

Enhancement of an oxbow and wetlands at Big Bend State Fish and Wildlife Area

Completion Report

Natural Resource Injury Assessment Restoration Project (1 of 3)

November 24, 2015

Project Summary

The week of September 28, 2015, restoration and enhancement work began at Big Bend State Fish and Wildlife Area. This effort was funded through the Natural Resource Restoration Trust Fund per consent order No. 09 CH 905, *People of the State of Illinois v. Chicago, Central & Pacific Railroad Company*.

Big Bend State Fish and Wildlife Area (BBSFWA) is a 2,376 acre site located along the Rock River west of Prophetstown, Illinois. The BBSFWA is a very complex system that is highly influenced by Rock River flood pulses and other natural disturbances, readily changing site conditions. The site is owned by the Illinois Department of Natural Resources and preserved by Natural Resource Conservation Service (NRCS) Emergency Watersheds Protection Program Floodplain easements (75-5A12-1-8698; 75-5A12-1-8699; 75-5A12-1-8700).

The project repaired and enhanced a large oxbow system within BBSFWA that directly borders the Rock River as well as several small wetlands south of the oxbow (Figure 1).

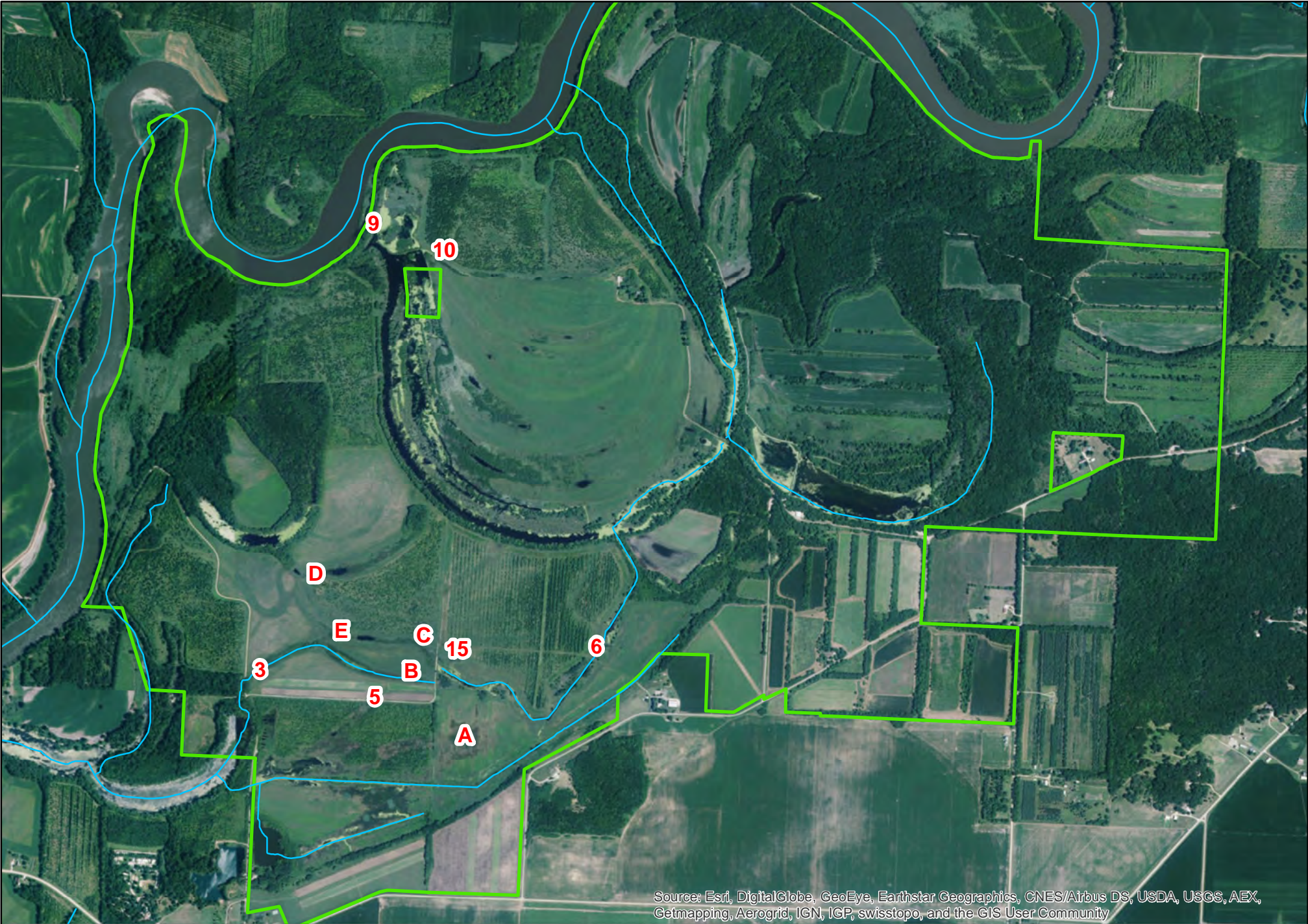
Oxbow Restoration (9 and 10): In early 2000s, NRCS implemented various site restoration projects, including, but not limited to, a crossing with a flap gate to control water in a small ditch (10) and a notched levee with water control structure (9) on the large oxbow island (Figure 2). Fall of 2015, the crossing was repaired and reinforced allowing for a stable crossing onto the island during prescribed burns, other natural resource management actions, and maintenance activities. Widening the levee in the vicinity of structure #9 and stabilizing the notch was completed, allowing for better management of the water levels in the large oxbow system to enhance fish and wildlife habitat. Completely armoring the notch should also stop the gully from advancing further into the wetland.

