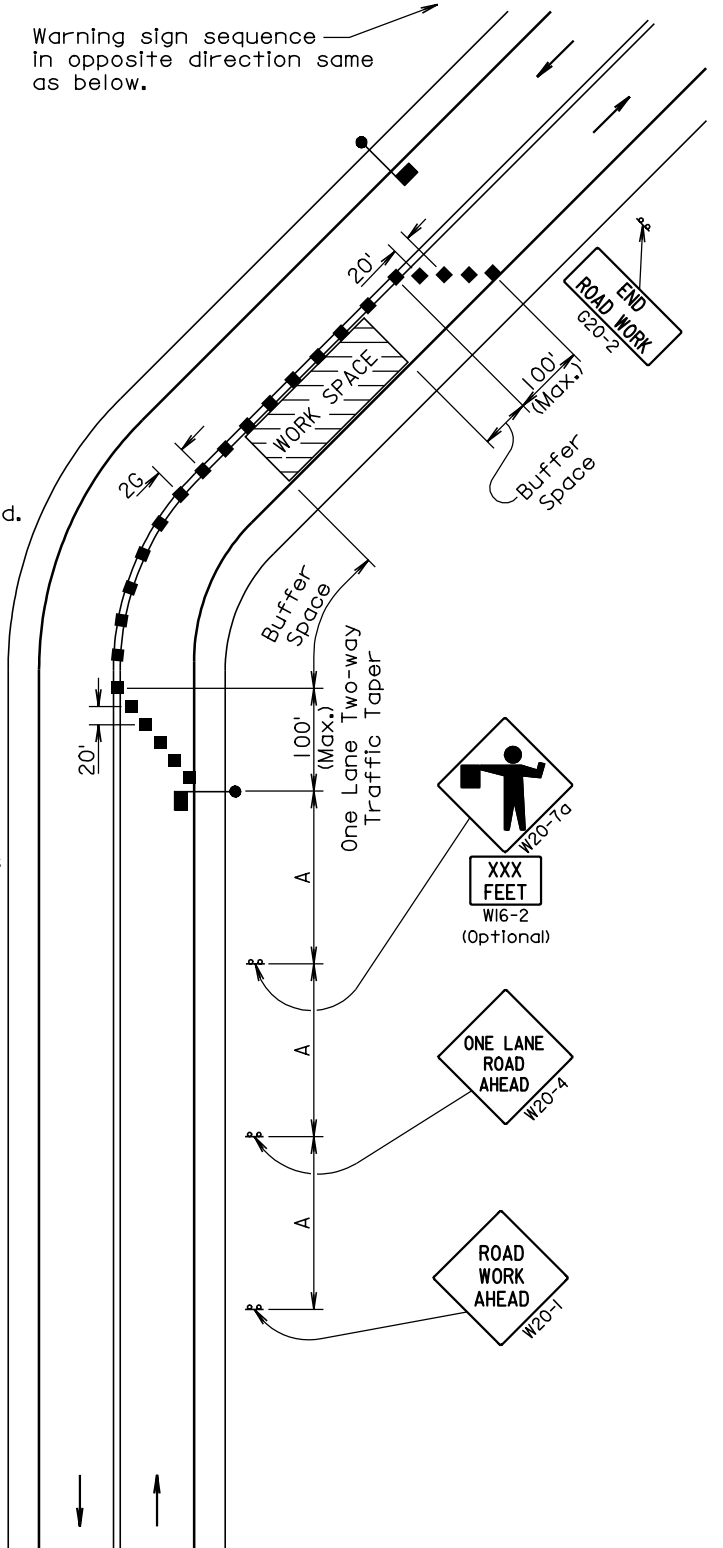
2-0-2
ROAD WORK
END

Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.

Channelizing devices and flaggers shall be used at intersecting roads to control intersecting road traffic as required.

The buffer space shall be a sufficient length so that the channelizing devices are visible to approaching traffic.

Warning sign sequence in opposite direction same as below.



