

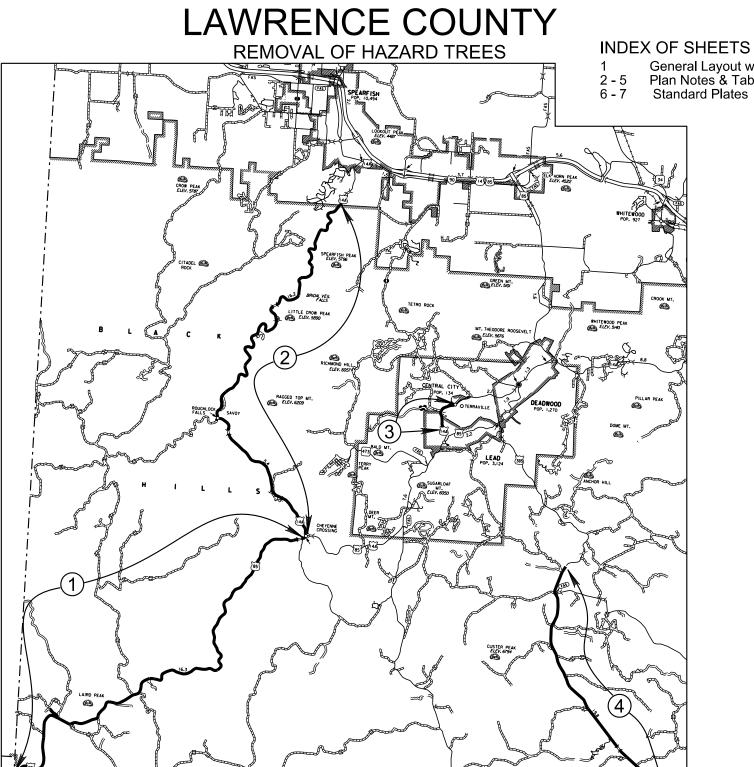
- 085-451 MRM 0 to MRM 16.29, PCN i63t
- 014A-451 MRM 12 to MRM 29, PCN i63u
- (3) 014A-451 MRM 37.45 to MRM 38.49, PCN i63u
- 385-451 MRM 102 to MRM 115.65, PCN i63v

STATE OF SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

PLANS FOR PROPOSED

STATE OF 085-451, 014A-451, & 385-451

PROJECTS 085-451, 014A-451 and 385-451 US HIGHWAYS 85, 14A & 385



General Layout with Index Plan Notes & Tables

Standard Plates

STORM WATER PERMIT None Required

ESTIMATE OF QUANTITIES (085-451, PCN i63t)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
100E0020	Clear and Grub Tree	126	Each
634E0010	Flagging	200.0	Hour
634E0110	Traffic Control Signs	137.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
734E0010	Erosion Control	Lump Sum	LS

ESTIMATE OF QUANTITIES (014A-451, PCN i63u)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
100E0020	Clear and Grub Tree	345	Each
634E0010	Flagging	300.0	Hour
634E0110	Traffic Control Signs	137.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
734E0010	Erosion Control	Lump Sum	LS

ESTIMATE OF QUANTITIES (385-451, PCN i63v)

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
100E0020	Clear and Grub Tree	122	Each
634E0010	Flagging	200.0	Hour
634E0110	Traffic Control Signs	137.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
734E0010	Erosion Control	Lump Sum	LS

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

ENVIRONMENTAL COMMITMENTS

The SDDOT is committed to protecting the environment and uses Section A Environmental Commitments as a communication tool for the Engineer and Contractor to ensure that attention is given to avoid, minimize, and/or mitigate an environmental impact. Environmental commitments to various agencies and the public have been made to secure approval of this project. An agency with permitting authority can delay a project if identified environmental impacts have not been adequately addressed. Unless otherwise designated, the Contractor's primary contact regarding matters associated with these commitments will be the Project Engineer. These environmental commitments are not subject to change without prior written approval from the SDDOT Environmental Office.

Additional guidance on SDDOT's Environmental Commitments can be accessed through the Environmental Procedures Manual found at: http://www.sddot.com/resources/Manuals/EnvironProcManual.pdf

For questions regarding change orders in the field that may have an effect on an Environmental Commitment, the Project Engineer will contact the Environmental Office at 605-773-3098 or 605-773-4336 to determine whether an environmental analysis and/or resource agency coordination is necessary.

