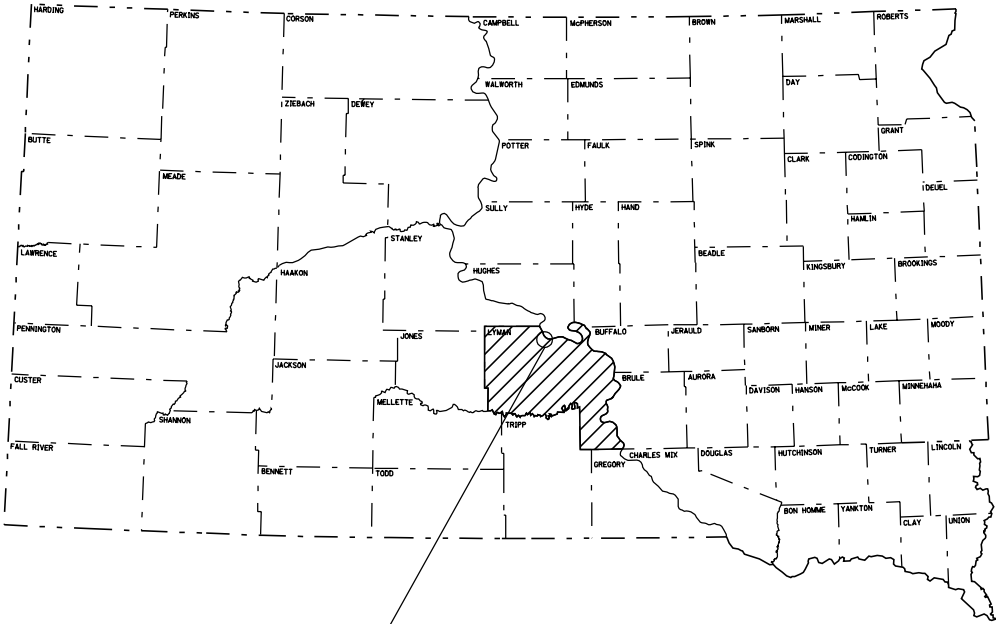
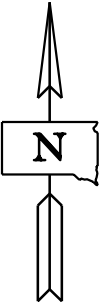


STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	1806-351	1	18

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
PROJECT 1806-351
SD HIGHWAY 1806
LYMAN COUNTY
CATTLE PASS EXTENSION, RIPRAP AND DOWNSPOUT
PCN 10X6



PROJECT

INDEX OF SHEETS

SHEET NO. 1	TITLE SHEET AND LAYOUT MAP
SHEET NOS. 2 THRU 4	ESTIMATE OF QUANTITIES AND PLAN NOTES
SHEET NOS. 5 THRU 6	SITE A PLAN SHEETS AND CROSS SECTION
SHEET NOS. 7 THRU 12	SITE B PLAN SHEETS AND CROSS SECTIONS
SHEET NOS. 13 THRU 18	STANDARD PLATES

DESIGN DESIGNATION

ADT (2007)	180
ADT (2027)	275
DHV	40
D	50%
T DHV	6.0%
T ADT	13.2%
V(m. p. h.)	70

Acres Disturbed: 0.53 Acres
Missouri River

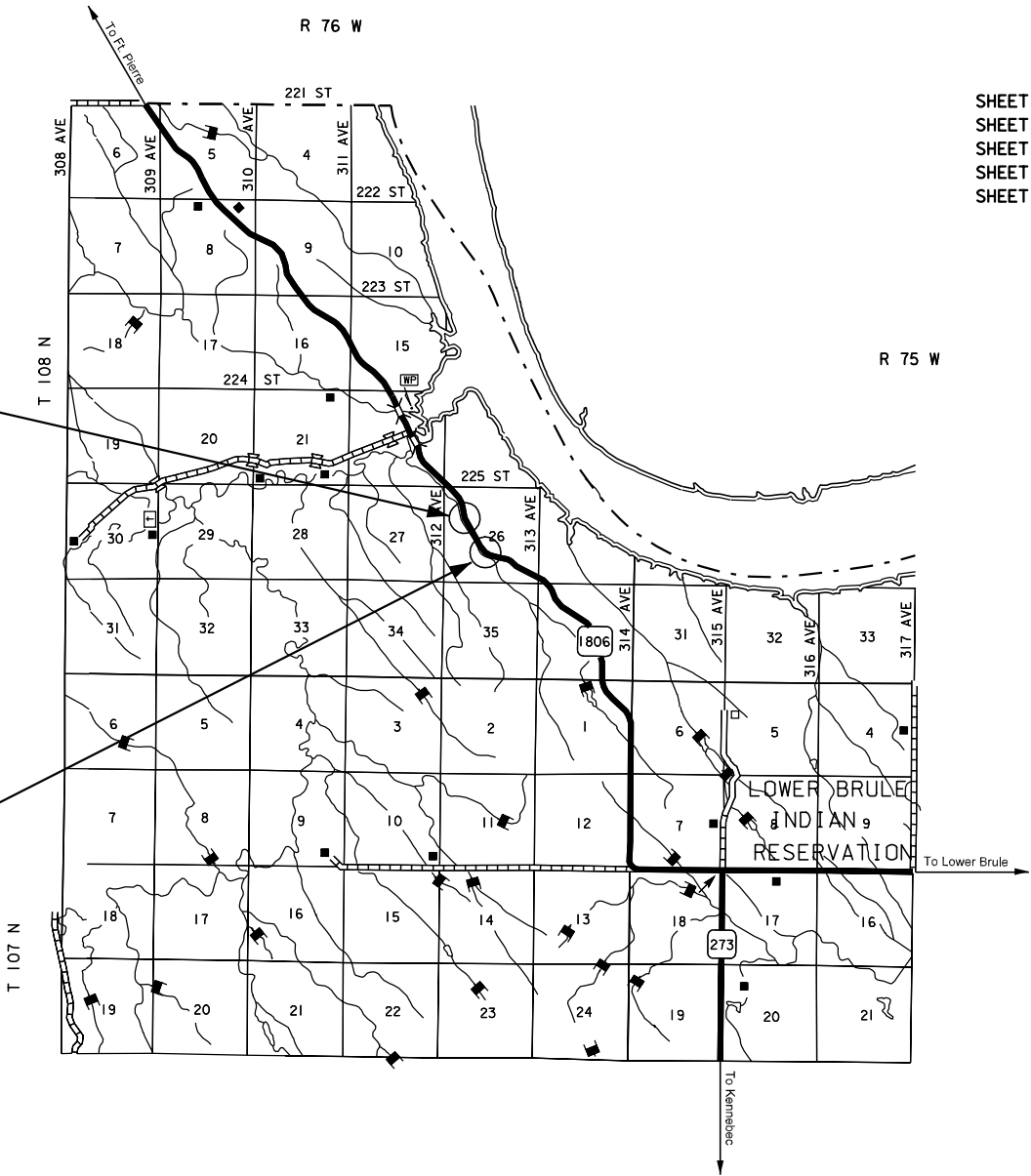
LEGEND

STATE AND NATIONAL LINE	----
COUNTY LINE	----
SECTION LINE	----
TEMPORARY EASEMENT	----
R.O.W. LINE	----
WORK LIMITS	----

STORM WATER PERMIT
(None Required)

SITE A MRM 144.2
At a culvert location
within Sec. 26, T 108 N,
R 76 W of the 5th P.M.

SITE B MRM 143.7
At a cattle pass
within Sec. 26, T 108 N,
R 76 W of the 5th P.M.



ESTIMATE OF QUANTITIES

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E0500	Remove Pipe Culvert	12	Ft
110E0590	Remove Cattle Pass	12	Ft
110E7510	Remove Pipe End Section for Reset	1	Each
110E7540	Remove Cattle Pass End Section for Reset	2	Each
110E7802	Remove Fence for Reset	750	Ft
120E0010	Unclassified Excavation	2,035	CuYd
120E0600	Contractor Furnished Borrow	1,150	CuYd
230E0010	Placing Topsoil	75	CuYd
230E0020	Placing Contractor Furnished Topsoil	50	CuYd
450E4759	18" CMP 16 Gauge, Furnish	112	Ft
450E4760	18" CMP, Install	112	Ft
450E5010	18" CMP Elbow, Furnish	2	Each
450E5011	18" CMP Elbow, Install	2	Each
450E9001	Reset Pipe End Section	1	Each
560E5003	5'x7' Reinforced Concrete Cattle Pass, Furnish	42.0	Ft
560E5004	5'x7' Reinforced Concrete Cattle Pass, Install	42.0	Ft
560E5101	Reset Reinforced Concrete Cattle Pass End Section	2	Each
620E0515	Type 1A Temporary Fence	1,300	Ft
620E4100	Reset Fence	750	Ft
634E0100	Traffic Control	340	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
700E0310	Class C Riprap	2,000.0	Ton
720E1015	Bank and Channel Protection Gabion	4.5	CuYd
730E0204	Type C Permanent Seed Mixture	5	Lb
732E0100	Mulching	0.6	Ton
734E0103	Type 3 Erosion Control Blanket	160	SqYd
734E0602	Low Flow Silt Fence	125	Ft
734E0610	Mucking Silt Fence	9	CuYd
734E0620	Repair Silt Fence	40	Ft
831E0110	Type B Drainage Fabric	2,100	SqYd

SPECIFICATIONS

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

GENERAL CONSTRUCTION NOTES

Damage to the driving surface or any other portion of the Right-of-Way due to the Contractor's Operation shall be repaired by the Contractor at no expense to the State.

Any existing pipe removed as part of the contract shall become the property of the contractor.

PROJECT WORK HOURS

The Contractor may perform work only during daylight hours unless additional hours are approved by the Engineer.

LOCATION AND SCOPE OF WORK

This project is located on SD1806 from approximately MRM 143.7 to approximately MRM 144.2. The work required for this project includes, but is not limited to, the following items, not listed in order of execution.

1. Install Downspout
2. Extend Cattle Pass
3. Slope Flattening
4. Riprap
5. Erosion Control

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility companies to avoid damage to existing facilities.

CLEARING

Before clearing activities begin, the Contractor shall contact the Engineer to determine the limits of clearing for the project. The Engineer will indicate which trees and shrubs that will remain within the limits of work. If the trees or shrubs that are suppose to remain within the limits of work are damaged or destroyed by the Contractor, the Contractor shall replace them with the same size and type at the Contractor's expense.

WASTE DISPOSAL SITE

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/demolition debris may not be disposed of within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Engineer.

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

WASTE DISPOSAL SITE (continued)

1. Construction/demolition debris consisting of concrete, asphalt concrete, or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction/demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating "No Dumping Allowed".
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

All costs associated with furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates, and signs), and reclamation of the waste disposal site(s) shall be incidental to the various contract items.

CONTRACTOR FURNISHED BORROW

The Contractor shall provide a suitable site for Contractor furnished borrow material. The Contractor is responsible for obtaining all required permits and clearances for the borrow site.

To obtain 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 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. Jim Donohue, State Archaeological Research Center at 605-394-1937 shall be contacted for a literature search.

If borrow material is furnished from within the current geographical reservation boundaries or historic boundaries of the Lake Traverse, Yankton, or Flandreau-Santee reservations, the Contractor shall obtain THPO (Tribal Historical Preservation Office) clearance from the Tribal Cultural Resources Officer. This requirement is in addition to the SHPO clearance. If no Tribal contact exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

CONTRACTOR FURNISHED BORROW (continued)

To facilitate SHPO and THPO responses, the Contractor should submit a cultural resources survey report or the results of the literature search along with a legal description of the site, a topographical map with the site clearly marked, and evidence of prior site disturbance to Terrence G. Keller, DOT Environmental Supervisor, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3721). Allow 30 days from the date this information is submitted to the Environmental Supervisor for SHPO approval. The Contractor is responsible for obtaining all required permits and clearances for the borrow and/or waste disposal site(s) prior to commencing construction activities at the borrow and/or waste disposal site(s). The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

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

The Contractor will be required to furnish borrow material on this project. Borrow material shall be furnished in accordance with Section 120 of the Standard Specifications. The Contractor will be required to obtain his/her own borrow sources. The borrow shall be approved by the Engineer.

Prior to placement of fill dirt the Contractor will be required to remove all available topsoil and replace it following the placement of the new fill material. Removal and replacement of topsoil will not be measured. Cost for removal and replacement of topsoil shall be incidental at the contract unit price per cubic yard for “Contractor Furnished Borrow”.

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment, and all costs for this water shall be incidental to the contract unit price per cubic yard for “Contractor Furnished Borrow”.

Excavation quantities are computed using the volume of embankment plus 35 percent for shrinkage.

Plans quantity will be the basis of measurement and payment.

Included in the Estimate of Quantities are 1150 cubic yards of Contractor Furnished Borrow.