June 26, 2006

Published Date: 1st Qtr. 2007

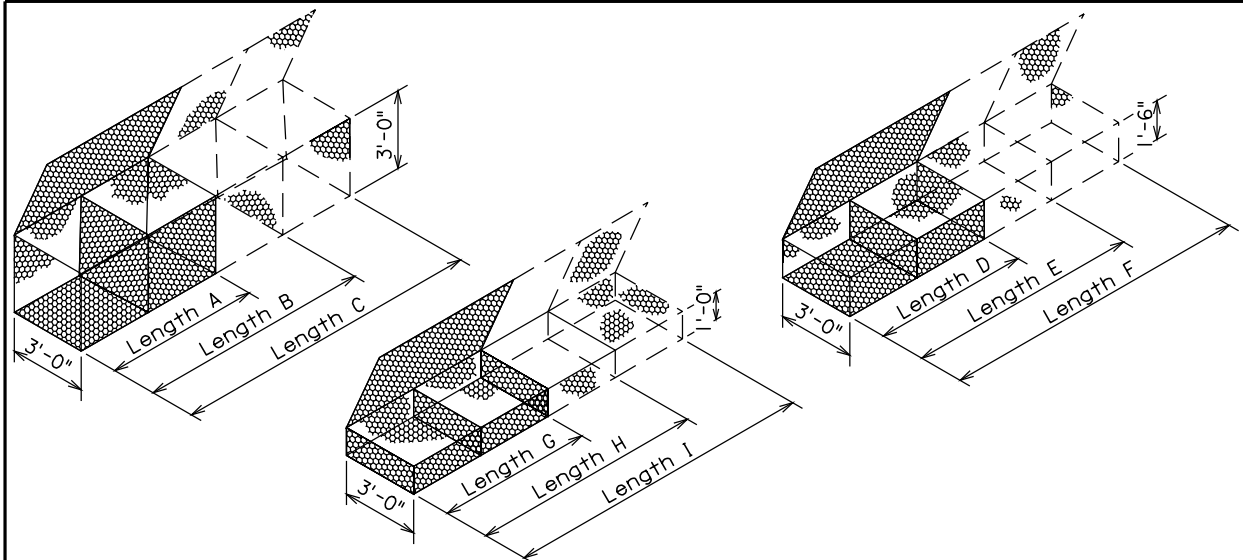
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**GUIDES FOR TRAFFIC CONTROL DEVICES
LANE CLOSURE WITH FLAGGER PROVIDED**

PLATE NUMBER
634.23

Sheet 1 of 1

Plotting Date: 19-MAR-2007



GABION DETAILS
 STANDARD SIZES

SIZE	LENGTH	WIDTH	HEIGHT	NUMBER OF CELLS	CAPACITY, Cu. Yd.
A	6'-0"	3'-0"	3'-0"	2	2.0
B	9'-0"	3'-0"	3'-0"	3	3.0
C	12'-0"	3'-0"	3'-0"	4	4.0
D	6'-0"	3'-0"	1'-6"	2	1.0
E	9'-0"	3'-0"	1'-6"	3	1.5
F	12'-0"	3'-0"	1'-6"	4	2.0
G	6'-0"	3'-0"	1'-0"	2	0.7
H	9'-0"	3'-0"	1'-0"	3	1.0
I	12'-0"	3'-0"	1'-0"	4	1.3

Above Dimensions subject to mill tolerances.

GENERAL NOTES:

Lacing and internal connecting wire shall be 0.0866 inch diameter steel wire ASTM A641 Class 3 soft temper measured after galvanizing and for PVC coated gabions shall be 0.0866 inch diameter steel wire measured after galvanizing but before PVC coating.

The lacing procedure is as follows:

1. Cut a length of lacing wire approximately 1 1/2 times the distance to be laced but not exceeding 5 feet.
2. Secure the wire terminal at the corner by looping and twisting.
3. Proceed lacing with alternating single and double loops at a spacing not to exceed 6 inches.
4. Securely fasten the other lacing wire terminal.

Wire lacing or interlocking type fasteners shall be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions shall be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing shall conform to ASTM A641-92 Class 3 coating. Fasteners shall also be in accordance with ASTM A764, Class II, Type III.

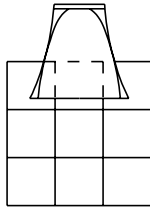
Interlocking fasteners for PVC coated gabions shall be high tensile 0.120 inch diameter stainless steel wire conforming to ASTM A313, Type 302, Class I. The spacing of the interlocking fasteners during all phases of assembly and construction shall not exceed 6 inches. All fasteners shall be placed where the mesh weaves around the selvage wire at the vertical and horizontal joints.

June 26, 2001

S D D O T	BANK AND CHANNEL PROTECTION GABIONS	PLATE NUMBER 720.01
	Published Date: 1st Qtr. 2007	Sheet 1 of 1

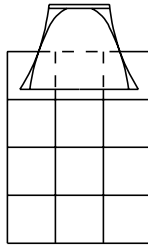
**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**

12", 18", & 24" RCP & CMP
12", 18", & 24" RCP Arch & CMP Arch



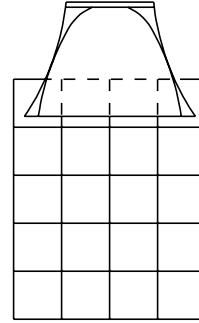
4.5 Cu. Yds.

30" & 36" RCP & CMP
30" & 36" RCP Arch & CMP Arch



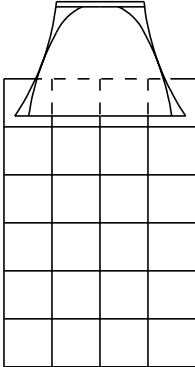
6.0 Cu. Yds.

