

STATE OF SOUTH DAKOTA	PROJECT ER 0023(38)	SHEET NO. 1	TOTAL SHEETS 20
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STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED PROJECT NO. ER 0023(38) PCN 044X HUTCHINSON WETLAND MITIGATION

INDEX OF SECTIONS

SECTION A:	ESTIMATE OF QUANTITIES
SECTION B:	GRADING PLAN
SECTION C:	TRAFFIC CONTROL
SECTION D:	EROSION AND SEDIMENT CONTROL

LEGEND

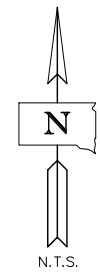
	STREET CENTERLINE
	SURVEY BASELINE
	COUNTY
	SECTION
	QUARTER
	SIXTEENTH
	CORPORATE LIMITS

EXISTING

	RIGHT OF WAY
	PERMANENT EASEMENT
	PROPERTY LINE
	R.R. RIGHT OF WAY
	SANITARY SEWER AND MANHOLE
	FORCE MAIN
	SANITARY SEWER SERVICE & CLEANOUT
	WATER MAIN, HYDRANT AND VALVE
	WATER SERVICE AND CURB STOP BOX
	WATER VALVE MANHOLE
	STORM SEWER, APRON, MANHOLE AND CATCH BASIN
	CULVERT
	BULKHEAD
	BURIED FIBER OPTIC CABLE
	BURIED FIBER OPTIC DUCT OR CONDUIT
	BURIED PHONE CABLE AND PEDESTAL
	BURIED PHONE DUCT OR CONDUIT AND MANHOLE
	BURIED TV CABLE AND PEDESTAL
	BURIED ELECTRIC CABLE
	BURIED ELECTRIC DUCT OR CONDUIT AND MANHOLE
	OVERHEAD ELECTRIC, POLE AND DOWN GUY ANCHOR
	LIGHT POLE
	TRAFFIC SIGNAL STANDARD
	GAS MAIN
	GAS SIGN, VALVE AND VENT
	PETROLEUM PIPELINE
	SOIL BORING
	TRAVERSE POINT
	CONCRETE CURB AND GUTTER
	EXISTING PAVEMENT OR SIDEWALK
	SIGN (HWY, PARK, STOP, ETC.)
	STREET NAME SIGN
	DITCH
	RAILROAD TRACKS
	FENCE (UNIDENTIFIED)
	BARBED WIRE FENCE
	CHAIN LINK FENCE
	ELECTRIC WIRE FENCE
	WOOD FENCE
	WOVEN WIRE FENCE
	PLATE BEAM GUARDRAIL
	CABLE GUARDRAIL
	DECIDUOUS AND CONIFEROUS TREE
	BUSH-SHRUB
	WOODED AREA
	WETLAND
	BUILDING

PROPOSED

	NEW RIGHT OF WAY
	PERMANENT EASEMENT
	TEMPORARY EASEMENT
	SANITARY SEWER AND MANHOLE
	FORCE MAIN
	SANITARY SEWER SERVICE & CLEANOUT
	WATER MAIN, HYDRANT AND VALVE
	WATER SERVICE AND CURB STOP BOX
	WATER VALVE MANHOLE
	STORM SEWER, MANHOLE AND CATCH BASIN
	CULVERT
	BULKHEAD
	DRAIN PIPE
	DITCH
	CONCRETE CURB AND GUTTER
	SILT FENCE
	FLOATION SILT CURTAIN
	BIOROLL
	LIGHT POLE
	TRAFFIC SIGNAL, STANDARD
	SIGN (HWY, PARK, STOP, ETC.)
	STREET LIGHT FEED POINT
	STREET LIGHTING CABLE
	REMOVE TREE



STORM WATER PERMIT
HUTCHINSON WETLAND
TOTAL PROJECT AREA: 14.77
AREA DISTURBED: 9.6 ACRES
MAJOR STREAM: MUD CREEK

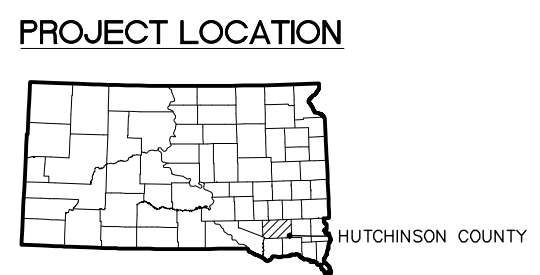
PROJECT LOCATIONS:
HUTCHINSON WETLAND
LAT: 43.16987201
LON: -97.41903196

APPROVED:	DATE
APPROVED:	DATE



I, ALAN V. MURRA, HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ENGINEER UNDER THE LAWS OF THE STATE OF SOUTH DAKOTA.

ALAN V. MURRA, P.E.	9228	05-08-2013
NAME	S.D. No.	Date



PROJECT LOCATION
PROPERTY DESCRIPTION:
LOT A - SW4 36-97-56 CONTAINING 20.58 ACRES,
MORE OR LESS, OF WHICH 5.81 ACRES, MORE OR
LESS, IS SUBJECT TO HIGHWAY EASEMENT.

NOTE:
THE SUBSURFACE UTILITY QUALITY INFORMATION IN THIS PLAN IS LEVEL D.
THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE
GUIDELINES OF CI/ASCE 38-02 ENTITLED "STANDARD GUIDELINES FOR THE
COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

THE CONTRACTOR SHALL CALL THE SOUTH DAKOTA STATE ONE CALL SYSTEM
AT 811 BEFORE COMMENCING EXCAVATION.



Know what's below.
Call before you dig.

PLANS PREPARED BY:

PHONE: 605.330.7000
401 EAST 8TH STREET
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ESTIMATE OF QUANTITIES

STATE OF SOUTH DAKOTA	PROJECT ER 0023(38)	SHEET NO. A1	TOTAL SHEETS A1
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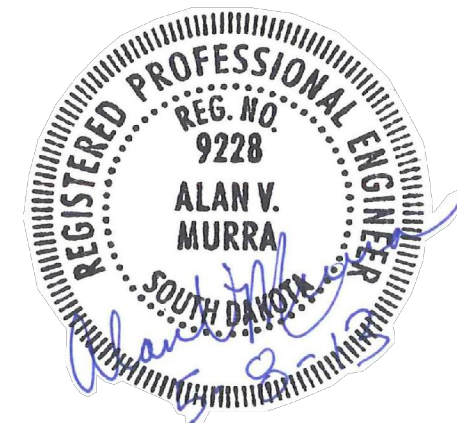
BID ITEM NO.	ITEM DESCRIPTION	TOTAL EST. QTY	UNIT
SECTION B - GRADING			
009E0010	Mobilization	LUMP SUM	LS
100E0020	Clear and Grub Tree	4	Each
120E0010	Unclassified Excavation	12,751	CuYd
620E0020	Type 2 Right-of-Way Fence	2,790	Ft
620E1020	2 Post Panel	6	Each
620E1030	3 Post Panel	4	Each

SECTION C - TRAFFIC CONTROL			
634E0100	Traffic Control	102.0	Unit
634E0120	Traffic Control, Miscellaneous	LUMP SUM	LS

SECTION D - EROSION CONTROL			
110E1700	Remove Silt Fence	54	Ft
730E0204	Type C Permanent Seed Mixture	145	Lb
730E0251	Special Permanent Seed Mixture 1	8	Lb
732E0100	Mulching	19.2	Ton
734E0602	Low Flow Silt Fence	215	Ft
734E0610	Mucking Silt Fence	15	CuYd

SPECIFICATIONS

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



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SECTION B: GRADING PLANS

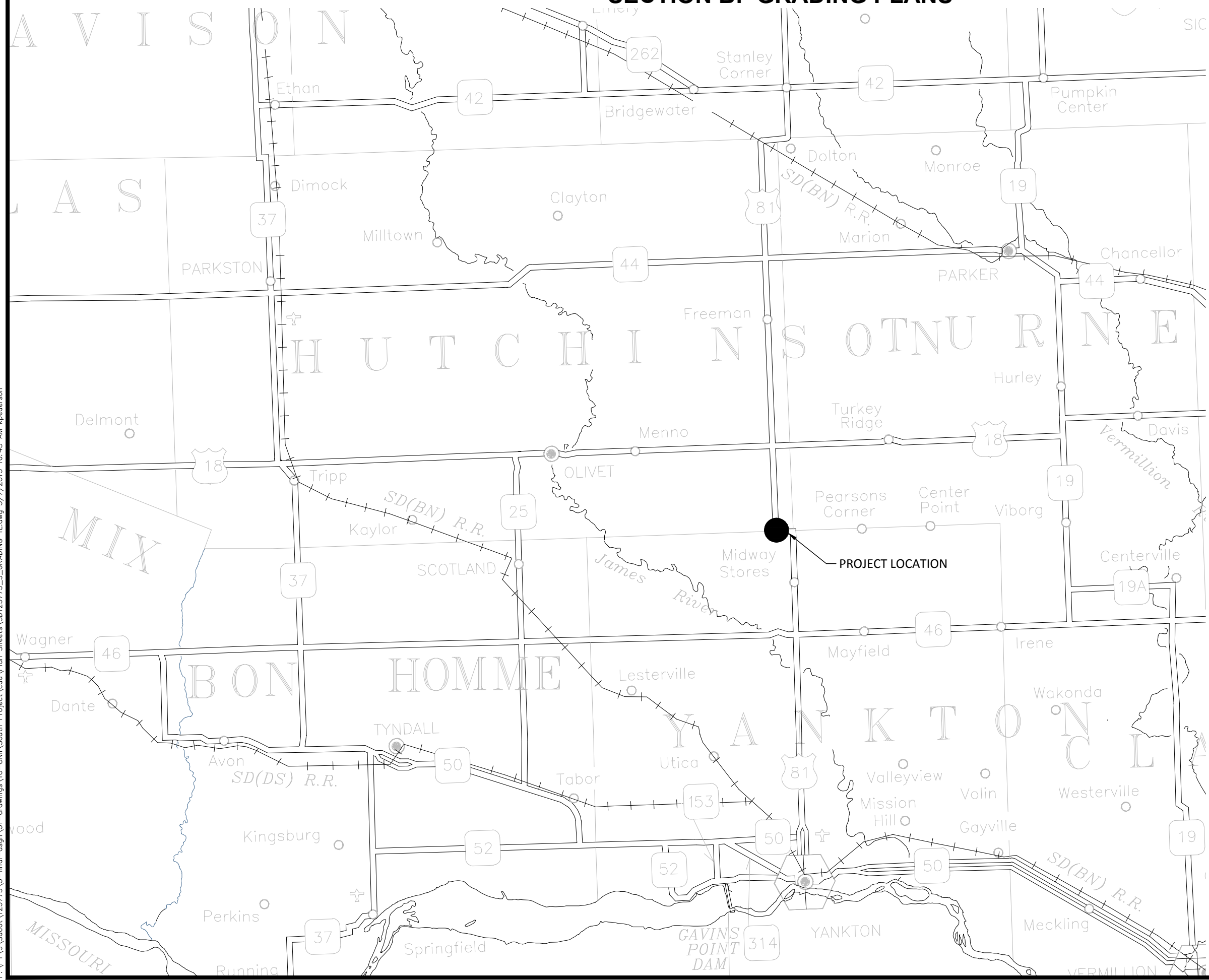
STATE OF SOUTH DAKOTA	PROJECT ER 0023(38)	SHEET NO. B1	TOTAL SHEETS B7
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INDEX OF SHEETS

- B1 GENERAL LAYOUT AND INDEX
- B2-B3 ESTIMATE OF QUANTITIES AND GENERAL NOTES
- B4 SITE GRADING
- B5-B7 SD STANDARD PLATES



DRAWING NOT TO SCALE



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SECTION B ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
100E0020	Clear and Grub Tree	4	Each
120E0010	Unclassified Excavation	12,751	CuYd
620E0020	Type 2 Right-of Way Fence	2,790	Ft
620E1020	2 Post Panel	6	Each
620E1030	3 Post Panel	4	Each

GRADING OPERATIONS

The estimated cubic yards of excavation and/or embankment required to construct wetland are included in the earthwork balance notes on the site grading sheets. The measurement for Unclassified Excavation shall be plan quantity.

