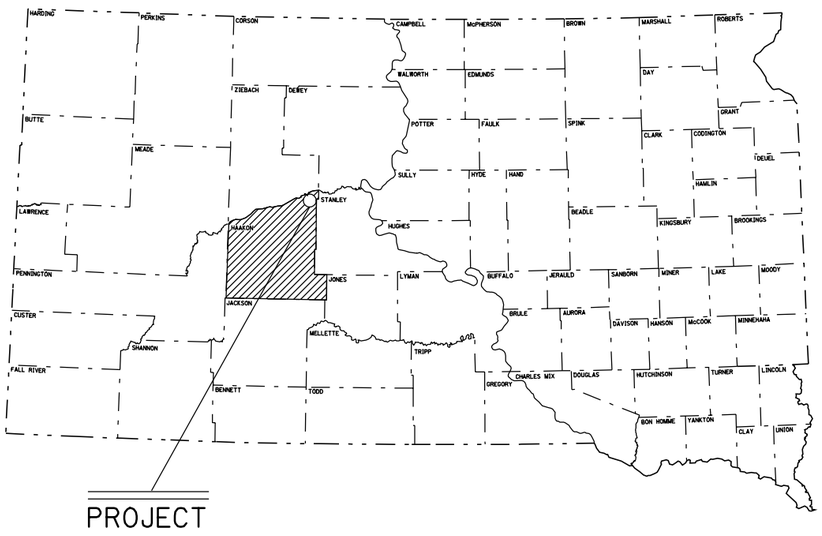
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	063-352	1	22



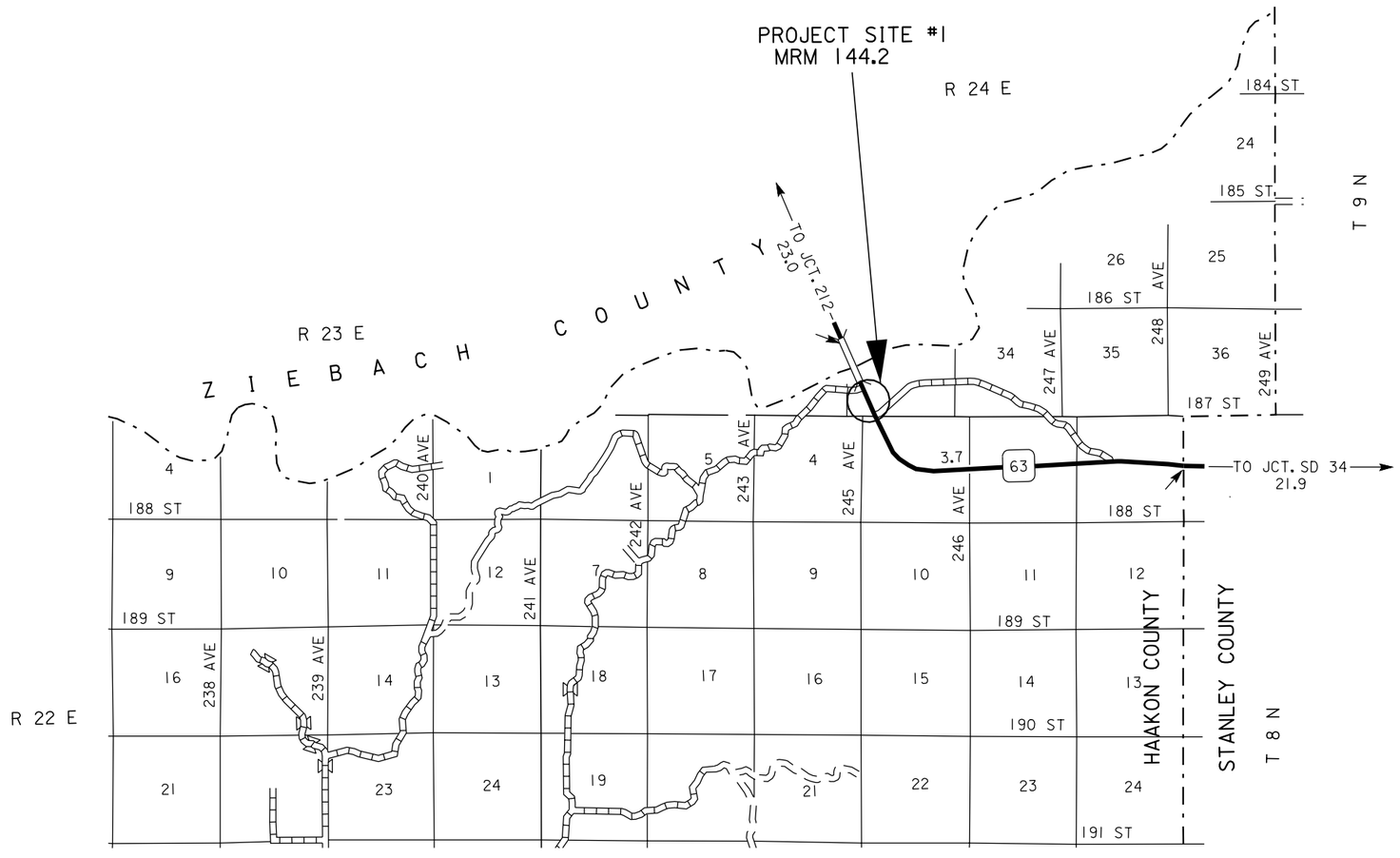
STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

PROJECT 063 - 352
SD HIGHWAY 63
HAAKON COUNTY

DOWNSPOUT & EROSION CONTROL
PCN I2EC

INDEX OF SHEETS



DESIGN DESIGNATION

ADT (2010)	330
ADT (2030)	358
DHV	57.3
D	50%
T DHV	6.1%
T ADT	13.4%
V(m. p. h.)	65

Acres Disturbed: 0.1 Acres

STORM WATER PERMIT
(None Required)

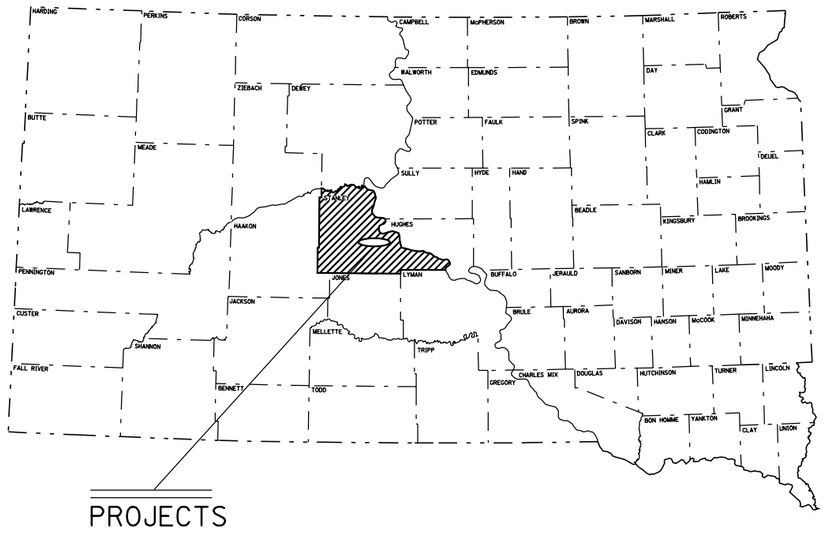
STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	2	22

STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION

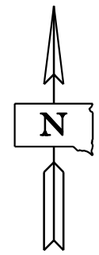
PLANS FOR PROPOSED

PROJECT 014 - 351
US HIGHWAY 14
STANLEY COUNTY

DOWNSPOUTS & EROSION CONTROL
PCN's 12F2 & 12F3



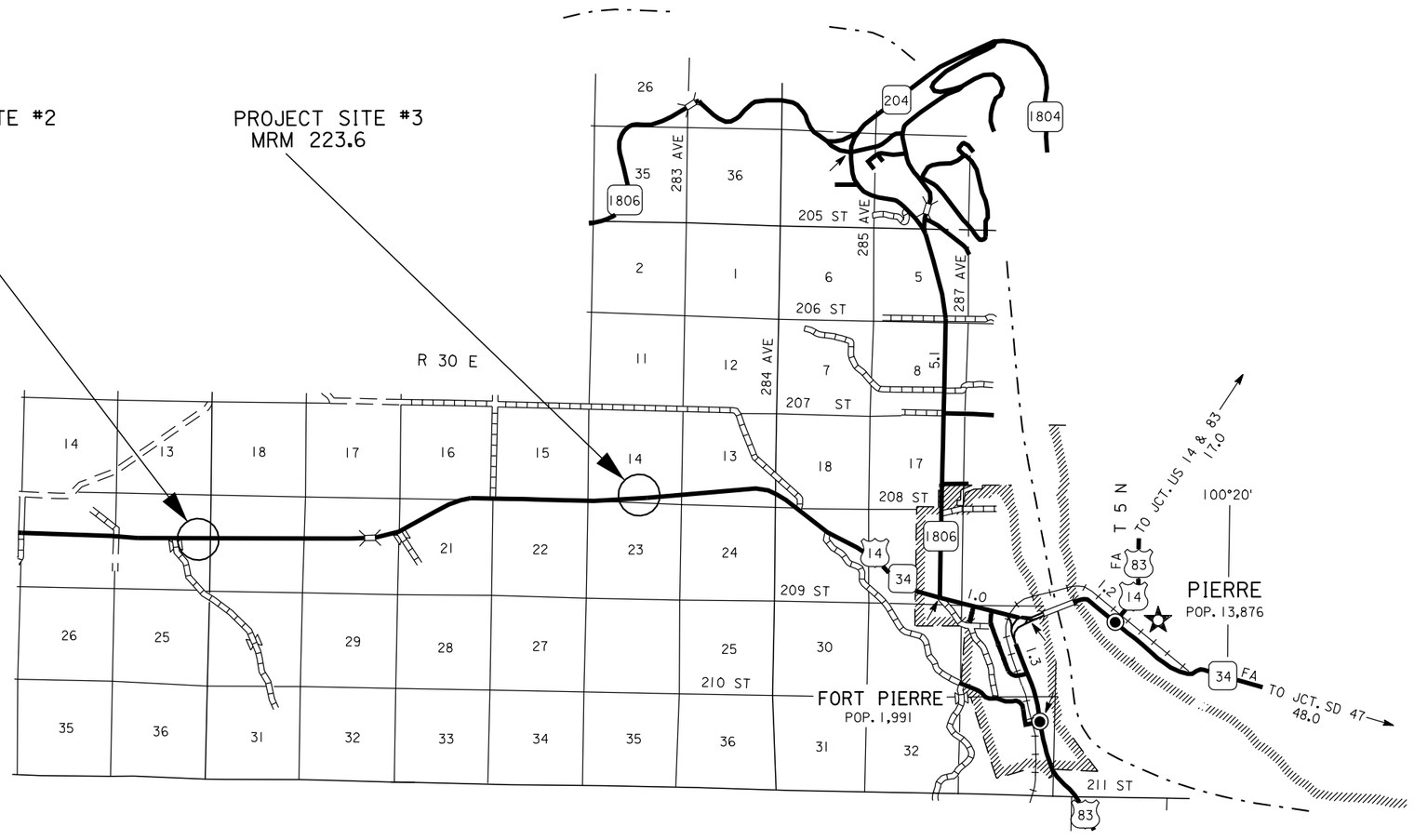
PROJECTS



T 6 N R 31 E

PROJECT SITE #2
MRM 218.6

PROJECT SITE #3
MRM 223.6



DESIGN DESIGNATION	
ADT (2010)	1385
ADT (2030)	1550
DHV	248
D	50%
T DHV	7.9%
T ADT	17.3%
V(m. p. h.)	65

MRM 218.6
Acres Disturbed: 0.2 Acres

MRM 223.6
Acres Disturbed: 0.2 Acres

STORM WATER PERMIT
(None Required)

ESTIMATE OF QUANTITIES

Site #1
063-352 PCN I2EC

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E0600	Remove Fence	125	Ft
110E1700	Remove Silt Fence	50	Ft
120E0600	Contractor Furnished Borrow	270	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
250E0020	Incidental Work, Grading	Lump Sum	LS
450E4767	24" CMP 12 Gauge, Furnish	82	Ft
450E4770	24" CMP, Install	82	Ft
450E5015	24" CMP Elbow, Furnish	2	Each
450E5016	24" CMP Elbow, Install	2	Each
450E5215	24" CMP Flared End, Furnish	1	Each
450E5216	24" CMP Flared End, Install	1	Each
450E8014	24" RCP to CMP Transition, Furnish	1	Each
450E8015	24" Pipe Transition, Install	1	Each
620E0060	Type 6 Right-of-Way Fence	125	Ft
620E0510	Type 1 Temporary Fence	325	Ft
634E0100	Traffic Control	238	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
720E1015	Bank and Channel Protection Gabion	4.5	CuYd
730E0204	Type C Permanent Seed Mixture	2	Lb
732E0100	Mulching	0.2	Ton
734E0604	High Flow Silt Fence	50	Ft
734E0610	Mucking Silt Fence	2	CuYd
734E0620	Repair Silt Fence	25	Ft