Wetland Restoration (A, B, C, D, E, 3, 5, 6 and 15): In areas depicted as A, B, C, D, E, 3, 5, 6 and 15 on Figure 1, minor excavations, armoring a wetland overflow and spring seep drainage, and installation of water control structures were implemented in an effort to facilitate floodwater storage, in turn providing additional shallow water wetland habitat for natural resources.

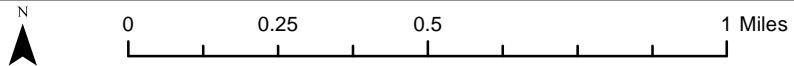
The project was completed October 15, 2015.

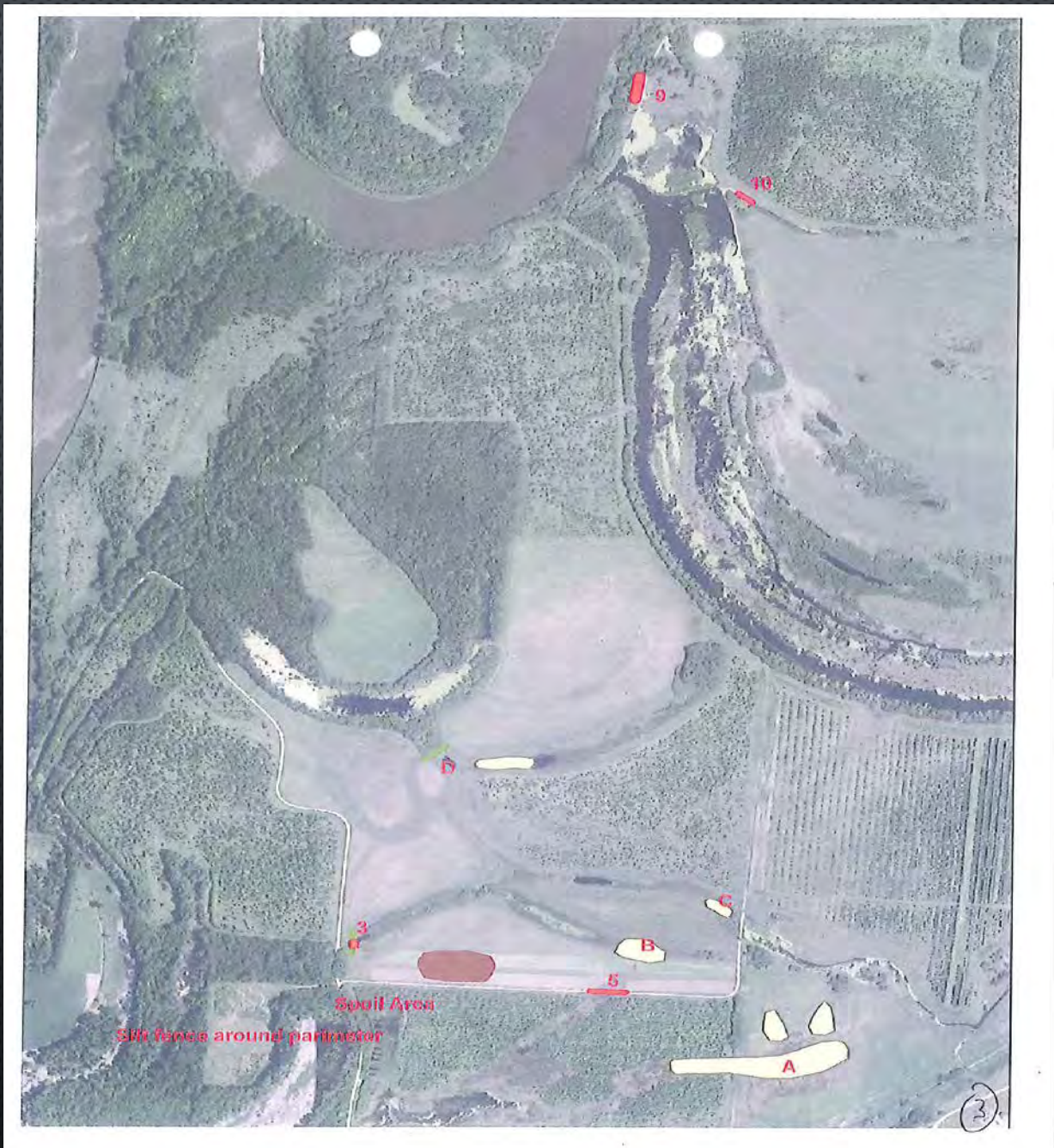
Figure 1. Big Bend State Fish and Wildlife wetland area, Oxbow and Wetland Repair and Enhancement Restoration Project