The Contractor shall rough grade (finish grade) the bottom of the wetland creation area to elevation 1424. Excavated material will be used on site as embankment material (site will balance). Embankment areas will be graded to promote drainage of storm water on site into the existing and wetland creation areas (to the greatest extent possible). The Contractor shall finish grade all disturbed areas as needed to complete the seeding and mulching operation as directed in the plan notes and specifications.

UTILITIES

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the South Dakota One Call process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25; the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

CLEARING

Before clearing activities begin, the Contractor shall contact the Engineer to determine the limits of clearing for the project. 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.

BALD EAGLE

Bald eagles are known to occur in this area. If a nest is observed within one mile of the project site, notify the Environmental Project Scientist of the DOT Environmental Office at 605-773-3268.

WHOOPIING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that typically roosts overnight at a single location. If a Whooping Crane is sighted roosting in the vicinity of the project, borrow pit, or staging site associated with the project, notify the Environmental Project Scientist of the DOT Environmental Office at 605-773-3268 and cease construction activities in the affected area until the Whooping Crane departs.

WATER SOURCE

The Contractor shall not withdraw water with equipment previously used outside the State of South Dakota without prior approval from the DOT Environmental Office.

The DOT Environmental Office contact is the Environmental Project Scientist, 605-773-3268. The WATER SOURCE plan note does not relieve the Contractor of his/her responsibility to obtain the necessary permits from other agencies such as the Department of Environment and Natural Resources (DENR) and the United States Army Corps of Engineers (COE).

WORK AFFECTING WATERWAYS

A. WATER QUALITY

Surface Water Quality

The Contractor is advised the South Dakota Surface Water Quality Standards, administered by the Department of Environment and Natural Resources (DENR), apply to this project.

Surface Water Discharge

If construction dewatering is required, the Contractor is required to obtain a Surface Water Discharge Permit from the DENR. Contact the DENR Surface Water Program at 605-773-3351 to apply for a permit.

Storm Water

The Contractor is advised this project is regulated under the Phase II Storm Water Regulations and must receive coverage under the DENR General Permit for Construction Activities. A Notice of Intent (NOI) will be submitted to DENR a minimum of 15 days prior to project start by the DOT Environmental Office. A letter must be received from DENR that acknowledges project coverage under this general permit before project start. The Contractor is advised that permit coverage may also be required by offsite activities, such as borrow and staging areas, which are the responsibility of the Contractor.

A major component of the storm water construction permit is development and implementation of a storm water pollution prevention plan (SWPPP). This plan is a joint effort and responsibility of the DOT and the Contractor. The SWPPP is a dynamic document and is to be available on-site at all times. Information on storm water requirements and SWPPP are available on the following websites:

SDDOT:
<http://sddot.com/transportation/highways/environmental/stormwater/Default.aspx>

DENR: <http://www.denr.sd.gov/des/sw/stormwater.aspx>

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.



REVISED

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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 project site or highway 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.

SHRINKAGE FACTOR: Embankment +15%

TABLE OF UNCLASSIFIED EXCAVATION

An earthwork summary has also been included on the site grading sheet with estimated cubic yards of excavation and/or embankment required to construct the wetland.

Excavation	<u>12,751 CY</u>
Total	12,751 CY

PROCEDURES FOR DETERMINING UNCLASSIFIED EXCAVATION QUANTITY

When plan quantities are used for payment, the Unclassified Excavation quantity shall be used for final payment.

BRACE PANELS FOR ROW FENCE

The E-Z Brace or an approved equal may be utilized as an alternate horizontal brace in the brace panels if approved by the Engineer. The E-Z Brace shall be attached to each wood post utilizing two 5/16" x 3" lag screws. Holes of appropriate diameter, based on wood post condition, shall be drilled before placement of lag screws. The following are contacts regarding the E-Z Brace:

Roger Papka
E-Z Brace
1160 Karen St.
Watertown, SD 57201
605-881-6142

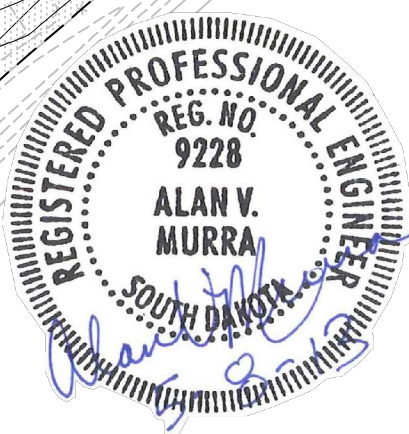
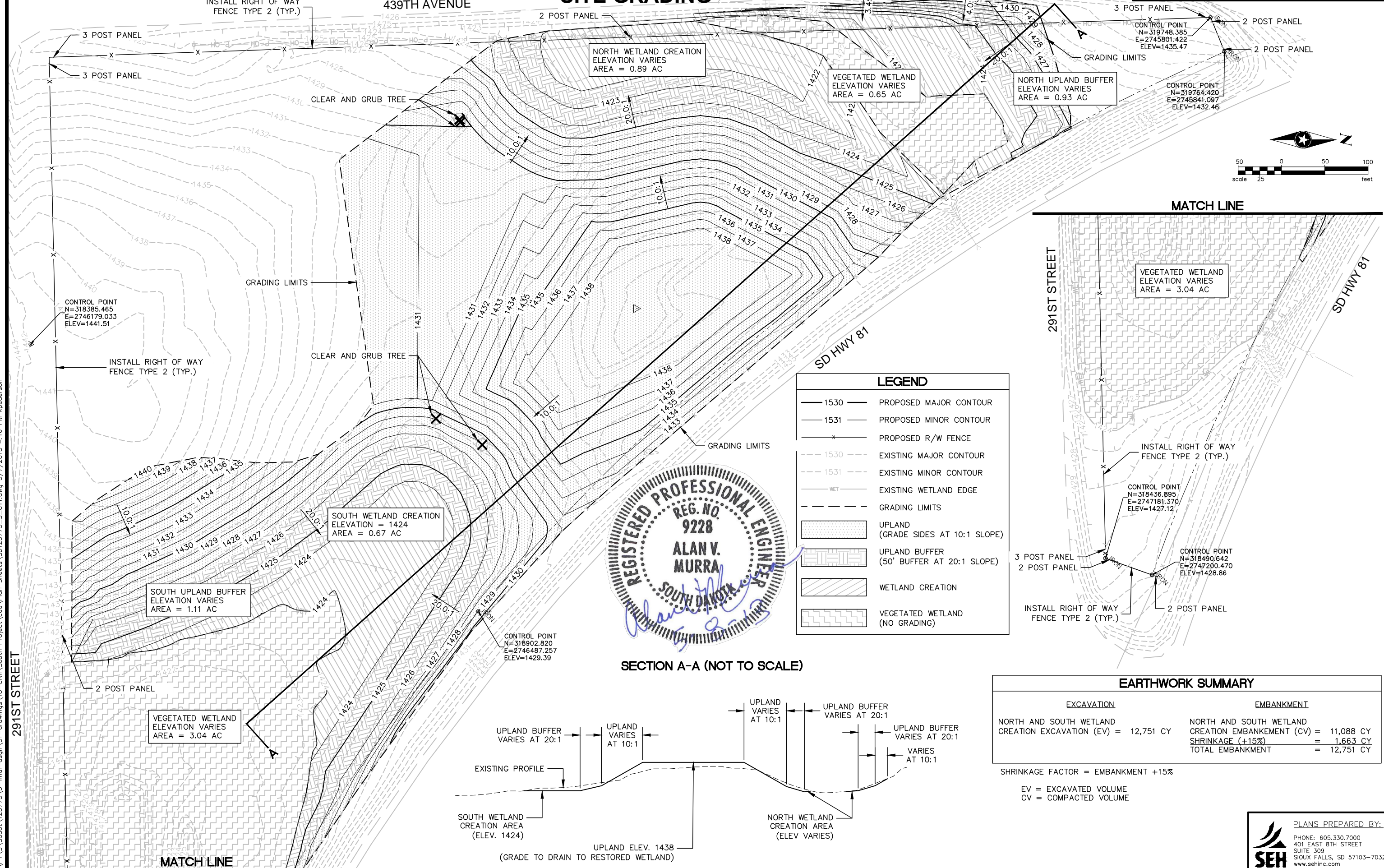
Dennis Mack
E-Z Brace
108 18th St. NE
Watertown, SD 57201
605-881-4990

TABLE OF FENCE QUANTITIES

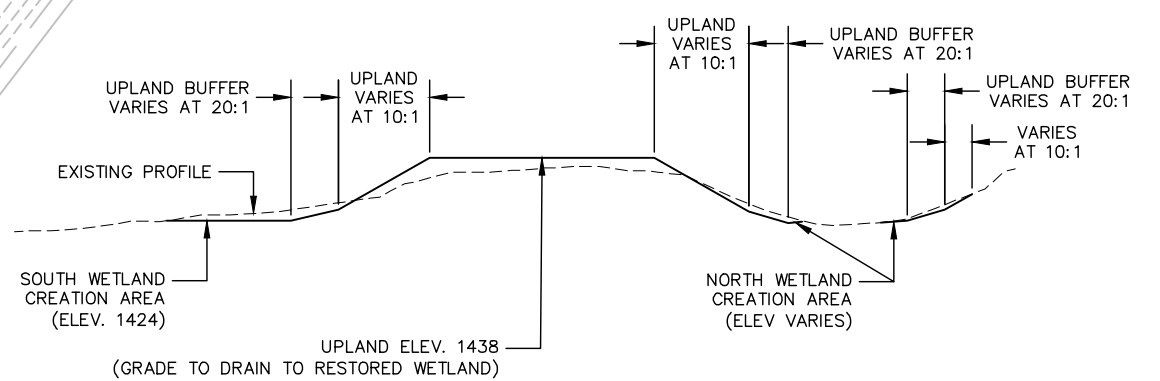
LOCATION	TYPE 2 RIGHT-OF- WAY FENCE FEET	POST PANELS	
		2 POST	3 POST
		EACH	EACH
SOUTH SIDE OF SITE	1334	1	2
EAST SIDE OF SITE	64	2	
NORTH SIDE OF SITE	50	2	
WEST SIDE OF SITE	1342	1	2
TOTALS:	2790	6	4