<u>COMMITMENT B: FEDERALLY THREATENED, ENDANGERED, AND PROTECTED SPECIES</u>

COMMIMENT B2: WHOOPING CRANE

The Whooping Crane is a spring and fall migratory bird in South Dakota that is about 5 feet tall and typically stops on wetlands, rivers, and agricultural lands along their migration route. An adult Whooping Crane is white with a red crown and a long, dark, pointed bill. Immature Whooping Cranes are cinnamon brown. While in flight, their long necks are kept straight and their long dark legs trail behind. Adult Whooping Cranes' black wing tips are visible during flight.

Action Taken/Required:

Harassment or other measures to cause the Whooping Crane to leave the site is a violation of the Endangered Species Act. If a Whooping Crane is sighted roosting in the project vicinity, borrow pits, or staging areas associated with the project, cease construction activities in the affected area until the Whooping Crane departs and immediately contact the Project Engineer. The Project Engineer will contact the Environmental Office so that the sighting can be reported to USFWS.

COMMITMENT B4: BALD EAGLE

Bald eagles are known to occur in this area.

Action Taken/Required:

If a nest is observed within one mile of the project site, notify the Project Engineer immediately so that he/she can consult with the Environmental Office for an appropriate course of action.

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	085-451, 014A-451, & 385-451	2	7

COMMITMENT E: STORM WATER

Construction activities constitute less than 1 acre of disturbance.

Action Taken/Required:

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.

COMMITMENT H: WASTE DISPOSAL SITE

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

Action Taken/Required:

Construction and/or demolition debris may not be disposed of within the Public ROW.

The waste disposal site(s) will be managed and reclaimed in accordance with the following from the General Permit for 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) will 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 Environmental Office and the Project Engineer.

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

- 1. Construction and/or demolition debris consisting of concrete, asphalt concrete, or other similar materials will be buried in a trench completely separate from wood debris. The final cover over the construction and/or demolition debris will consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the Public ROW will be seeded in accordance with Natural Resources Conservation Service recommendations. The seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor will control the access to waste disposal sites not within the Public ROW with fences, gates, and placement of a sign or signs at the entrance to the site stating, "No Dumping Allowed".
- 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 will 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) will be incidental to the various contract items.

COMMITMENT I: HISTORICAL PRESERVATION OFFICE CLEARANCES

The Project Engineer will contact the Environmental Office to determine locations where cultural resources exist along the project that need to be avoided and protected.

SDDOT is working on concurrence with the State Historical Preservation Office (SHPO or THPO) for the hazard tree removal at the locations provided in these plans.

Action Taken/Required:

All earth disturbing activities not designated within the plans require a cultural resource review prior to scheduling the pre-construction meeting. This work includes but is not limited to: Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas.

The Contractor will arrange and pay for a record search and when necessary, a cultural resource survey. The Contractor has the option to contact the state Archaeological Research Center (ARC) at 605-394-1936 or another qualified archaeologist, to obtain either a records search or a cultural resources survey. A record search might be sufficient for review if the site was previously surveyed; however, a cultural resources survey may need to be conducted by a qualified archaeologist.

The Contractor will provide ARC with the following: a topographical map or aerial view of 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 artifacts have not been found on the site.

The Contractor will submit the cultural resources survey report to SDDOT Environmental Office, 700 East Broadway Avenue, Pierre, SD 57501-2586. SDDOT will submit the information to the appropriate SHPO/THPO. Allow **30 Days** from the date this information is submitted to the Environmental Engineer for SHPO/THPO review.

In the event of an inadvertent discovery of human remains, funerary objects, or if evidence of cultural resources is identified during project construction activities, then such activities will immediately cease, and the Project Engineer will be immediately notified. The Project Engineer will contact the SDDOT Environmental Office to determine an appropriate course of action.

SHPO/THPO review does not relieve the Contractor of the responsibility for obtaining any additional permits and clearances for Contractor furnished material sources, material processing sites, stockpile sites, storage areas, plant sites, and waste areas that affect wetlands, threatened and endangered species, or waterways. The Contractor will not utilize a site known or suspected of having contaminated soil or water. The Contractor will provide the required permits and clearances to the Project Engineer at the preconstruction meeting.

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	085-451, 014A-451, & 385-451	3	7

SDDOT ROW CORNERS

The SDDOT right-of-way is marked with a rebar with aluminum cap and a brown Carsonite post at key points. Prior to any timber operations, the SDDOT project Engineer will identify each Carsonite post and mark it with pink flagging, the contractor will be responsible to maintain the flagging as needed, the Carsonite posts will NOT be painted in any way. Contractor will take care to not disturb these right-of-way points during the project. Any corners and/or Carsonite disturbed by the contractor will be replaced.