Green outline represents IDNR property boundary



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community







EAST PART PORTLAND/ EAST PART ERIE PLAT

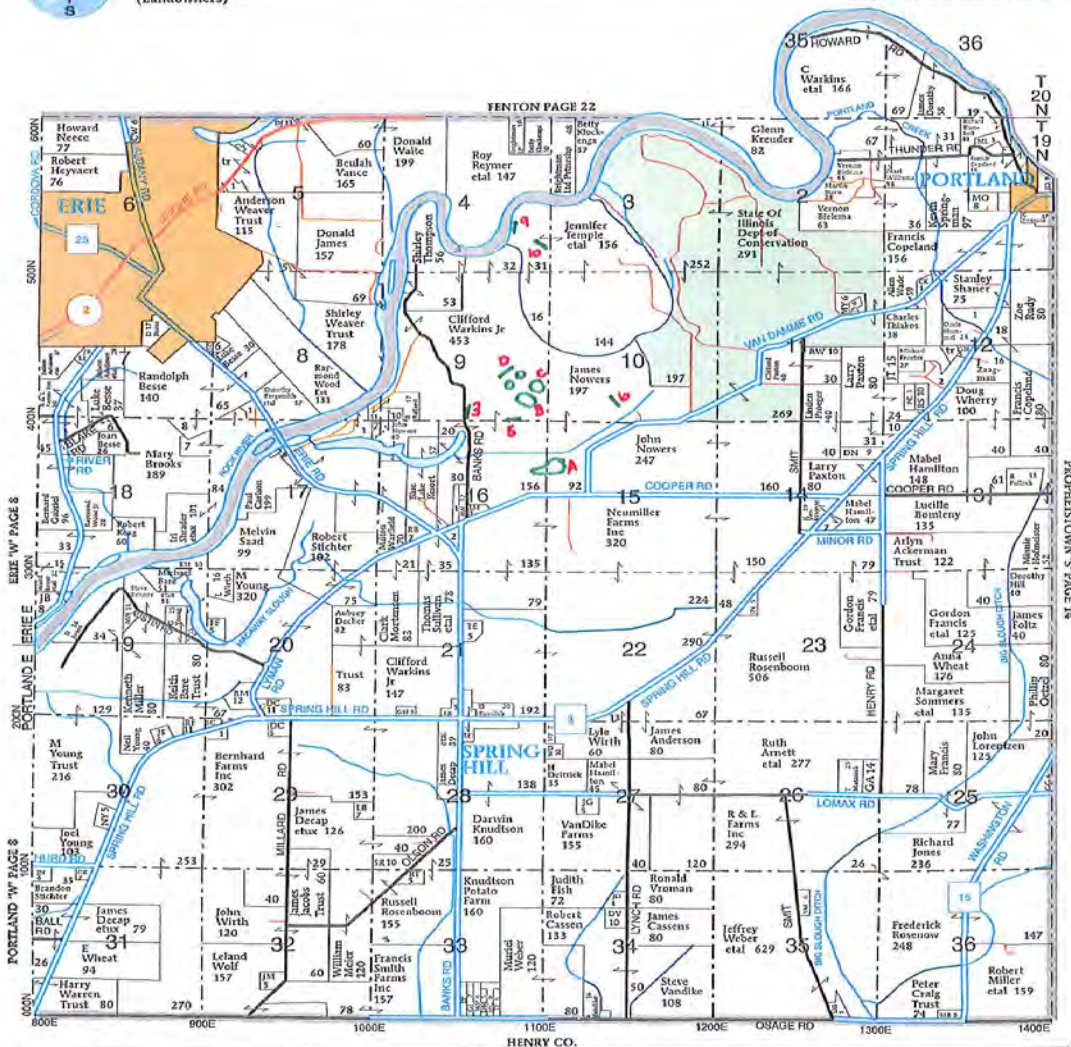
WHITESIDE COUNTY, ILLINOIS

(Landowners)

T-19-N ♦ R-4-E

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See Page 56 For Additional Pages.



Contact:
Whiteside County Extension Office
100 E. Knox Street, Morrisburg, IL 61270
815/772-1075; Fax 815/772-6077

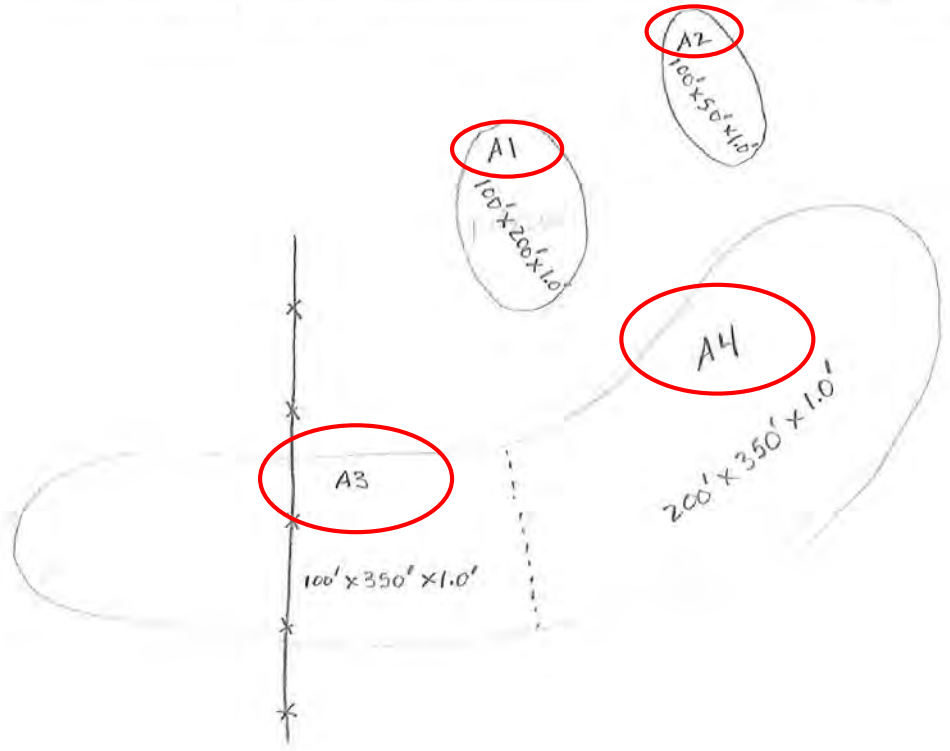


INVEST IN THEIR FUTURE
BE A
VOLUNTEER 4-H
LEADER
SHARE YOUR TALENTS





STATE <u>ILLINOIS</u>	PROJECT <u>Wetland A</u>	<u>BIG BEND</u>	
BY <u>Trey</u>	DATE <u>4/15</u>	CHECKED BY	DATE
SUBJECT <u>A1, A2, A3, A4</u>			JOB NO.
			SHEET _____ OF _____



Name Big Bird Program # _____ Contract # _____

Date 4/14/15 Tract _____ Farm _____

Cost Estimate For Wetland

By: Jim Doeden 1/18/00

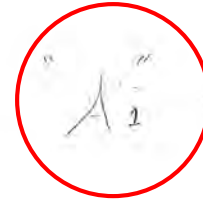
Typical Wetland Sizes

100' X 200'

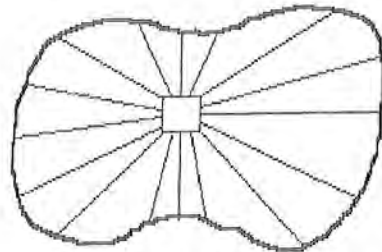
370 Cu. Yds.