PIPE FOR DOWNSPOUTS

High density polyethylene pipe may be substituted for corrugated metal pipe downspouts at no additional cost to the State. All necessary connections and transitions shall be approved by the Engineer.

Acceptance of high density polyethylene pipe will be by certification.

The end sections for the high density polyethylene pipe shall be metal, conform to the type of end section as shown in the plans, and be compatible with the high density polyethylene pipe.

TYPE B DRAINAGE FABRIC

Type B Drainage Fabric will be placed below the riprap. An estimated 2020 square yards will be needed.

GRADING OPERATIONS

The estimated cubic yards of excavation and/or embankment required to construct the embankment for the downspout, cattle pass extension and riprap are included in the earthwork computations.

Water for Embankment is estimated at the rate of 10 gallons of water per cubic yard of Embankment, and all costs for this water shall be incidental to the contract unit price per cubic yard for “Unclassified Excavation”.

Temporary fences shall be placed ahead of work on the downspout, cattle pass extension and shaping for riprap unless otherwise directed by the Engineer.

SHRINKAGE FACTOR: Embankment +35%

EMBANKMENT MOISTURE AND DENSITY REQUIREMENTS

Compaction shall to the satisfaction of the Engineer.

SALVAGING, STOCKPILING, AND PLACING TOPSOIL

The thickness will be approximately 4 inches.

The quantity of topsoil within the construction limits of Site B will not be field measured. Plans quantity will be the basis of payment, and will be in full compensation for salvaging, stockpiling and placing the required depth of topsoil.

PLACING CONTRACTOR FURNISHED TOPSOIL

It is anticipated that a larger volume of topsoil will be needed for the new grade at Site A than can be salvaged from the existing grade. The Contractor will be required to furnish and place 4 inches of topsoil on roadway inslopes and areas as determined by the Engineer during construction.

The quantity of topsoil furnished and placed within the construction limits at Site A will not be field measured. Plans quantity will be the basis of payment, and will be in full compensation for furnishing and placing the required depth of topsoil.

DRILLS

In addition to the drills specified in Section 730 of the Standard Specifications, other types of drills including no-till drills will be allowed as long as the seed is planted at a depth of ¼” to ½” .

FERTILIZING

Application of fertilizer will not be required on this project.

PERMANENT SEEDING

The areas to be seeded comprise of all newly graded areas within the project limits except for the top of roadways and temporary easements under cultivation.

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, Rosana	16
Canada Wildrye	Mandan	2
Total:		18

MULCHING (GRASS HAY OR STRAW)

Bales with noxious weed contamination will be rejected and the Contractor will be required to remove the contaminated bales from the project.

LOW FLOW SILT FENCE

The low flow silt fence fabric provided shall be from the approved product list. The approved product list for low flow silt fence may be viewed at the following internet site:

<http://www.state.sd.us/Applications/HC54ApprovedProducts/main.asp>

Low flow silt fence shall be placed at the locations noted on the plan sheets and at locations that will minimize siltation of adjacent streams, lakes, dams, or drainage areas as determined by the Engineer during construction. Refer to Standard Plate 734.04 for details.

MUCKING SILT FENCE

Mucking silt fence shall consist of removing muck trapped by the silt fence and spreading the material evenly over the adjacent area to conform to the existing grade.

EROSION CONTROL BLANKET

The Contractor shall install erosion control blanket at the locations specified on the plan sheets. All cost for shaping for erosion control blanket including labor and equipment shall be incidental to the contract unit price per square yard for “Type 3 Erosion Control Blanket”.

The erosion control blanket provided shall be from the approved product list. The approved product list for erosion control blanket may be viewed at the following internet site:

<http://www.state.sd.us/Applications/HC54ApprovedProducts/main.asp>

The Contractor shall install erosion control blanket according to the manufacturer’s installation instructions.

GENERAL MAINTENANCE OF TRAFFIC

Removing, relocating, covering, salvaging and resetting of existing traffic control devices, including delineation, 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.

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

ITEMIZED LIST FOR TRAFFIC CONTROL

Sign Code	Sign Size	Description	Number Required	UNITS PER SIGN	UNITS
G20-2	36" X 18"	END ROAD WORK	4	17	68
W20-1	48" X 48"	ROAD WORK ##### FT. OR AHEAD	4	34	136
W21-3	48" X 48"	ROAD MACHINERY AHEAD	2	34	68
W21-5	48" X 48"	SHOULDER WORK	2	34	68
TOTAL UNITS					340

CONTROL DATA

Name	Northing	Easting	Elevation
CP1	657278.792	2076106.222	1484.71
CP2	655902.208	2076838.551	1510.26
BM #5	660235.678	2073632.515	1424.76
BM #7	661521.729	2073249.156	1427.06

ALIGNMENTS
SITE A

	STATION	NORTHING	EASTING
Element: Linear			
POB (1)	0+00.00	657085.621	2076361.257
PI (7)	0+94.24	657163.151	2076307.683
Tangent Direction:	N 34^38'41" W		
Tangent Length:	94.24		

Element: Linear			
PI (7)	0+94.24	657163.151	2076307.683
POE (2)	1+73.97	657225.203	2076257.618
Tangent Direction:	N 38^53'52" W		
Tangent Length:	79.73		

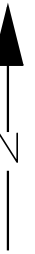
SITE B

	STATION	NORTHING	EASTING
Element: Linear			
POB (3)	0+00.00	654668.681	2077466.135
POE (5)	8+47.39	655395.316	2077030.172
Tangent Direction:	N 30^57'46" W		
Tangent Length:	847.39		

SITE A

Sec. 26 - T108N - R76W

STATE OF SOUTH DAKOTA	PROJECT	SHEET	TOTAL SHEETS
	1806-351	5	18



Design Alignment Data

Element: Linear	STATION	NORTHING	EASTING
POB (1)	0+00.00	657085.621	2076361.257
PI (7)	0+94.24	657163.151	2076307.683
Tangent Direction:		N 34°38'41" W	
Tangent Length:		94.24	
Element: Linear	STATION	NORTHING	EASTING
PI (7)	0+94.24	657163.151	2076307.683
POE (2)	1+73.97	657225.203	2076257.618
Tangent Direction:		N 38°53'52" W	
Tangent Length:		79.73	

0+98 - 24.0' Lt. to 0+98 - 139.1' Lt.
 Remove 12' - 18" CMP
 Remove CMP Flared End for Reset
 Furnish and Install 112' - 18" CMP Downspout
 (38' & 74' Str. Pipe)
 2 - 10 Degree Elbows
 Reset 1 Flared End

Install 160 SqYds Type 3 Erosion Control Blanket on 3:1 Downspout Inslope
 Install 4.5 CuYds Bank & Channel Protection Gabions
 Contractor Furnished and Placed Topsoil 50 CuYds
 Remove & Reset 150' Type 2 ROW Fence
 Any fencing damaged during removal and storage will be replaced at the Contractors expense

Install 350' Temporary Fence Type 1A
 Contractor Furnished Borrow 1150 CuYds

Install 30' Low Flow Silt Fence

Parcel 1

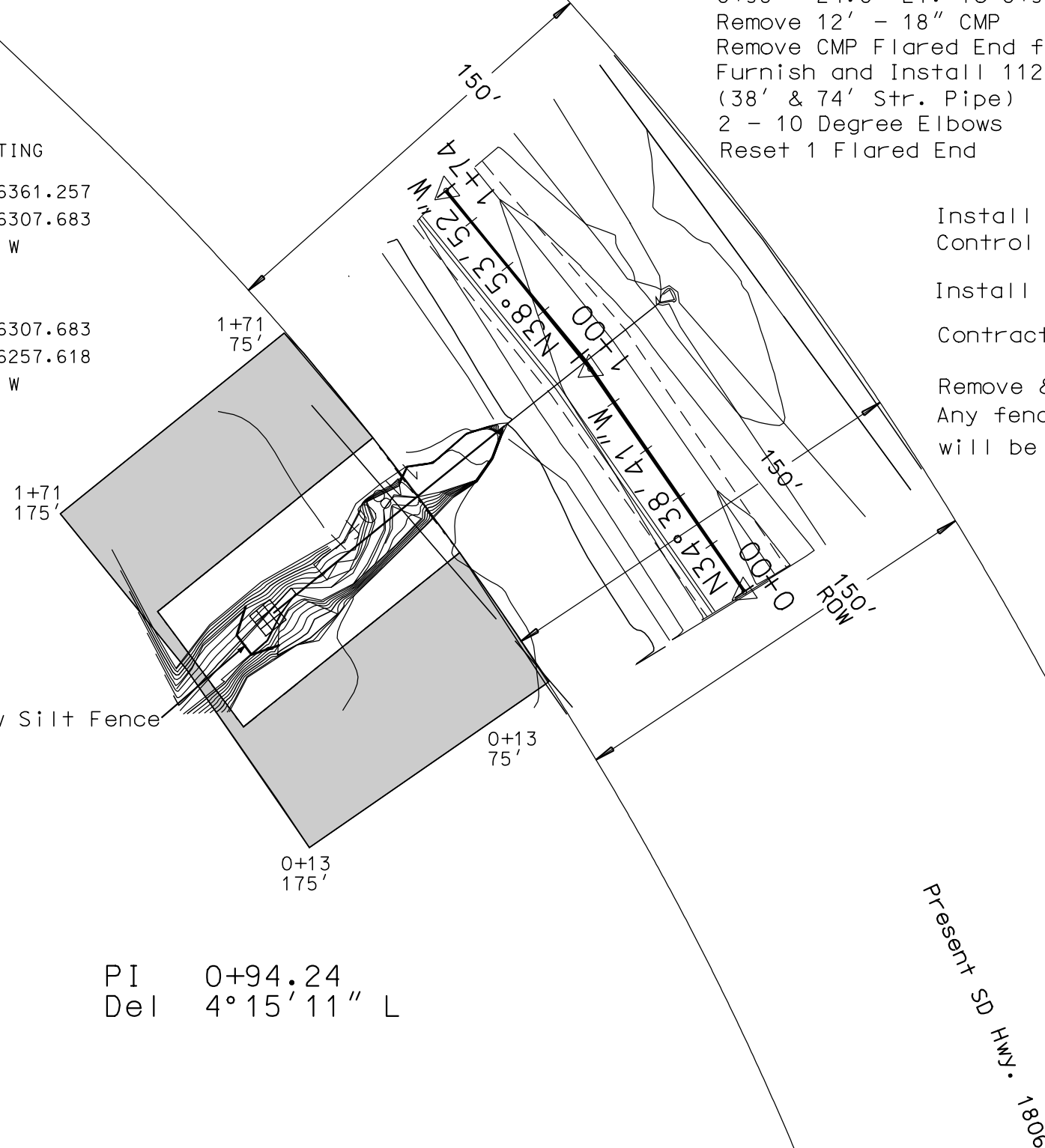
0+13 to 1+71 L
 Temporary Easement for Fill, Downspout and Bank and Channel Protection
 0.23 ac. more or less

Lower Brule Sioux Tribe, T4072
 NW1/4 of Sec. 26-T108N-R76W

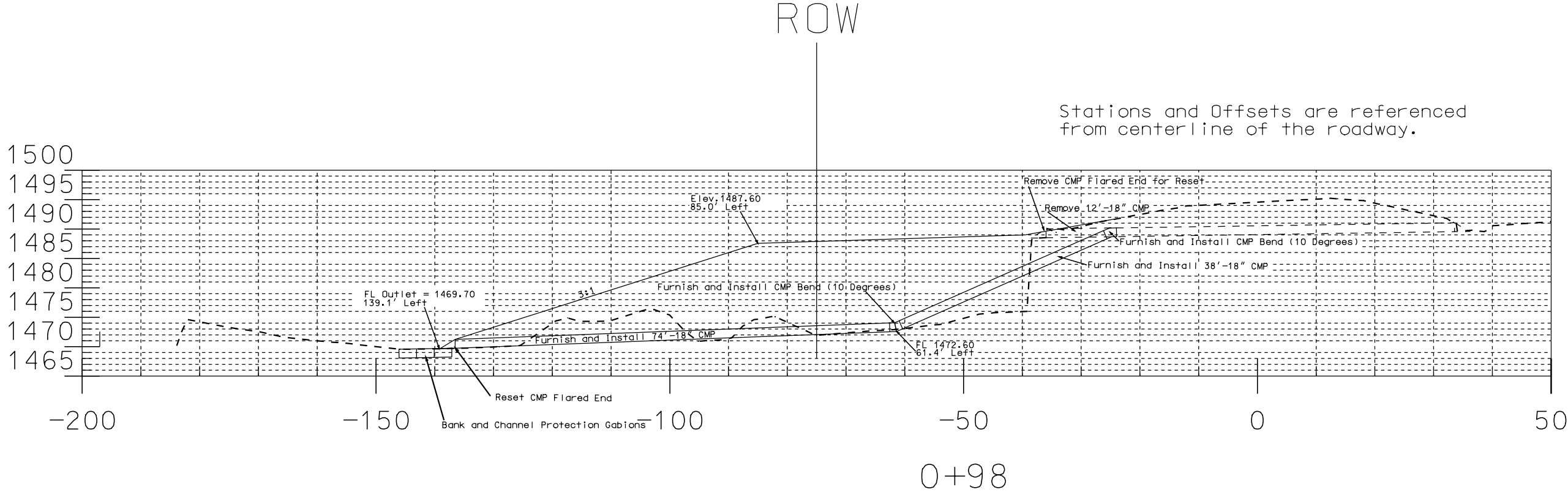
Parcel 1

0.11 acre (4829 sq ft) more or less.
 Permanent Easement

PI 0+94.24
 Del 4°15'11" L



S I T E A
Mainline Downspout
Pipe Cross Section



Design Alignment Data

Element:	Linear	STATION	NORTHING	EASTING
POB (3)		0+00.00	654668.681	2077466.135
POE (5)		8+47.39	655395.316	2077030.172
Tangent Direction:		N 30°57'46" W		
Tangent Length:		847.39		

Sec. 26 - T108N - R76W

3+07 Rt. Install 200'
Temporary Fence Type 1A
Sta. 4+50 to 5+00 Lt.
grade channel for positive flow

Install 1900 Ton of Class C Riprap
Sta. 4+00 Lt. to 6+50 Lt.