Site #2
014-351 PCN I2F2

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1700	Remove Silt Fence	50	Ft
110E7802	Remove Fence for Reset	140	Ft
120E0010	Unclassified Excavation	1,080	CuYd
120E0600	Contractor Furnished Borrow	100	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
250E0020	Incidental Work, Grading	Lump Sum	LS
450E4767	24" CMP 12 Gauge, Furnish	62	Ft
450E4770	24" CMP, Install	62	Ft
450E5015	24" CMP Elbow, Furnish	2	Each
450E5016	24" CMP Elbow, Install	2	Each
450E5215	24" CMP Flared End, Furnish	1	Each
450E5216	24" CMP Flared End, Install	1	Each
450E8014	24" RCP to CMP Transition, Furnish	1	Each
450E8015	24" Pipe Transition, Install	1	Each
620E0510	Type 1 Temporary Fence	290	Ft
620E4100	Reset Fence	140	Ft
634E0010	Flagging	20	Hour
634E0100	Traffic Control	374	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
720E1015	Bank and Channel Protection Gabion	4.5	CuYd
730E0204	Type C Permanent Seed Mixture	4	Lb
732E0100	Mulching	0.4	Ton
734E0604	High Flow Silt Fence	50	Ft
734E0610	Mucking Silt Fence	2	CuYd
734E0620	Repair Silt Fence	10	Ft

ESTIMATE OF QUANTITIES (continued)

Site #3
014-351 PCN I2F3

Bid Item Number	Item	Quantity	Unit
009E0010	Mobilization	Lump Sum	LS
110E1700	Remove Silt Fence	75	Ft
110E7802	Remove Fence for Reset	80	Ft
120E0010	Unclassified Excavation	830	CuYd
120E0600	Contractor Furnished Borrow	1,425	CuYd
230E0100	Remove and Replace Topsoil	Lump Sum	LS
250E0020	Incidental Work, Grading	Lump Sum	LS
450E4767	24" CMP 12 Gauge, Furnish	94	Ft
450E4770	24" CMP, Install	94	Ft
450E5015	24" CMP Elbow, Furnish	2	Each
450E5016	24" CMP Elbow, Install	2	Each
450E5215	24" CMP Flared End, Furnish	1	Each
450E5216	24" CMP Flared End, Install	1	Each
450E8014	24" RCP to CMP Transition, Furnish	1	Each
450E8015	24" Pipe Transition, Install	1	Each
620E0510	Type 1 Temporary Fence	390	Ft
620E4100	Reset Fence	80	Ft
634E0100	Traffic Control	238	Unit
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
720E1015	Bank and Channel Protection Gabion	4.5	CuYd
730E0204	Type C Permanent Seed Mixture	4	Lb
732E0100	Mulching	0.4	Ton
734E0604	High Flow Silt Fence	75	Ft
734E0610	Mucking Silt Fence	2	CuYd
734E0620	Repair Silt Fence	30	Ft

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.

PROJECT WORK HOURS

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

SPECIFICATIONS

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

LOCATION AND SCOPE OF WORK

This project is located at the following sites:
Site #1 - SD 63 at approximately MRM 144.2.
Site #2 - US 14 at approximately MRM 218.6
Site #3 - US 14 at approximately MRM 223.6

The general scope of this project consists of, but is not limited to, the following:

Strip and stockpile topsoil off entire work area.
Clean out existing RCP at Site 3.
Rebuild inslope for downspout.
Install CMP for downspout.
Backfill according to the cross sections.
Place topsoil.
Install erosion control.
Other work as necessary.

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.

WATER QUALITY

Storm Water

At a minimum and regardless of project size, appropriate erosion and sediment control measures must be installed to control the discharge of pollutants from the construction site.

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. The borrow material shall be approved by the Engineer. The plans quantity for “Contractor Furnished Borrow” as shown in the Estimate of Quantities will be the basis of payment for this item.

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

HISTORICAL PRESERVATION OFFICE CLEARANCES

To obtain State Historical Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. In lieu of a cultural resources survey, the Contractor could request a records search from Jim Donohue, State Archaeological Research Center (SARC). Provide SARC with the following: a topographical map or aerial view on which the site is clearly outlined, site dimensions, project number, and PCN. If applicable, 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. The Contractor shall arrange and pay for the cultural resource survey and/or records search.

If any earth disturbing activities occur within the current geographical or historic boundaries of any South Dakota reservation, the Contractor shall obtain Tribal Historical Preservation Office (THPO) clearance. If no THPO exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO or THPO responses, the Contractor should submit a records search or cultural resources survey report to the DOT Environmental Engineer, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3268). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO/THPO approval. The Contractor is responsible for obtaining all required permits and clearances for staging areas, borrow sites, waste disposal sites, and all material processing sites. The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

WASTE DISPOSAL SITE

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:

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.

INCIDENTAL WORK, GRADING

Site #1

Station	L/R	Remarks
0+62	Rt.	Remove Existing CMP Downspout

Site #2

Station	L/R	Remarks
1+01	Rt.	Remove Existing CMP Downspout
1+40 to 2+00	Rt.	Clean out channel

Site #3

Station	L/R	Remarks
1+76 to 3+04	76’ Rt	Salvage Corral Fence
1+74 to 3+04	105’Rt to 108.9 Rt.	Salvage Corral Fence
2+05 to 3+16	191’ Rt. To 108.9’ Rt.	Salvage Corral Fence
1+96	80’ Lt to 90’ Rt.	Clean Out Existing RCP
1+96	Rt.	Remove Existing CMP Downspout
1+75 to 3+04	85’ Rt.	Repair Water Line

Salvage Corral Fence (Incidental Work, Grading)

Site #3

1+76-76' Rt. to 3+04-76' Rt.
1+74-105' Rt. to 3+04-108.9' Rt.
2+05-191' Rt. to 3+16-108.9' Rt.
Above Fence shall be salvaged by the Contractor and stockpiled at a site approved by the Landowner. The Contractor shall take care to not damage the fence. Any horizontal fence members damaged by the Contractor shall be replaced by the Contractor at no cost to the State or Landowner.

CORRUGATED METAL PIPE

Corrugated metal pipes shall have 2 ⅔-inch X ½-inch corrugations for 42-inch and smaller round pipe and 48-inch and smaller arch pipe unless otherwise stated in the plans. Corrugated metal pipes shall have 3-inch X 1-inch or 5-inch X 1-inch corrugations for 48-inch and larger round pipe and 54-inch and larger arch pipe unless otherwise stated in the plans.

The corrugated metal pipes including the elbows, tees, crosses, wyes, and ends shall be 12 gauge and aluminum-coated (Type 2) in accordance with AASHTO M36.

TABLE OF BANK AND CHANNEL PROTECTION GABIONS

Station	L/R	Quantity (CuYd)
0+62 (Site #1)	Rt.	4.5
1+41 (Site #2)	Rt.	4.5
2+20 (Site #3)	Rt.	4.5
	Total:	13.5

GRADING OPERATIONS

Special ditch grades and other sections of the roadway different than the typical section(s) shall be constructed to the limits shown on the cross sections.

Temporary fences and/or permanent fence shall be placed ahead of the grading operation unless otherwise directed by the Engineer.

At Site #2, US Hwy 14 MRM 218.6 the Contractor shall limit excavation to 20’ Rt. of centerline of existing US HWY 14. The Contractor shall be required to maintain a 4:1 slope from 20’ Rt. to 50’ Rt. during non working hours at this location. Flaggers shall be used thru this section as determined by the Engineer. The Contractor shall also replace any granular material removed with base course and any damage to the existing asphalt concrete shall be repaired by the Contractor at no cost to the State. Base course used shall placed as approved by the Engineer and shall be incidental to various bid items for this project. Compaction of Base Course shall be to the satisfaction of the Engineer.

SHRINKAGE FACTOR: Embankment +35%

UNSTABLE EXCAVATION

Unstable Excavation will be required throughout the project limits to excavate saturated or weak compressible soils and other organic materials. A nominal 3 ft. depth of compressible material is anticipated to be removed from each fill footprint prior to construction of the embankment. The depth of unstable excavation may be adjusted by the Engineer to ensure a solid foundation free of organic, soft, unstable material is prepared. Unstable and/or highly organic material shall be stockpiled for use as topsoil or wasted at a site approved by the Engineer.

The quantity of unstable excavation is included in the bid item for Unclassified Excavation.

EMBANKMENT CONSTRUCTION (Site #1)

Compaction for Site #1 (SD 63 MRM 144.2) shall be according to the Ordinary Compaction Method. This method is detailed in Section 120.3 B. 3. b of the Standard Specifications.

EMBANKMENT CONSTRUCTION (Sites #2 and #3)

Compaction for Site #2 (US HWY14 MRM 218.6) and Site #3 (US 14 MRM 223.6) shall be according to the Specified Density Method and as noted below.

Embankment construction shall not begin until all unstable compressible materials have been excavated from the embankment footprint to the satisfaction of the Engineer. A suitable embankment foundation consists of compacted soil which does not pump, rut, or otherwise displace when traveled over with construction equipment. Each embankment shall be benched into the existing slopes in accordance with Section 120.3.B.1 of the Standard Specifications for Roads and Bridges. Compaction of the embankment will be according to the Specified Density Method. Minimum density testing requirements shall be one test per zone per site. Each Zone shall be 3 feet in depth. Moisture testing shall remain as per Minimum Sample Testing Requirements.

REMOVE AND REPLACE TOPSOIL

Topsoil shall also be salvaged and stockpiled prior to constructing the following: downspouts. Limits of this work, depth of salvage, and stockpile location will be directed by the Engineer. Following completion of construction, topsoil shall be spread evenly over the disturbed areas.

Site #1
The estimated amount of topsoil to be removed and replaced is 160 CuYd.

Site #2
The estimated amount of topsoil to be removed and replaced is 160 CuYd.

Site #3
The estimated amount of topsoil to be removed and replaced is 100 CuYd.

All cost associated with removing and replacing the topsoil along areas to be resurfaced shall be incidental to the lump sum price for “Remove and Replace 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 they have baffles, partitions, agitators, or augers which keep the seed distributed throughout the seed box and 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.
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.

HIGH FLOW SILT FENCE

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

http://apps.sd.gov/Applications/HC54ApprovedProducts/main.asp

High flow silt fence shall be placed at the locations noted in the table 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 734.05 for details.

TABLE OF HIGH FLOW SILT FENCE

Station	L/R	Location	Quantity (Ft)
0+62	Rt,	Site #1	50
2+00	Rt.	Site #2	50
2+20	Rt.	Site #3	75
		Additional Quantity:	0
		Total:	175

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.

REMOVE SILT FENCE

Silt fence shall be removed when vegetation is established. Some or all of the silt fence may be left on the project until vegetation is established.

GENERAL MAINTENANCE OF TRAFFIC

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 bottom of signs on portable or temporary supports shall not be less than seven feet above the pavement in urban areas and one foot above the pavement in rural areas. Portable sign supports may be used as long as the duration is less than 3 days. If the duration is more than 3 days the signs shall be on fixed location, ground mounted, breakaway supports.

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

SIGN TABULATION

Site #1

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	2	34	68
W21-3	48" x 48"	ROAD MACHINERY AHEAD	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
				TOTAL UNITS	238

Site #2

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W3-4	48" x 48"	BE PREPARED TO STOP	2	34	68
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	2	34	68
W20-7a	48" x 48"	FLAGGER	2	34	68
W21-3	48" x 48"	ROAD MACHINERY AHEAD	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
				TOTAL UNITS	374

Site #3

SIGN CODE	SIGN SIZE	DESCRIPTION	NUMBER REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" x 18"	END ROAD WORK	2	17	34
W20-1	48" x 48"	ROAD WORK #### FT. OR AHEAD	2	34	68
W21-3	48" x 48"	ROAD MACHINERY AHEAD	2	34	68
W21-5	48" x 48"	SHOULDER WORK	2	34	68
				TOTAL UNITS	238