Minimum side slopes

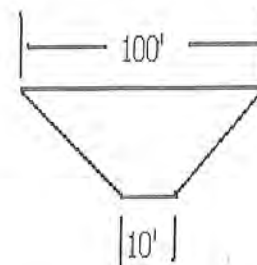
8:1



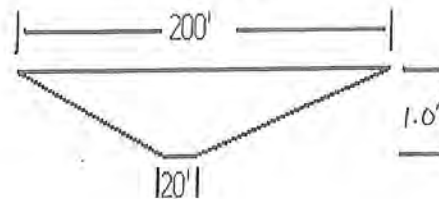
Top View



End View



Side View



CALL JULIE 1-800-892-0123

WITH THE FOLLOWING:

COUNTY Whiteside

CITY-TOWNSHIP ERTS TWP

SEC. & 1/4 SEC. No. # SPC 15 NW1/4

48 Hours Before You Dig.

(TWO WORKING DAYS)

(5)

Name Big Pond Program # _____ Contract # _____

Date 9/14/15 Tract _____ Farm _____

Cost Estimate For Wetland

By: Jim Doeden 1/18/00

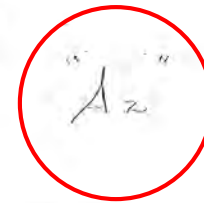
Typical Wetland Sizes

100' X 50'

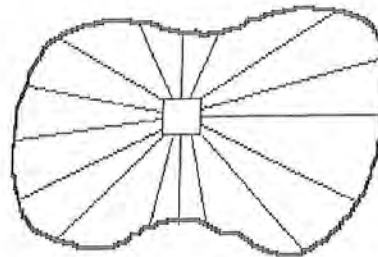
93 Cu. Yds.

Minimum side slopes

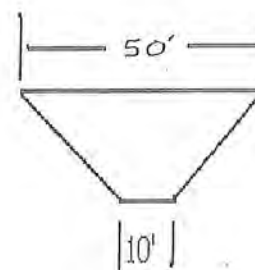
8:1



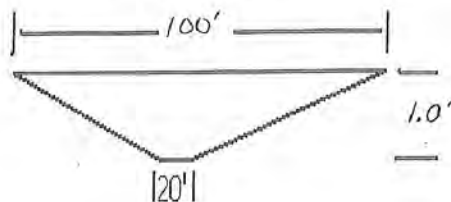
Top View



End View



Side View



CALL JULIE 1-800-892-0123

WITH THE FOLLOWING:

COUNTY WILSON

CITY-TOWNSHIP CRIT TWP

SEC. & 1/4 SEC. No. # SEC 15 DW 1/4

48 Hours Before You Dig.

(TWO WORKING DAYS)



(6)

Name Big Bend Program # _____ Contract # _____

Date 11/14/15 Tract _____ Farm _____

Cost Estimate For Wetland

By: Jim Doeden 1/18/00

Typical Wetland Sizes

100' X 350'

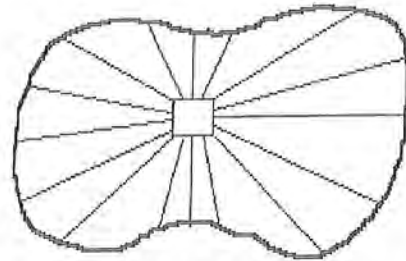
648 Cu. Yds.

Minimum side slopes

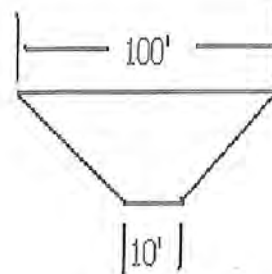
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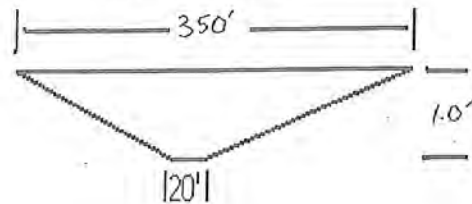
Top View



End View



Side View



CALL JULIE 1-800-892-0123

WITH THE FOLLOWING:

COUNTY Whiteside

CITY-TOWNSHIP Glendale Twp

SEC. & 1/4 SEC. No. # SEC 15 NW 1/4

48 Hours Before You Dig.

(TWO WORKING DAYS)

(7)

Name B. G. Beard Program # _____ Contract # _____

Date 1/14/00 Tract _____ Farm _____

Cost Estimate For Wetland

By: Jim Doeden 1/18/00

Typical Wetland Sizes

350' X 200'

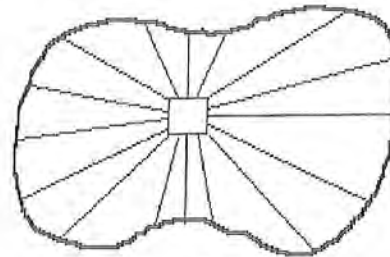
1296 Cu. Yds.