SITE GRADING



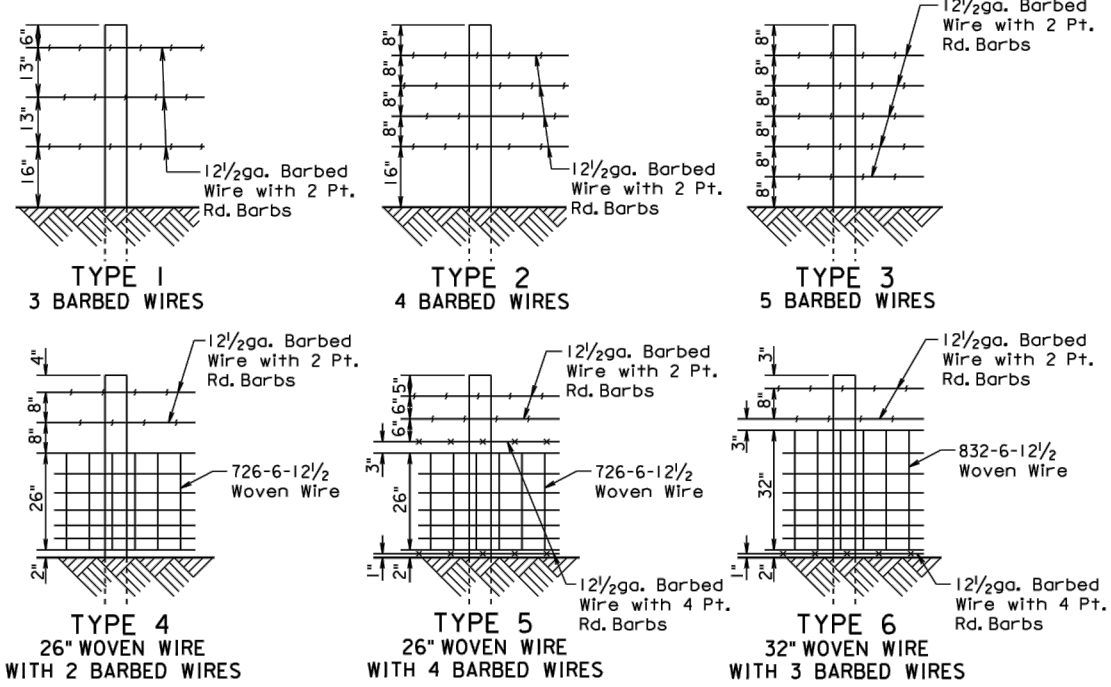
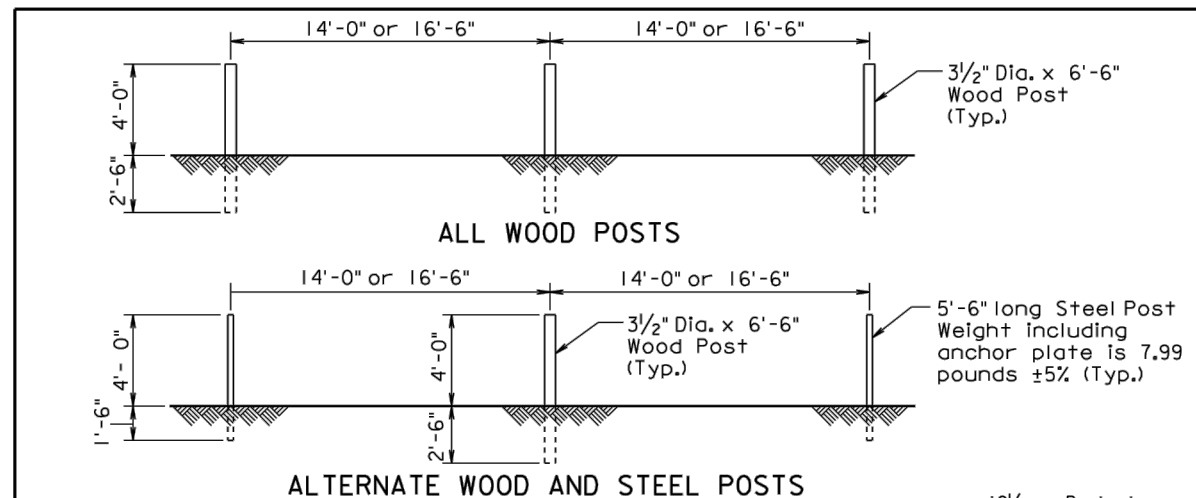
SECTION A-A (NOT TO SCALE)



LEGEND	
— 1530 —	PROPOSED MAJOR CONTOUR
— 1531 —	PROPOSED MINOR CONTOUR
x	PROPOSED R/W FENCE
- - - 1530 - - -	EXISTING MAJOR CONTOUR
- - - 1531 - - -	EXISTING MINOR CONTOUR
- - - - -	EXISTING WETLAND EDGE
- - - - -	GRADING LIMITS
[Pattern]	UPLAND (GRADE SIDES AT 10:1 SLOPE)
[Pattern]	UPLAND BUFFER (50' BUFFER AT 20:1 SLOPE)
[Pattern]	WETLAND CREATION
[Pattern]	VEGETATED WETLAND (NO GRADING)

EARTHWORK SUMMARY	
EXCAVATION	EMBANKMENT
NORTH AND SOUTH WETLAND CREATION EXCAVATION (EV) = 12,751 CY	NORTH AND SOUTH WETLAND CREATION EMBANKMENT (CV) = 11,088 CY
	SHRINKAGE (+15%) = 1,663 CY
	TOTAL EMBANKMENT = 12,751 CY
SHRINKAGE FACTOR = EMBANKMENT +15%	
EV = EXCAVATED VOLUME CV = COMPACTED VOLUME	

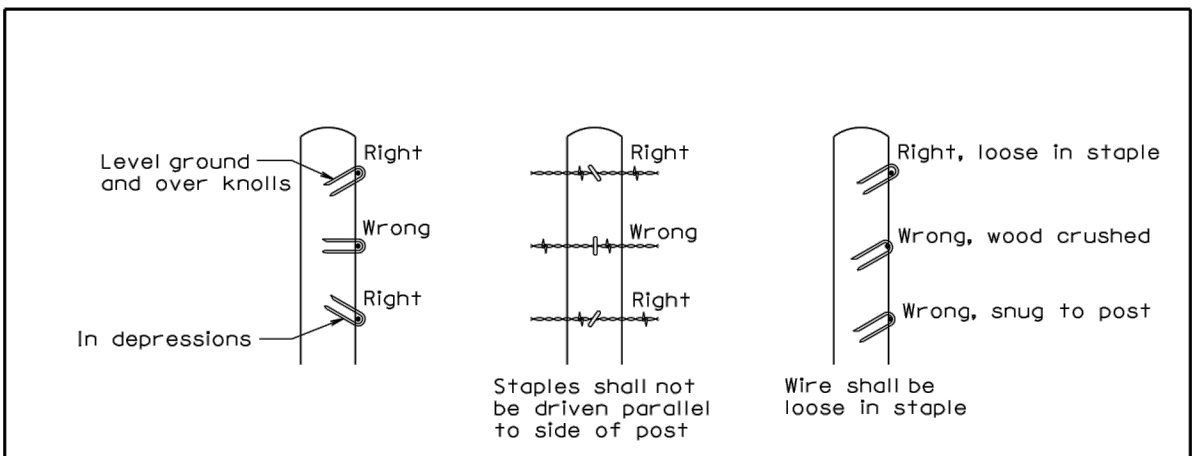
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TYPE	DESCRIPTION	LINE POST SPACING	WIRE GAGE	BARBED WIRE		WOVEN WIRE
				NUMBER AND SHAPE OF BARBS	STYLE OR DESIGN NO.	
1	3 Barbed Wires	16'-6"	12 1/2	2 Point Round	---	---
2	4 Barbed Wires	16'-6"	12 1/2	2 Point Round	---	---
3	5 Barbed Wires	16'-6"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

GENERAL NOTES:
 Fence types designated on the plans that are followed by the letter S shall have smooth (barbless) wires.
 When type 5S or 6S is designated the bottom wire may be barbed, smooth, or left off.
 All degrees of curvature stated for fence are at centerline of roadway.
 September 14, 2009

S D D O T	RIGHT-OF-WAY FENCE	PLATE NUMBER 620.01
	Published Date: 2nd Qtr. 2013	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.

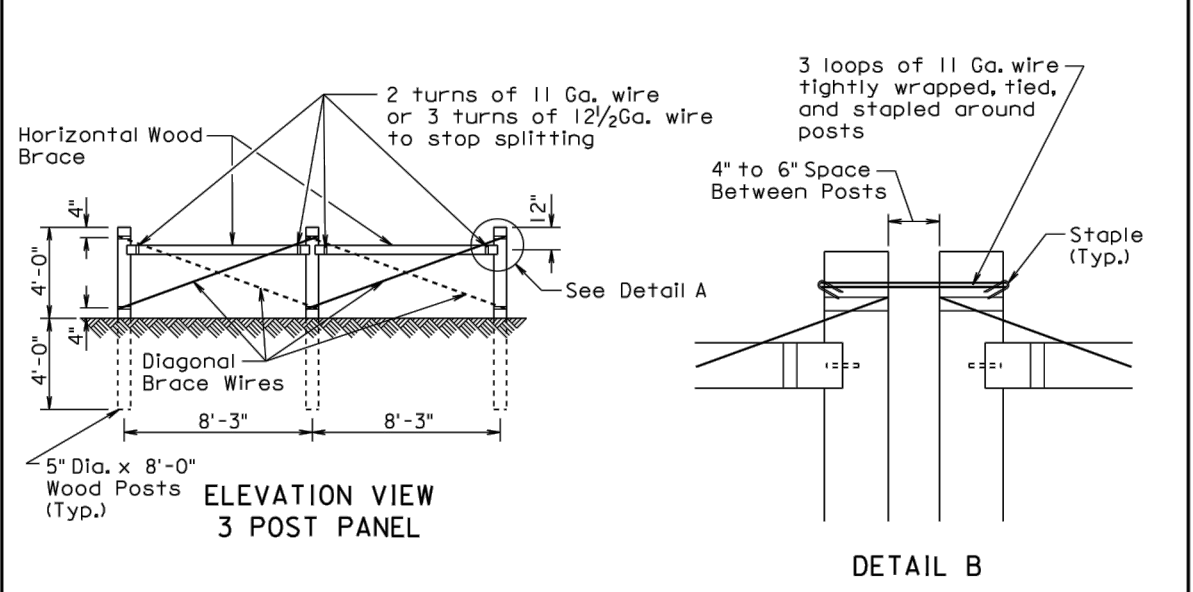
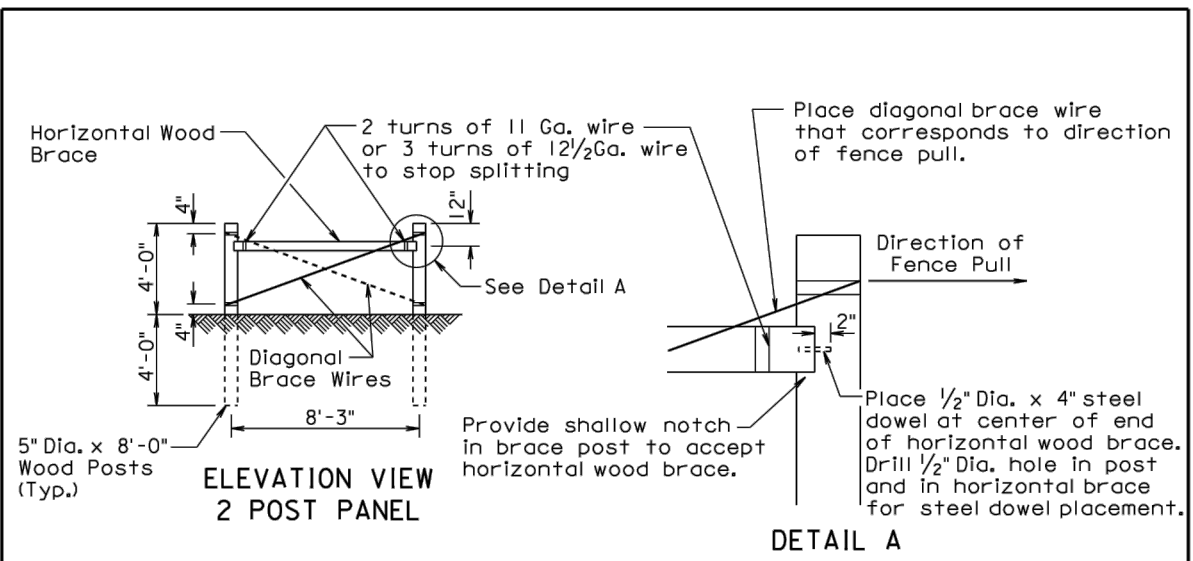
Barbs shall be fabricated from zinc coated 14 ga. wire. Two point barbs shall be wrapped twice around one main strand at 4" spacings and the four point barbs shall be interlocked and wrapped around both main strands at 5" spacings.