SITE B

Install 2020 SqYds Type B Drainage Fabric
Sta. 4+00 Lt. to 6+50 Lt. under Riprap

Sta. 3+10-5.9° LHF Rt. Remove
Cattle Pass End Section for Reset

Sta. 3+10-5.9° LHF Rt. Furnish and
Install 24' 5'x7' Cattle Pass

Sta. 3+10-5.9° LHF Rt. Reset
Cattle Pass End Section

Sta. 3+07 Rt. Remove and
Reset 100' Type 2 ROW Fence



Lower Brule Sioux Tribe, T4072
NW1/4 of Sec. 26-T108N-R76W

Parcel 1

Sta. 6+95 Lt. Install 95'
Low Flow Silt Fence

Sta. 3+10-5.9° LHF Lt. Remove
Cattle Pass End Section for Reset

Sta. 3+10-5.9° LHF Lt. Furnish and
Install 18' 5'x7' Cattle Pass

Sta. 3+10-5.9° LHF Lt.
Remove 12' 5'x7' Cattle Pass
(To be disposed of by Contractor)

Sta. 3+10-5.9 LHF Lt. Reset
Cattle Pass End Section

Sta. 2+00 Lt. to 7+00 Lt.
Install 750' Temporary Fence Type 1A

Sta. 2+00 Lt. to 7+00 Lt.
Remove and Reset 500' Type 2 ROW Fence

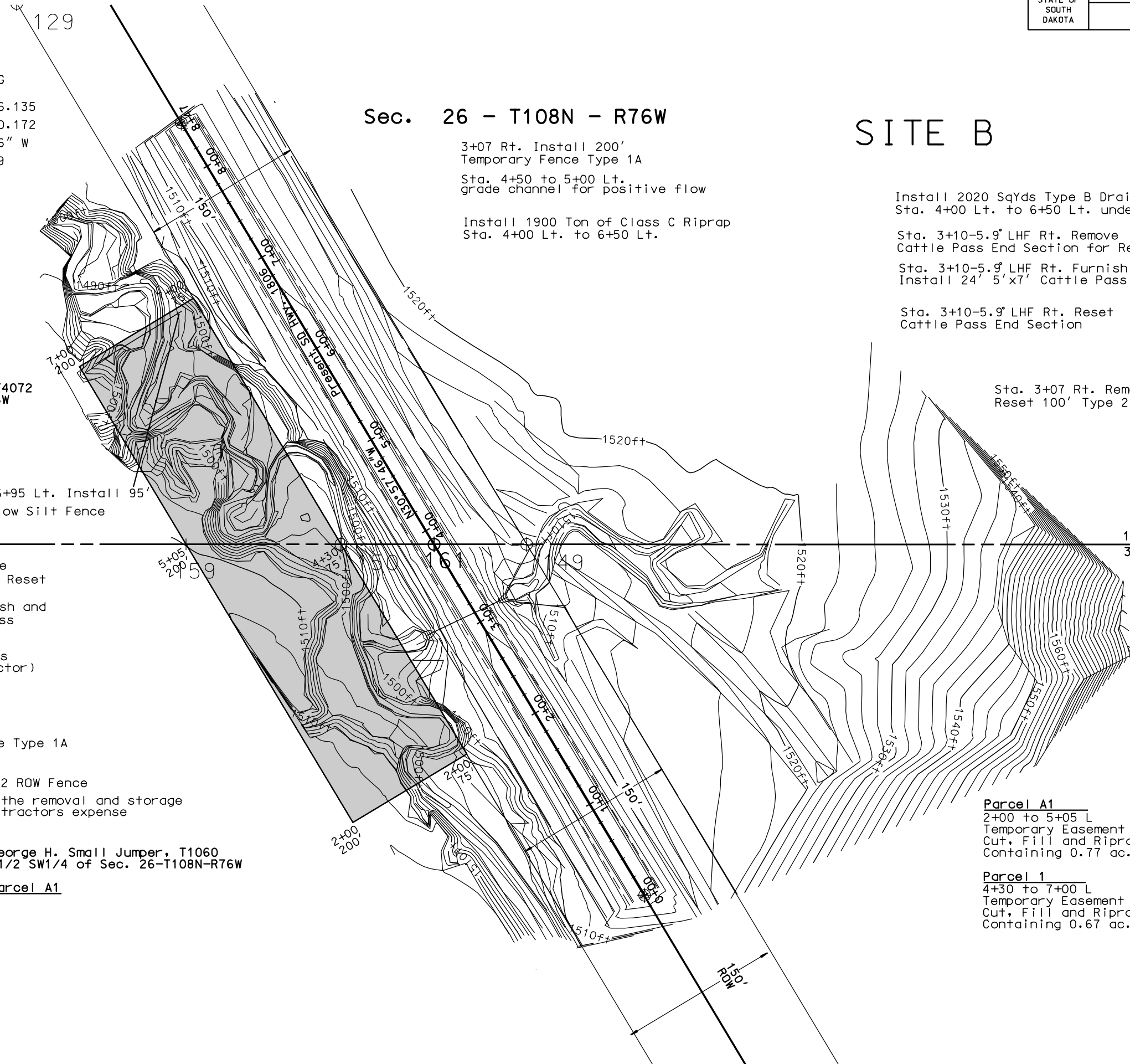
Any fencing damaged during the removal and storage
will be replaced at the Contractors expense

George H. Small Jumper, T1060
N1/2 SW1/4 of Sec. 26-T108N-R76W

Parcel A1

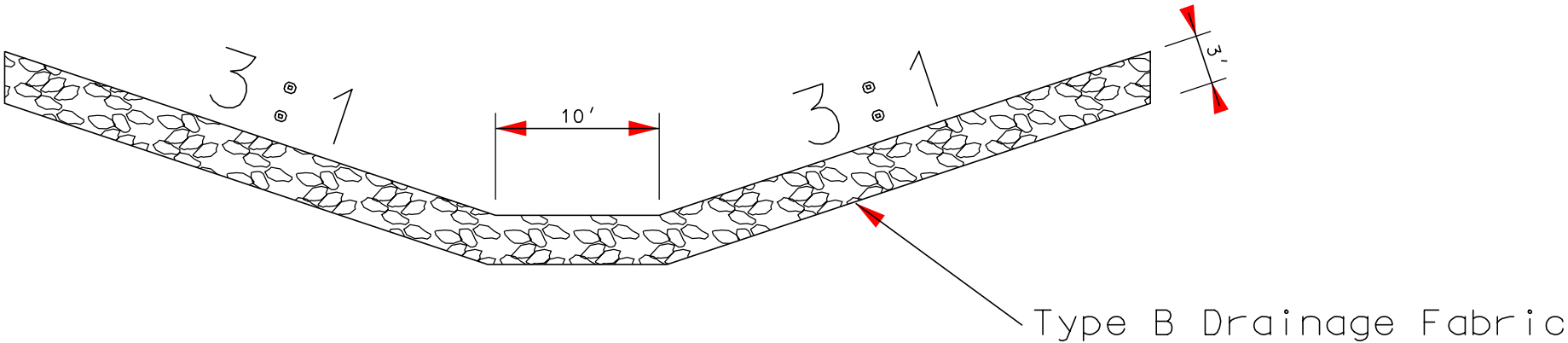
Parcel A1
2+00 to 5+05 L
Temporary Easement for
Cut, Fill and Riprap for Bank Protection
Containing 0.77 ac. more or less

Parcel 1
4+30 to 7+00 L
Temporary Easement for
Cut, Fill and Riprap for Bank Protection
Containing 0.67 ac. more or less

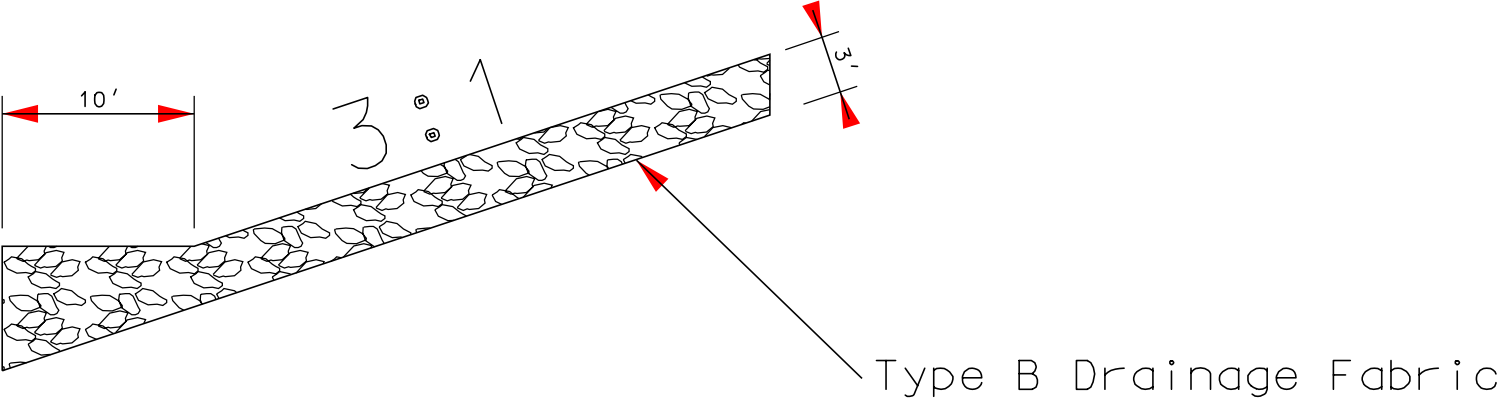


Typical Sections
Riprap

Sta. 4+00 to 4+75



Sta. 5+00 to 6+50



STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	1806-351	9	18

Site B
Cattle Pass Extension
Cross Section

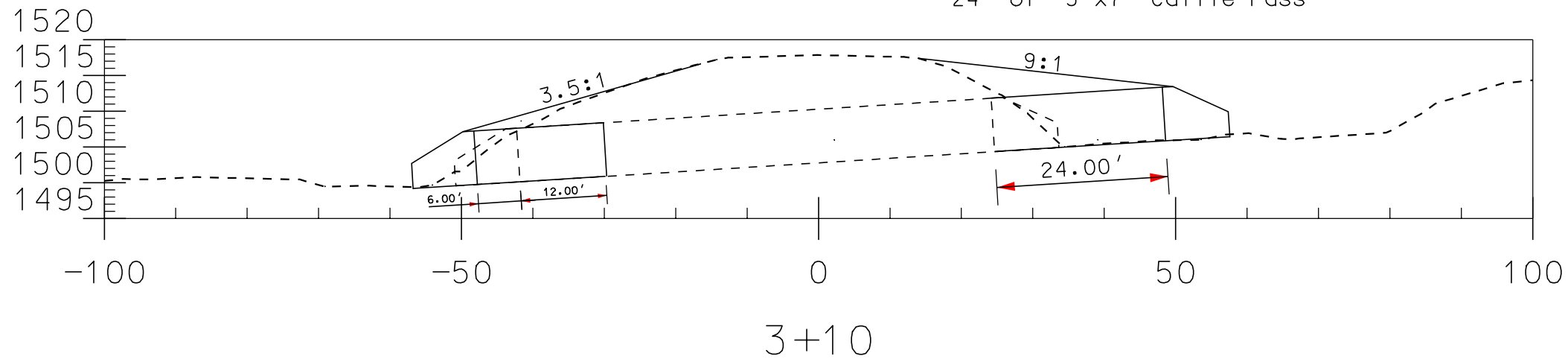
3+10-5.9° LHF Lt. Remove 2-6' Sections
of 5'x7' Cattle Pass
(To be disposed of by Contractor)