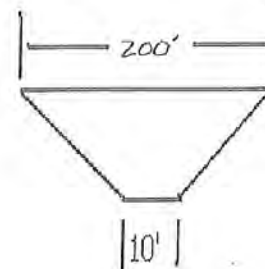
Minimum side slopes

8:1

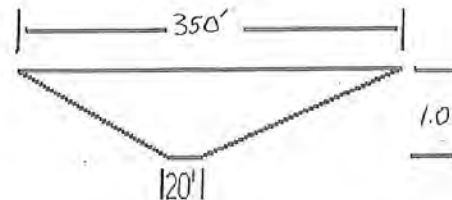
Top View



End View



Side View



CALL JULIE 1-800-892-0123

WITH THE FOLLOWING:

COUNTY Whitman

CITY-TOWNSHIP CRUE TWP

SEC. & ¼ SEC. No. # SEC 15 NW ¼

48 Hours Before You Dig.

(TWO WORKING DAYS)

(8)



Name BIG BEND Program # _____ Contract # _____

Date 11/11/15 Tract _____ Farm _____

Cost Estimate For Wetland



By: Jim Doeden 1/18/00

Typical Wetland Sizes

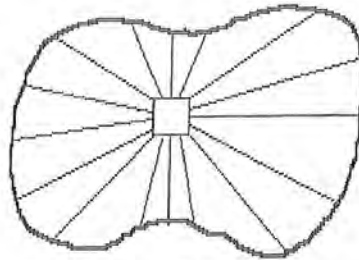
400' X 300'

3333 Cu. Yds.

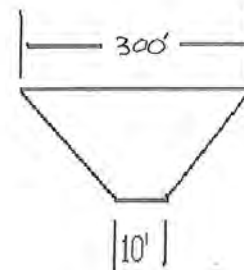
Minimum side slopes

8:1

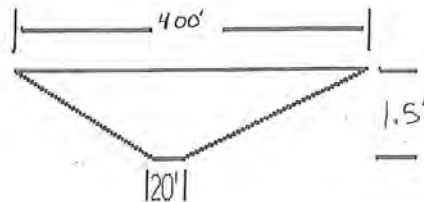
Top View



End View



Side View



CALL JULIE 1-800-892-0123

WITH THE FOLLOWING:

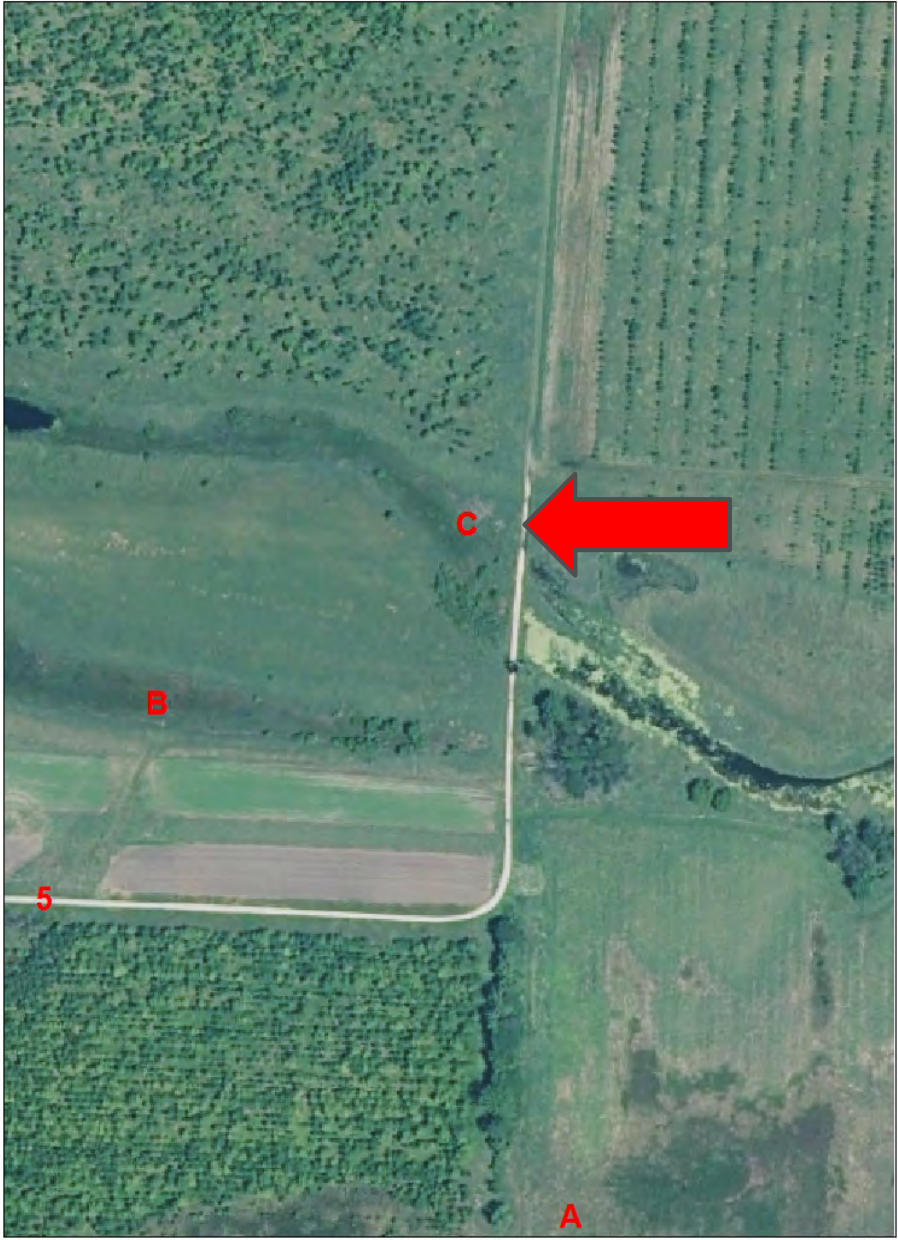
COUNTY Whitfield

CITY-TOWNSHIP ERIE TWP

SEC. & 1/4 SEC. No. # SEC 9 SW 1/4

48 Hours Before You Dig.
(TWO WORKING DAYS)





Name Big Bend Program # _____ Contract # _____

Date 4/14/15 Tract _____ Farm _____

Cost Estimate For Wetland



By: Jim Doeden 1/18/00

Typical Wetland Sizes

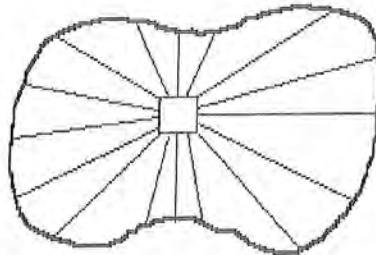
100' X 200'

740 Cu. Yds.

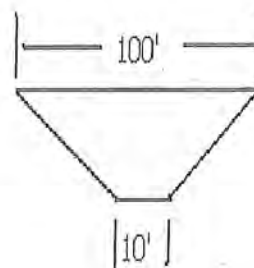
Minimum side slopes

8:1

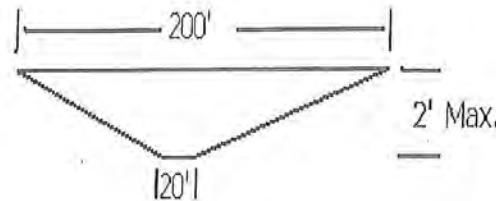
Top View



End View



Side View



CALL JULIE 1-800-892-0123

WITH THE FOLLOWING:

COUNTY Whisper

CITY-TOWNSHIP EPHE TWP

SEC. & W SEC. No.# SEC 9 SE 24

48 Hours Before You Dig.

(TWO WORKING DAYS)





Name BIG BEND Program # _____ Contr. # _____

Date 4/14/15 Tract _____ Farm _____

Cost Estimate For Wetland



By: Jim Doeden 1/18/00
Typical Wetland Sizes

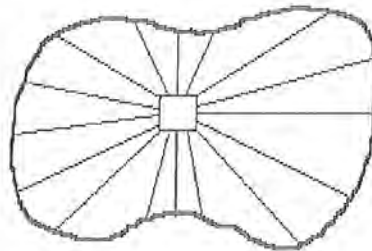
75 ft. X 300 ft.

834 Cu. Yds.

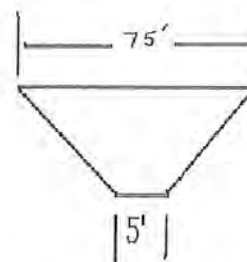
Minimum side slopes

6:1

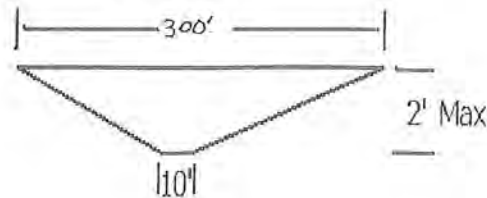
Top View



End View



Side View



CALL JULIE 1-800-892-0123

WITH THE FOLLOWING:

COUNTY Washita

CITY/TOWNSHIP EPIC Twp

SEC. & 1/4 SEC. No.# Sec 9 SW 1/4

48 Hours Before You Dig.

(TWO WORKING DAYS)

11

Field/Site: "D"	Area (Acres or 1000 ft ²): c. 3 ac
Name: Troy Brown	Date: 4/15/11
Farm #	Tract #
Planned by: Troy Brown SCT	

Definition

The establishment of permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.



USDA Natural Resources Conservation Service

Conditions where practice applies

On areas with existing or expected high rates of erosion or degraded sites that usually cannot be stabilized by ordinary conservation treatment and/or management, and if left untreated, could be severely damaged by erosion or sedimentation or could cause significant off-site damage. Examples are dams, dikes, mine spoils, levee cuts, fills, surfaced mined areas, and denuded or gullied areas. The practice also applies to vegetating concentrated flow channels such as natural or constructed waterways.

Seedbed preparation and seeding

Incorporate required amendments to depth of 3 inches leaving a firm seedbed free of large clods, stones, and debris larger than 6 inches in diameter. Seedbed must be firmed with a cultipacker/cultimulcher, harrow, or similar tool designed to break clods, level, and firm the seedbed. Seedbeds are considered firm when footprints leave no more than a 1/2 inch deep depression. Apply seed uniformly at a depth of 1/4-1/2 inch with a drill or cultipacker type seeder. Broadcast methods are acceptable where the seed will be applied uniformly and covered 1/4-1/2 inch deep with a cultipacker/cultimulcher, harrow, or similar tool designed to break clods, level, and firm the seedbed.

Sketch of Area to be treated

See Attached Photo



Seed, Lime, and Fertilizer (Specify rates per acre or per 1000 ft²)

0.3 Ac

Materials	Kind	Rate per acre or per 1000 ft ²	Total
Lime	Agricultural	PH of 6.0 - 7.5	As needed
Nitrogen(N)		120	36 lbs
Phosphorus(P ₂ O ₅)		120	36 lbs
Potassium (K ₂ O)		120	36 lbs
Companion Crop	Spring oats / Summer wheat or rye	20 lbs	6 lbs
Seed (PLS#/Ac.)	Smooth Bromegrass	30 lbs	9 lbs
	Alfalfa	9 lbs	3 lbs
Temporary Seeding	Wheat or Rye	90 lbs	27 lbs
Mulch	straw	2 tons	
Anchor	Disk 2 inch deep		

Seeding Dates: Early spring to June 1, August to Sept 1, After Sept 1 until October 1 150 lbs wheat or rye temporary cover

All seed shall be of high quality and comply with Illinois Seed and Weed Laws; and originate from the United States or Canada.