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	063-352	7	22

PCN I2EC
MRM 144.2
SITE #1

Sta. 0+00 to 1+25 - Rt.
Install 325' Type 1 Temporary Fence

Sta. 0+00 to 1+25 - Rt.
Remove 125' Fence

Sta. 0+00 to 1+25 - Rt.
Install 125' Type 6 ROW Fence

Sta. 0+62 - 128.9' Rt.
Install 4.5 CuYds
Bank & Channel Protection Gabions

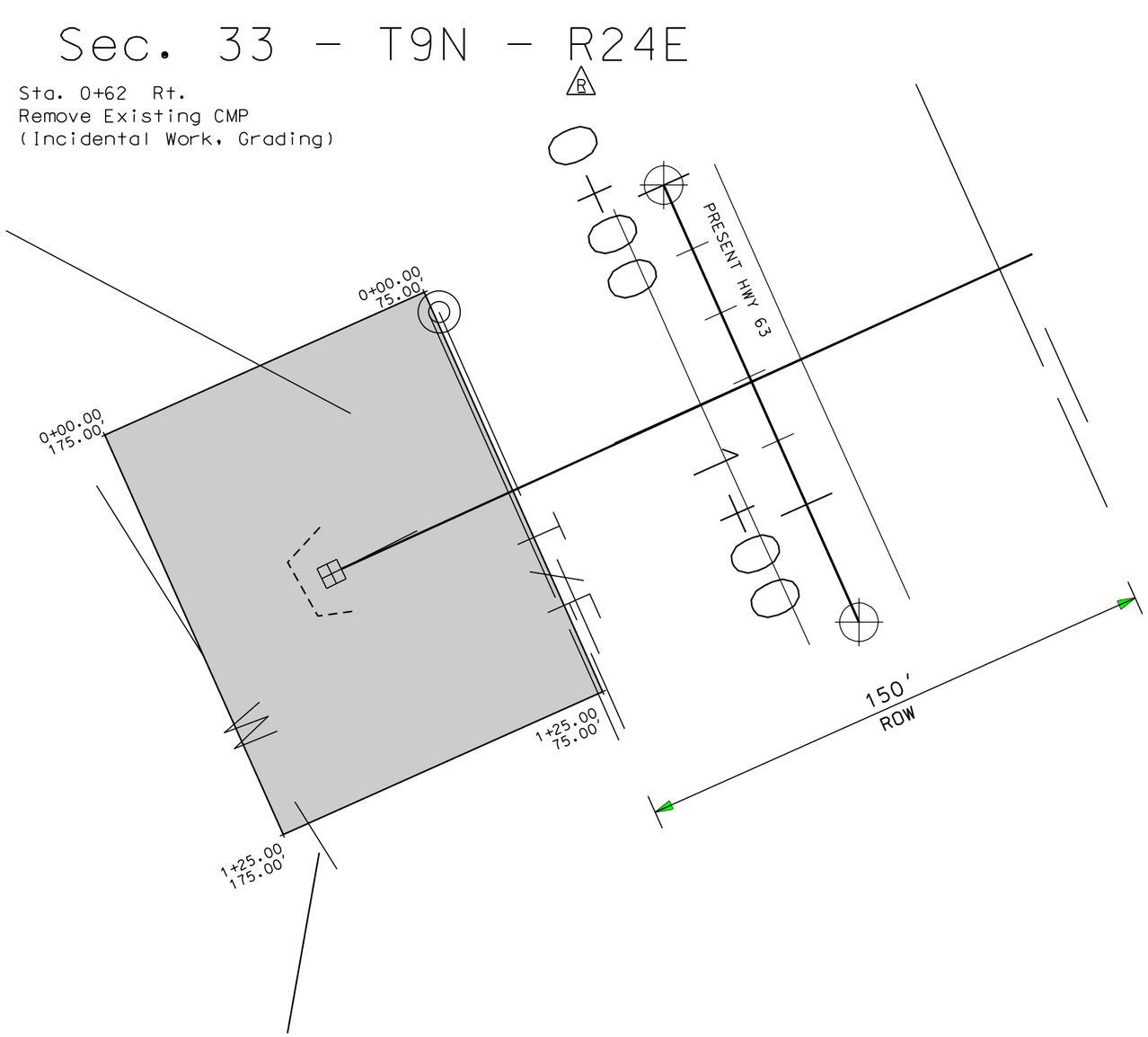
Sta. 0+62 - 135'' Rt.
Install 50" High Flow Silt Fence

Sta. 0+62 Rt.
270 CuYds Contractor Furnished Borrow

Sta. 0+62
Extend Existing 24" RCP With
24" - 12 Gauge Aluminized CMP Downspout
(1 - RCP to CMP Transition, 2 - 12.5 elbows,
66' CMP, 16' CMP, and 1 - CMP Flared End)

Sec. 33 - T9N - R24E

Sta. 0+62 Rt.
Remove Existing CMP
(Incidental Work, Grading)



South Dakota Game Fish & Parks
SW 1/4 Section 33 -
Township 9 North - Range 24 East
of the B.H.M

Parcel No. A1

Sta. 0+00 to 1+25 Rt.
TEMPORARY EASEMENT FOR
PIPE REPLACEMENT CONTAINING
0.29 AC (12,500 SQFT) MORE OR LESS

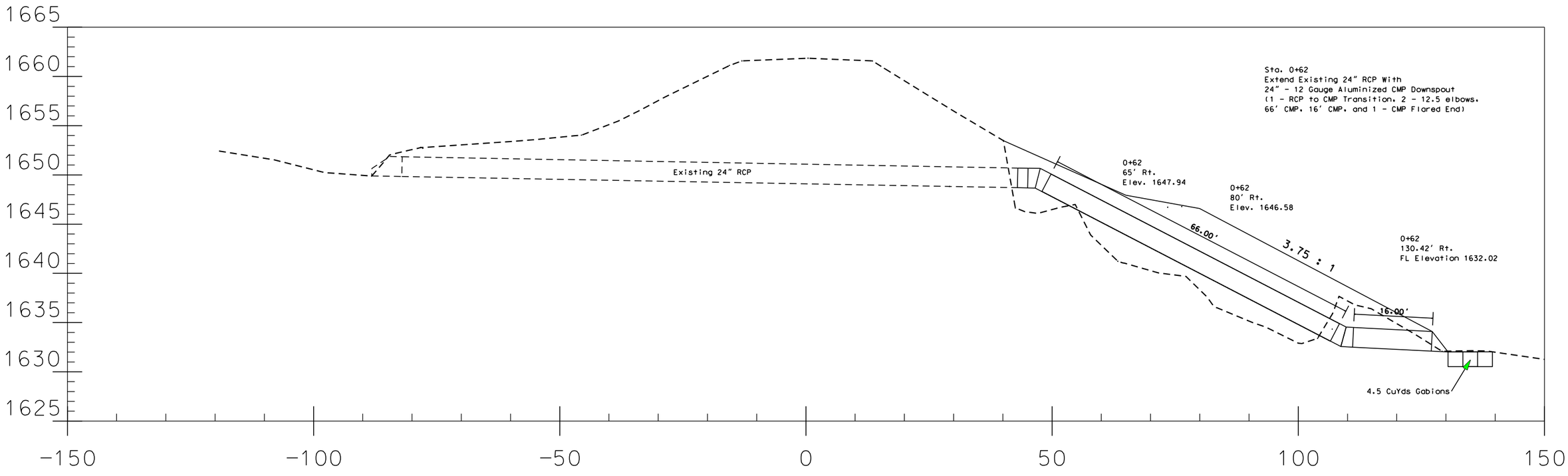
Disturbed Area = 0.10 Acres

Scale 1"= 40'

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	063-352	8	22

Pipe Section

MRM 144.2



0+62

Scale 1" = 20' Horizontal
1" = 10' Vertical

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	9	22

PCN I2F2
MRM 218.6
SITE #2

Sec. 24 - T5N - R29E

Sta. 1+01 (25 Degree Skew RHF)
Extend Existing 24" RCP With
24" - 12 Gauge Aluminized CMP Downspout
(1 - RCP to CMP Transition, 2 - 12.5 degree elbows,
48' CMP, 14' CMP, and 1 - CMP Flared End)

Sta. 0+60 to 2+00 Rt.
Install 290' Type 1 Temporary Fence

Sta. 0+60 to 2+00 - Rt.
Remove 140' ROW Fence for Reset

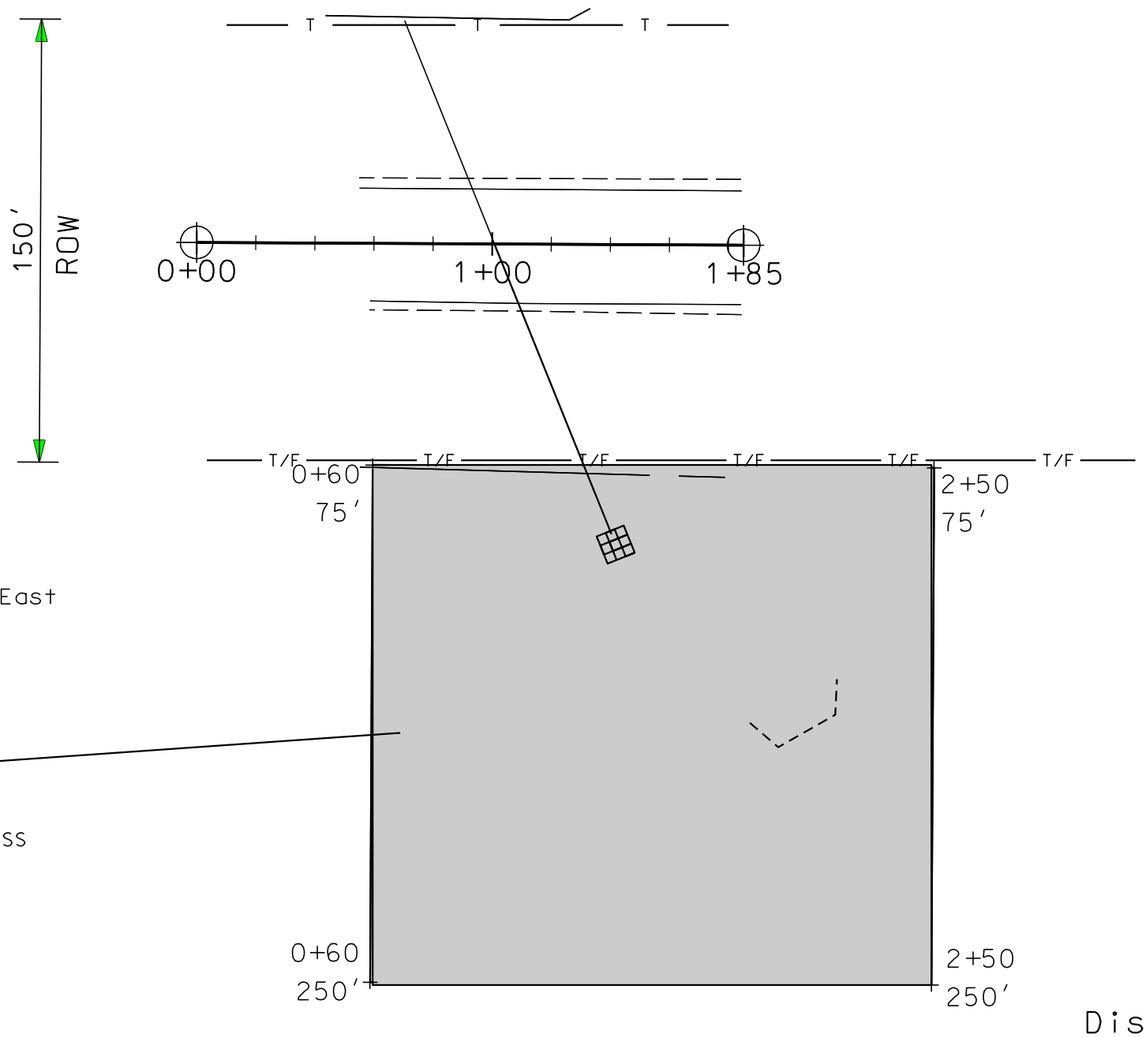
Sta. 0+60 to 2+00 - Rt.
Reset 140' ROW Fence

Sta. 1+41-98' Rt.
Install 4.5 CuYds
Bank & Channel Protection Gabions

Sta. 1+01 Rt.
Remove Existing CMP Downspout
(Incidental Work, Grading)

Sta. 2+00 Rt.
Install 50' High Flow Silt Fence

Sta. 1+40 Rt. to 2+00 Rt.
Channel Cleanout (Incidental Work, Grading)



N

McQustion Family Ltd.
SE 1/4 of Section 24 -
Township 5 North - Range 29 East
of the B.H.M.

Parcel No. A1

Sta. 0+60 to 2+00 Rt.