42" RCP & CMP
42" RCP Arch & CMP Arch



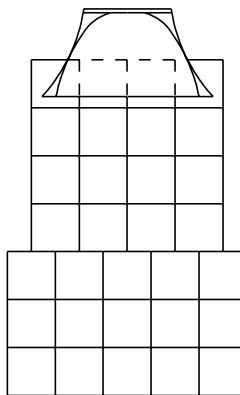
10.0 Cu. Yds.

48" & 54" RCP & CMP
48" & 54" RCP Arch & CMP Arch



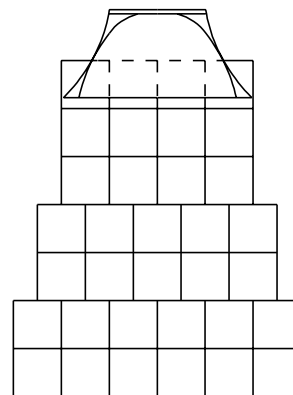
12.0 Cu. Yds.

60" RCP & CMP
60" RCP Arch & CMP Arch



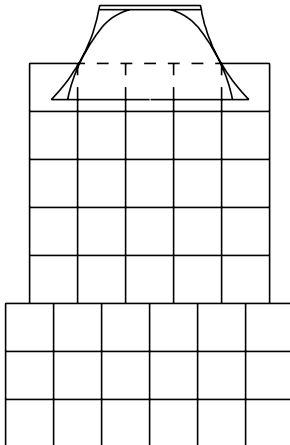
15.5 Cu. Yds.

66" RCP & CMP



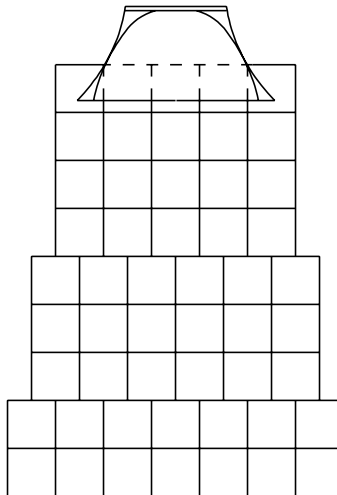
17.0 Cu. Yds.

72" RCP & CMP
72" RCP Arch & CMP Arch



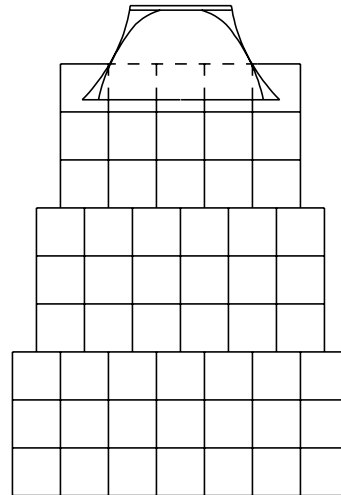
21.5 Cu. Yds.

78" RCP & CMP



26.0 Cu. Yds.

84" RCP & CMP



27.0 Cu. Yds.

GENERAL NOTES:

Gabions at outlets of C. M. pipe and R. C. pipe shall be placed under the end section a distance of 2' from the outlet end of the section. For C. M. pipe end section installations, the upper fabric of the gabions shall be modified to accommodate the metal end section in a manner approved by the Engineer.

Quantities shown on this standard plate are based on standard gabion sizes D, E, and F (See Standard Plate 720.01).

June 26, 2001

Published Date: 1st Qtr. 2007

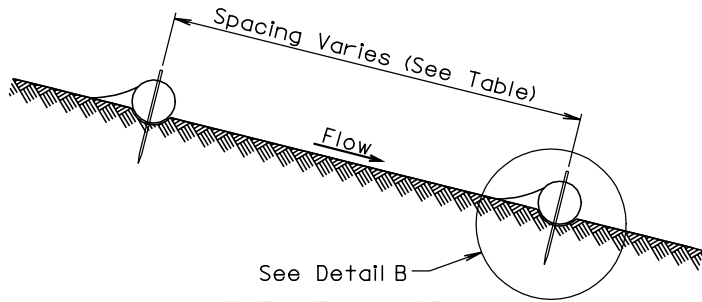
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**BANK AND CHANNEL PROTECTION GABION
PLACEMENT UNDER PIPE END SECTIONS**