Seed quality shall not drop below 70% Pure Live Seed (PLS) for bromegrass and 80% for other cool season grass and legume species.

PLS = (% germination + % dormant seed) X % purity
100

Minimum germination percent for warm season grasses shall be as follows:

Switchgrass - 75%.

Indiangrass - 60%.

Big Bluestem - 60%, and

Eastern Gamagrass - 50%.

Germination tests are required for all warm and cool season grasses and legumes (excluding companion crops). Germination tests may not be older than 12 months at time of seeding excluding the month of testing. Inoculate legume seed before seeding with inoculant specific for the species. Re-inoculate uncoated seed if pre-inoculated more than 60 days prior to seeding.

NRCS - ILLINOIS
June, 2011





CALL JULIE 1-800-892-0123

WITH THE FOLLOWING:

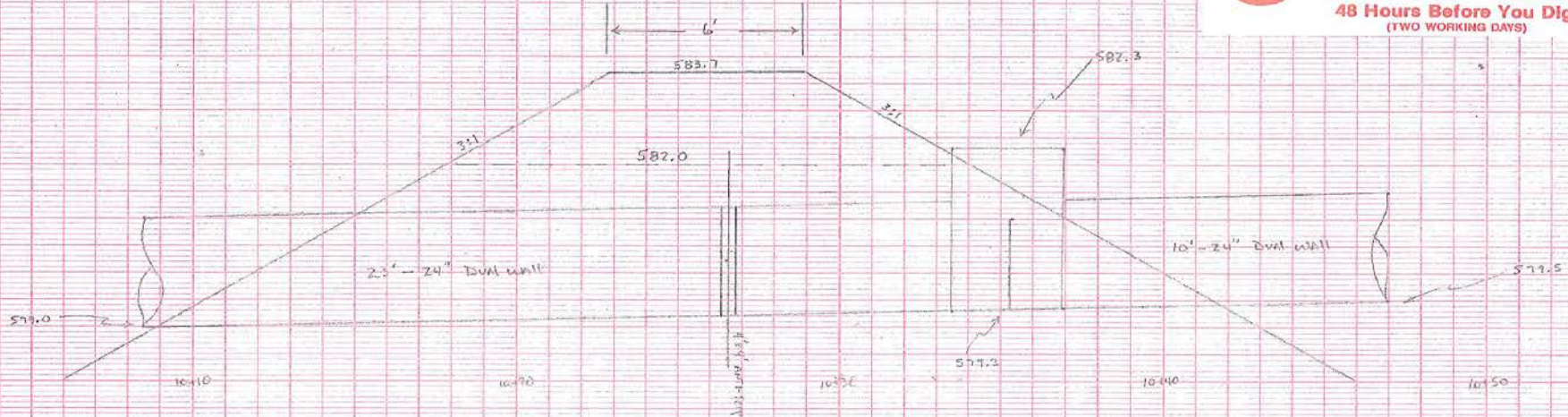
COUNTY Whiteside

CITY-TOWNSHIP ERIE

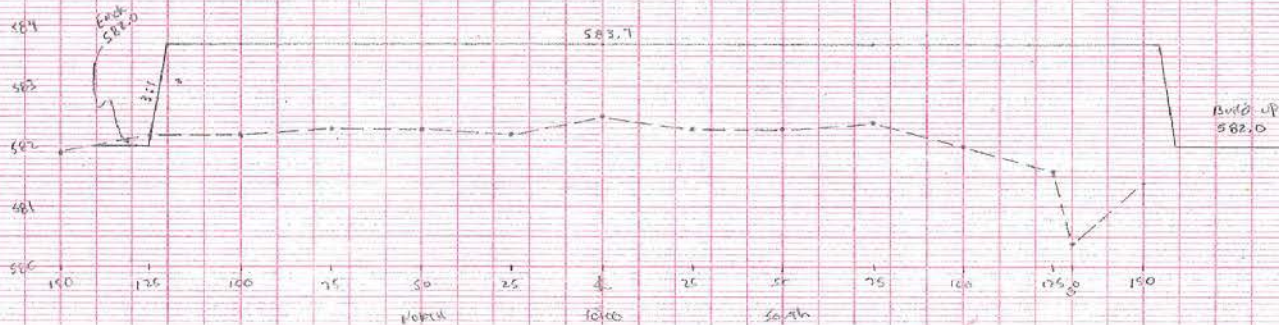
SEC. & 1/4 SEC. No. SEC 9 SE 1/4

48 Hours Before You Dig.
(TWO WORKING DAYS)

584
583
582
581
580
579
578
577
576
575
574
573
572



TBM Elev. 581.01 Top of Hub
By Sight (2) of Stakes
Pink Flags



OPERATOR R.G. BEYER SEC. 9 T. 190 R. 1E
 COOPERATING WITH MPCS
 COUNTY WHITESIDE STATE IL.
 SURVEYED TRAY DATE 4/12/15

#3

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed TRAY Date 4/15 Approved by [Signature]
 Drawn TRAY Date 4/15 Title _____
 Field _____ Title _____
 Chapter 21 Sheet 13 of 21 Drawing No. _____

Field/Site: <u>H 3</u>	Area (Acres or 1000 ft ²): 0.3 Ac
Name: <u>Bellevue</u>	Date: <u>4/15/11</u>
Farm #	Tract #
Planned by: Troy Brown SCT	

Definition

The establishment of permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

Conditions where practice applies

On areas with existing or expected high rates of erosion or degraded sites that usually cannot be stabilized by ordinary conservation treatment and/or management, and if left untreated, could be severely damaged by erosion or sedimentation or could cause significant off-site damage. Examples are dams, dikes, mine spoils, levee cuts, fills, surfaced mined areas, and denuded or gullied areas. The practice also applies to vegetating concentrated flow channels such as natural or constructed waterways.