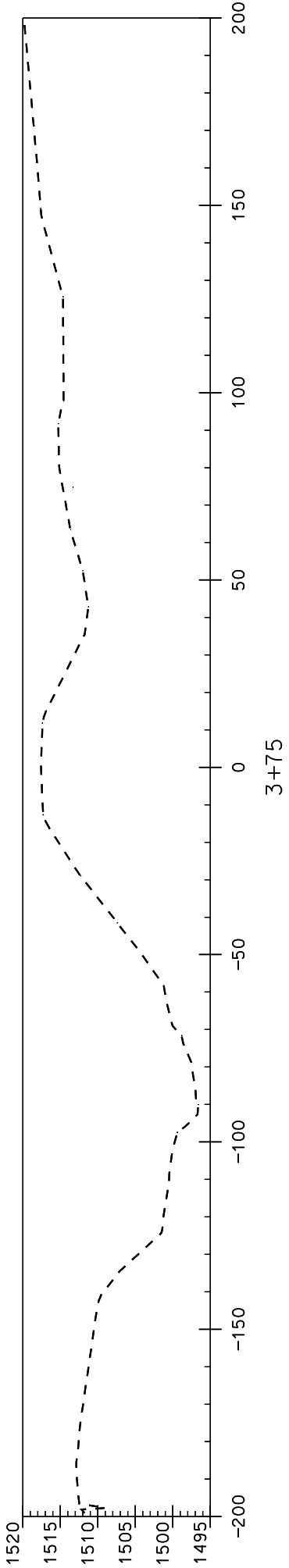
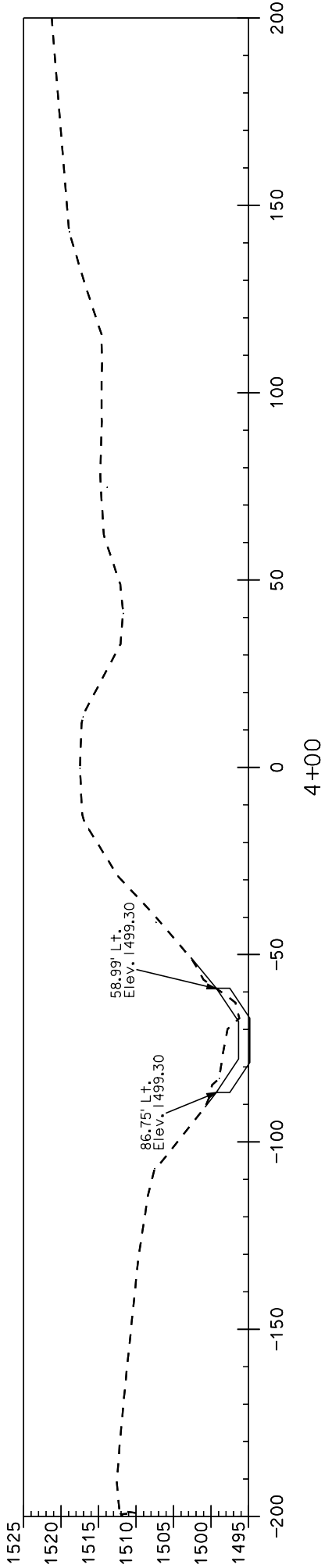
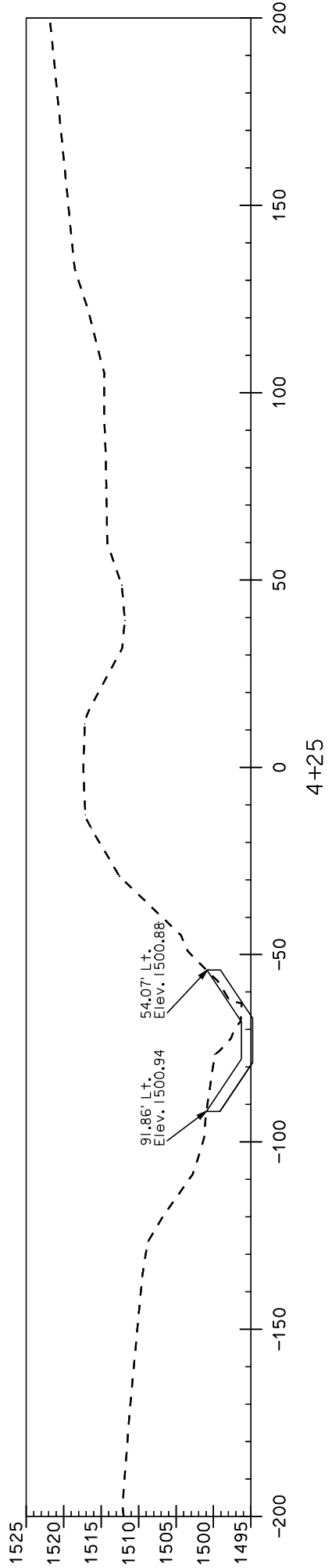
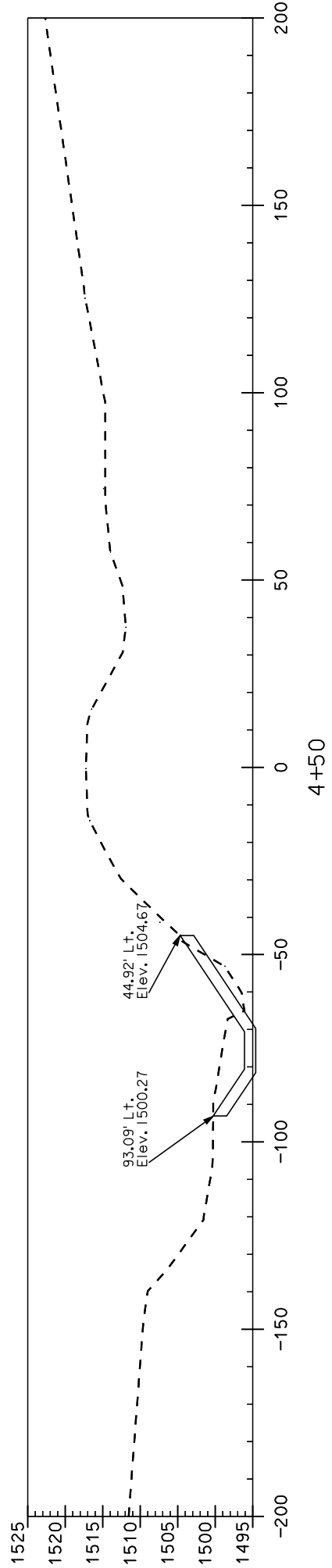
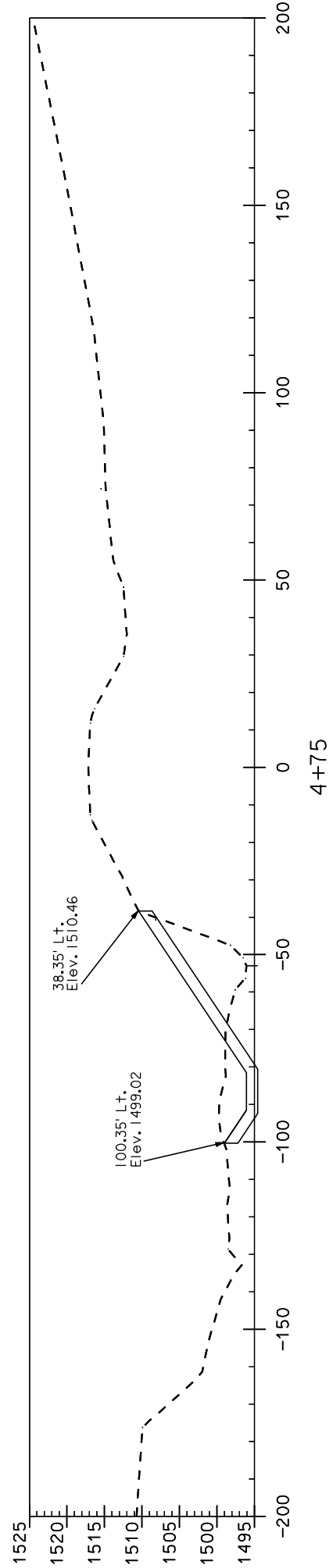
3+10-5.9° LHF Lt. Remove and Reset
Cattle Pass End Section

3+10-5.9° LHF Lt. Furnish and Install
18' of 5'x7' Cattle Pass

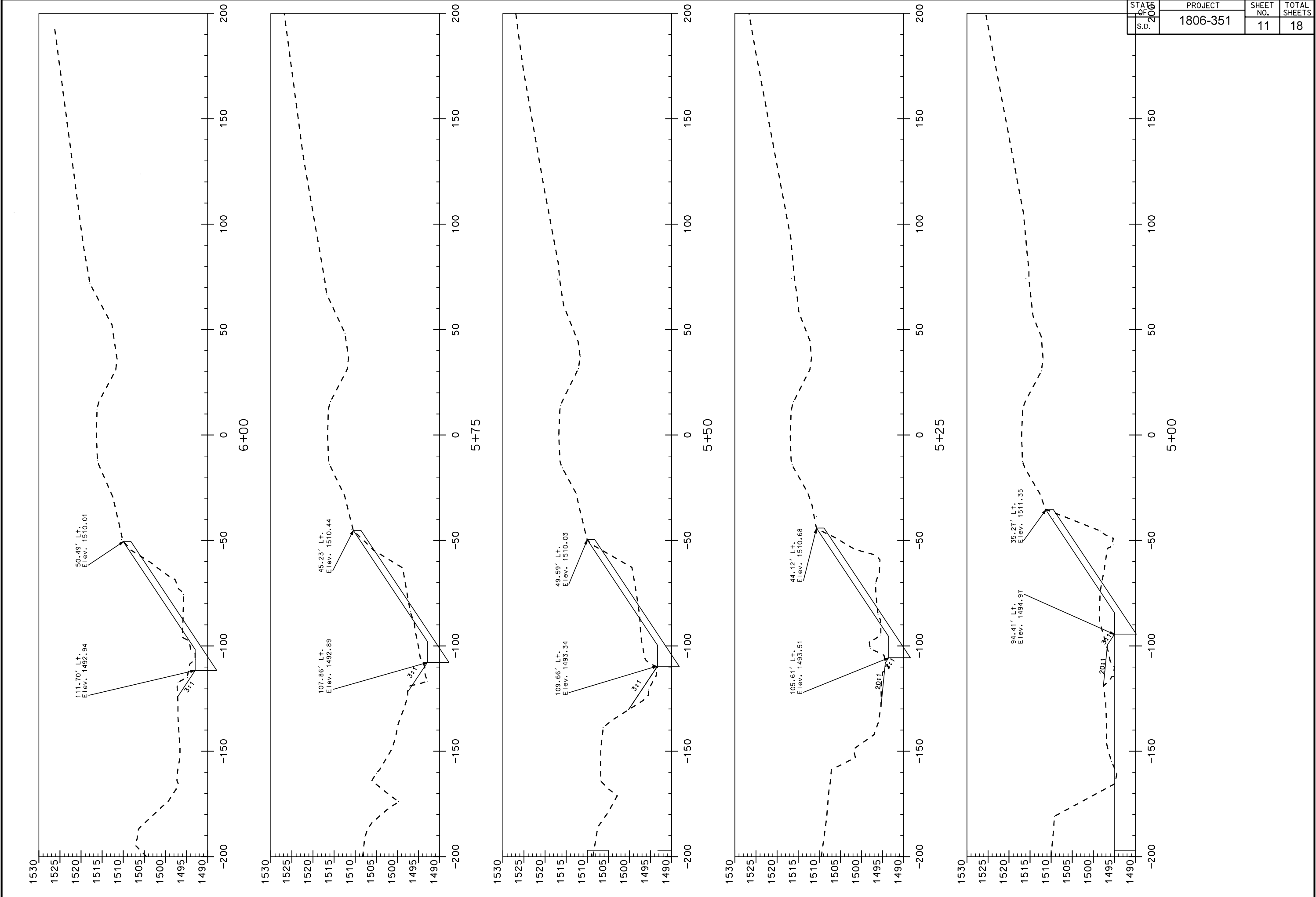
3+10-5.9° LHF Rt. Remove and Reset
Cattle Pass End Section