BLACK HILLS NATIONAL FOREST CONTACT INFORMATION

Steve Kozel District Ranger

Forest Service Black Hills National Forest, Northern Hills Ranger District

p: 605-642-4622 x 3050 steve.kozel@usda.fed.gov 2014 North Main Street Spearfish, SD 57783

CLEAR AND GRUB TREE

The hazard trees to clear on this project are described as dead or dying and are located within the highway right of way. These hazard trees will be removed from the project limits and properly disposed of by the Contractor.

If the Contractor plans to convert the removed trees to a saleable product, then the Contractor will notify the Forest Service to obtain the necessary permits. The Contractor will coordinate with the Black Hills National Forest, Northern Hills Ranger District for permitting and ensuring proper disposal of removed trees.

Limbs removed from trees may remain within the highway right of way. These limbs will be placed outside the clear-zone. The clear-zone width is 10' measured from the travel lane for posted speeds 40 mph or less highways. The clear-zone width is 30' measured from the travel lane for posted speeds greater than 40 mph highways.

Limbs will be bucked and slashed to a height of less than 18" if left onsite.

Before clearing activities begin, the Contractor will contact the Project Engineer to identify what trees are to be cleared on the project.

The Contractor will avoid rutting and excessive soil disturbance during operations. If excessive rutting or soil disturbance occurs, the Contractor will stop operations and wait until the soil achieves enough strength to support equipment or change operation and retrieve trees with some other less soil disturbing method.

Extra care will be taken not to damage other nearby trees during the clearing process.

The Contractor will avoid wetlands, streams, and riparian areas during operations.

The Contractor is responsible for keeping the roadway clear of debris. No separate payment will be made for this work.

The Contractor will grade and level the soil to the original condition if disturbed by clearing activities. No separate payment will be made for this work.

All work descried in this section will be incidental to the contract unit price bid per each for Clear and Grub Tree.

TABLE OF CLEAR AND GRUB TREE (085-451, PCN i63t)

Tree Count Hwy 85				
Start	End	Right	Left	
MRM	MRM	Side	Side	
0	1	2	0	
1	2	2	0	
2	3	1	1	
3	4	0	1	
4	5	8	5	
5	6	0	3	
6	7	0	1	
7	8	7	3	
8	9	5	3	
9	10	5	4	
10	11	6	14	
11	12	0	3	
12	13	5	10	
13	14	2	16	
14	15	3	10	
15	16.29	3	3	
	Total:	49	77	
Total Both	Total Both Sides: 126			

TABLE OF CLEAR AND GRUB TREE (014A-451, PCN i63u)

Start	End	Right	Left
MRM	MRM	Side	Side
12	13	10	5
13	14	11	5
14	15	5	3
15	16	8	5
16	17	6	5
17	18	10	8
18	19	8	7
19	20	38	16
20	21	12	12
21	22	10	5
22	23	8	8
23	24	2	2
24	25	3	5
25	26	13	20
26	27	3	25
27	28	12	11
28	29	2	12
	Total:	161	154
		A - Central	

Tree Cou	nt Hwy 14	A - Central	City to Lead
37.45	38.49	0	30
	TOTAL		
Total Both	n Sides:		345

TABLE OF CLEAR AND GRUB TREE (385-451, PCN i63v)

Tree Count Hwy 385				
Start	End	Right	Left	
MRM	MRM	Side	Side	
102	103	11	0	
103	104	6	1	
104	105	4	7	
105	106	4	2	
106	107	17	5	
107	109	3	12	
109	110	0	3	
110	111	0	6	
111	112	3	4	
112	113	4	1	
113	114	4	7	
114	115	5	4	
115	115.65	4	5	
	Total:	65	57	
_	_			
Total Both	n Sides:		122	

STATE OF	PROJECT	SHEET	TOTAL
SOUTH DAKOTA	085-451, 014A-451, & 385-451	4	7

EROSION CONTROL

All costs for the erosion control work for furnishing, placing, and maintaining erosion control including equipment, labor, installing and removing wattles, permanent seeding, fertilizing, and fiber mulching will be incidental to the contract lump sum price for "Erosion Control".

The limits of erosion control work will be for all locations disturbed during construction. These limits will be determined by the Engineer during construction.

Erosion control wattles for restraining the flow of runoff and sediment will be installed at locations to protect water resources as directed by the Project Engineer. Refer to Standard Plate 734.06 for details.

The Contractor will provide certification that the erosion control wattles do not contain noxious weed seeds.