TEMPORARY EASEMENT FOR

PIPE REPLACEMENT CONTAINING

0.76 AC (33,250 SQFT) MORE OR LESS

Scale 1"= 50'

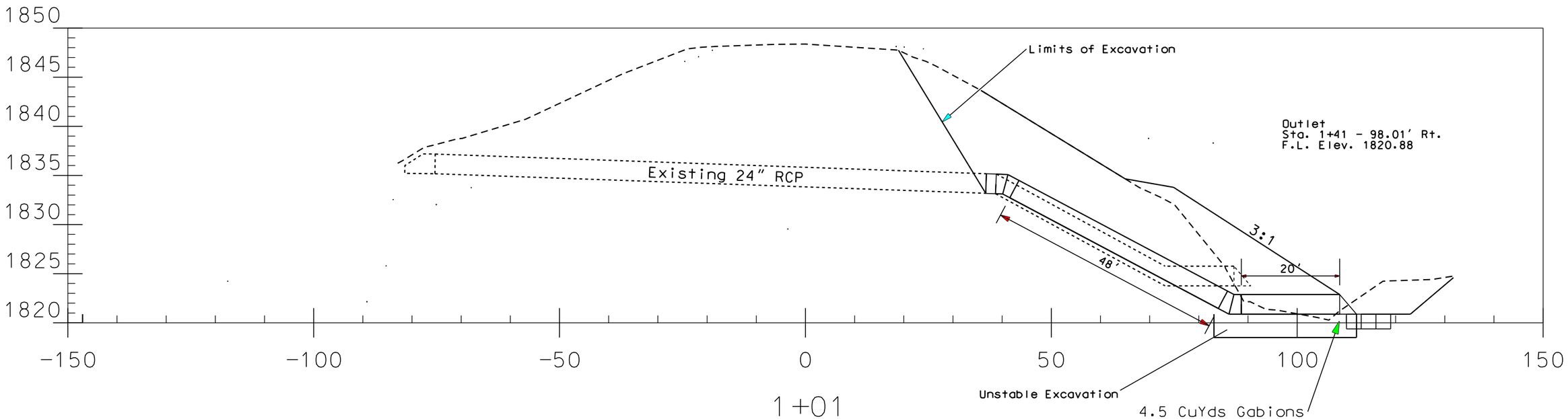
Disturbed Area = 0.2 Acres

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	10	22

Pipe Section

MRM 218.6

Sta. 1+01
Extend Existing 24" RCP With
24" - 12 Gauge Aluminized CMP Downspout
(1 - RCP to CMP Transition, 2 - 12.5 degree elbows,
48' CMP, 14' CMP, and 1 - CMP Flared End)



Scale 1" = 20' Horizontal
1" = 10' Vertical

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	11	22

PCN I2F3
MRM 223.6
SITE #3

Sta. 1+96 (10 Degree Skew RHF)
Extend Existing 24" RCP With
24" - 12 Gauge Aluminized CMP Downspout
(1 - RCP to CMP Transition, 2 - 10 degree elbows,
84' CMP, 10' CMP, and 1 - CMP Flared End)

Sta. 1+96 (10 Degree Skew RHF)
Clean Out Existing 24" RCP
Incidental Work, Grading

Sta. 0+10 to 2+50 - Lt.
Install 390' Type 1 Temporary Fence

Sta. 1+60 to 2+40 - Lt.
Remove 80' ROW Fence for Reset

Sta. 1+60 to 2+40 - Lt.
Reset 80' ROW Fence

Sta. 2+20 - 146.9' Rt.
Install 4.5 CuYds Bank and
Channel Protection Gabions

1425 CuYds Contractor Furnished Borrow

Sta. 2+20 - 160' Rt.
Install 75' High Flow Silt Fence

Sta. 1+96 Rt.
Remove Existing CMP
(Incidental Work, Grading)

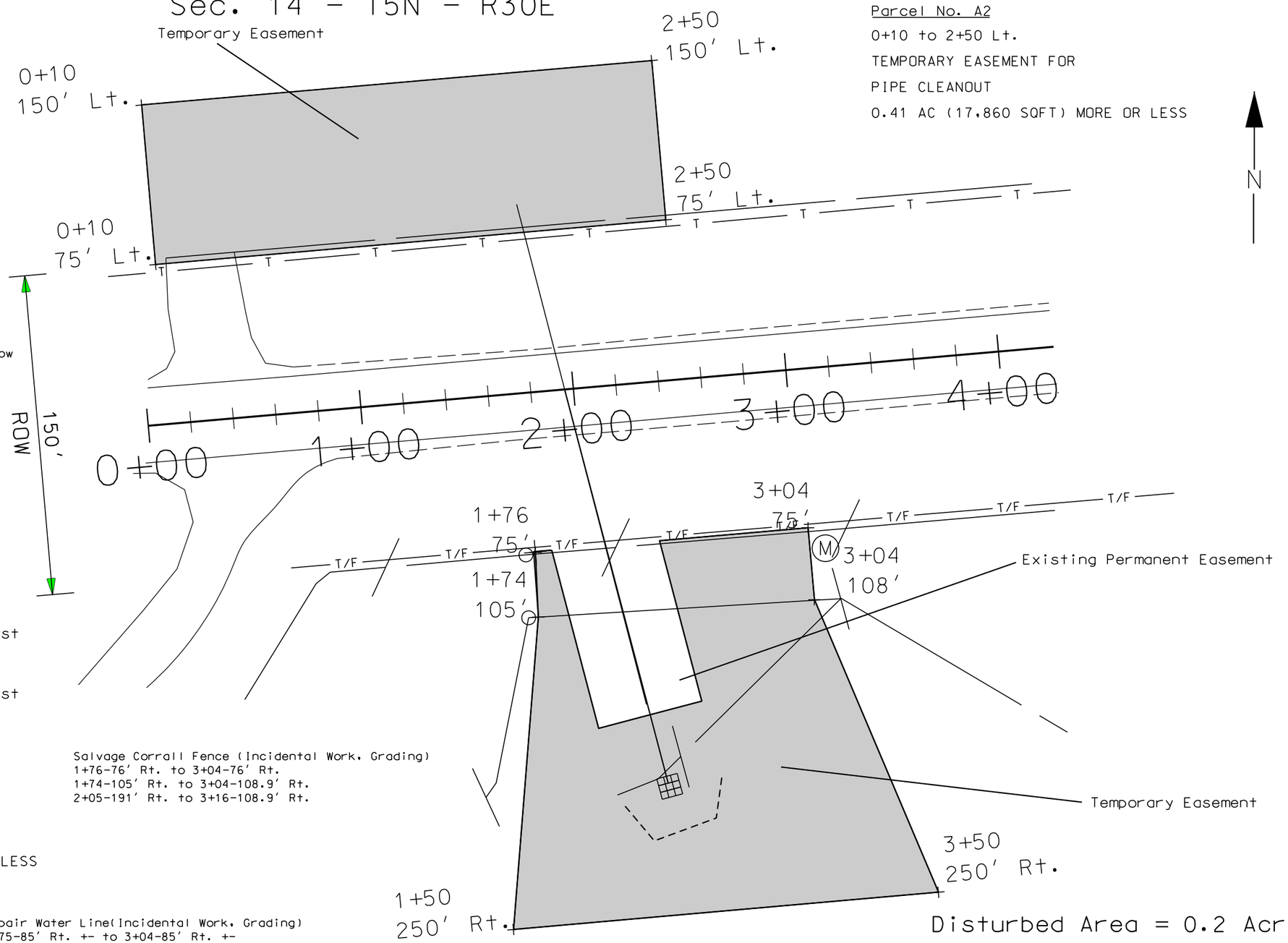
Jerry Schwahn
SE 1/4 of Section 14 -
Township 5 North - Range 30 East
of the B.H.M. &
NE 1/4 of Section 23 -
Township 5 North - Range 30 East
of the B.H.M.

Parcel No. A1
Sta. 1+50 to 3+50 Rt.
TEMPORARY EASEMENT FOR
PIPE REPLACEMENT CONTAINING
0.53 AC (22,880 SQFT) MORE OR LESS

Lillian Briggs
SE 1/4 of Section 14 -
Township 5 North - Range 30 East
of the B.H.M.

Parcel No. A2
0+10 to 2+50 Lt.
TEMPORARY EASEMENT FOR
PIPE CLEANOUT
0.41 AC (17,860 SQFT) MORE OR LESS

Sec. 14 - T5N - R30E



Salvage Corrall Fence (Incidental Work, Grading)
1+76-76' Rt. to 3+04-76' Rt.
1+74-105' Rt. to 3+04-108.9' Rt.
2+05-191' Rt. to 3+16-108.9' Rt.

Repair Water Line(Incidental Work, Grading)
1+75-85' Rt. +- to 3+04-85' Rt. +-
Contractor shall repair existing 2" waterline as needed and
after installation of new cmp downspout. Location shown
on plans is approximate.

Disturbed Area = 0.2 Acres

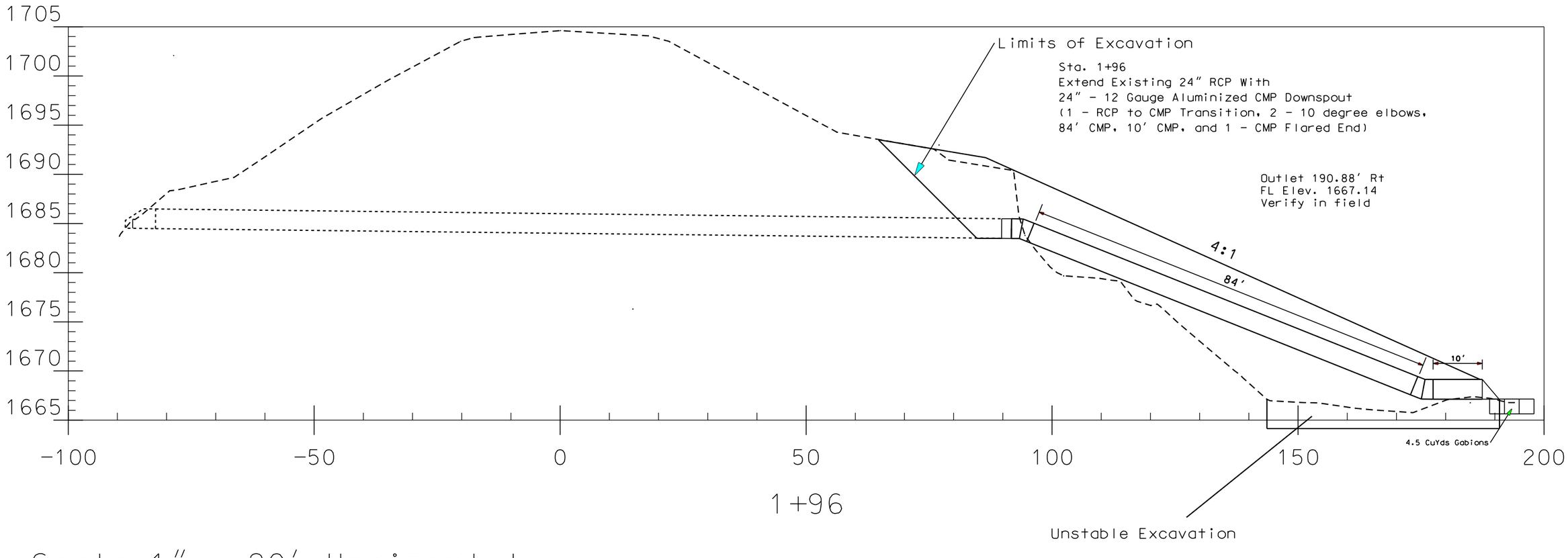
Scale 1"= 50'

