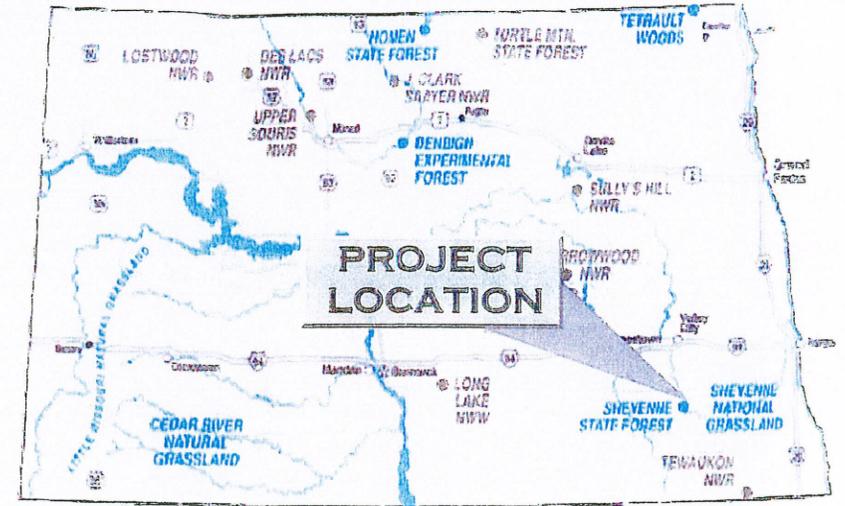




U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE, REGION 1

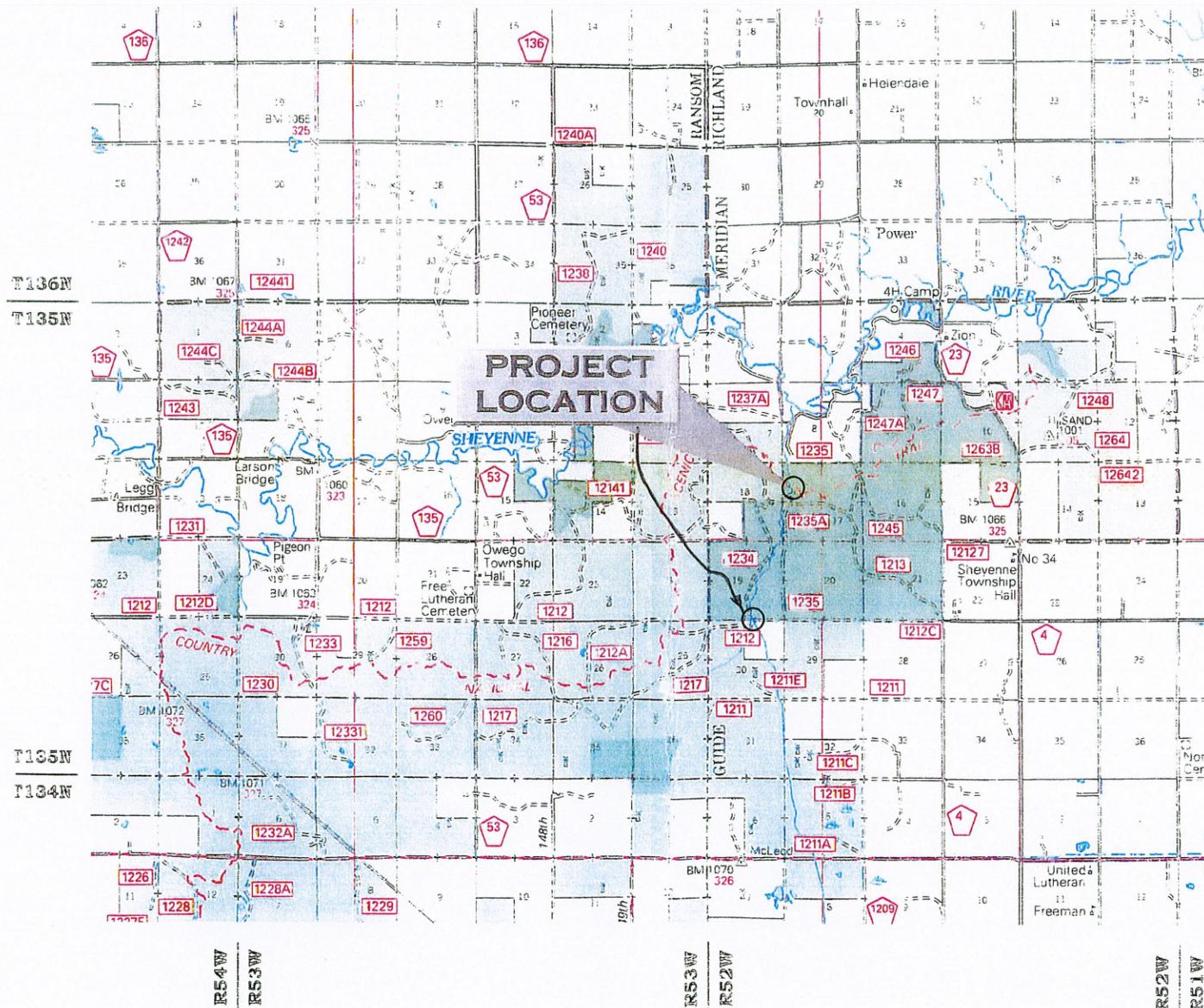
CONSTRUCTION PLANS FOR:
IRON SPRINGS BRIDGE
(NO. 1001-23.6) NORTH COUNTY TRAIL

DAKOTA PRAIRIE GRASSLANDS
SHEYENNE RANGER DISTRICT
RICHLAND COUNTY, NORTH DAKOTA
RICHLAND



NORTH DAKOTA

INDEX TO SHEETS	
NO.	Description
1	Title Sheet
2	Schedule of Items/Construction Notes
3	Drawing



AREA MAP

RECOMMENDED:

Bryan [Signature] DATE 7/6/12
SHEYENNE DISTRICT RANGER
DAKOTA PRAIRIE GRASSLANDS

APPROVED:

[Signature] DATE 7/16/12
GRASSLANDS ENGINEER
DAKOTA PRAIRIE GRASSLANDS

APPROVED:

Nancy [Signature] DATE 7/16/12
GRASSLANDS SUPERVISOR
DAKOTA PRAIRIE GRASSLANDS

Sheet 2

General Construction Notes:

Repair fill on east side of trail bridge

1. Remove and stockpile all topsoil from the areas to be disturbed by the project including the diversion ditch east of the bridge. Remove and stockpile surfacing from existing North Country Trail (NCT) where ditch crosses the NCT.
2. Construct French drain as per drawings; construct drain so the top of the gravel is at least one (1) foot below existing surface water elevation or as staked by the Forest Service. Install perforated pipe at a grade no less than 2% for the entire length. Outlet of drain shall be at stream elevation. All materials for the French Drain are incidental to the French Drain Pay Item.
3. Construct 225' diversion ditch 2 foot deep as per typical section and staked by FS at no less than 2% down grade to the North. Ditch earthwork is incidental to the Excavation Pay Item.
4. Reconstruct short section (+or- 15') of existing NCT where ditch crosses the trail.
5. Cover French drain with local excavated material and fill from diversion ditch.
6. Reshape area to a constant slope as shown on the drawings to the existing water level in Iron Springs Creek utilizing ditch and local material as fill.
7. Construct and surface with aggregate, 4" compacted depth, new trail to match into existing trail east of the bridge, start at seven foot wide at the bridge and taper to 3 foot wide in 30 feet, then 3 feet wide to existing trail. All trail earthwork is incidental to the Excavation Pay Item.
8. Replace topsoil on the fill slopes to the creek first, then the diversion ditch last. Make sure ditch is still functional after topsoil is replaced.
9. Seeding of all disturbed areas with native seed and placing willow shoots shall be done by the Forest Service.
10. For all fill areas, construct a solid embankment with adequate compaction by working smaller rock and fines in with the larger rocks to fill the voids, and by operating hauling and spreading equipment uniformly over the full width of each layer as the embankment is constructed.