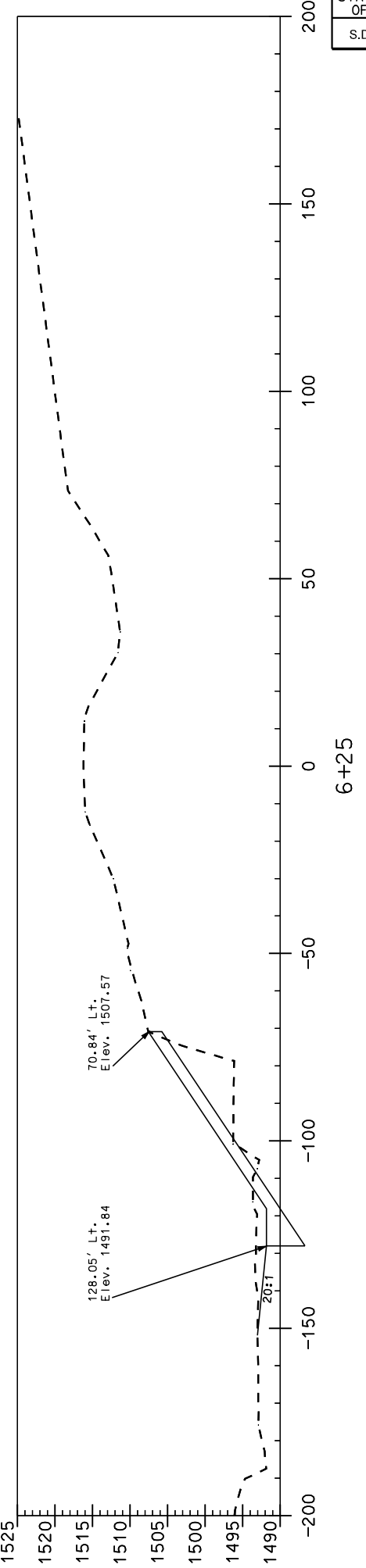
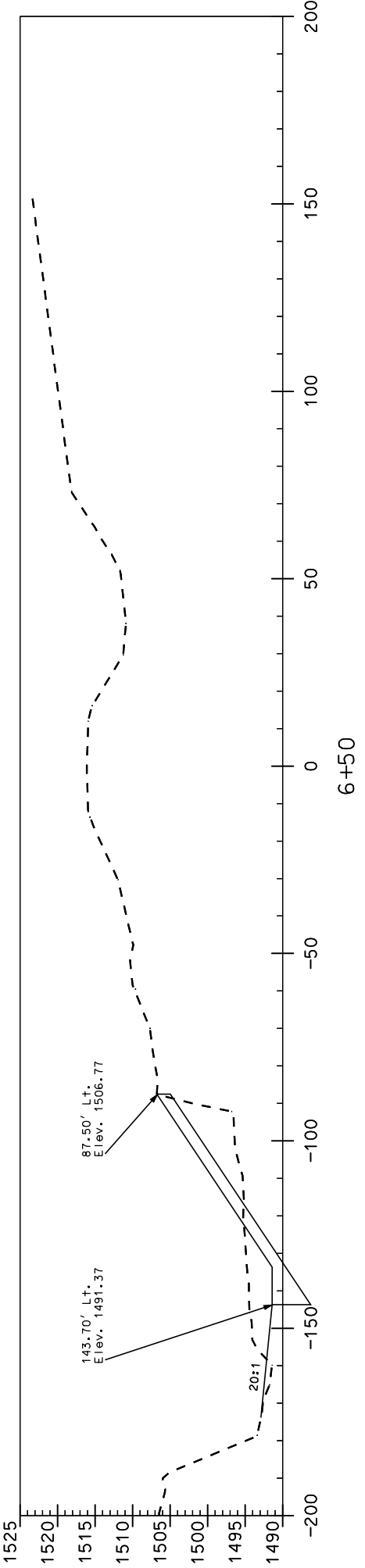
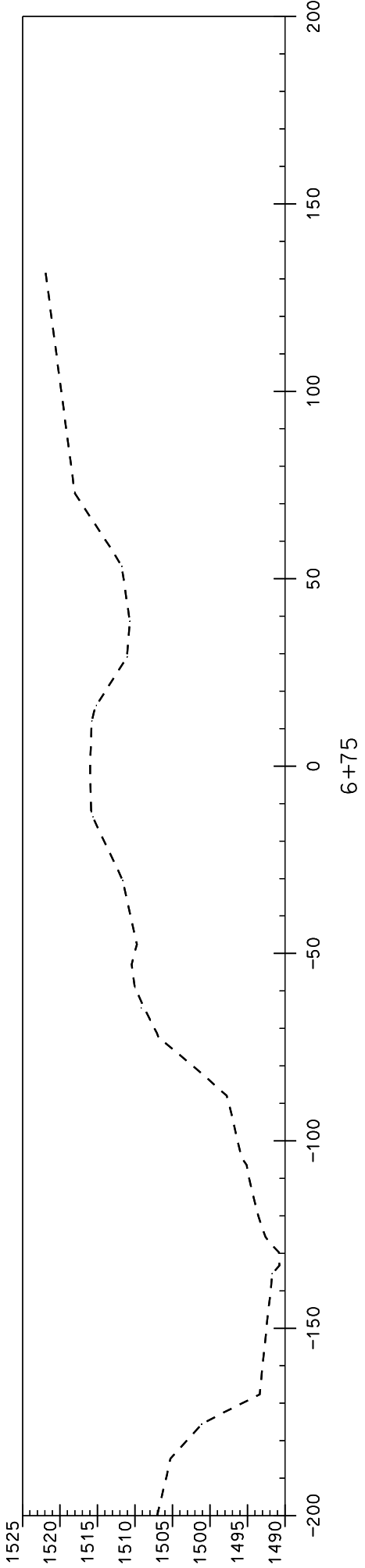
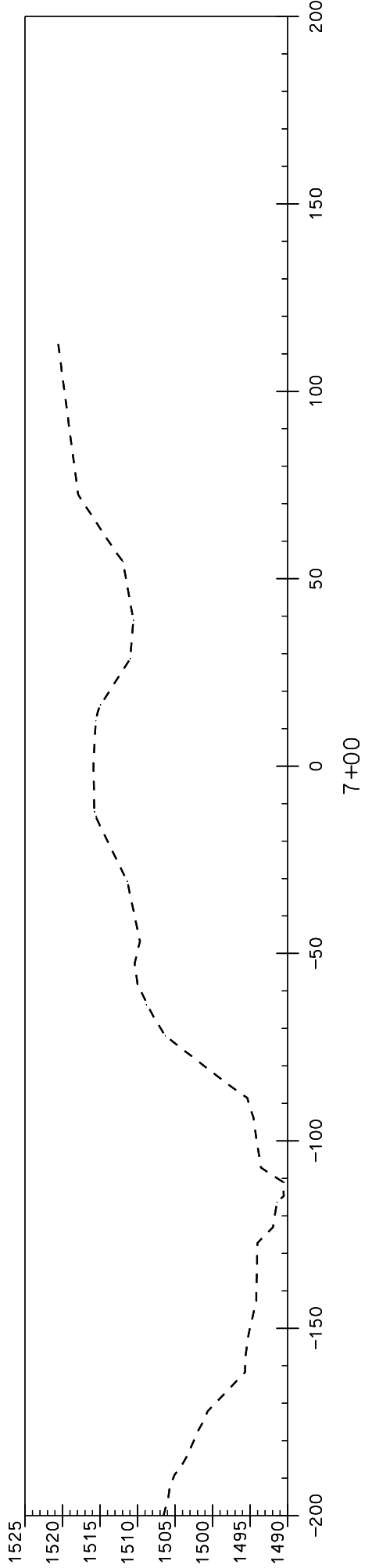
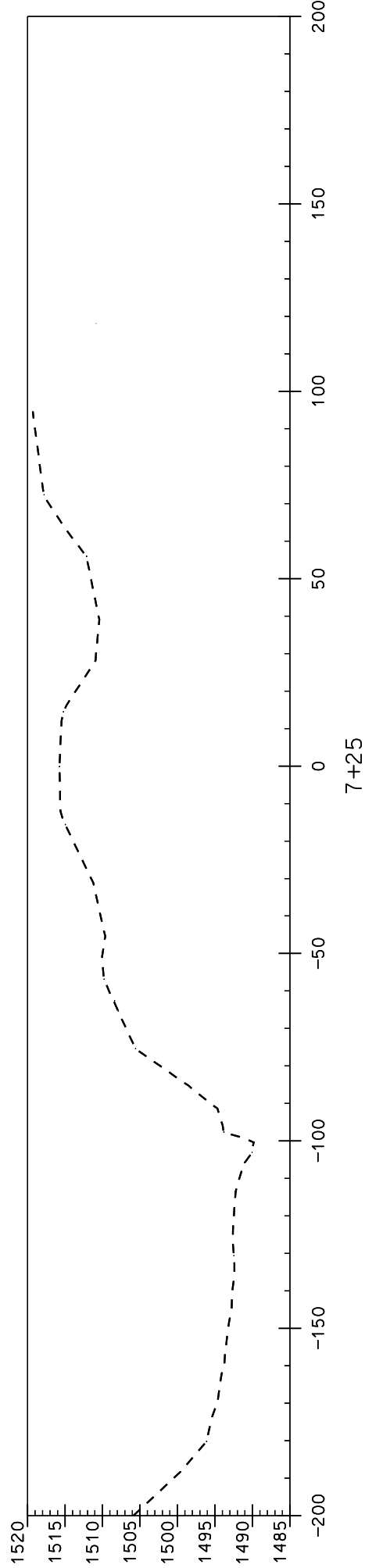
3+10-5.9° LHF Rt. Furnish and Install
24' of 5'x7' Cattle Pass



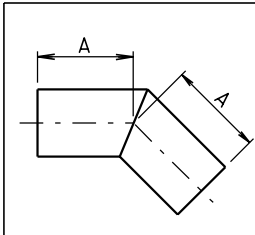
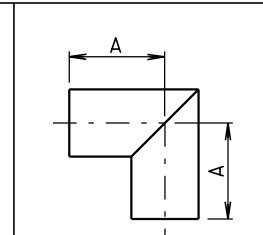
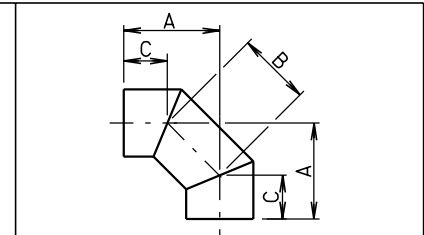
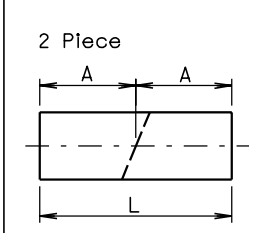
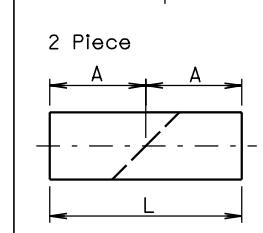
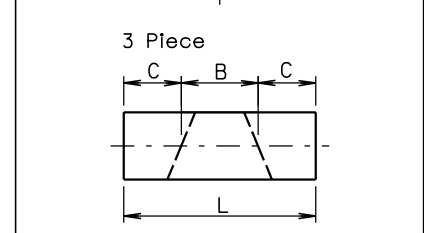


STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
	1806-351	10	18





STATE OF S.D.	PROJECT	SHEET NO.	TOTAL SHEETS
	1806-351	12	18

										
2 Piece			2 Piece			3 Piece				
										
5° to 45° Elbow			50° to 90° Elbow			90° Elbow				
Diameter	A	L	Diameter	A	L	Diameter	A	B	C	L
Inches	Feet	Feet	Inches	Feet	Feet	Inches	Inches			Feet
12	1	2	12	2	4	12	25½	11	18½	4
15	1	2	15	2	4	15	26½	12	18	4
18	1	2	18	2	4	18	27	14	17	4
21	2	4	21	2	4	21	27	15	16½	4
24	2	4	24	2	4	24	27½	16	16	4
27	2	4	27	2	4	27	27½	17	15½	4
30	2	4	30	3	6	30	40	19	26½	6
33	2	4	33	3	6	33	40	20	26	6
36	2	4	36	3	6	36	40½	21	25½	6
42	2	4	42	3	6	42	41	23	24½	6
48	2	4	48	4	8	48	53½	26	35	8
54	3	6	54	4	8	54	54	28	34	8
60	3	6	60	4	8	60	54½	31	32½	8
66	3	6	66	4	8	66	54	33	31½	8
72	3	6	72	5	10	72	67½	36	42	10
78	3	6	78	5	10	78	68	39	40½	10
84	3	6	84	5	10	84	68½	41	39½	10
90	3	6	90	6	12	90	70	46	37	10
96	3	6	96	6	12	96	82	46	49	12

FABRICATED ELBOW LENGTHS FOR ALL CORRUGATIONS

GENERAL NOTES:
All dimensions shown are nominal.
L = Linear Feet of C.M.P. required to fabricate fitting.