Sec. 23 - T5N - R30E

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	12	22

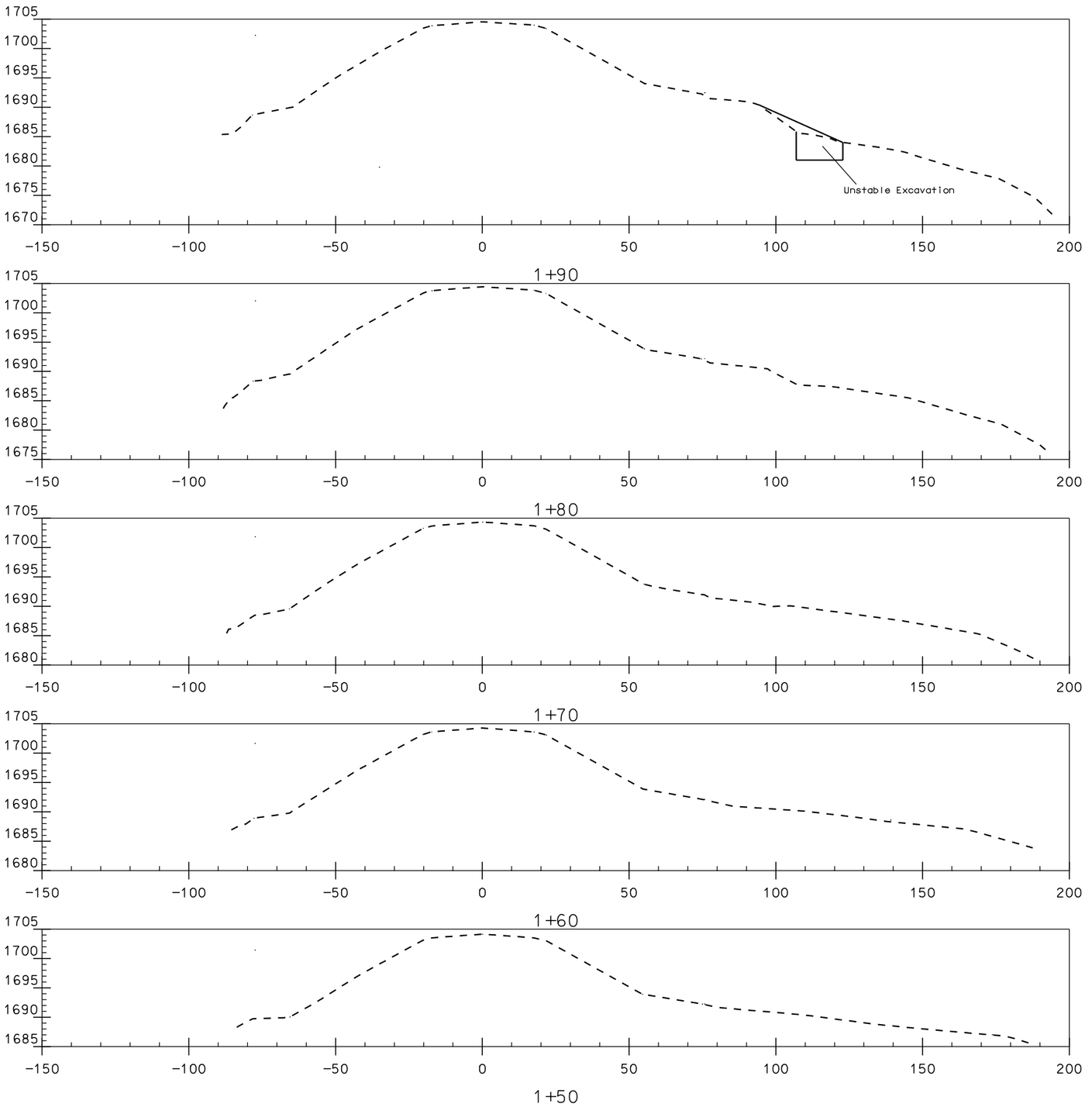
Pipe Section

MRM 223.6



Scale 1" = 20' Horizontal
1" = 10' Vertical

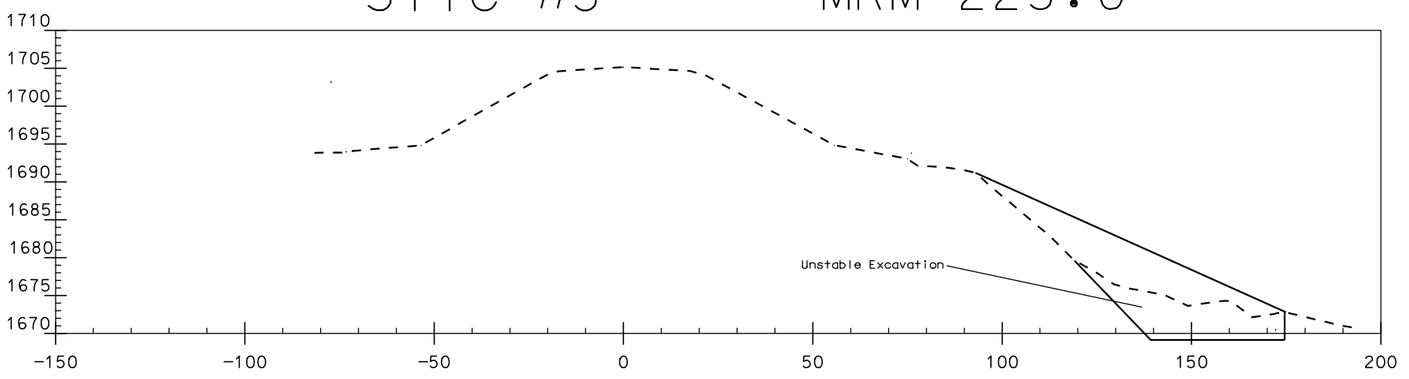
Site #3
MRM 223.6



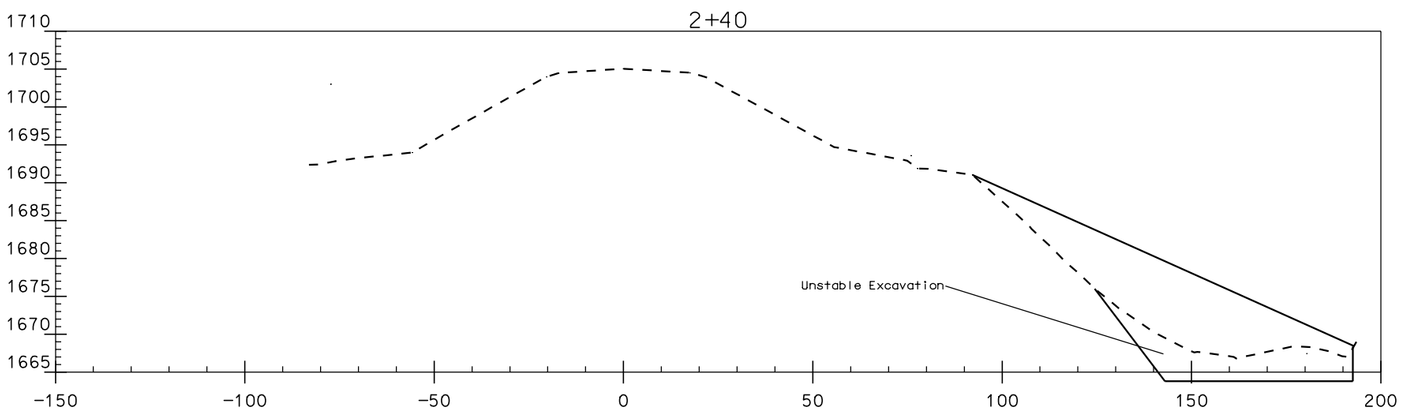
Scale 1" = 40'

STATE OF S.D.	PROJECT	SHEET NO.	TOTAL SHEETS
	014-351	13	22

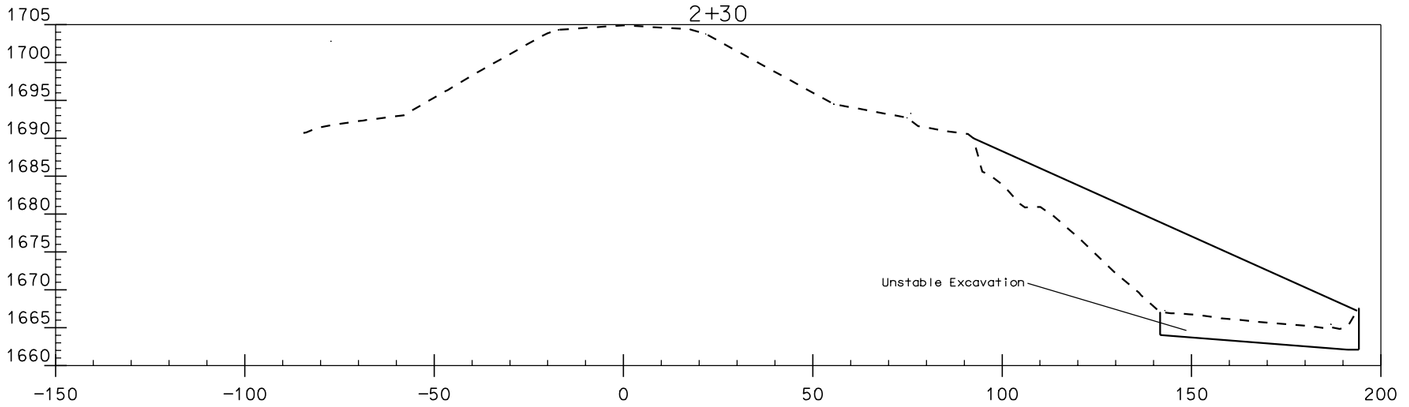
Site #3 MRM 223.6



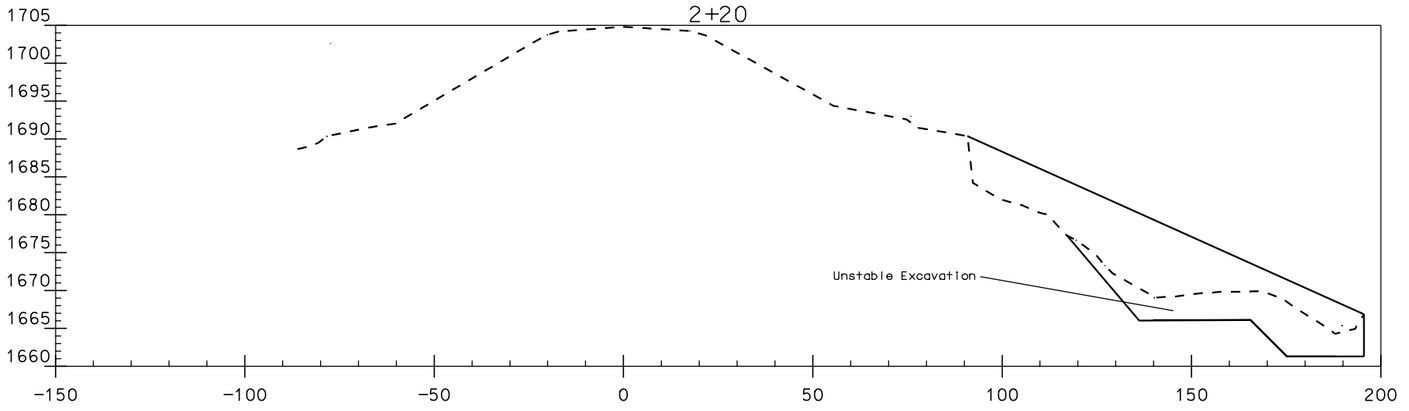
2+40



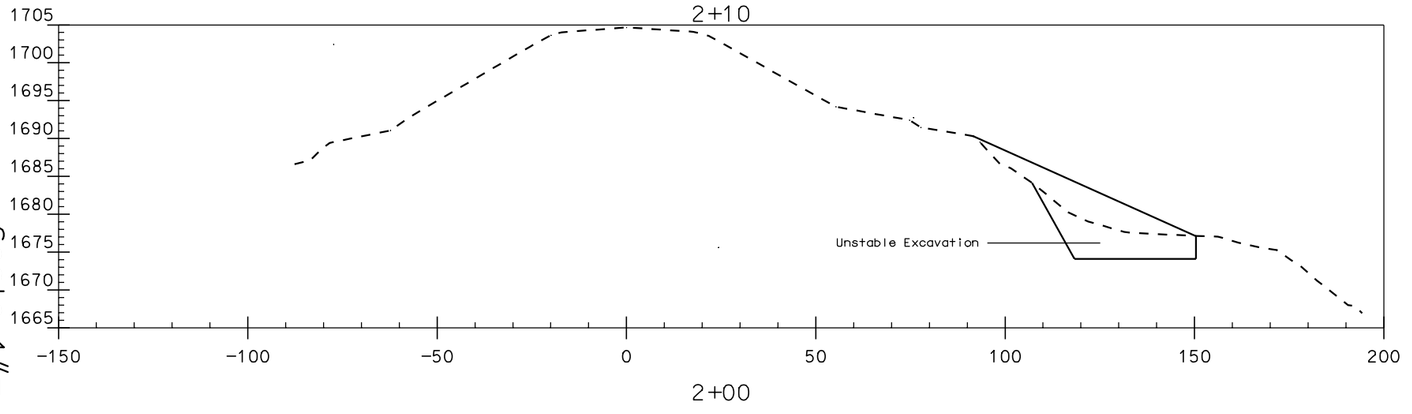
2+30



2+20



2+10

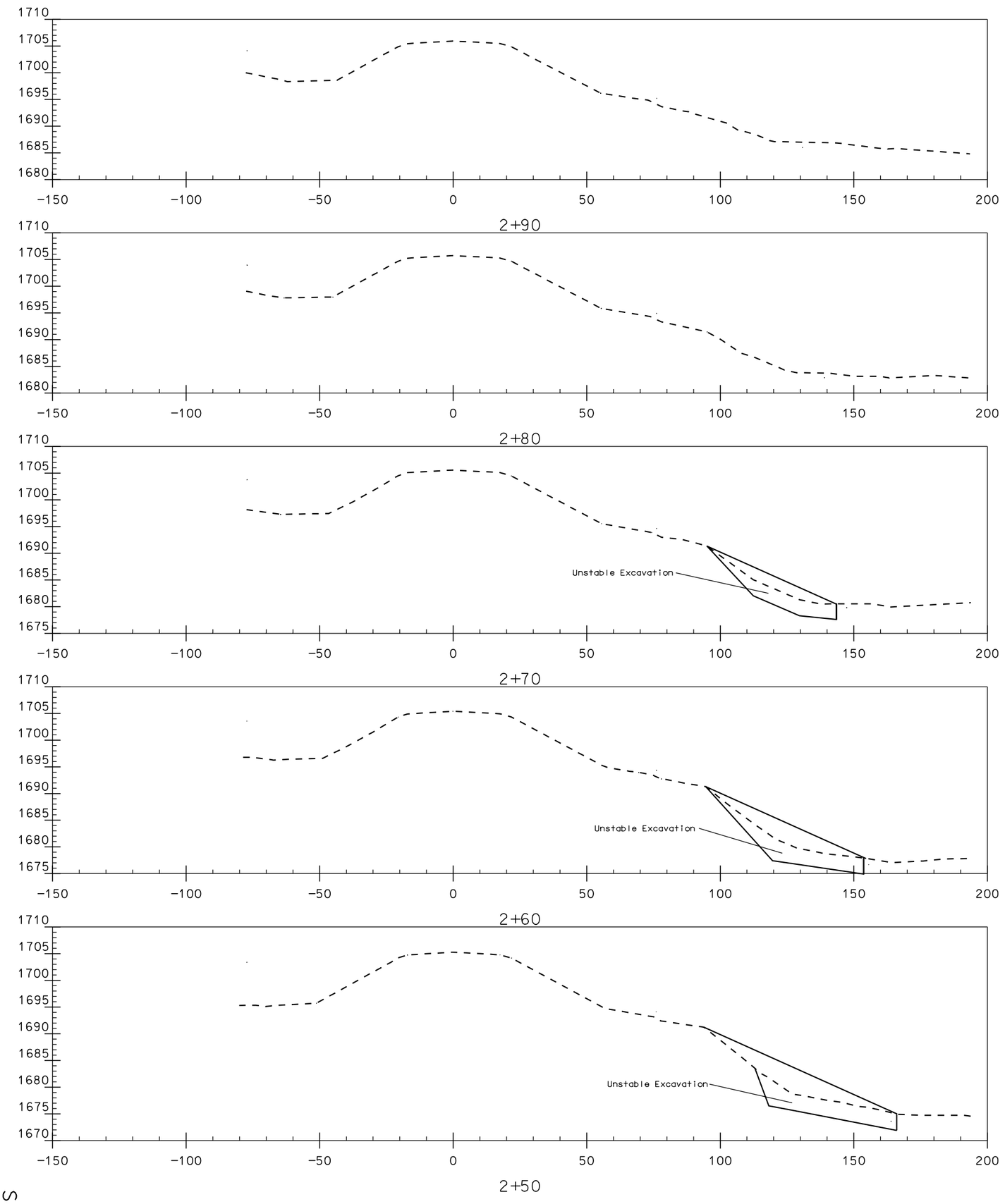


2+00

Scale 1" = 40'