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.

S D D O T	STAPLE INSTALLATION AND GENERAL RIGHT-OF-WAY FENCE NOTES	PLATE NUMBER 620.02
	Published Date: 3rd Qtr. 2012	Sheet 1 of 1

December 23, 2004

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GENERAL NOTES:

Two Post Panels shall be installed at least every 1320' between corners.

Two Post Panels shall be installed at any sharp vertical angle crest points and as directed by the Engineer.

Horizontal wood braces shall consist of 4" dia. x 8' wood posts or rough 4" x 4" x 8' timbers.

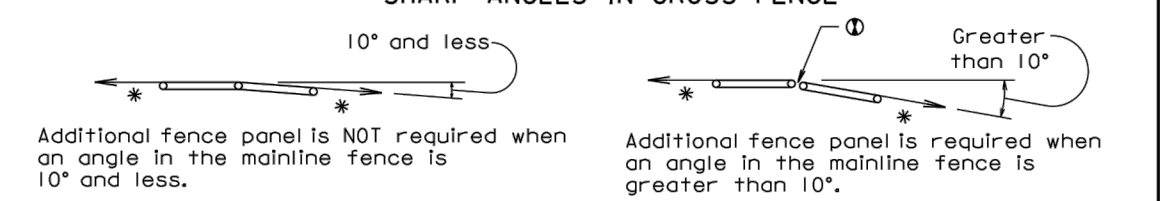
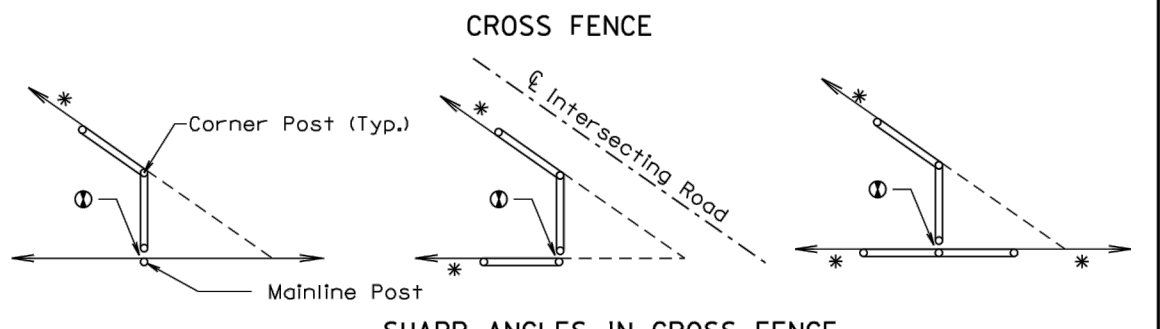
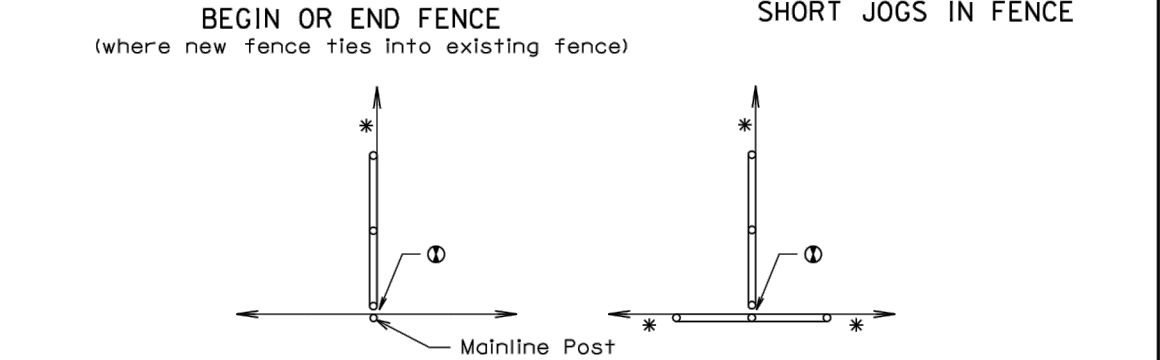
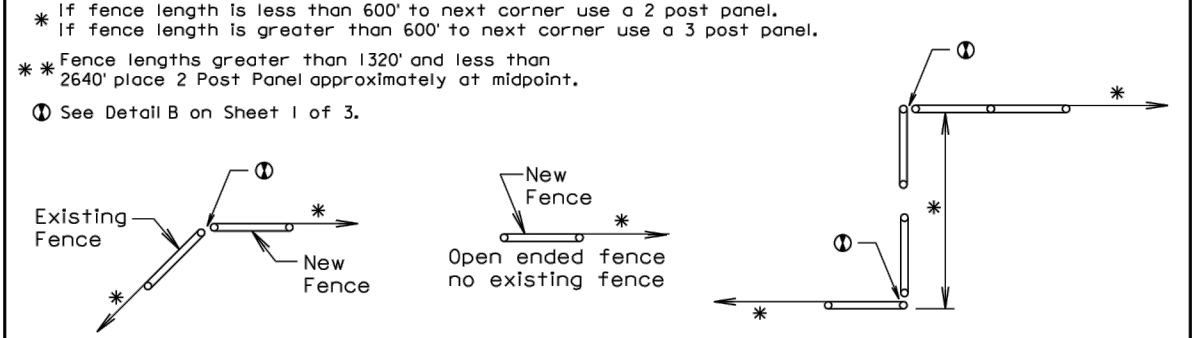
Diagonal brace wires shall be fabricated with 4 strands of 9 Ga. galvanized wire twisted tight. The diagonal brace wires shall be installed in accordance with the direction of the fence pull. Two diagonal brace wires are required if fence pull is in both directions.

December 23, 2004

S D D O T	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
	Published Date: 2nd Qtr. 2013	Sheet 1 of 3

SPACING OF 2 POST PANELS WITHIN CURVES	
DEGREE OF CURVE	SPACING OF 2 POST PANEL
less than 3°15'	** 1320'
3°15' and greater	**At P.C., P.T., and at every 1320' between P.C. and P.T.

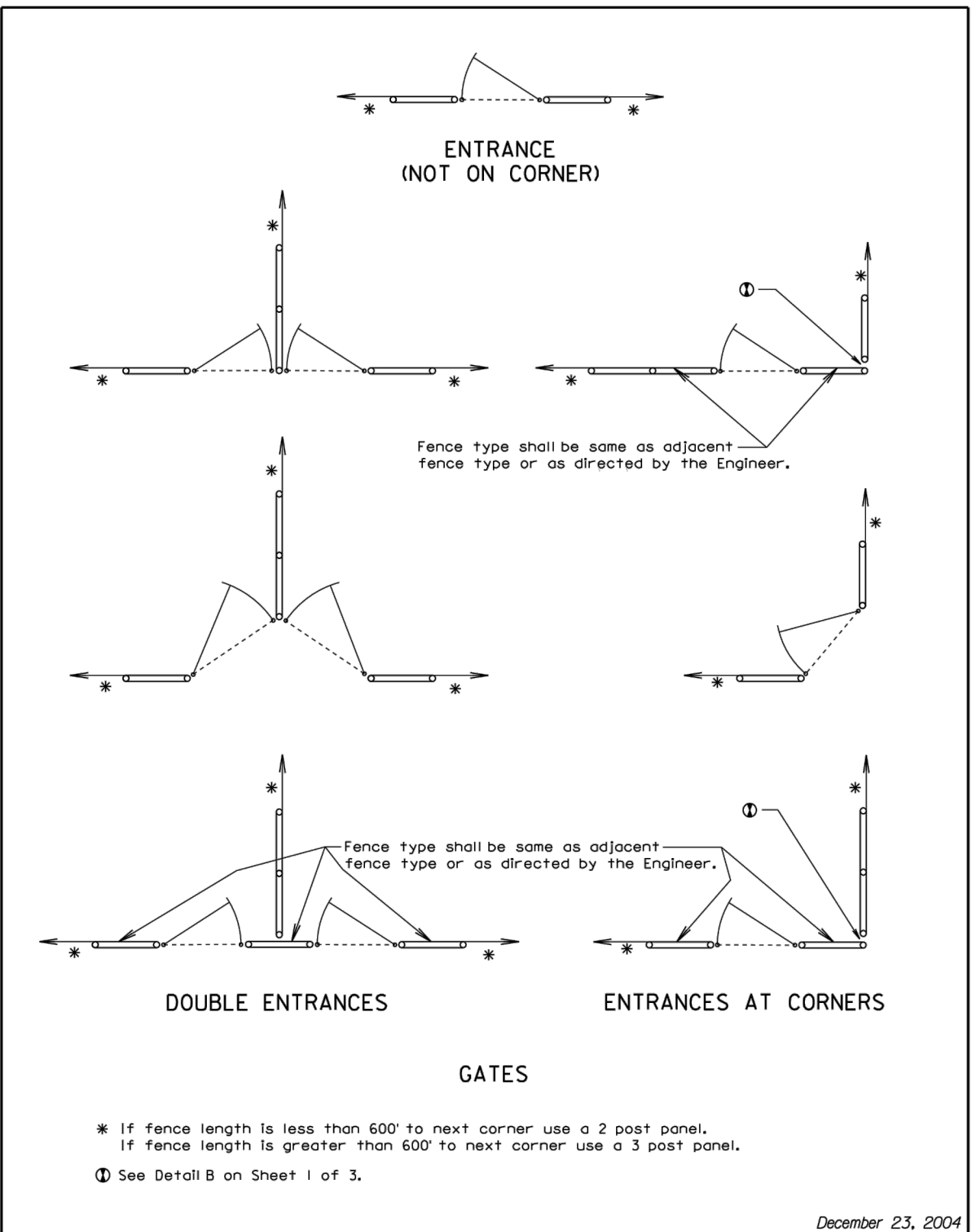
GENERAL NOTE:
All degrees of curvature stated for fence are at centerline of roadway.



December 23, 2004

S D D O T	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
	Published Date: 2nd Qtr. 2013	Sheet 2 of 3

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* If fence length is less than 600' to next corner use a 2 post panel.
 If fence length is greater than 600' to next corner use a 3 post panel.
 ① See Detail B on Sheet 1 of 3.

December 23, 2004

S D D O T	BRACE PANELS AND APPLICATIONS OF BRACE PANELS	PLATE NUMBER 620.03
		Sheet 3 of 3

Published Date: 2nd Qtr. 2013

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SECTION C: TRAFFIC CONTROL PLANS

STATE OF SOUTH DAKOTA	PROJECT ER 0023(38)	SHEET NO. C1	TOTAL SHEETS C4
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- C2 ESTIMATE OF QUANTITIES AND TRAFFIC CONTROL NOTES
- C3 TRAFFIC CONTROL PLANS
- C4 SD STANDARD PLATES



DRAWING NOT TO SCALE



PLANS PREPARED BY:

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SECTION C ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
634E0100	Traffic Control	102	Unit
634E0120	Traffic Control, Miscellaneous	LUMP SUM	LS

TRAFFIC CONTROL

Installation of traffic control shall conform to the Standard Specifications and the Manual on Uniform Traffic Control Devices (MUTCD), most current Edition.