**PLATE NUMBER
720.03**

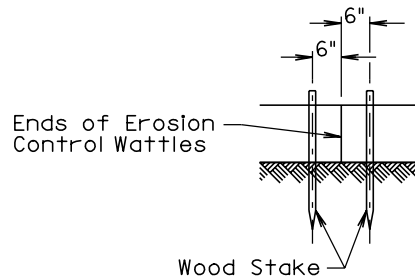
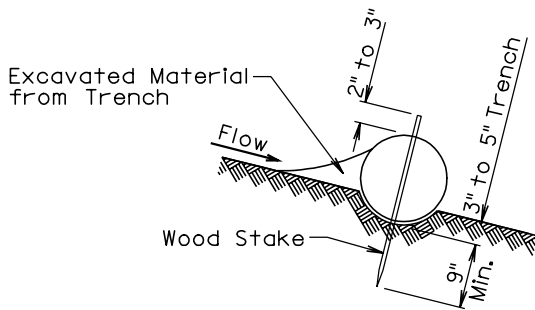
Sheet 1 of 1

Plotting Date: 19-MAR-2007



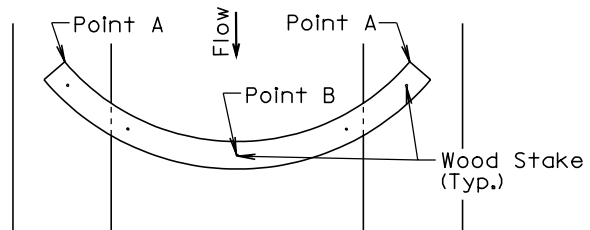
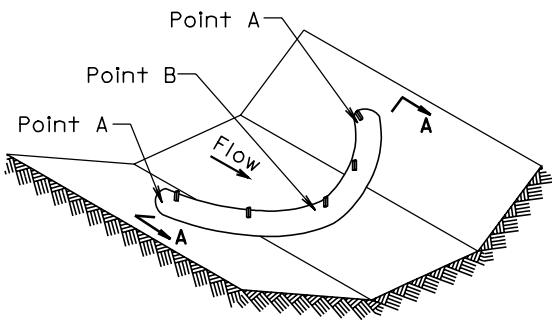
CUT OR FILL SLOPE INSTALLATION	
Slope	Spacing (Ft)
1:1	10
2:1	20
3:1	30
4:1	40

ELEVATION VIEW
 CUT OR FILL SLOPE INSTALLATION



DETAIL B
 (TYPICAL OF ALL INSTALLATIONS)

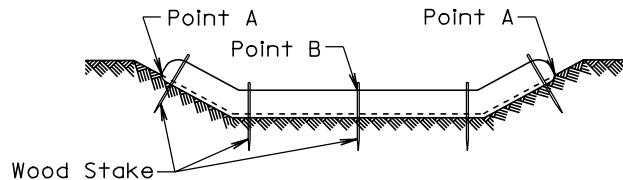
DETAIL C



ISOMETRIC VIEW
 DITCH INSTALLATION

PLAN VIEW
 DITCH INSTALLATION

DITCH INSTALLATION	
Grade	Spacing (Ft)
2%	150
3%	100
4%	75
5%	50



SECTION A-A

December 23, 2004

Published Date: 1st Qtr. 2007

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EROSION CONTROL WATTLE

PLATE NUMBER
 734.06

Sheet 1 of 2

**018-292, 044-292, 046-292 & 081-292
HUTCHINSON, TURNER & YANKTON COUNTIES**

GENERAL NOTES:

At cut or fill slope installations, wattles shall be installed along the contour and perpendicular to the water flow.

At ditch installations, point A must be higher than point B to ensure that water flows over the wattle and not around the ends.

The Contractor shall dig a 3" to 5" trench, install the wattle tightly in the trench so that daylight can not be seen under the wattle, and then compact the soil excavated from the trench against the wattle on the uphill side. See Detail B.

The stakes shall be 1"x2" or 2"x2" wood stakes, however, other types of stakes such as rebar may be used only if approved by the Engineer. The stakes shall be placed 6" from the ends of the wattles and the spacing of the stakes along the wattles shall be 3' to 4'.

When installing running lengths of wattles, the Contractor shall butt the second wattle tightly against the first and shall not overlap the ends. See Detail C.

The Contractor and Engineer shall inspect the erosion control wattles once every week and within 24 hours after every rainfall event greater than 1/2". The Contractor shall remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

Sediment removal, disposal, or necessary shaping shall be as directed by the Engineer. All costs for removing accumulated sediment, disposal of sediment, and necessary shaping shall be incidental to the contract unit price per cubic yard for "Remove Sediment".

All costs for furnishing and installing the erosion control wattles including labor, equipment, and materials shall be incidental to the contract unit price per foot for the corresponding erosion control wattle bid item.

All costs for removing the erosion control wattle from the project including labor, equipment, and materials shall be incidental to the contract unit price per foot for "Remove Erosion Control Wattle".

December 23, 2004

<i>Published Date: 1st Qtr. 2007</i>	S D D O T	EROSION CONTROL WATTLE	<i>PLATE NUMBER</i> 734.06
			<i>Sheet 2 of 2</i>

Plotting Date: 19-MAR-2007