STATE OF S.D.	PROJECT
	014-351
SHEET NO.	TOTAL SHEETS
14	22

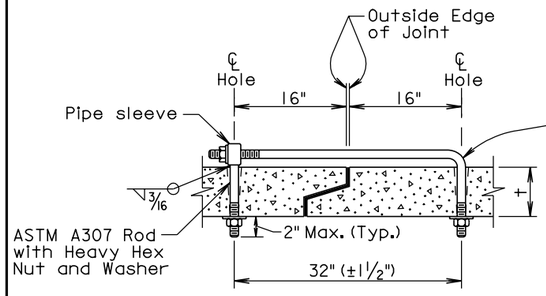
Site #3
MRM 223.6



Scale 1" = 40'

STATE OF	PROJECT	SHEET NO.	TOTAL SHEETS
S.D.	014-351	15	22

Wall "t" (in.)	Rod Dia. (in.)	Pipe Sleeve Dia. (nominal)
≤ 3 1/4	5/8	3/4
3 1/2-6 1/2	3/4	1
≥ 7	1	1 1/4



ADJUSTABLE EYE BOLT TIE

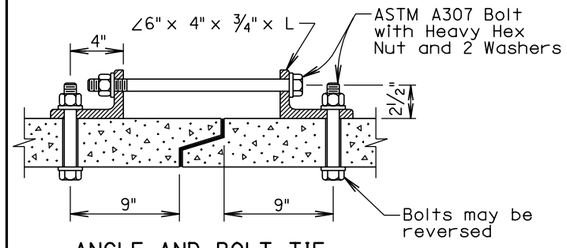
GENERAL NOTES:

Tie bolts shall conform to ASTM A307, Grade C. Nuts shall be heavy hex conforming to ASTM A563. Washers shall conform to ASTM F436.

Pipe Sleeve shall conform to ASTM A500 or A53, Grade B.

Galvanize adjustible eye bolt tie assembly in accordance with ASTM A153.

Pipe Dia. (in.)	"L" (in.)	Bolt Dia. (in.)
≤ 48	4	3/4
> 48	6	1



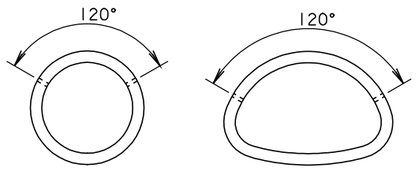
ANGLE AND BOLT TIE

GENERAL NOTES:

Angles shall conform to ASTM A36.

Bolts shall conform to ASTM A307. Nuts shall be heavy hex conforming to ASTM A563. Washers shall conform to ASTM F436.

Galvanize angles, bolts, nuts, and washers in accordance with ASTM A153.



END VIEW "CIRCULAR"

END VIEW "ARCH"

GENERAL NOTES:

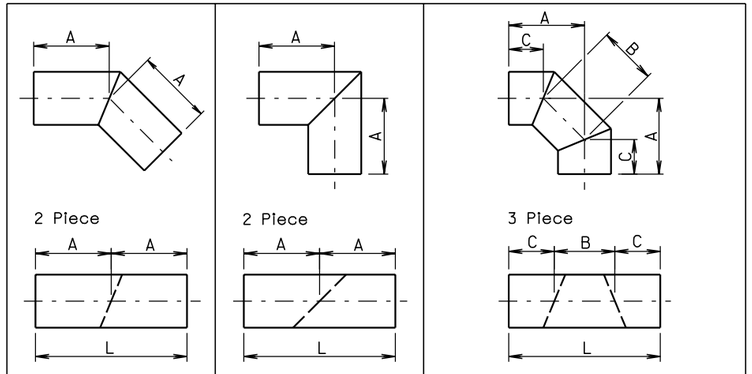
In lieu of tie bolts detailed above, tecktonius fasteners or other type tie bolt connections may be installed if approved by the Engineer.

The first three sections (both inlet and outlet) of 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 larger than 78" diameter or equivalent diameter shall have all sections tied. Each end section is considered as one section.

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. or R.C.P. Arch.

September 14, 2011

Published Date: 2nd Qtr. 2012	SDDOT	TIE BOLTS FOR R.C.P. END SECTIONS	PLATE NUMBER 450.18
			Sheet 1 of 1



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	25 1/2	11	18 1/2	4
15	1	2	15	2	4	15	26 1/2	12	18	4
18	1	2	18	2	4	18	27	14	17	4
21	2	4	21	2	4	21	27	15	16 1/2	4
24	2	4	24	2	4	24	27 1/2	16	16	4
27	2	4	27	2	4	27	27 1/2	17	15 1/2	4
30	2	4	30	3	6	30	40	19	26 1/2	6
33	2	4	33	3	6	33	40	20	26	6
36	2	4	36	3	6	36	40 1/2	21	25 1/2	6
42	2	4	42	3	6	42	41	23	24 1/2	6
48	2	4	48	4	8	48	53 1/2	26	35	8
54	3	6	54	4	8	54	54	28	34	8
60	3	6	60	4	8	60	54 1/2	31	32 1/2	8
66	3	6	66	4	8	66	54	33	31 1/2	8
72	3	6	72	5	10	72	67 1/2	36	42	10
78	3	6	78	5	10	78	68	39	40 1/2	10
84	3	6	84	5	10	84	68 1/2	41	39 1/2	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:

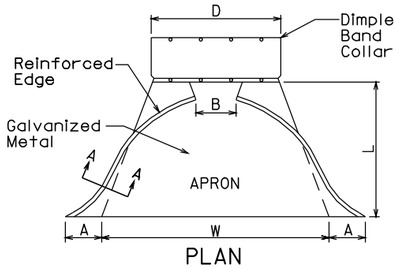
All dimensions shown are nominal.

L = Linear Feet of C.M.P. required to fabricate fitting.

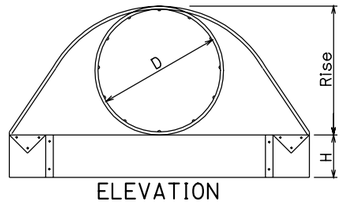
June 26, 2001

Published Date: 2nd Qtr. 2012	SDDOT	C.M.P. FABRICATED LENGTHS FOR ELBOWS	PLATE NUMBER 450.32
			Sheet 1 of 1

Alternate Type Connector Sections may be used with approval of the Engineer.



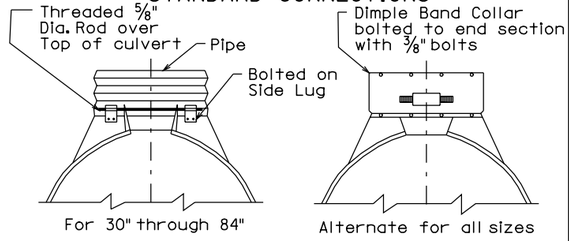
PLAN

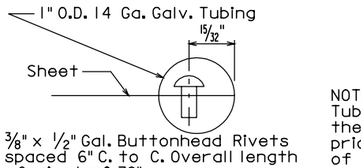


ELEVATION

Dia. D (In.)	Ga.	DIMENSIONS (In.) A	B	H	L	W	Approx. Slope	Body
12	16	6	6	6	21	24	2½:1	1 Pc.
15	16	7	8	6	26	30	2½:1	1 Pc.
18	16	8	10	6	31	36	2½:1	1 Pc.
21	16	9	12	6	36	42	2½:1	1 Pc.
24	16	10	13	6	41	48	2½:1	1 Pc.
30	14	12	16	8	46	60	2½:1	1 Pc.
36	14	14	19	9	51	72	2½:1	2 Pc.
42	12	16	22	11	60	84	2½:1	2 Pc.
48	12	18	27	12	69	90	2¼:1	2 Pc.
54	12	18	30	12	78	102	2:1	3 Pc.
60	12	18	33	12	84	114	1¾:1	3 Pc.
66	12	18	36	12	87	120	1½:1	3 Pc.
72	12	18	39	12	87	126	1⅓:1	3 Pc.
78	12	18	42	12	87	132	1¼:1	3 Pc.
84	12	18	45	12	87	138	1⅙:1	3 Pc.

STANDARD CONNECTIONS

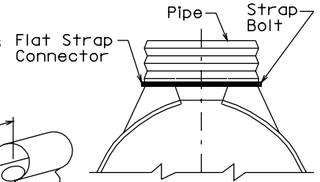


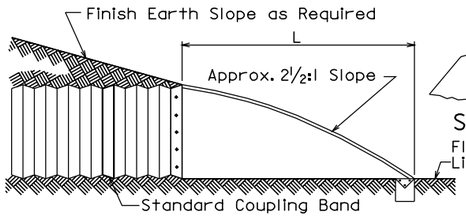


3/8" x 1/2" Gal. Buttonhead Rivets spaced 6" C. to C. Overall length of rivets=0.78"

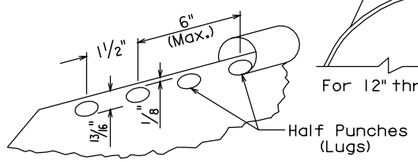
TUBING ATTACHMENT DETAILS
SECTION A-A

NOTE:
Tubing is slipped over the sheet and rivets or lugs prior to forming operations of the apron.

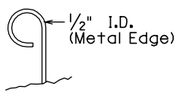




TYPICAL CROSS-SECTION



SECTION A-A (alternate)



SECTION A-A (alternate)

GENERAL NOTES:

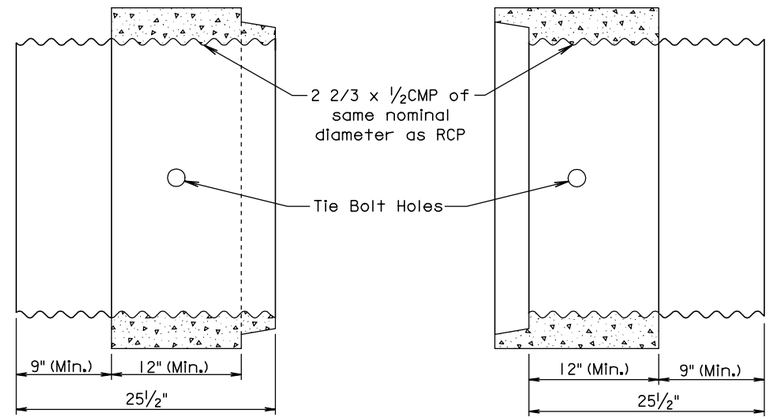
All 3 pc. bodies shall have 12 Ga. sides and 10 Ga. center panels. Width of center panels shall be greater than 20% of the pipe periphery. Multiple panel bodies to have lap seams tightly joined by 3/8" Dia. galvanized rivets or bolts.

For 60" through 84" sizes, reinforced edges shall be supplemented with galvanized stiffener angles. The angles will be 2" x 2" x 1/4" for 60" through 72" diameters and 2½" x 2½" x 1/4" for 78" and 84" diameters. The angles shall be attached by 3/8" diameter galvanized nuts and bolts.

Rivets and Bolts shall be 3/8" Dia, Min. for 10 Ga. and 12 Ga. sheet, and 5/16" Dia. Min. for 14 Ga. and 16 Ga. sheets. Tighten nuts with torque wrench to 25 lbs. torque.

March 31, 2000

Published Date: 2nd Qtr. 2012	SDDOT	C.M.P. FLARED ENDS	PLATE NUMBER 450.35
			Sheet 1 of 1



INLET
(CMP to RCP Transition)

OUTLET
(RCP to CMP Transition)

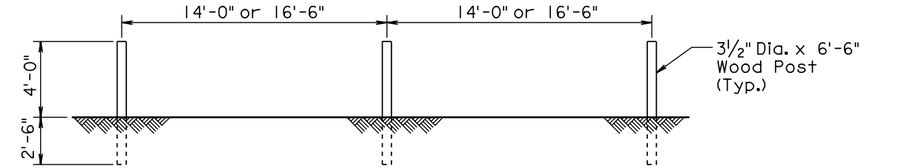
GENERAL NOTE:

Arch pipe transitions shall be fabricated similar to the round transition shown above.