The erosion control wattle provided will be from the following approved product list: http://apps.sd.gov/HC60ApprovedProducts/main.aspx

Type F Permanent Seed Mixture will consist of the following:

Grass Species	Variety	Pure Live Seed (PLS) (Pounds/Acre)
Western Wheatgrass	Arriba, Flintlock, Rodan, Rosana, Walsh	7
Green Needlegrass	Lodorm, AC Mallard Ecovar	4
Sideoats Grama	Butte, Pierre	3
Blue Grama	Bad River	2
Oats or Spring Wheat: April through May;		10
Winter Wheat: August through November		
	Total:	26

Mycorrhizal inoculum will consist of mycorrhizal fungi spores and mycorrhizal fungi-infected root fragments in a solid carrier. The carrier may include organic materials, calcinated clay, or other materials consistent with application and good plant growth. The supplier will provide certification of the fungal species claimed and the live propagule count. The inoculum will include the following fungal species:

25% Glomus intraradices

25% Glomus aggregatum or deserticola

25% Glomus mosseae 25% Glomus etunicatum

All seed will be inoculated by the seed supplier with a minimum of 100,000 live propagules of mycorrhizal fungi per acre. All costs of inoculating the seed will be incidental to the contract lump sum price for Erosion Control.

The mycorrhizal inoculum will be as shown below or an approved equal:

Product Manufacturer

MycoApply Mycorrhizal Applications, Inc.

Grants Pass, OR Phone: 1-866-476-7800 www.mycorrhizae.com

AM 120 Multi Species Blend Reforestation Technologies Int.

Gilroy, CA

Phone: 1-800-784-4769 www.reforest.com

The Contractor will apply an all-natural slow release fertilizer prior to seeding or placing sod. The all-natural fertilizer will have a minimum guaranteed analysis of 4-4-4 and be USDA Certified BioBased. It should provide a minimum of 4% (N) nitrogen with a minimum water insoluble nitrogen (WIN) fraction of 2.07%, a minimum of 4% (P2O5) available phosphate, a minimum of 4% (K2O) soluble potash, and a maximum carbon to nitrogen ratio (C:N ratio) of 5:1. The all-natural fertilizer will be free of weed-seed and pathogens accomplished through thermophilic composting, and not mechanical or chemical sterilization, to assure presence of beneficial soil microbiology. The fertilizer will have a near neutral pH, a low salt index, a low biological oxygen demand, contain organic humic and fulvic acids, and have high aerobic organism counts. The fertilizer will also be stable, free of bad odors, and be unattractive as a food source for animals. It should also be in a granular form that is easily spread.

The fertilizer will be applied at a rate of 1,500 pounds per acre in accordance with the manufacturer's recommended method of application.

The all-natural slow release fertilizer will be as shown below or an approved equal:

<u>Product</u> <u>Manufacturer</u>

Sustane Corporate Headquarters

Cannon Falls, Minnesota Phone: 1-800-352-9245 www.sustane.com

Perfect Blend, LLC

Bellevue, WA Phone: 1-866-456-8890 www.perfect-blend.com

Fiber mulch will be applied in a separate operation following permanent seeding.

An additional 2% by weight of tackifier will be added to the fiber mulch product selected from the approved product list. If the product selected has guar gum tackifier included, then the additional 2% of tackifier will be guar gum. If the product selected has synthetic tackifier included, then the additional 2% of tackifier will be synthetic.

The Contractor will allow the fiber mulch to cure a minimum of 18 hours prior to watering or any storm event to ensure proper cohesion between the soil and fiber particles.

All costs for the additional tackifier added to the fiber mulch including labor, equipment, and materials will be incidental to the contract lump sum price for Erosion Control.

The fiber mulch provided will be from the approved product list. The approved product list for fiber mulch may be viewed at the following internet site:

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

TRAFFIC CONTROL - GENERAL NOTES

Unless otherwise stated in these plans, no work will be allowed during hours of darkness.

All materials and equipment will be stored a minimum distance of 30' from the traveled way during nonworking hours.

All haul trucks will be equipped with a second flashing amber light that is visible from the backside of the haul truck. The costs for the flashing amber lights will be incidental to the various related contract bid items.

All construction operations will be conducted in the general direction of traffic movement.