June 26, 2001

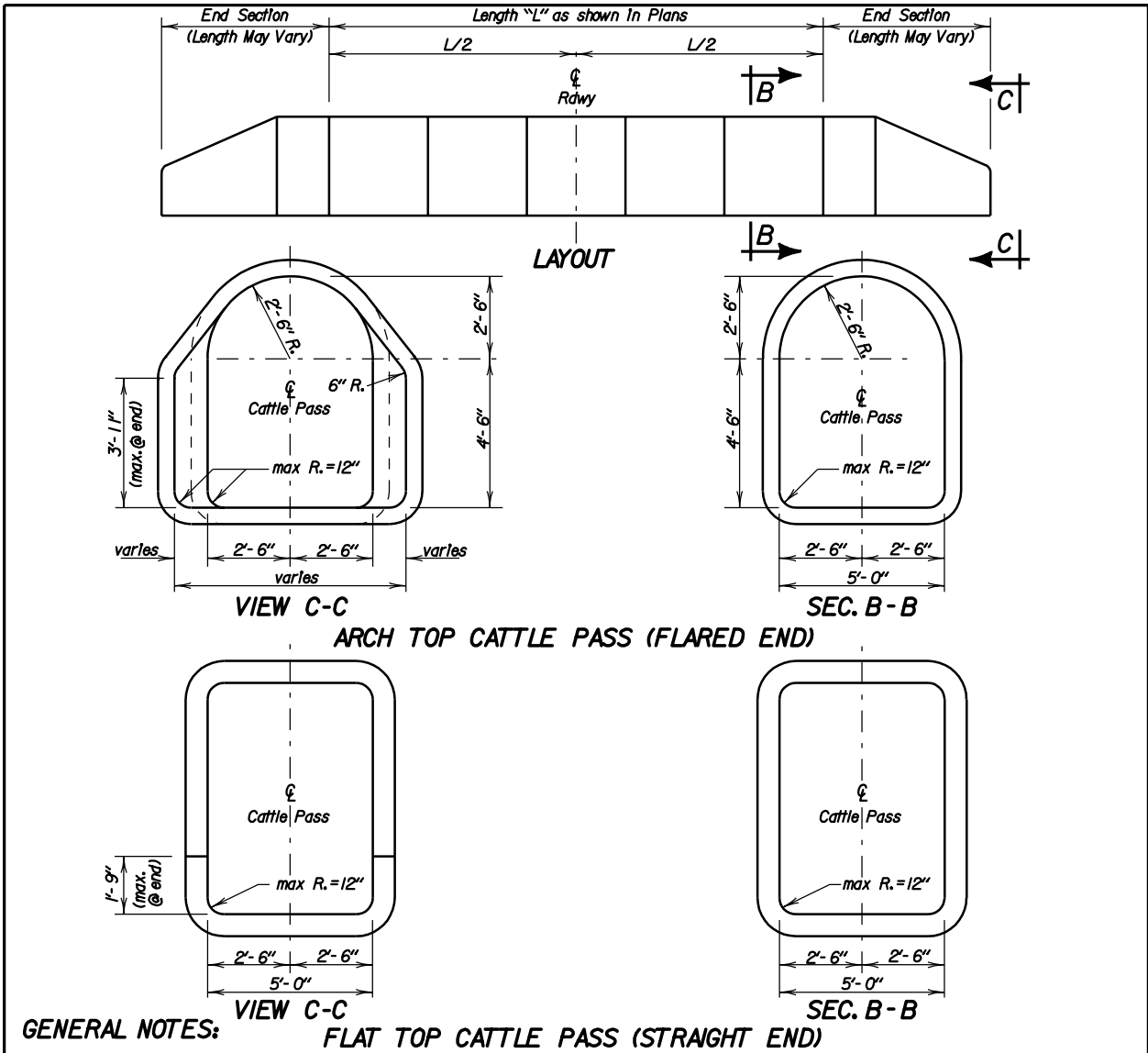
Published Date: 1st Qtr. 2009

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C.M.P. FABRICATED LENGTHS FOR ELBOWS

PLATE NUMBER
450.32

Sheet 1 of 1



GENERAL NOTES: ARCH TOP CATTLE PASS (FLARED END) VIEW C-C
FLAT TOP CATTLE PASS (STRAIGHT END) SEC. B-B

- Unless otherwise specified elsewhere on the plans, cattle pass may be either cast-in-place or precast. For cast-in-place cattle pass details, see Standard Plate No. 560.33.
- Precast cattle pass shall be on the current approved list available through proper channels from the SDDOT Office Of Bridge Design. To qualify for addition to the approved list, submit a checked design, done by South Dakota Registered Professional Engineers, and shop plans to the Office of Bridge Design for approval. Design shall be in accordance with the current edition of the AASHTO Standard Specifications for Highway Bridges.
- The provisions of Sections 450 and 990 of the Standard Specifications pertaining to Reinforced Concrete Pipe shall apply to the furnishing and installing of the precast cattle pass.
- Shapes other than that shown will be allowed. Submit details to the Office of Bridge Design for approval.
- Minimum section length shall be 4 ft.
- Lift holes shall be plugged with an approved nonshrinkable grout.
- Each section shall be tied to adjacent sections with tie bolts conforming to Standard Plate No. 560.01.
- All costs associated with furnishing and installing the cattle pass, whether cast-in-place or precast, shall be incidental to the corresponding furnish and install bid items for "5' x 7' Reinforced Concrete Cattle Pass" and "5' x 7' Reinforced Concrete Cattle Pass End Section".

March 31, 2000

Published Date: 1st Qtr. 2009

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PRECAST 5' X 7' CATTLE PASS

PLATE NUMBER
560.31

Sheet 1 of 1

Plotting Date: 13-FEB-2009

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

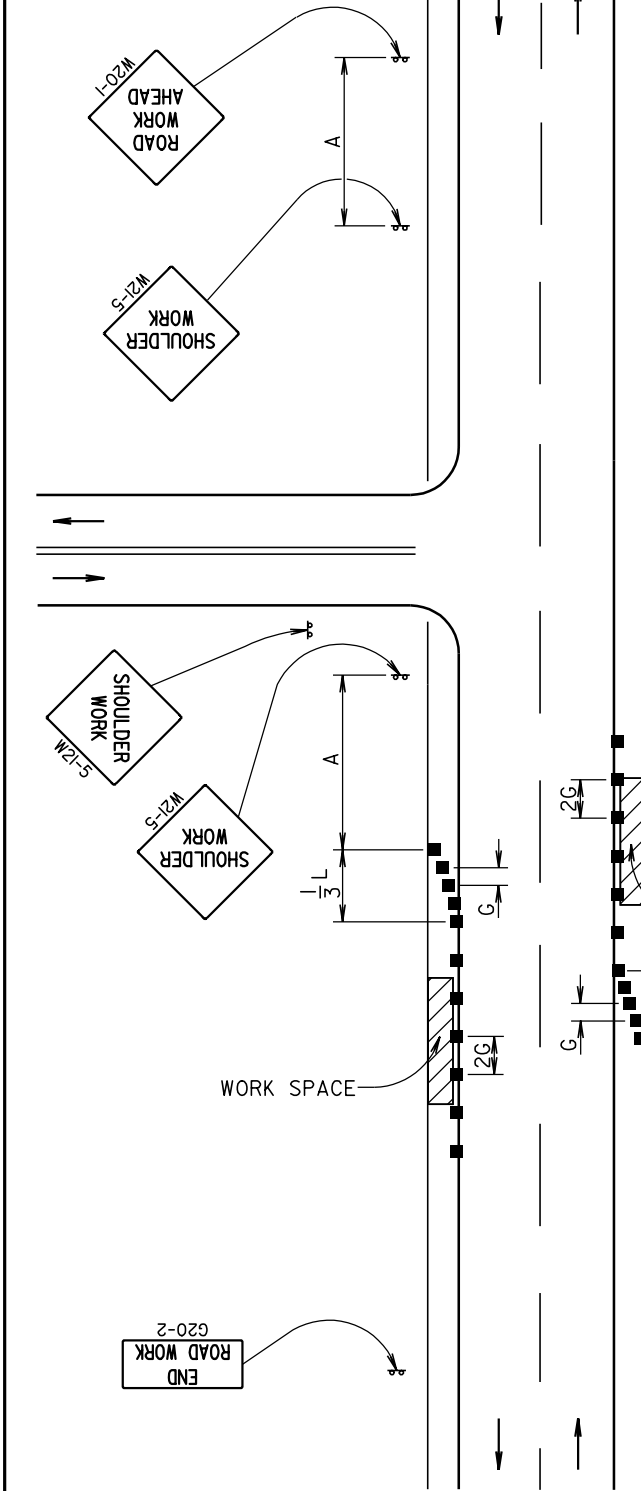
Published Date: 1st Qtr. 2009

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GUIDES FOR TRAFFIC CONTROL DEVICES
WORK BEYOND THE SHOULDER

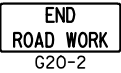
PLATE NUMBER
634.01

Sheet 1 of 1



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

Channelizing Device



The channelizing devices shall be drums or type II barricades if traffic control must remain overnight or longer.

For short duration operations (1 hour or less) all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

WORK SPACE



July 1, 2005

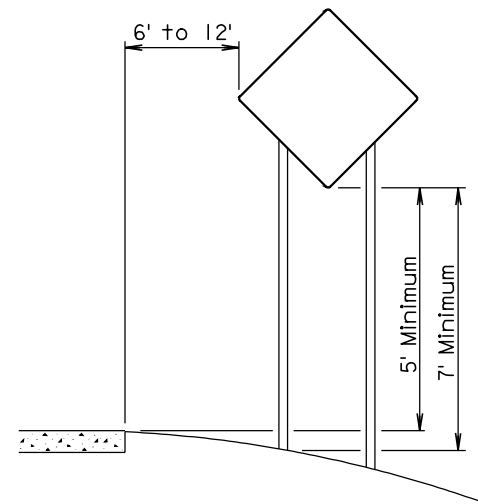
Published Date: 1st Qtr. 2009

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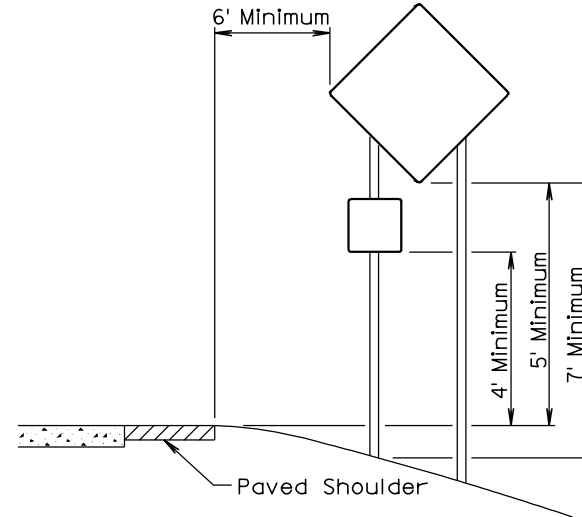
GUIDES FOR TRAFFIC CONTROL DEVICES
WORK ON SHOULDERS