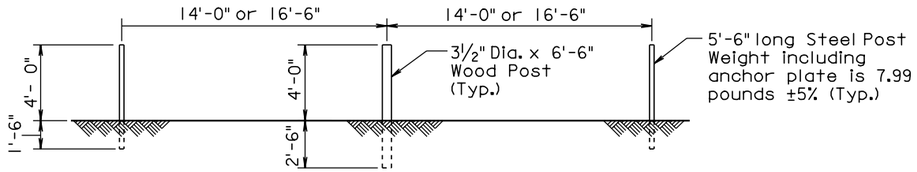
March 31, 2000

Published Date: 2nd Qtr. 2012	SDDOT	C.M.P. TO R.C.P. TRANSITION AND R.C.P. TO C.M.P. TRANSITION	PLATE NUMBER 450.50
			Sheet 1 of 1

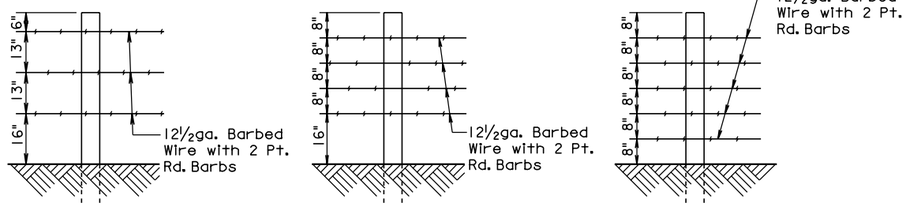
Username - trpr22412



ALL WOOD POSTS



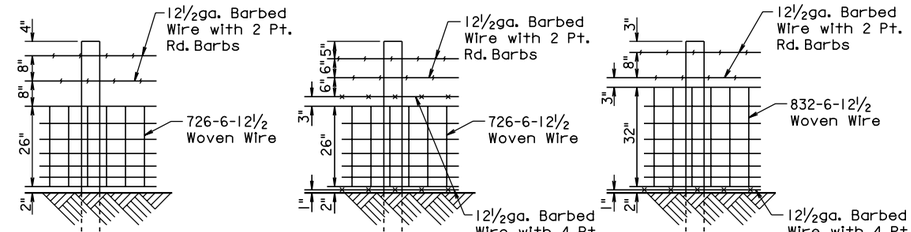
ALTERNATE WOOD AND STEEL POSTS



TYPE 1
3 BARBED WIRES

TYPE 2
4 BARBED WIRES

TYPE 3
5 BARBED WIRES



TYPE 4
26" WOVEN WIRE
WITH 2 BARBED WIRES

TYPE 5
26" WOVEN WIRE
WITH 4 BARBED WIRES

TYPE 6
32" WOVEN WIRE
WITH 3 BARBED WIRES

TYPE OF FENCE		LINE POST SPACING	BARBED WIRE		WOVEN WIRE
			WIRE GAGE	NUMBER AND SHAPE OF BARBS	STYLE OR DESIGN NO.
TYPE	DESCRIPTION				
1	3 Barbed Wires	16'-6"	12½	2 Point Round	—
2	4 Barbed Wires	16'-6"	12½	2 Point Round	—
3	5 Barbed Wires	16'-6"	12½	2 Point Round	—
4	26" Woven Wire with 2 Barbed Wires	14'-0"	12½	2 Point Round	726-6-12½
5	26" Woven Wire with 4 Barbed Wires	14'-0"	12½	2 wires with 2 Pt. Rd. 2 wires with 4 Pt. Rd.	726-6-12½
6	32" Woven Wire with 3 Barbed Wires	14'-0"	12½	2 wires with 2 Pt. Rd. 1 wire with 4 Pt. Rd.	832-6-12½

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.

September 14, 2009

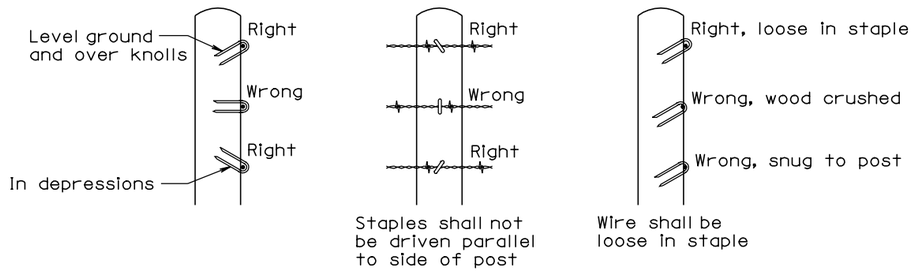
Published Date: 2nd Qtr. 2012

SDDOT

RIGHT-OF-WAY FENCE

PLATE NUMBER 620.01

Sheet 1 of 1



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

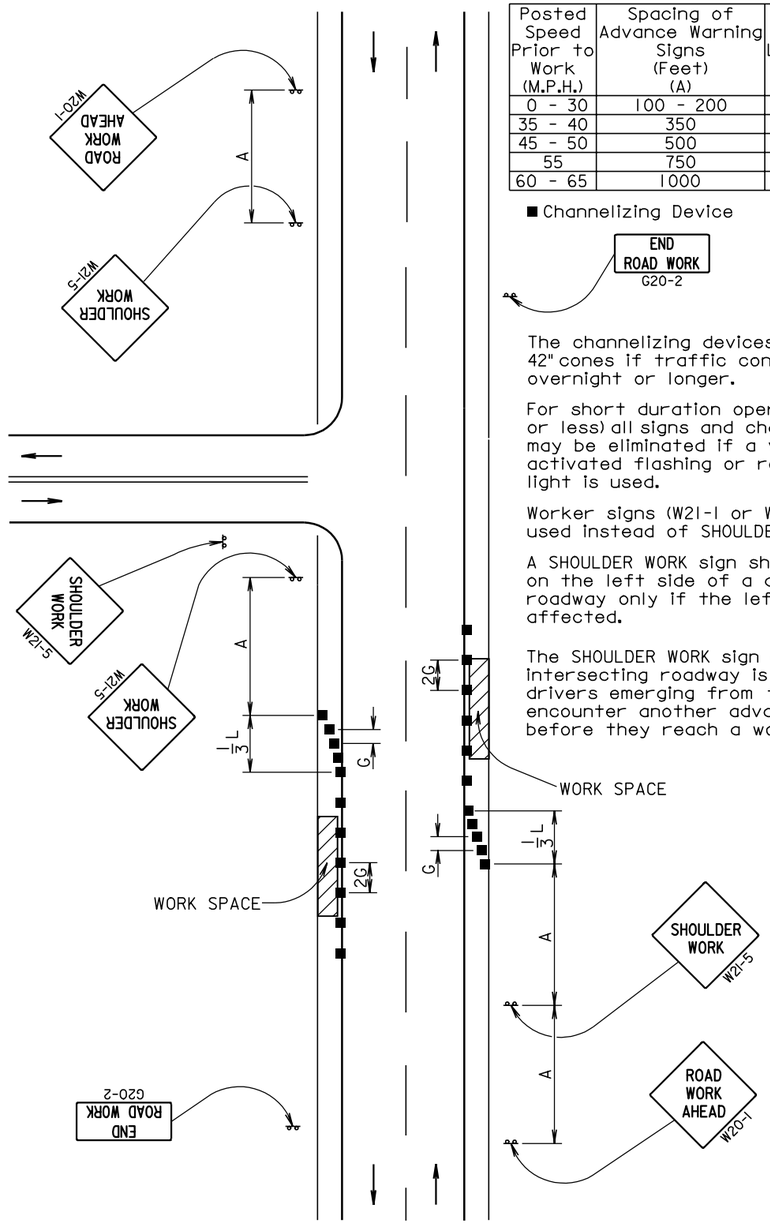
Published Date: 2nd Qtr. 2012

SDDOT

STAPLE INSTALLATION AND GENERAL RIGHT-OF-WAY FENCE NOTES

PLATE NUMBER 620.02

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	100 - 200	180	25
35 - 40	350	320	25
45 - 50	500	600	50
55	750	660	50
60 - 65	1000	780	50

■ Channelizing Device

END ROAD WORK
G20-2

The channelizing devices shall be drums or 42" cones 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.

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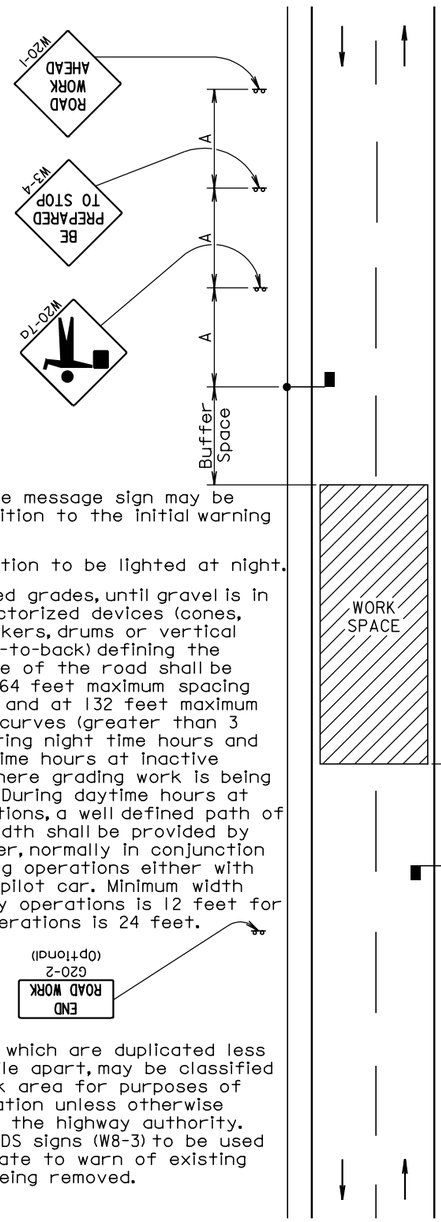
SDDOT

GUIDES FOR TRAFFIC CONTROL DEVICES
WORK ON SHOULDERS

PLATE NUMBER 634.03

Sheet 1 of 1



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 - 65	1000

Flagger

END ROAD WORK
G20-2
(Optional)

Posted Speed Prior to Work (M.P.H.)	Length of Longitudinal Buffer Space (Feet)
20	35
25	55
30	85
35	120
40	170
45	220
50	280
55	335
60	415
65	485

Buffer space dependent on work site limitations.

A changeable message sign may be used in addition to the initial warning sign.

Flagger station to be lighted at night.

On unfinished grades, until gravel is in place, reflectorized devices (cones, tubular markers, drums or vertical panels back-to-back) defining the outside edge of the road shall be placed at 264 feet maximum spacing on tangent and at 132 feet maximum spacing on curves (greater than 3 degrees) during night time hours and during daytime hours at inactive locations where grading work is being performed. During daytime hours at active locations, a well defined path of adequate width shall be provided by motor grader, normally in conjunction with flagging operations either with or without pilot car. Minimum width for one way operations is 12 feet for two way operations is 24 feet.

END ROAD WORK
G20-2
(Optional)

Work areas which are duplicated less than one mile apart, may be classified as one work area for purposes of sign installation unless otherwise directed by the highway authority. PAVEMENT ENDS signs (W8-3) to be used as appropriate to warn of existing surfacing being removed.

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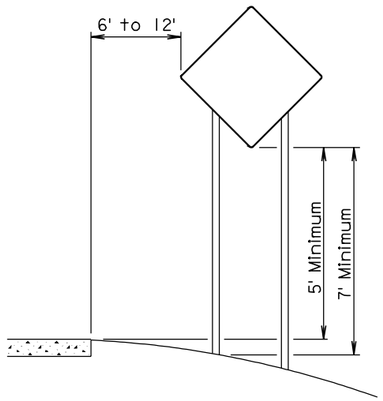
SDDOT

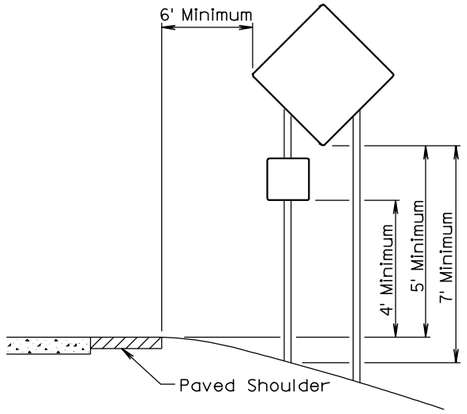
GUIDES FOR TRAFFIC CONTROL DEVICES
LONG TERM ROAD WORK

PLATE NUMBER 634.31

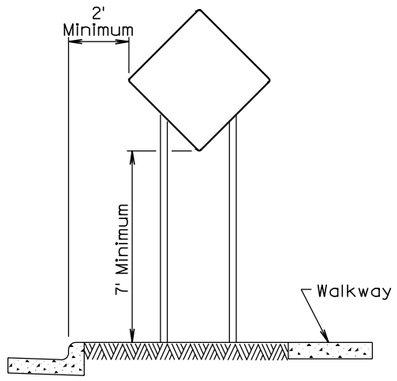
Sheet 1 of 1



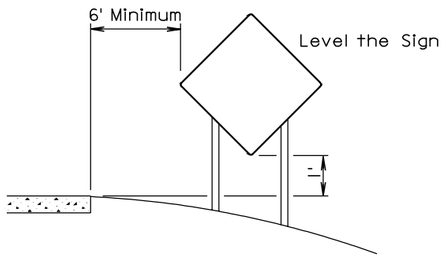
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