Storage of all materials, 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.

Installation, maintenance, relocation and removal of barricades, cones, vertical panels, drums, barricade warning lights, watchmen, tubular markers and flags shall be included in the lump sum price bid for "Traffic Control, Miscellaneous".

Work activities during non-daylight hours are subject to prior approval.

Payment for signs and barricades will be for the maximum number in use at any one time. Reuse of the same sign or barricade at different locations will not warrant additional payment.

ITEMIZED LIST FOR TRAFFIC CONTROL

SIGN CODE	SIGN SIZE	DISCRIPTION	TOTAL NO. REQUIRED	UNITS PER SIGN	UNITS
G20-2	36" X 18"	END ROAD WORK	2	17	34
W20-1	48" X 48"	ROAD WORK AHEAD	2	34	68
TOTAL UNITS:					102



TRAFFIC CONTROL PLANS

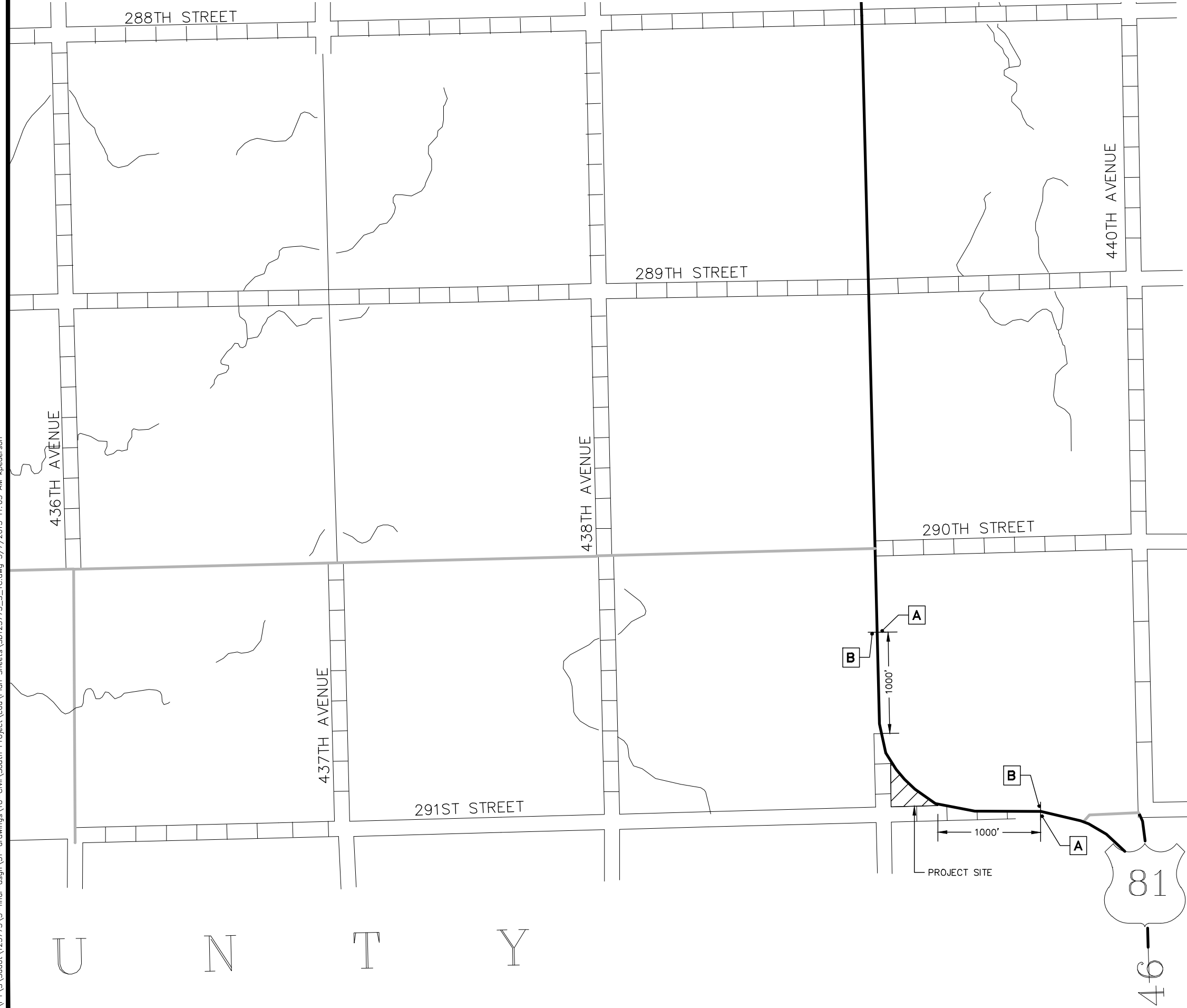
STATE OF SOUTH DAKOTA	PROJECT ER 0023(38)	SHEET NO. C3	TOTAL SHEETS C4
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DRAWING NOT TO SCALE

A
END ROAD WORK
G30-2
36" X 18"

B
ROAD WORK AHEAD
W20-1
48" X 48"

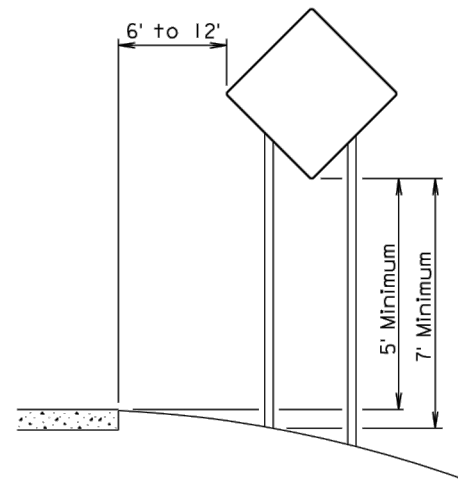


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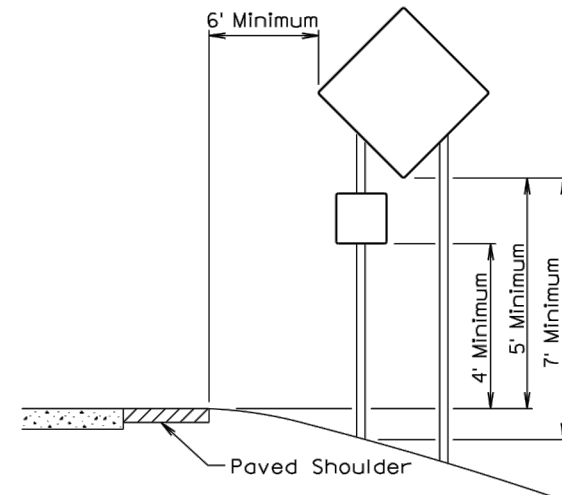


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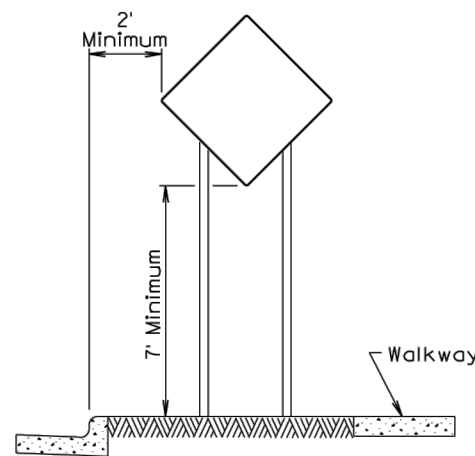
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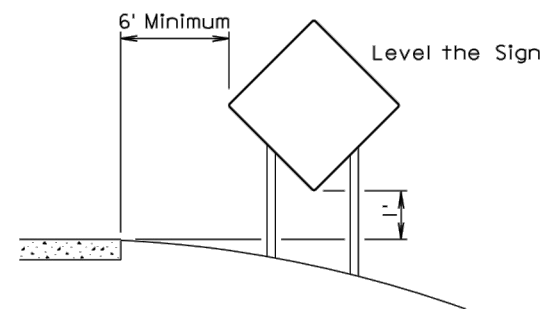
RURAL DISTRICT



RURAL DISTRICT WITH SUPPLEMENTAL PLATE



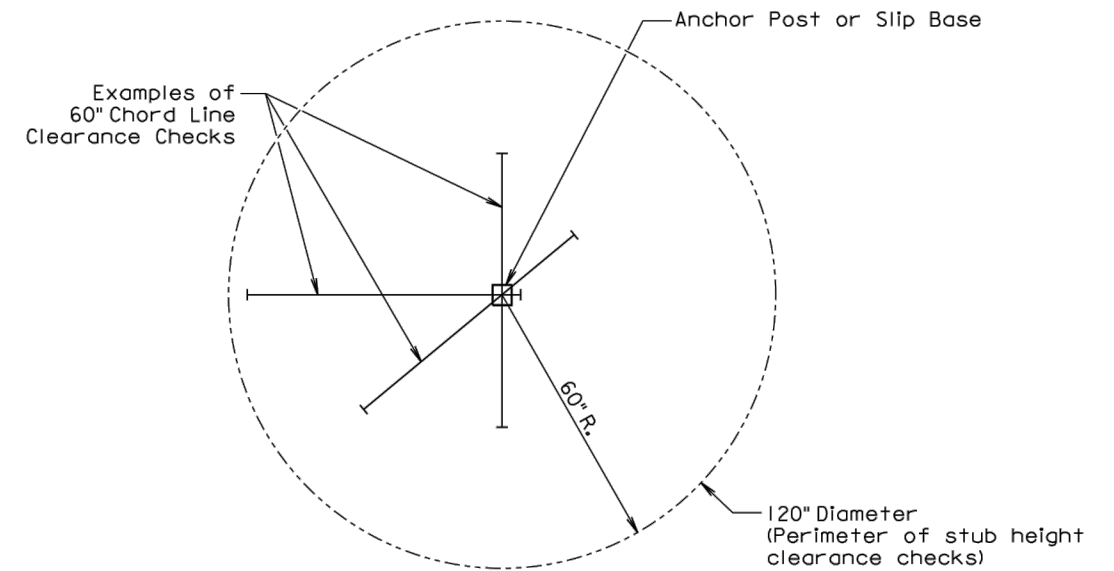
URBAN DISTRICT



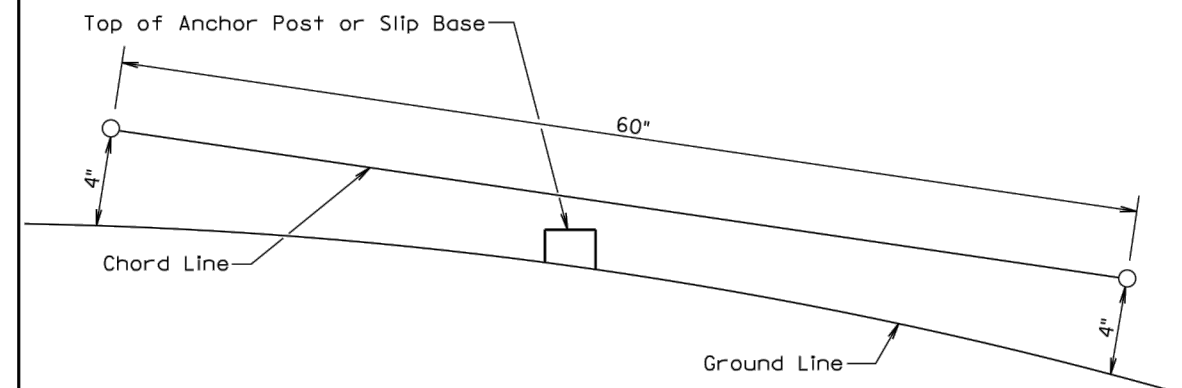
RURAL DISTRICT 3 DAY MAXIMUM

February 14, 2011

Published Date: 2nd Qtr. 2013	S D D O T	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