INVENTORY OF TRAFFIC CONTROL DEVICES PER PROJECT

		CONVENTIONAL ROAD			
SIGN CODE	SIGN DESCRIPTION	NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT			137.0		

STATE OF	PROJECT	SHEET	TOTAL SHEETS
SOUTH DAKOTA	085-451, 014A-451, & 385-451	5	7

| STATE OF SOUTH DAKOTA | DAKO

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

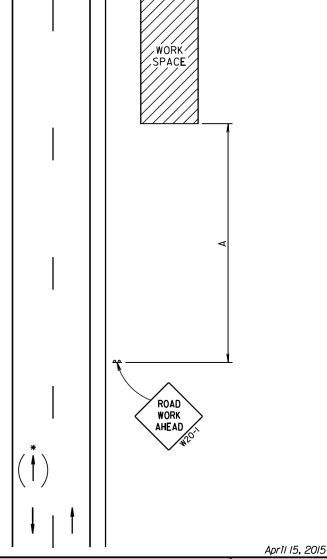
The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

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

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

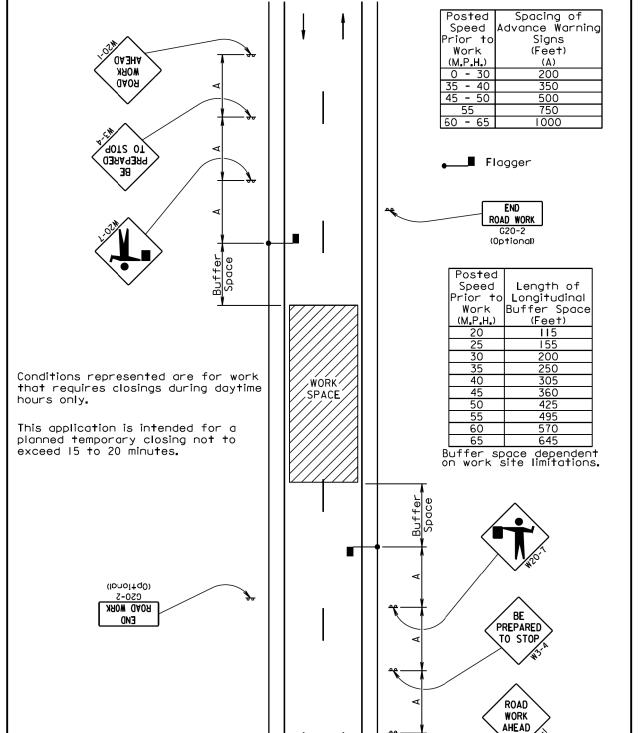
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Posted	Spacing of	
	Advance Warning	
Prior to	Signs	
Work	(Feet)	
(M.P.H.)	(A)	
0 - 30	200	
35 - 40	350	
45 - 50	500	
55	750	
60 - 80	1000	



GUIDES FOR TRAFFIC CONTROL DEVICES WORK BEYOND THE SHOULDER plate number 634.01

Sheet I Of I Published Date: 2nd Qtr. 2020



S D D O

September 6, 2015
PLATE NUMBER

GUIDES FOR TRAFFIC CONTROL DEVICES

TEMPORARY ROAD WORK

Sheet I of I

634.30

Published Date: 2nd Qtr. 2020

S D D O T

Sh

From - TRRC1.

PLATE NUMBER *734.06*

Wood Stake (Typ.)

Point A

CUT OR FILL SLOPE INSTALLATION

Slope

1:1 2:1

3:1

4:1

Wood Stake

DETAIL C

(See General Notes)

Point A-

-Point B

PLAN VIEW (Ditch Installation)

Ends of Erosion-

Control Wattles

Point A

-Point A

Point B

Spacing

(Ft.) 10

20

30

40

Published Date: 2nd Qtr. 2020

STATE OF PROJECT SHEET TOTAL SHEETS 085-451, 014A-451, & 385-451 DAKOTA

Plotting Date:

05/15/2020

GENERAL NOTES:

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

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

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

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

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

The Contractor and Engineer will inspect the erosion control wattles in accordance with the storm water permit. The Contractor will remove, dispose, or reshape the accumulated sediment when necessary as determined by the Engineer.

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

D D O

Published Date: 2nd Qtr. 2020

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

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

February 14, 2020

PLATE NUMBER 734.06 **EROSION CONTROL WATTLE**

Sheet 2 of 2

Wood Stake **SECTION A-A** February 14, 2020 DDOT **EROSION CONTROL WATTLE** Sheet I of 2

Point A **ISOMETRIC VIEW**

Spacing Varies (See Table)

See Detail B

ELEVATION VIEW (Cut or Fill Slope Installation)

Wood Stake-

(Ditch Installation)

Spacing

(Ft.) 150

100

75

50

DITCH INSTALLATION

Grade

2%

3%

4%

5%

Point A

Point B-

DETAIL B

(Typical of All Installations)

Excavated Materialfrom Trench