URBAN DISTRICT



RURAL DISTRICT 3 DAY MAXIMUM

February 14, 2011

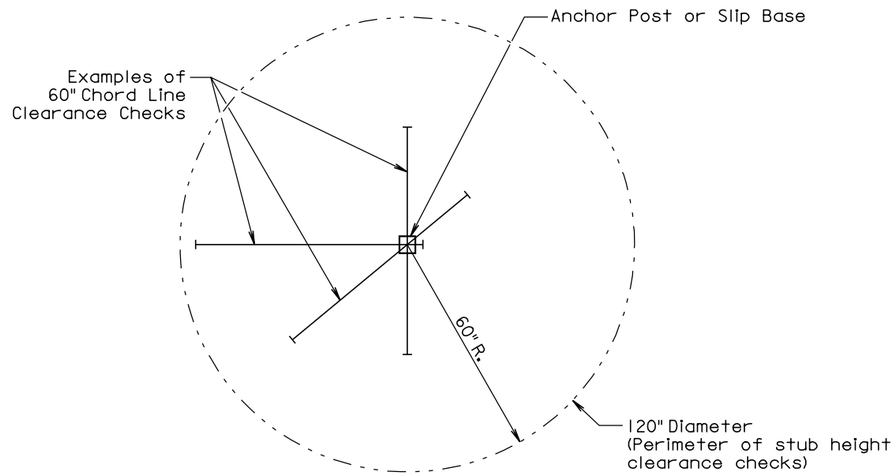
Published Date: 2nd Qtr. 2012

SDDOT

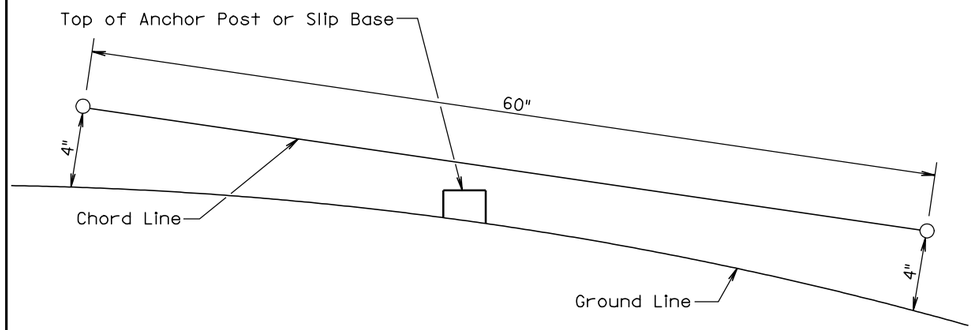
CRASHWORTHY SIGN SUPPORTS
(Typical Construction Signing)

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

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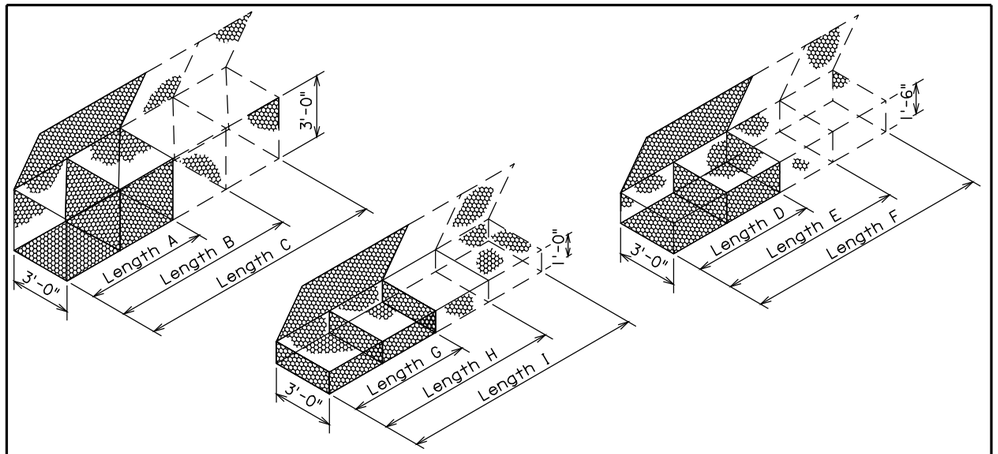
SDDOT

BREAKAWAY SUPPORT STUB CLEARANCE

PLATE NUMBER 634.99

Sheet 1 of 1



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 ½ 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.

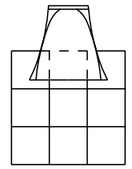
Wire lacing or interlocking type fasteners shall be used for gabion assembly and final construction of gabion structures. Interlocking fasteners for galvanized gabions shall be high tensile 0.120 inch diameter galvanized steel wire measured after galvanizing. The galvanizing shall conform to ASTM A641-92 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 1. 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

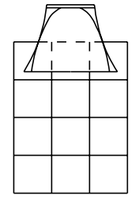
Published Date: 2nd Qtr. 2012	SDDOT	BANK AND CHANNEL PROTECTION GABIONS	PLATE NUMBER 720.01 Sheet 1 of 1

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



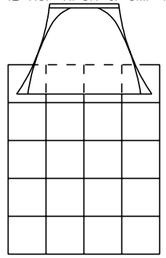
4.5 Cu. Yds.

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



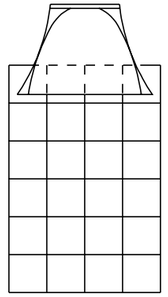
6.0 Cu. Yds.

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



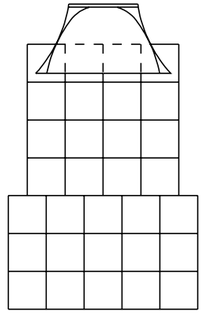
10.0 Cu. Yds.

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



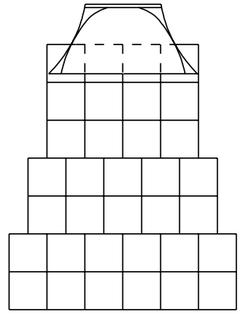
12.0 Cu. Yds.

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



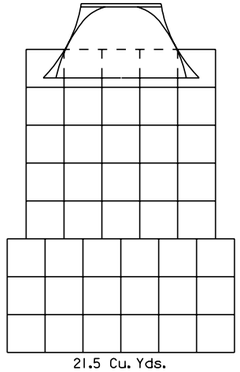
15.5 Cu. Yds.

66" RCP & CMP



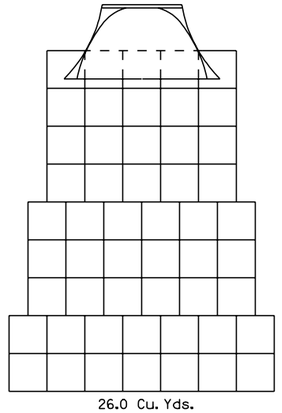
17.0 Cu. Yds.

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



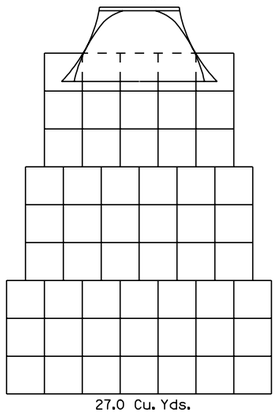
21.5 Cu. Yds.

78" RCP & CMP



26.0 Cu. Yds.

84" RCP & CMP



27.0 Cu. Yds.

GENERAL NOTES:

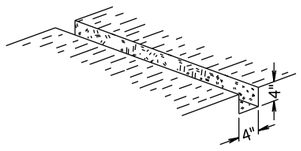
Gabions at outlets of C. M. pipe and R. C. pipe shall be placed under the end section a distance of 2' from the outlet end of the section. For C. M. pipe end section installations, the upper fabric of the gabions shall be modified to accommodate the metal end section in a manner approved by the Engineer.

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

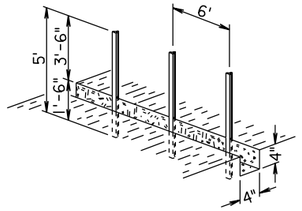
June 26, 2001

Published Date: 2nd Qtr. 2012	SDDOT	BANK AND CHANNEL PROTECTION GABION PLACEMENT UNDER PIPE END SECTIONS	PLATE NUMBER 720.03 Sheet 1 of 1

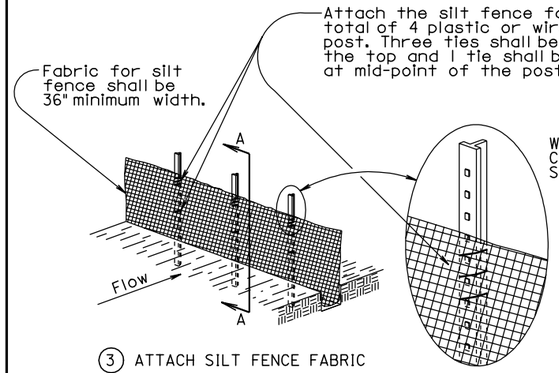
MANUAL HIGH FLOW SILT FENCE INSTALLATION



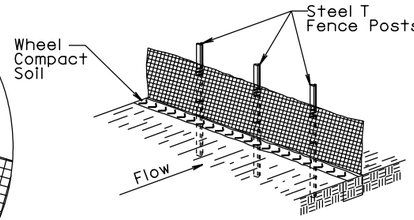
(1) EXCAVATE TRENCH



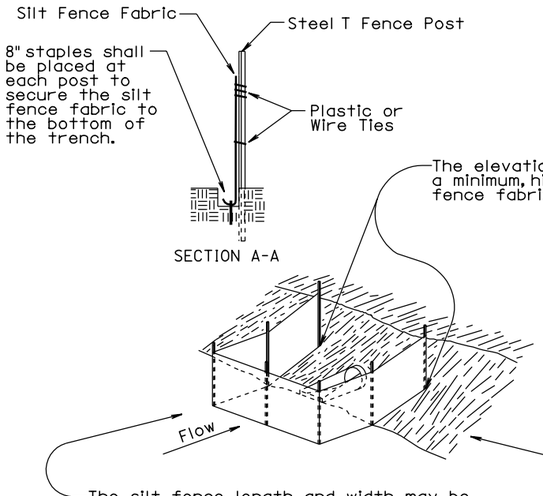
(2) DRIVE STEEL T FENCE POSTS



(3) ATTACH SILT FENCE FABRIC



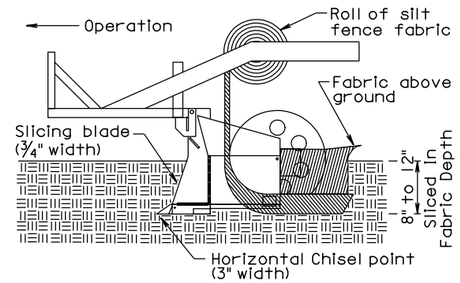
(4) BACKFILL TRENCH AND WHEEL COMPACT SOIL



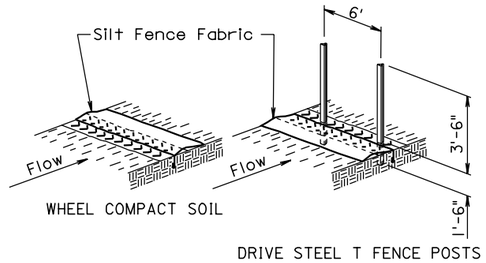
December 23, 2003

Published Date: 2nd Qtr. 2012	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 1 of 2

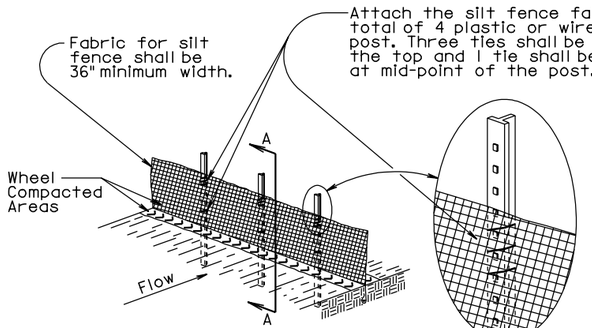
MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



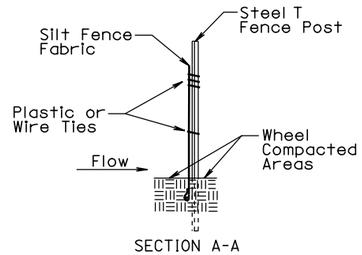
(1) INSTALL SILT FENCE FABRIC BY MACHINE SLICING METHOD.



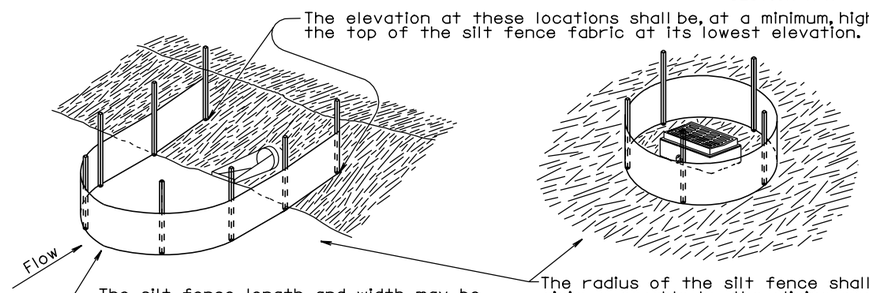
(2) WHEEL COMPACT SOIL ABOVE SLICED IN PORTION OF FABRIC AND THEN DRIVE STEEL T FENCE POSTS.



(3) ATTACH SILT FENCE FABRIC



SECTION A-A



GENERAL NOTE:

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: 2nd Qtr. 2012	SDDOT	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
			Sheet 2 of 2