Published Date: 2nd Qtr. 2013	S D D O T	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 634.99
			Sheet 1 of 1

SECTION D: EROSION AND SEDIMENT CONTROL PLANS

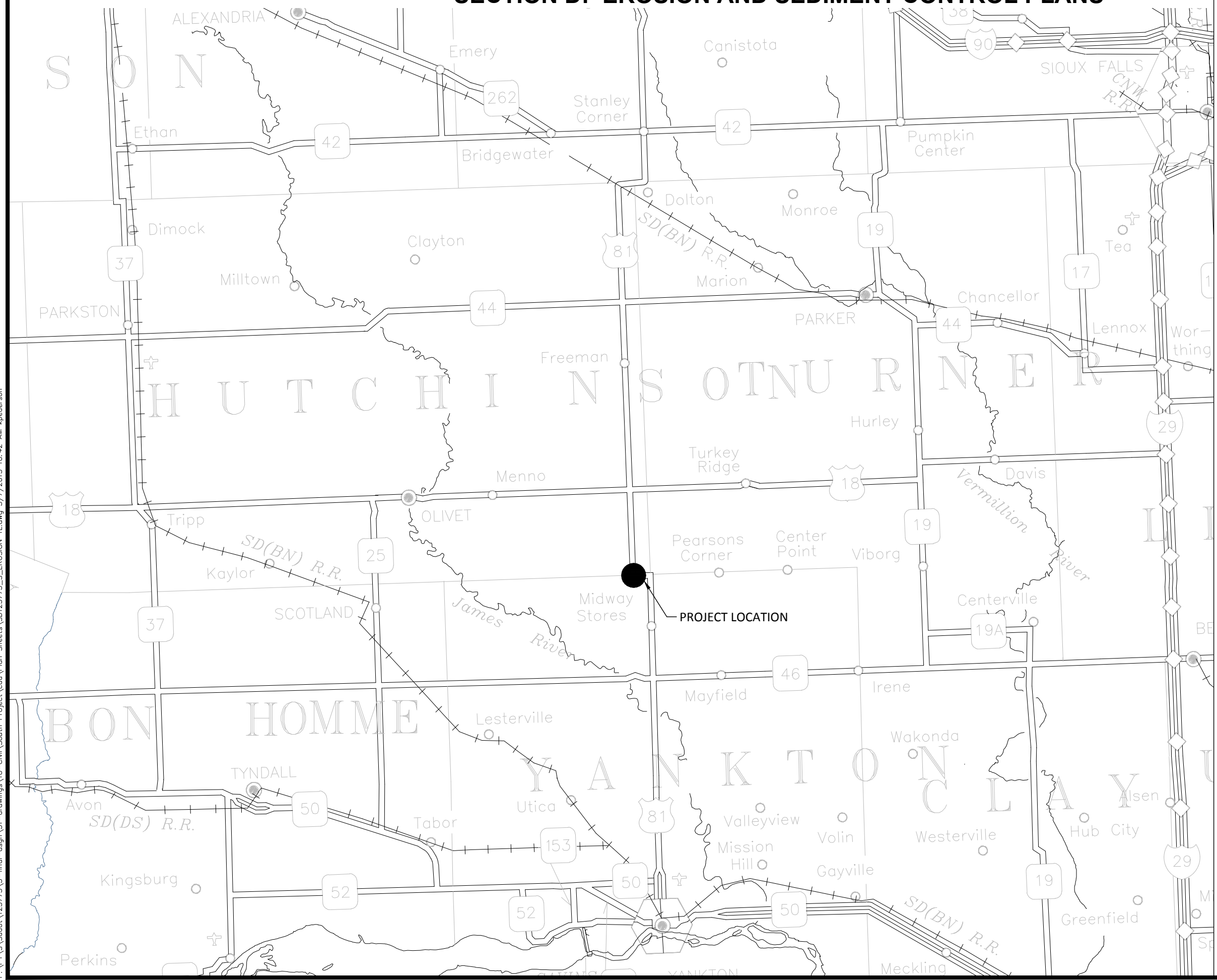
STATE OF SOUTH DAKOTA	PROJECT ER 0023(38)	SHEET NO. D1	TOTAL SHEETS D7
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INDEX OF SHEETS

- D1 GENERAL LAYOUT AND INDEX
- D2-D5 ESTIMATE OF QUANTITIES AND EROSION AND SEDIMENT CONTROL NOTES
- D6 EROSION AND SEDIMENT CONTROL PLANS
- D7 SD STANDARD PLATES



DRAWING NOT TO SCALE



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SECTION D ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E1700	Remove Silt Fence	54	Ft
730E0204	Type C Permanent Seed Mixture	145	Lb
730E0251	Special Permanent Seed Mixture 1	8	Lb
732E0100	Mulching	19.2	Ton
734E0604	High Flow Silt Fence	215	Ft
734E0610	Mucking Silt Fence	15	CuYd

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. Newly graded areas shown as upland or upland buffer areas on the site grading plan should be seeded with Type B Permanent Seed Mixture. Newly graded areas shown as Wetland Creation on the site grading plan should be seeded with Special Permanent Seed Mixture 1.

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

Special Permanent Seed Mixture 1 shall consist of the following:

Scientific Name	Common Name	Pure Live Seed (PLS) (Pounds/Acre)
Grasses		
Calamagrostis Canadensis	Blue Joint Teed Grass	0.05
Elymus virginicus	Virginia Wildrye	1.50
Glyceria grandis	Reed Manna Grass	0.20
Leersia oryzoides	Rice Cut Grass	0.40
Glyceria striata	Fowl Manna Grass	0.03
Spartina pectinata	Prairie Cord Grass	0.40
Poa palustris	Fowl Bluegrass	0.45
Beckmannia syzigachne	American Slough Grass	0.50
Forbs		
Alisma subcordatum	Common Water Plantain	0.20
Asclepias incarnate	Swamp Milkweed	0.05
Eupatorium perfoliatum	Boneset	0.02
Verbena hastate	Blue Vervain	0.25
Sedges, Rushes, Reeds		
Carex vulpinodea	Brown Fox Sedge	0.30
Scirpus atrovirens	Dark Green Bulrush	0.30
Scirpus fluvialtilis	River Bulrush	0.10
Sparganium eurycarpum	Giant Bur Reed	0.25
Total:		5.00

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://sddot.com/business/certification/products/Default.aspx>

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

Location	Quantity (Ft)
West side of property	215
Total: 215	

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.



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STORM WATER POLLUTION PREVENTION PLAN CHECKLIST

(The numbers right of the title headings are reference numbers to the GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES)

❖ **SITE DESCRIPTION (4.2 1)**

- **Project Limits: See Title Sheet (4.2 1.b)**
- **Project Description: See Title Sheet (4.2 1.a.)**
- **Site Map(s): See Title Sheet and Plans (4.2 1.f. (1)-(6))**
- **Major Soil Disturbing Activities** (check all that apply)
 - Clearing and grubbing
 - Excavation/borrow
 - Grading and shaping
 - Filling
 - Cutting and filling
 - Other (describe):
- **Total Project Area 14.77 AC (4.2 1.b.)**
- **Total Area To Be Disturbed 9.6 AC (4.2 1.b.)**
- **Existing Vegetative Cover (%) 100**
- **Soil Properties:**
Tetonka silty clay loam
Clarno – Davison loams
Ethan – Betts loams
Tetonka and Whitewood silty clay loams
Worthing silty caly loam **(4.2 1. d.)**
- **Name of Receiving Water Body/Bodies Mud Creek (4.2 1.e.)**

❖ **ORDER OF CONSTRUCTION ACTIVITIES (4.2 1.c.)**

- (Stabilization measures shall be initiated as soon as possible, but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Initiation of final or temporary stabilization may exceed the 14-day limit if earth disturbing activities will be resumed within 21 days.)
- **Contractor shall install low flow silt fence as directed by Engineer in Field**
 - **Contractor shall strip existing vegetation from cut areas and place material at the bottom of the embankment areas. Contractor will excavate remainder of cut section and build embankment above stripped vegetation.**
 - **Contractor shall undulate grading in Wetland Creation Areas to promote vegetative growth.**
 - **Contractor shall use all excavated material on site for embankment.**
 - **Contractor shall reseed all disturbed areas shown on the Erosion Control Plan.**

❖ **EROSION AND SEDIMENT CONTROLS (4.2 2.a.(1)(a)-(f))**

- (Check all that apply)
- **Stabilization Practices (See Detail Plan Sheets)**
 - Temporary Seeding (Cover Crop Seeding)
 - Permanent Seeding
 - Sodding
 - Planting (Woody Vegetation for Soil Stabilization)
 - Mulching (Grass Hay or Straw)
 - Hydraulic Mulch (Wood Fiber Mulch)
 - Soil Stabilizer
 - Bonded Fiber Matrix
 - Erosion Control Blankets or Mats
 - Vegetation Buffer Strips
 - Roughened Surface (e.g. tracking)

- Dust Control
- Other:

➤ **Structural Temporary Erosion and Sediment Controls**

- Silt Fence
- Floating Silt Curtain
- Straw Bale Check
- Temporary Berm
- Temporary Slope Drain
- Straw Wattles or Rolls
- Turf Reinforcement Mat
- Rip Rap
- Gabions
- Rock Check Dams
- Sediment Traps/Basins
- Inlet Protection
- Outlet Protection
- Surface Inlet Protection (Area Drain)
- Curb Inlet Protection
- Stabilized Construction Entrances
- Entrance/Exit Equipment Tire Wash
- Interceptor Ditch
- Concrete Washout Area
- Temporary Diversion Channel
- Work Platform
- Temporary Water Barrier
- Temporary Water Crossing
- Other:

➤ **Wetland Avoidance**

Will construction and/or erosion and sediment controls impinge on regulated wetlands? Yes No If yes, the structural and erosion and sediment controls have been included in the total project wetland impacts and have been included in the 404 permit process with the USACE.

➤ **Storm Water Management (4.2 2.b., (1) and (2))**

Storm water management will be handled by temporary controls outlined in "EROSION AND SEDIMENT CONTROLS" above, and any permanent controls needed to meet permanent storm water management needs in the post construction period. Permanent controls will be shown on the plans and noted as permanent.

➤ **Other Storm Water Controls (4.2 2.c., (1) and (2))**

▪ **Waste Disposal**

All liquid waste materials will be collected and stored in sealed metal containers approved by the project engineer. All trash and construction debris from the site will be deposited in the approved containers. Containers will be serviced as necessary, and the trash will be hauled to an approved disposal site or licensed landfill. All onsite personnel will be instructed in the proper procedures for waste disposal, and notices stating proper practices will be posted in the field office. The general contractor's representative responsible for the conduct of work on the site will be responsible for seeing waste disposal procedures are followed.

▪ **Hazardous Waste**

All hazardous waste materials will be disposed of in a manner specified by local or state regulations or by the manufacturer. Site personnel will be instructed in these practices, and the individual designated as the contractor's on-site representative will be responsible for seeing that these practices are followed.