Runout ditches on west side of the bridge

1. Remove and stockpile topsoil from staked area.
2. Start construction of the runout ditches at least 30' west of the bridge.
3. Construct runout ditches - 20' minimum length, using excavated material as a ditch block shown on the plans. All runout ditch earthwork is incidental to the Excavation Pay Item.
4. Replace topsoil to repair existing rills in fill slopes by the west bridge abutment, then place topsoil on ditch blocks and last on the slopes of ditch. Make sure ditch is still functional after topsoil is replaced. Rill fill work is incidental to the Topsoil Pay Item.
5. Seeding of all disturbed areas with native seed shall be done by the Forest Service.

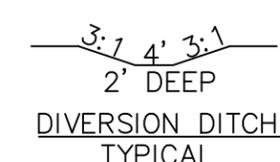
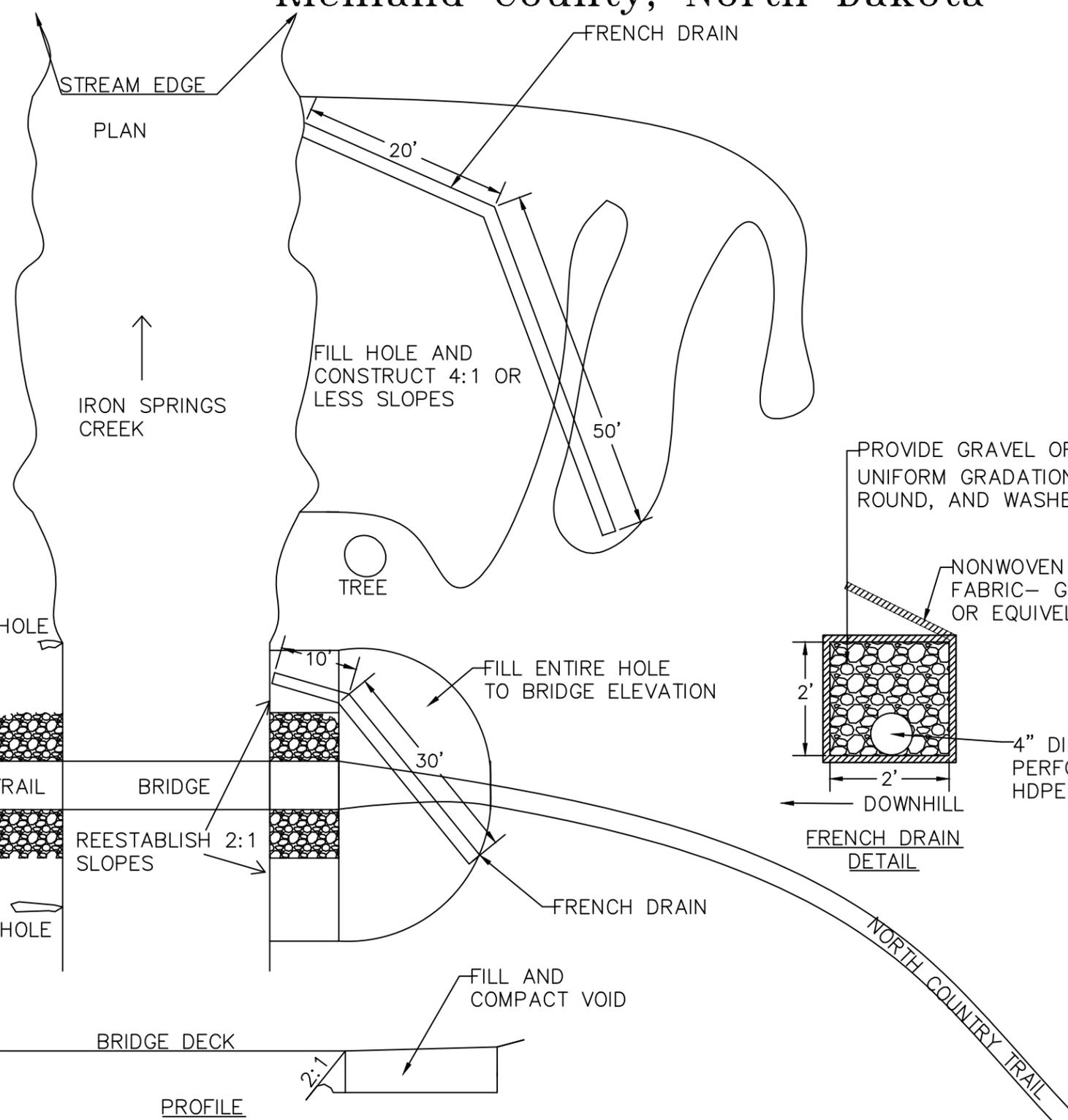
Sheet 2 continued

Road #1212 ditch repair in section 19, T135N R52W, 5th PM.