PLATE NUMBER
634.03

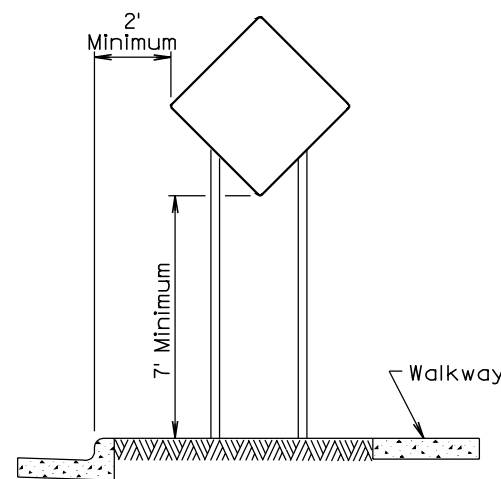
Sheet 1 of 1



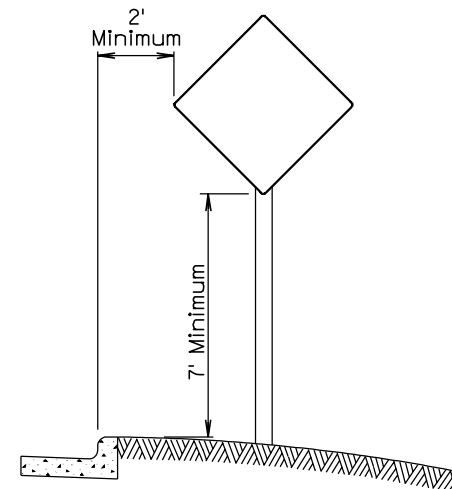
RURAL DISTRICT



RURAL DISTRICT WITH
SUPPLEMENTAL PLATE



URBAN DISTRICT



URBAN DISTRICT

December 23, 2003

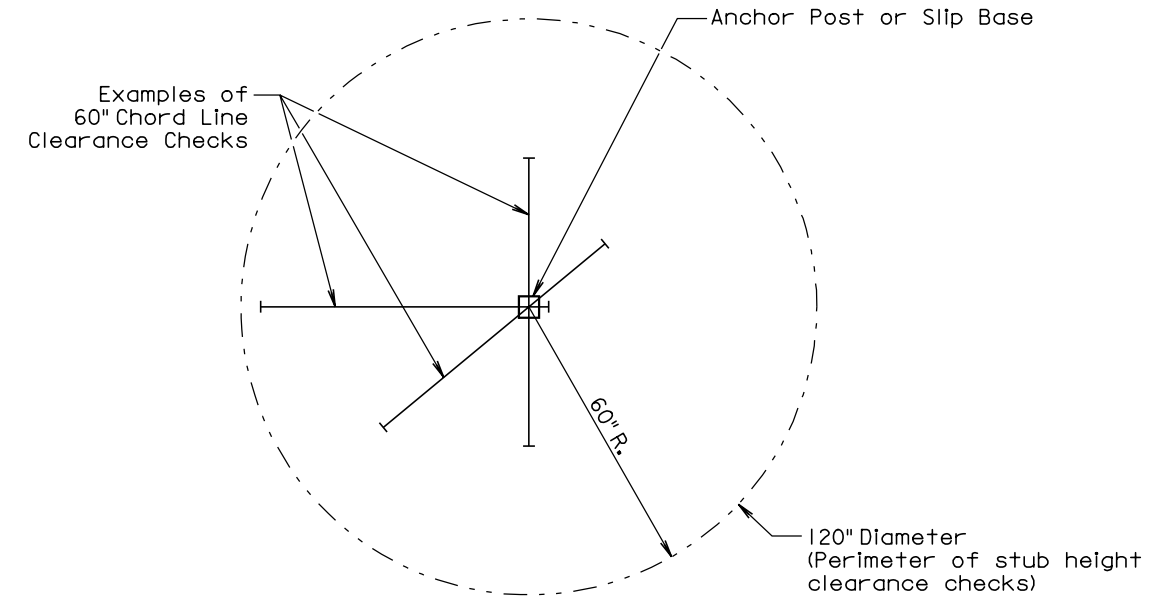
Published Date: 1st Qtr. 2009

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BREAKAWAY SIGN SUPPORTS
(Typical Construction Signing)

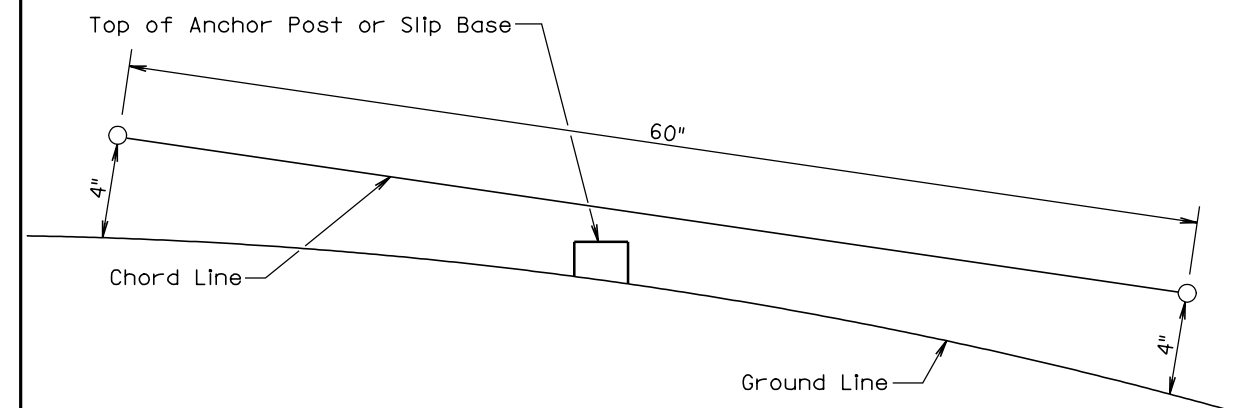
PLATE NUMBER
634.85

Sheet 1 of 1



PLAN VIEW

(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

The top of anchor posts and slip bases SHALL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height shall be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

The 4" stub height clearance is not necessary for U-channel lap splices where the support is designed to yield (bend) at the base.

July 1, 2005

Published Date: 1st Qtr. 2009

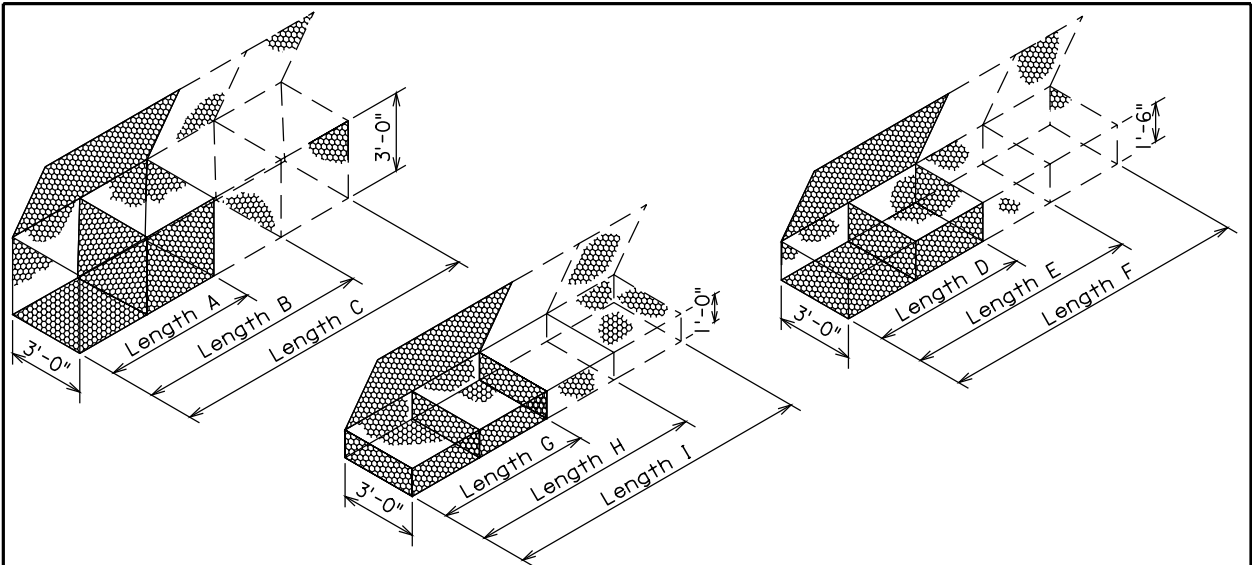
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BREAKAWAY SUPPORT STUB CLEARANCE

PLATE NUMBER
634.99

Sheet 1 of 1

Plotting Date: 13-FEB-2009



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.

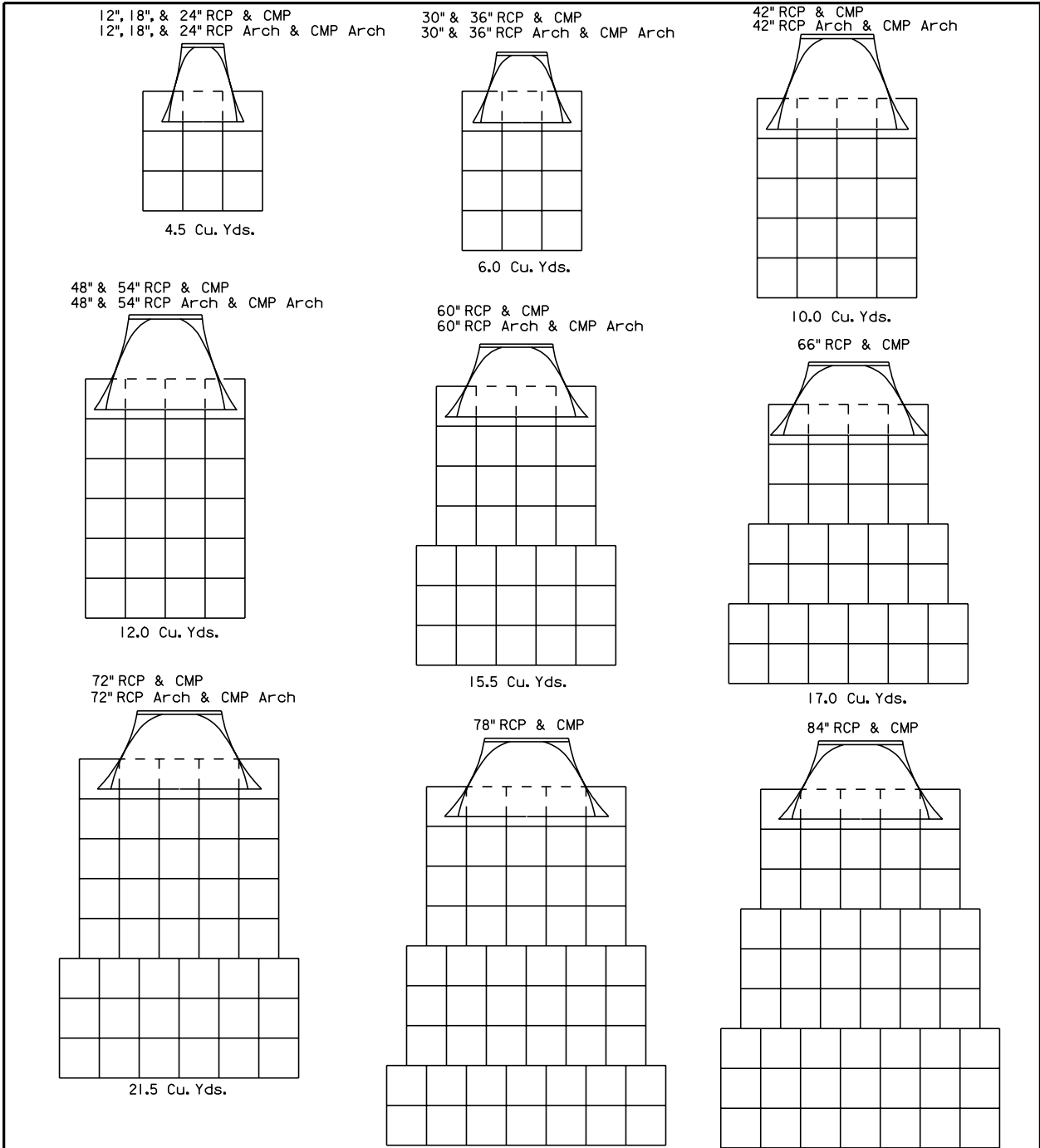
The lacing procedure is as follows:

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



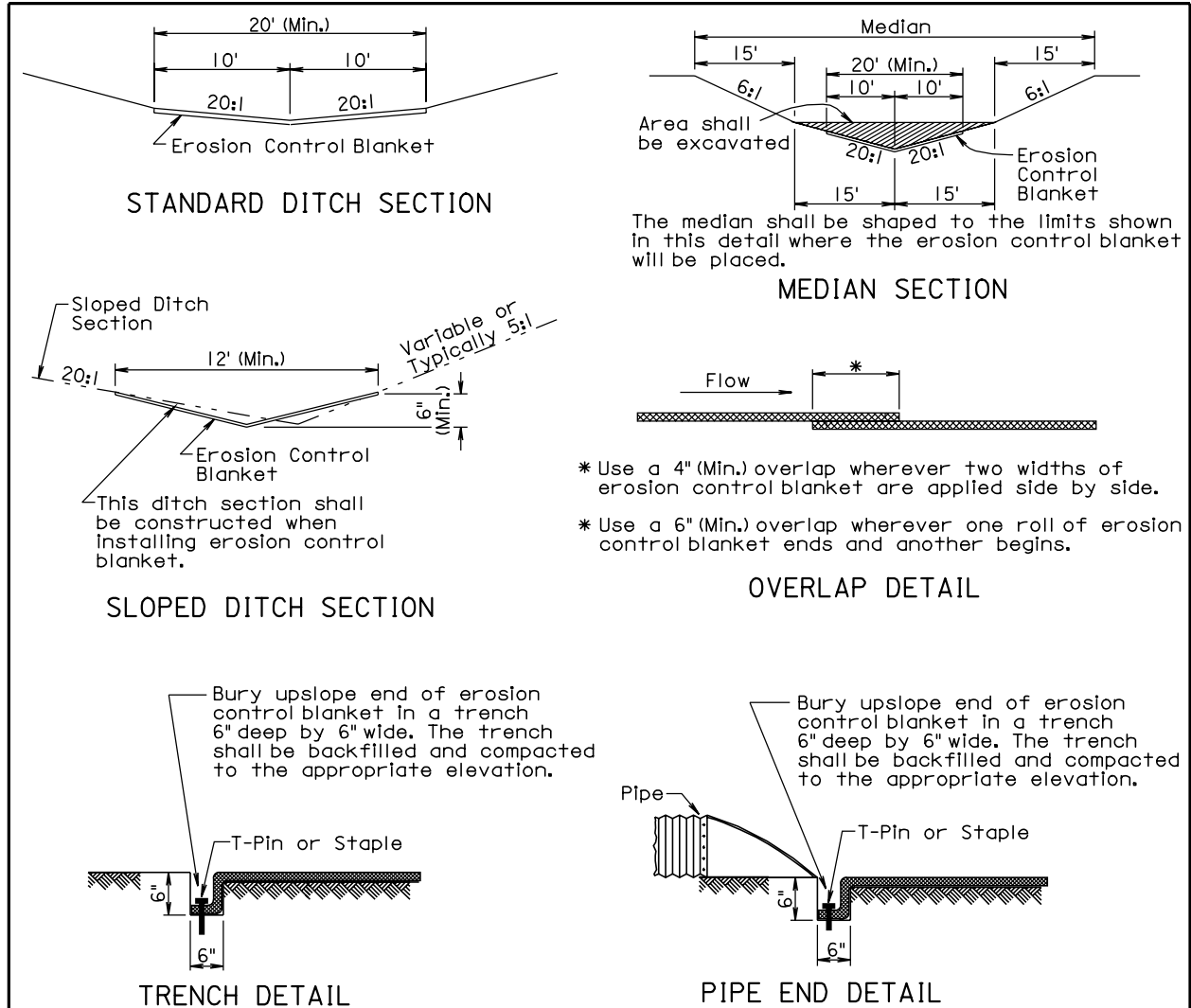
GENERAL NOTES:

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

Plotting Date: 13-FEB-2009



GENERAL NOTES:

Prior to placement of the erosion control blanket, the areas shall be properly prepared, shaped, seeded, and fertilized.

Erosion control blanket shall be unrolled in the direction of the flow of water when placed in ditches and on slopes. The upslope end of the erosion control blanket shall be buried in a trench 6" wide by 6" deep. There shall be at least a 6" overlap wherever one roll of erosion control blanket ends and another begins, with the upslope erosion control blanket placed on top of the downslope erosion control blanket.

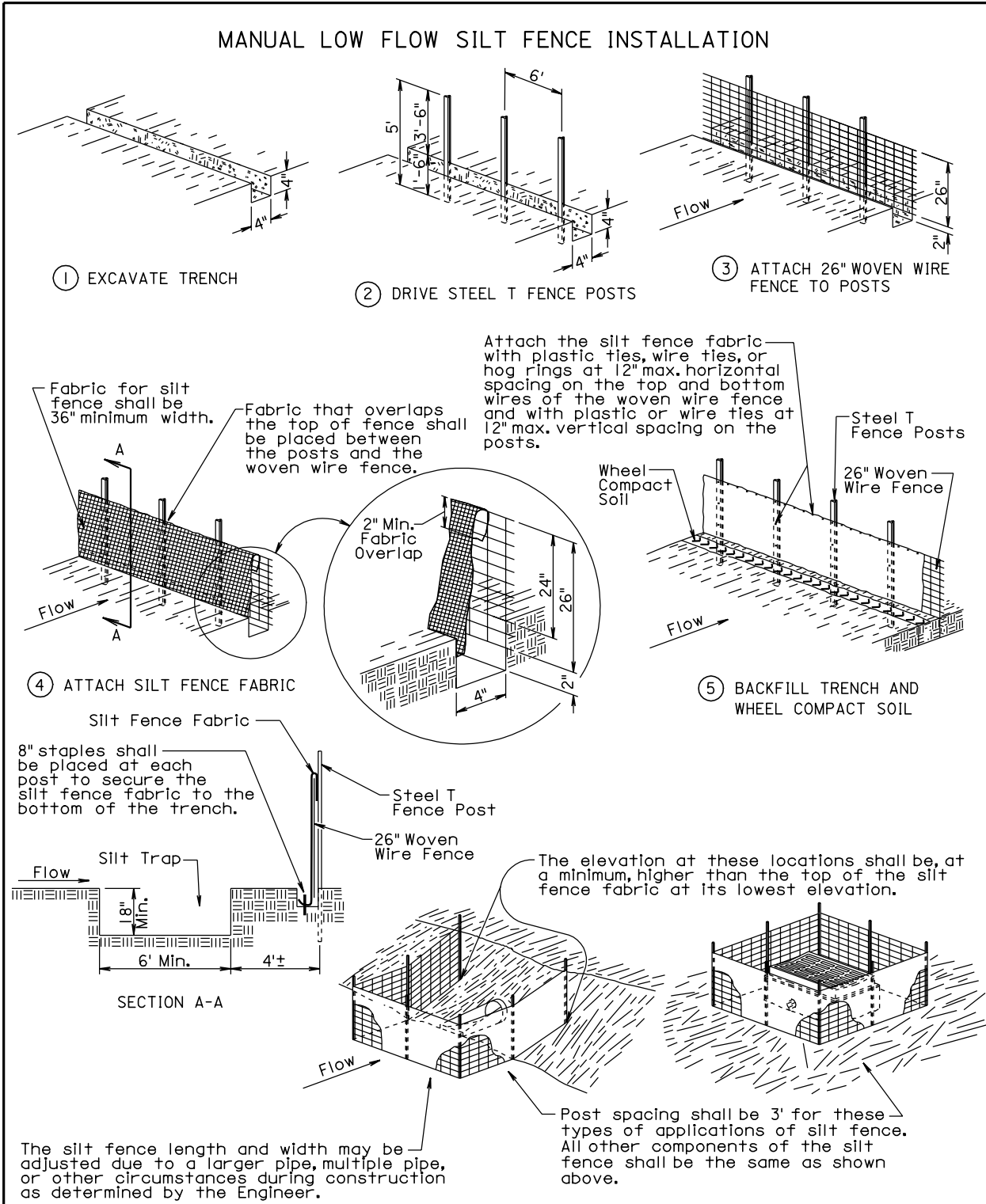
The erosion control blanket shall be pinned to the ground according to the manufacturer's installation recommendations.

After the placement of the erosion control blanket, the Contractor shall fine grade along all edges of the blanket to maintain a uniform slope adjacent to the blanket and level any low spots which might prevent uniform and unrestricted flow of side drainage directly onto the erosion control blanket.

All ditch sections shall be shaped when installing the erosion control blanket. All costs for shaping the ditches shall be incidental to the contract unit price per foot for "Shaping for Erosion Control Blanket".

December 23, 2004

Published Date: 1st Qtr. 2009	S D D O T	EROSION CONTROL BLANKET	PLATE NUMBER 734.01
			Sheet 1 of 1

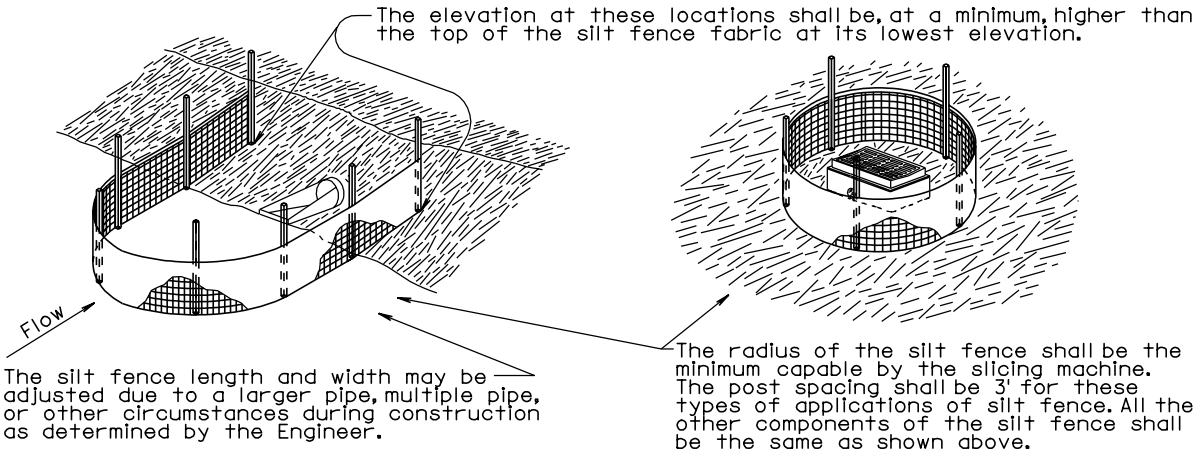
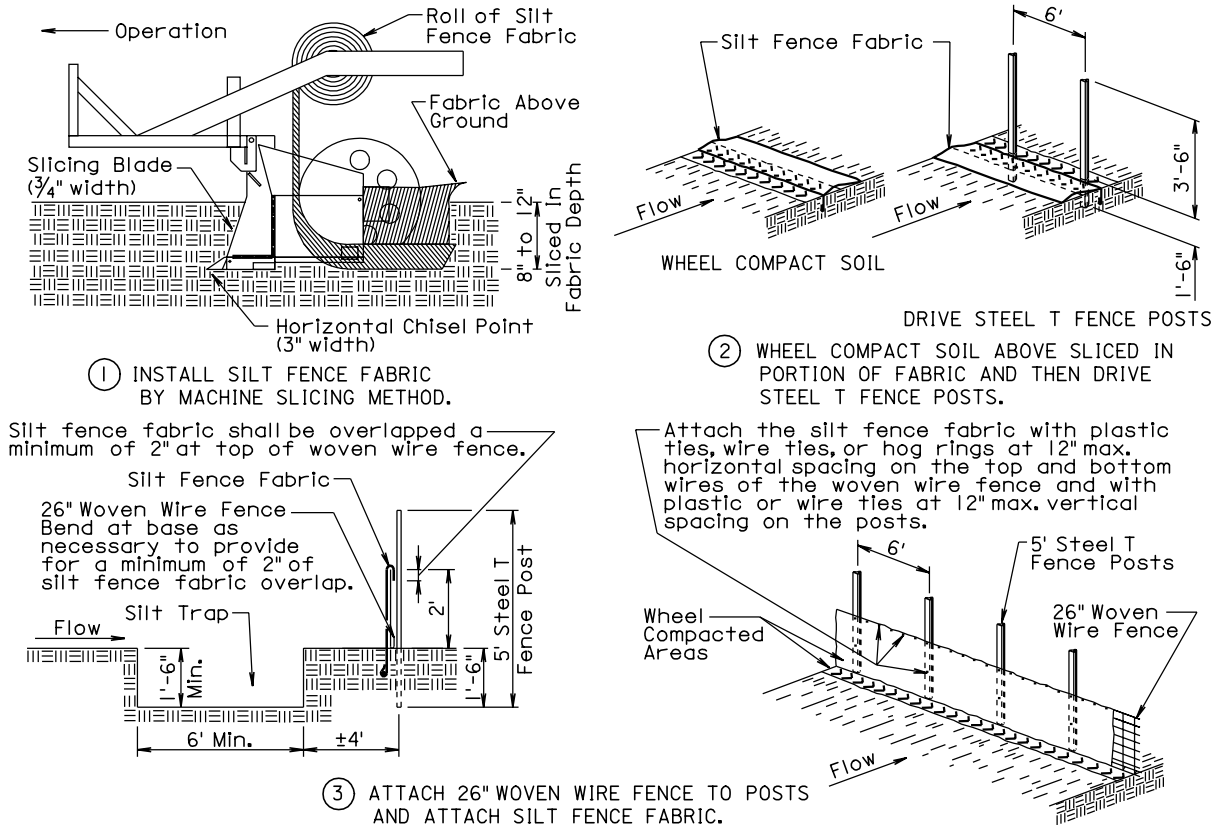


December 23, 2003

Published Date: 1st Qtr. 2009	S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 1 of 2

Plotting Date: 13-FEB-2009

MACHINE SLICED LOW FLOW SILT FENCE INSTALLATION



GENERAL NOTES:

A silt trap shall be provided when specified by a plan note. All costs for constructing the silt trap shall be incidental to the contract unit price per cubic yard for "Silt Trap".

If a trench can not be dug or the silt fence fabric can not be sliced in due to the type of earthen material (such as rock), then a row of 30 to 40 pound sandbags butted end to end shall be provided on top of the extra length of silt fence fabric to prevent underflow.

December 23, 2003

Published Date: 1st Qtr. 2009	S D D O T	LOW FLOW SILT FENCE AND SILT TRAP	PLATE NUMBER 734.04
			Sheet 2 of 2