▪ **Sanitary Waste**

Portable sanitary facilities will be provided on all construction sites. Sanitary waste will be collected from the portable units in a timely manner by a licensed waste management contractor or as required by any local regulations.

❖ **Maintenance and Inspection (4.2 3. and 4.2 4.)**

➤ **Maintenance and Inspection Practices**

- Inspections will be conducted at least one time per week and after a storm event of 0.50 inches or greater.
- All controls will be maintained in good working order. Necessary repairs will be initiated within 24 hours of the site inspection report.
- Silt fence will be inspected for depth of sediment and for tears in order to ensure the fabric is securely attached to the posts and that the posts are well anchored. Sediment buildup will be removed from the silt fence when it reaches 1/3 of the height of the silt fence.
- Sediment basins and traps will be checked. Sediment will be removed when depth reaches approximately 50 percent of the structure's capacity, and at the conclusion of the construction.
- Check dams will be inspected for stability. Sediment will be removed when depth reaches 1/2 the height of the dam.
- All seeded areas will be checked for bare spots, washouts, and vigorous growth free of significant weed infestations.
- Inspection and maintenance reports will be prepared on form DOT 298 for each site inspection, this form will also be used to document changes to the SWPPP. A copy of the completed inspection form will be filed with the SWPPP documents.
- The SDDOT Project Engineer and contractor's site superintendent are responsible for inspections. Maintenance, repair activities are the responsibility of the contractor. The SDDOT Project Engineer will complete the inspection and maintenance reports and distribute copies per the distribution instructions on DOT 298.


❖ **Non-Storm Water Discharges (3.0)**

The following non-storm water discharges are anticipated during the course of this project (check all that apply).

- Discharges from water line flushing.
- Pavement wash-water, where no spills or leaks of toxic or hazardous materials have occurred.
- Uncontaminated ground water associated with dewatering activities.



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❖ **Materials Inventory (4.2. 2.c.(2))**

The following materials or substances are expected to be present on the site during the construction period. These materials will be handled as noted under the headings "EROSION AND SEDIMENT CONTROLS" and "SPILL PREVENTION" (check all that apply).

- Concrete and Portland Cement
- Detergents
- Paints
- Metals
- Bituminous Materials
- Petroleum Based Products
- Cleaning Solvents
- Wood
- Cure
- Texture
- Chemical Fertilizers
- Other:

❖ **Spill Prevention (4.2 2.c.(2))**

➤ **Material Management**

▪ Housekeeping

- Only needed products will be stored on-site by the contractor.
- Except for bulk materials the contractor will store all materials under cover and in appropriate containers.
- Products must be stored in original containers and labeled.
- Material mixing will be conducted in accordance with the manufacturer's recommendations.
- When possible, all products will be completely used before properly disposing of the container off site.
- The manufacturer's directions for disposal of materials and containers will be followed.
- The contractor's site superintendent will inspect materials storage areas regularly to ensure proper use and disposal.
- Dust generated will be controlled in an environmentally safe manner.
- Vegetation areas not essential to the construction project will be preserved and maintained as noted on the plans.

▪ Hazardous Materials

- Products will be kept in original containers unless the container is not resealable.
- Original labels and material safety data sheets will be retained in a safe place to relay important product information.
- If surplus product must be disposed of, manufacturer's label directions for disposal will be followed.
- Maintenance and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, de-greasing operations, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants will be conducted on an impervious surface and under cover during wet weather to prevent the release of contaminants onto the ground.
- Wheel wash water will be collected and allowed to settle out suspended solids prior to discharge. Wheel wash water will not be discharged directly into any storm water system or storm water treatment system.
- Potential pH-modifying materials such as: bulk cement, cement kiln dust, fly ash, new concrete washings, concrete

pumping, residuals from concrete saw cutting (either wet or dry), and mixer washout waters will be collected on site and managed to prevent contamination of storm water runoff.

➤ **Product Specific Practices (6.8)**

▪ Petroleum Products

All on-site vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled.

▪ Fertilizers

Fertilizers will be applied only in the amounts specified by the SDDOT. Once applied, fertilizers will be worked into the soil to limit the exposure to storm water. Fertilizers will be stored in an enclosed area. The contents of partially used fertilizer bags will be transferred to sealable containers to avoid spills.

▪ Paints

All containers will be tightly sealed and stored when not required for use. The excess will be disposed of according to the manufacturer's instructions and any applicable state and local regulations.

▪ Concrete Trucks

Contractors will provide designated truck washout areas on the site. These areas must be self contained and not connected to any storm water outlet of the site. Upon completion of construction washout areas will be properly stabilized.

➤ **Spill Control Practices (4.2 2 c.(2))**

In addition to the previous housekeeping and management practices, the following practices will be followed for spill prevention and cleanup if needed.

- For all hazardous materials stored on site, the manufacturer's recommended methods for spill clean up will be clearly posted. Site personnel will be made aware of the procedures and the locations of the information and cleanup supplies.
- Appropriate cleanup materials and equipment will be maintained by the contractor in the materials storage area on-site. As appropriate, equipment and materials may include items such as brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for clean up purposes.
- All spills will be cleaned immediately after discovery and the materials disposed of properly.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- After a spill a report will be prepared describing the spill, what caused it, and the cleanup measures taken. The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring, as well as clean up instructions in the event of reoccurrences.
- The contractor's site superintendent, responsible for day-to-day operations, will be the spill prevention and cleanup coordinator. The contractor is responsible for ensuring that the site superintendent has had appropriate training for hazardous materials handling, spill management, and cleanup.

➤ **Spill Response (4.2 2 c.(2))**

The primary objective in responding to a spill is to quickly contain the material(s) and prevent or minimize migration into storm water runoff and conveyance systems. If the release has impacted on-site storm

water, it is critical to contain the released materials on-site and prevent their release into receiving waters. If a spill of pollutants threatens storm water or surface water at the site, the spill response procedures outlined below must be implemented in a timely manner to prevent the release of pollutants.

- The contractor's site superintendent will be notified immediately when a spill or the threat of a spill is observed. The superintendent will assess the situation and determine the appropriate response.
- If spills represent an imminent threat of escaping erosion and sediment controls and entering receiving waters, personnel will be directed to respond immediately to contain the release and notify the superintendent after the situation has been stabilized.
- Spill kits containing appropriate materials and equipment for spill response and cleanup will be maintained by the contractor at the site.
- If oil sheen is observed on surface water (e.g. settling ponds, detention ponds, swales), action will be taken immediately to remove the material causing the sheen. The contractor will use appropriate materials to contain and absorb the spill. The source of the oil sheen will also be identified and removed or repaired as necessary to prevent further releases.
- If a spill occurs the superintendent or the superintendent's designee will be responsible for completing the spill reporting form and for reporting the spill to SD DENR.
- Personnel with primary responsibility for spill response and clean up will receive training by the contractor's site superintendent or designee. The training must include identifying the location of the spill kits and other spill response equipment and the use of spill response materials.
- Spill response equipment will be inspected and maintained as necessary to replace any materials used in spill response activities.



❖ **Spill Notification**

In the event of a spill, the contractor's site superintendent will make the appropriate notification(s), consistent with the following procedures:

- A release or spill of a regulated substance (includes petroleum and petroleum products) must be reported to DENR immediately **if any one of the following** conditions exists:
 - The discharge threatens or is in a position to threaten the waters of the state (surface water or ground water).
 - The discharge causes an immediate danger to human health or safety.
 - The discharge exceeds 25 gallons.
 - The discharge causes a sheen on surface water.
 - The discharge of any substance that exceeds the ground water quality standards of ARSD (Administrative Rules of South Dakota) chapter 74:51:01.
 - The discharge of any substance that exceeds the surface water quality standards of ARSD chapter 74:51:01.
 - The discharge of any substance that harms or threatens to harm wildlife or aquatic life.
 - The discharge of crude oil in field activities under SDCL (South Dakota Codified Laws) chapter 45-9 is greater than 1 barrel (42 gallons).

To report a release or spill, call DENR at 605-773-3296 during regular office hours (8 a.m. to 5 p.m. Central time). To report the release after hours, on weekends or holidays, call State Radio Communications at 605-773-3231. Reporting the release to DENR does not meet any obligation for reporting to other state, local, or federal agencies. Therefore, the responsible person must also contact local authorities to determine the local reporting requirements for releases. DENR recommends that spills also be reported to the National Response Center at (800) 424-8802.

❖ **Construction Changes (4.4)**

When changes are made to the construction project that will require alterations in the temporary erosion controls of the site, the Storm Water Pollution Prevention Plan (SWPPP) will be amended to provide appropriate protection to disturbed areas, all storm water structures, and adjacent waters. The SDDOT Project Engineer will modify the SWPPP plan (DOT 298) and drawings to reflect the needed changes. Copies of changes will be routed per DOT 298. Copies of forms and the SWPPP will be retained in a designated place for review over the course of the project.

❖ **CERTIFICATIONS**

➤ **Certification of Compliance with Federal, State, and Local Regulations**

The Storm Water Pollution Prevention Plan (SWPPP) for this project reflects the requirements of all local municipal jurisdictions for storm water management and sediment and erosion control as established by ordinance, as well as other state and federal requirements for sediment and erosion control plans, permits, notices or documentation as appropriate.

➤ **South Dakota Department of Transportation**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for

gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Tom Leibel

Authorized Signature (See the General Permit, Section 6.7.1.C.)

➤ **Prime Contractor**

This section is to be executed by the General Contractor after the award of the contract. This section may be executed any time there is a change in the Prime Contractor of the project.

I certify under penalty of law that this document and all attachments will be revised or maintained under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorized Signature

❖ **CONTACT INFORMATION**

➤ **Contractor Information:**

- Prime Contractor Name:
- Contractor Contact Name:
- Address:
- Address:
- City: State: Zip:
- Office Phone: Field:
- Cell Phone: Fax:

➤ **Erosion Control Supervisor**

- Name:
- Address:
- Address:
- City: State: Zip:
- Office Phone: Field:
- Cell Phone: Fax:

➤ **SDDOT Project Engineer**

- Name:
- Business Address:
- Job Office Location:
- City: State: Zip:
- Office Phone: Field:
- Cell Phone: Fax:

➤ **SD DENR Contact Spill Reporting**

- Business Hours Monday-Friday (605) 773-3296
- Nights and Weekends (605) 773-3231