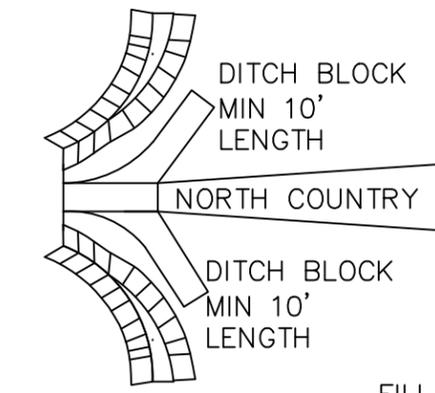
Remove and stockpile existing rock from washout. Remove and stockpile topsoil from adjacent slopes as directed by Engineer. Remove alluvial fan from outlet of washout and place the material back into the washout. Reshape fill slopes to obtain 3:1 or less slope ratio and construct drainage way for riprap. Place fabric on resloped washed out ditch area one (1) foot below ditch line. Place existing 20 yards of riprap rock stockpile on fabric over repaired fill washout. Rock shall conform to the existing fill slope as directed by the Engineer. Construct ditch block out of local material, two foot high by four foot top width about 300 feet East of rock work as staked by Engineer. For all fill areas construct a solid embankment with adequate compaction by working smaller rock and fines in with the larger rocks to fill the voids, and by operating hauling and spreading equipment uniformly over the full width of each layer as the embankment is constructed.

USDA Forest Service Region 1
 Dakota Prairie Grasslands
 Sheyenne Ranger District
 Iron Springs Trail Bridge #1001-23.6
 SECTION 17, T135N, R52W 5th Principal Meridian
 Richland County, North Dakota

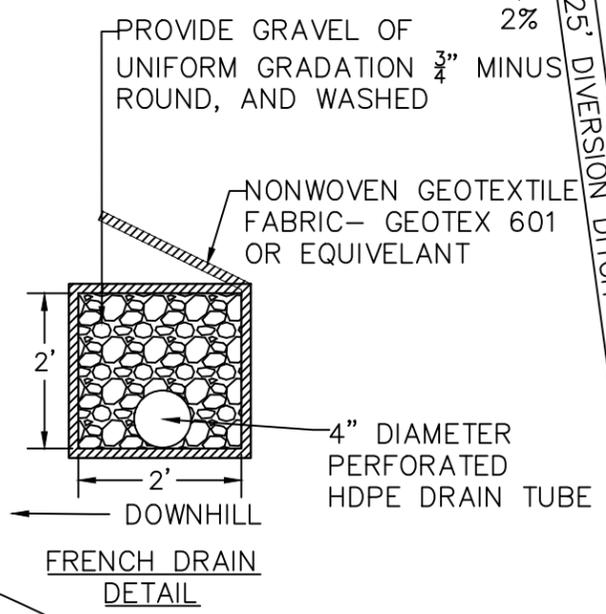
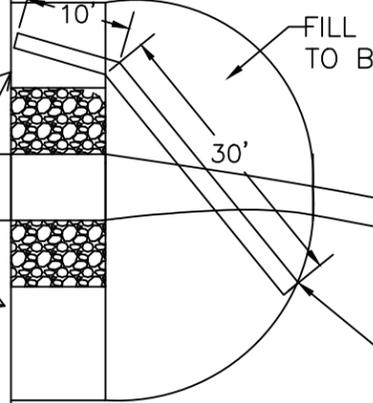
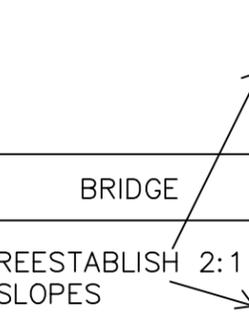
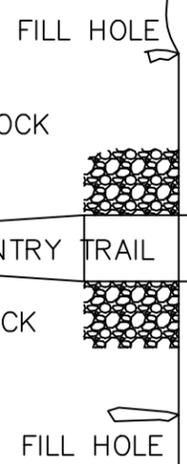
DITCH TO DAYLIGHT