➤ **SD DENR Contact for Hazardous Materials.**

- (605) 773-3153

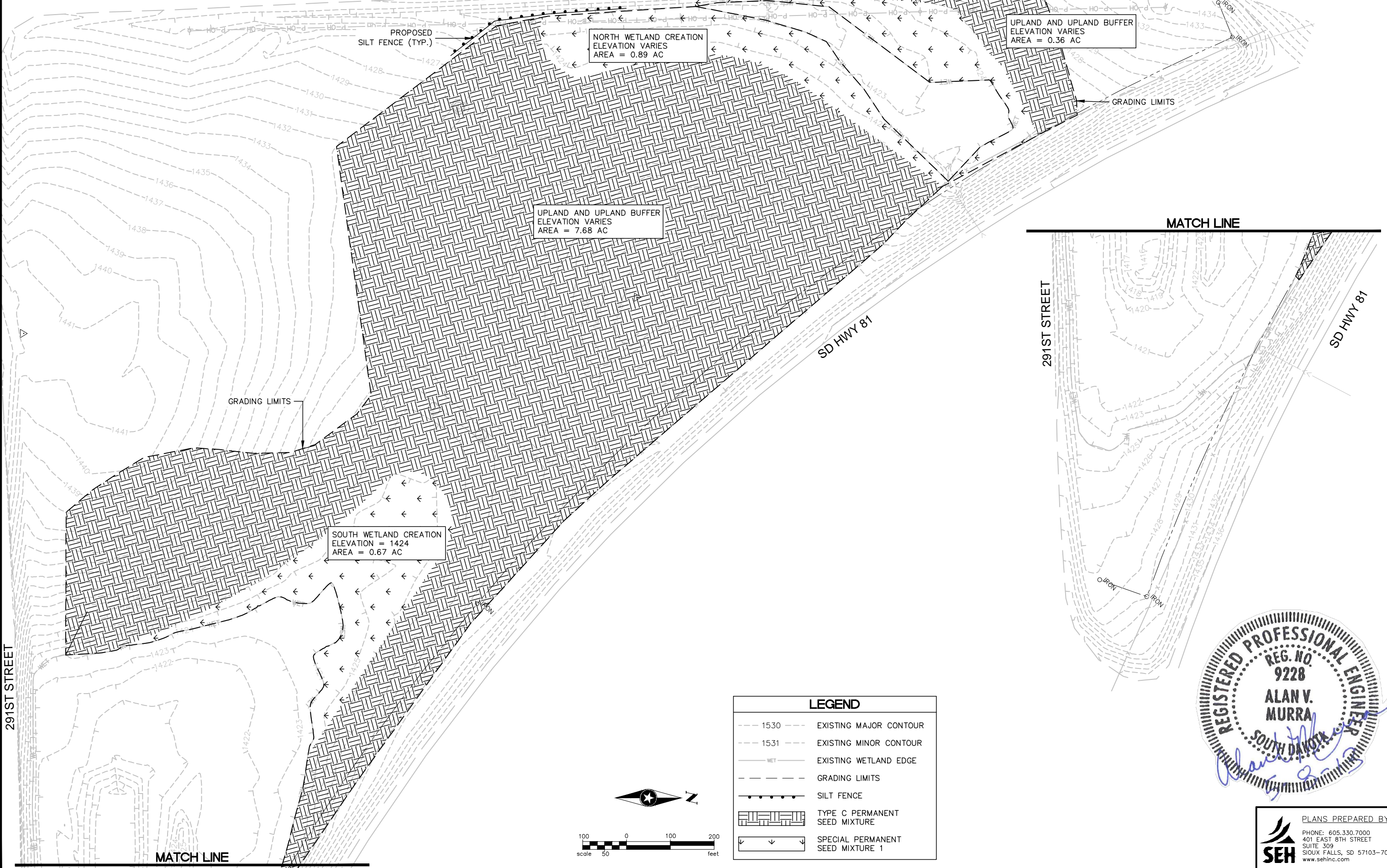
➤ **National Response Center Hotline**

- (800) 424-8802.



EROSION AND SEDIMENT CONTROL PLANS

439TH AVENUE



PROPOSED SILT FENCE (TYP.)

NORTH WETLAND CREATION
ELEVATION VARIES
AREA = 0.89 AC

UPLAND AND UPLAND BUFFER
ELEVATION VARIES
AREA = 0.36 AC

GRADING LIMITS

UPLAND AND UPLAND BUFFER
ELEVATION VARIES
AREA = 7.68 AC

MATCH LINE

GRADING LIMITS

SOUTH WETLAND CREATION
ELEVATION = 1424
AREA = 0.67 AC

SD HWY 81

291ST STREET

SD HWY 81

291ST STREET

MATCH LINE

LEGEND

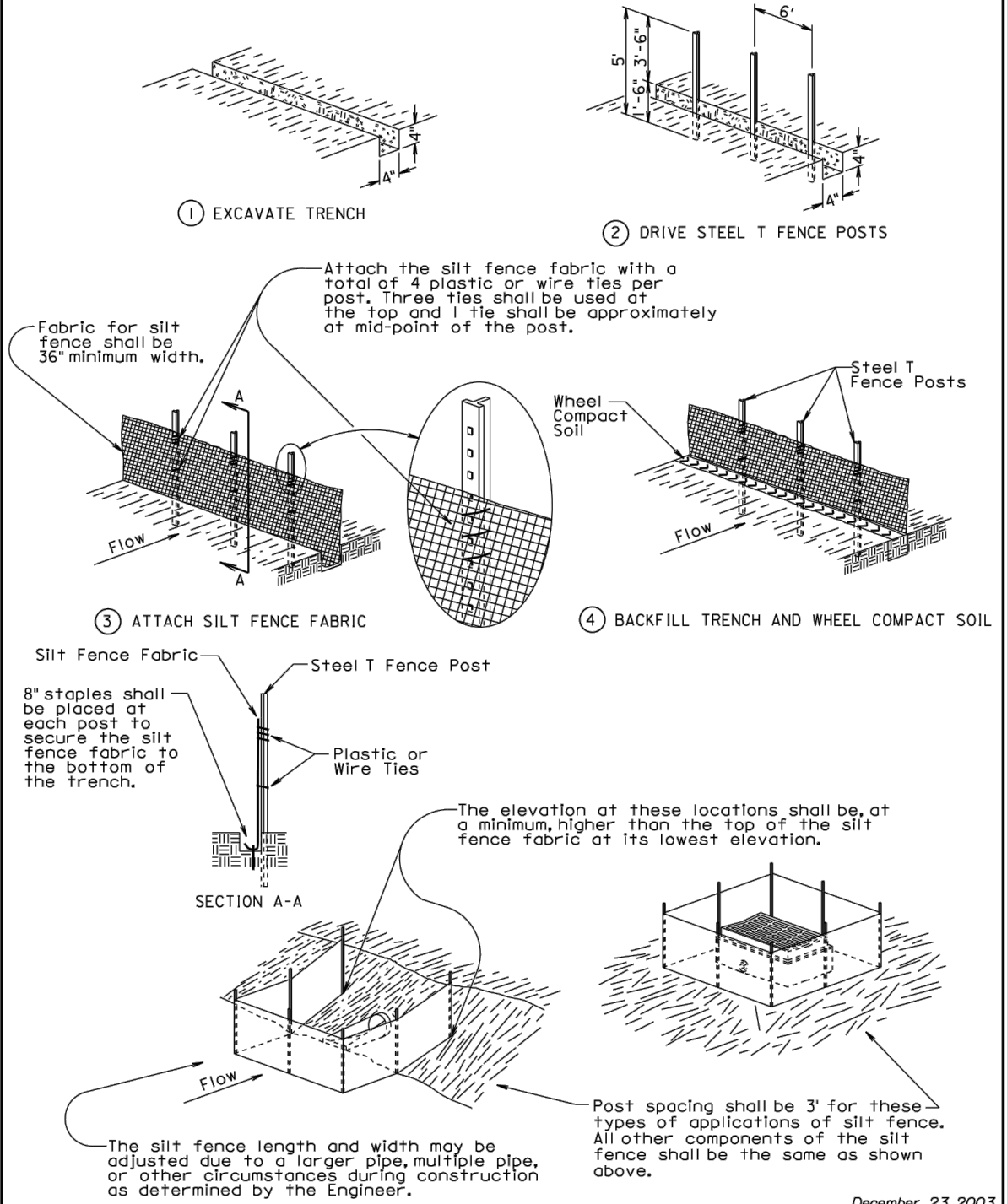
- 1530 --- EXISTING MAJOR CONTOUR
- 1531 --- EXISTING MINOR CONTOUR
- WET --- EXISTING WETLAND EDGE
- --- GRADING LIMITS
- --- SILT FENCE
- --- TYPE C PERMANENT SEED MIXTURE
- --- SPECIAL PERMANENT SEED MIXTURE 1



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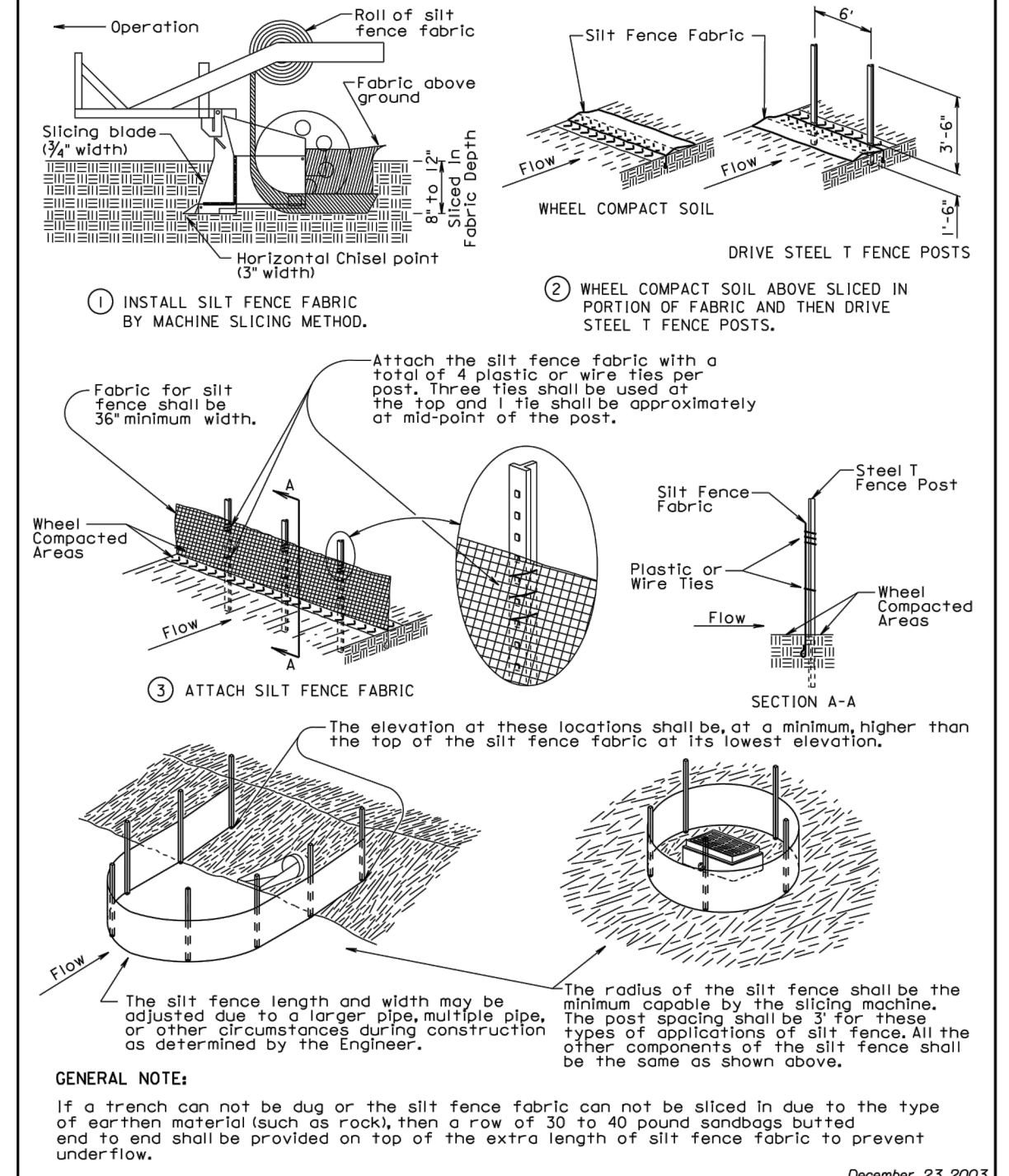
MANUAL HIGH FLOW SILT FENCE INSTALLATION



December 23, 2003

S D D O T	HIGH FLOW SILT FENCE	PLATE NUMBER 734.05
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MACHINE SLICED HIGH FLOW SILT FENCE INSTALLATION



December 23, 2003

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