20' MIN RUNOUT DITCH TRANSITION FROM V-DITCH TO 4' FLATBOTTOM



20' MIN RUNOUT DITCH TRANSITION FROM V-DITCH TO 4' FLATBOTTOM



BRIDGE DECK

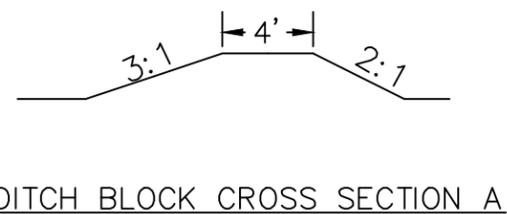
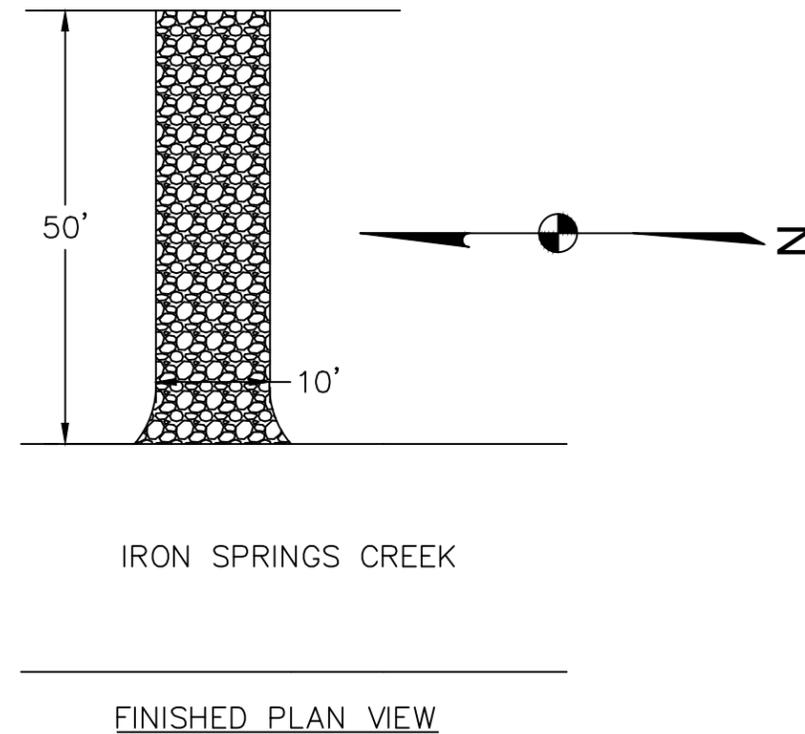
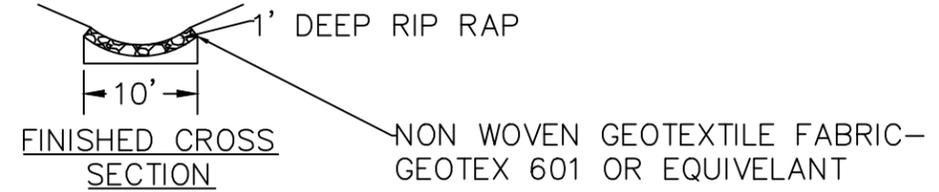
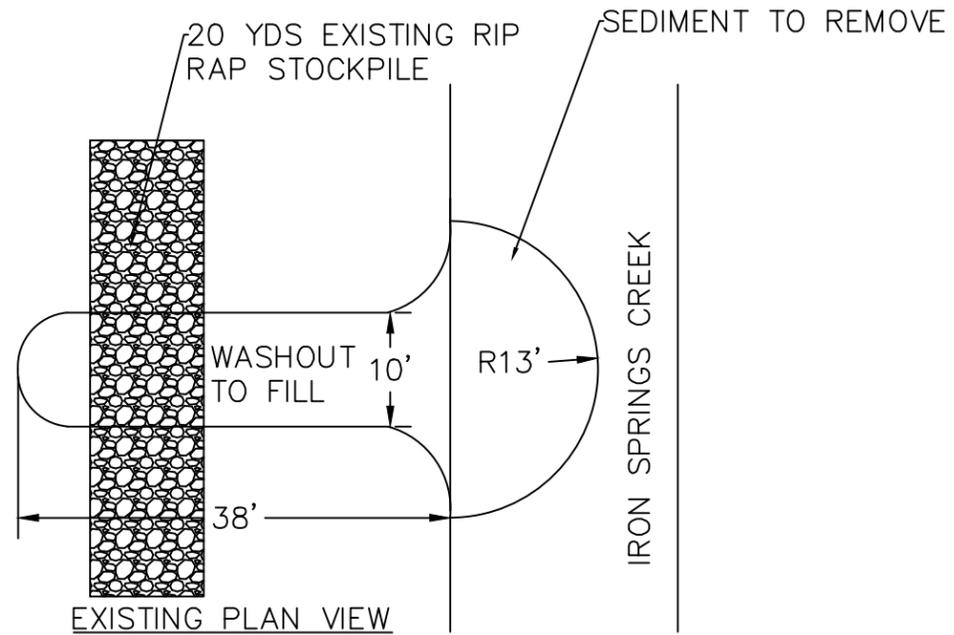
PROFILE

CONSTRUCT 225' DIVERSION DITCH

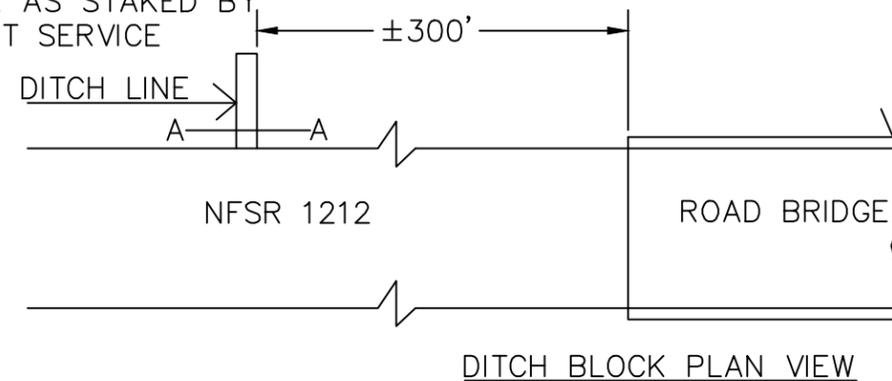
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REVISIONS	DATE
NO. DESCRIPTION	
IRON SPRINGS TRAIL BRIDGE SITE PLAN SHEYENNE RANGER DISTRICT	
DRAWN BY: JMK	DESIGNED BY: JMK
FORWARDED BY: JMK	APPROVED BY: [Signature]
JOB NUMBER: -	
DATE: 8/2/12	
SCALE: N/A	
SHEET NO: 3	OF 4

USDA Forest Service Region 1
 Dakota Prairie Grasslands
 Sheyenne Ranger District
 Road 1212 Iron Springs Erosion Repair
 SECTION 19,T135N,R52W 5th Principal Meridian
 Richland County, North Dakota



CONSTRUCT 2' HIGH BY
 4' TOP WIDTH DITCH
 BLOCK AS STAKED BY
 FOREST SERVICE



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IRON SPRINGS EROSION REPAIR SITE PLAN SHEYENNE RANGER DISTRICT PREPARED FOR USFS		DRAWN BY JMK DESIGNED BY JMK CHECKED BY ROADDESIGN APPROVED BY	DATE: 8/2/12 SCALE: N/A SHEET NO: 4 of 4

Sheet 5

Aggregate Surfacing Gradation Requirements

Modified North Dakota DOT class 13 specification

Sieve Size	Percent Passing Designated Sieve
1"	100
3/4"	70-100
No. 4	38-70
No. 8	22-62
No. 30	12-45
No. 200	10-17

L.A. Abrasion 50% maximum allowable percentage.

Shale 12% maximum allowable percentage.

Fractured Faces 10% minimum weight percent allowable.