USDA Natural Resources Conservation Service

Seedbed preparation and seeding

Incorporate required amendments to depth of 3 inches leaving a firm seedbed free of large clods, stones, and debris larger than 6 inches in diameter. Seedbed must be firmed with a cultipacker/cultimulcher, harrow, or similar tool designed to break clods, level, and firm the seedbed. Seedbeds are considered firm when footprints leave no more than a 1/2 inch deep depression. Apply seed uniformly at a depth of 1/4-1/2 inch with a drill or cultipacker type seeder. Broadcast methods are acceptable where the seed will be applied uniformly and covered 1/4-1/2 inch deep with a cultipacker/cultimulcher, harrow, or similar tool designed to break clods, level, and firm the seedbed.

Sketch of Area to be treated



Seed, Lime, and Fertilizer (Specify rates per acre or per 1000 ft²) *0.3 AC*

Materials	Kind	Rate per acre or per 1000 ft ²	Total
Lime	Agricultural	PH of 6.0 - 7.5	As needed
Nitrogen(N)		120	36 lbs
Phosphorus(P ₂ O ₅)		120	36 lbs
Potassium (K ₂ O)		120	36 lbs
Companion Crop	Spring oats / Summer wheat or rye	20 lbs	6 lbs
Seed (PLS#/Ac.)	Smooth Bromegrass	30 lbs	9 lbs
	Alfalfa	9 lbs	3 lbs
Temporary Seeding	Wheat or Rye	90 lbs	27 lbs
Mulch	straw	2 tons	
Anchor	Disk 2 inch deep		

Seeding Dates: Early spring to June 1, August to Sept 1, After Sept 1 until October 1 150 lbs wheat or rye temporary cover

All seed shall be of high quality and comply with Illinois Seed and Weed Laws; and originate from the United States or Canada.

Seed quality shall not drop below 70% Pure Live Seed (PLS) for bromegrass and 80% for other cool season grass and legume species.

PLS = $(\% \text{ germination} + \% \text{ dormant seed}) \times \% \text{ purity}$
100

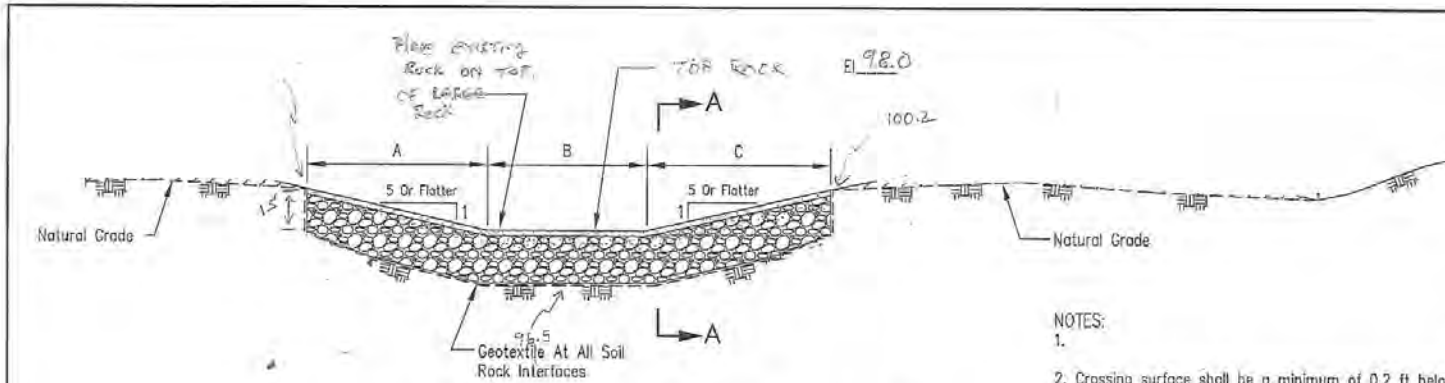
Minimum germination percent for warm season grasses shall be as follows:

- Switchgrass - 75%,
- Indiangrass - 60%,
- Big Bluestem - 60%, and
- Eastern Gamagrass - 50%.

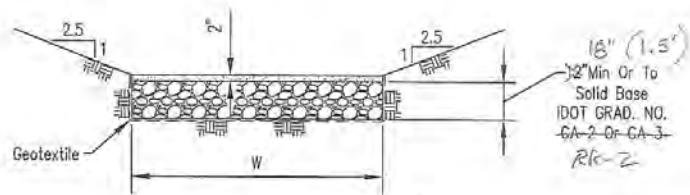
Germination tests are required for all warm and cool season grasses and legumes (excluding companion crops). Germination tests may not be older than 12 months at time of seeding excluding the month of testing. Inoculate legume seed before seeding with inoculant specific for the species. Re-inoculate uncoated seed if pre-inoculated more than 60 days prior to seeding.



* Remove culvert



PROFILE ALONG CENTERLINE OF CROSSING



SECTION A-A

DIMENSIONS
 A = 50 (Ft)
 B = 50 (Ft)
 C = 50 (Ft)
 W = 15 (Ft)
 Station 16+00 @ culvert

ESTIMATED QUANTITIES	
Excavation	— Cu.Yd.
Coarse Aggregate	252 Tons.
Geotextile	750 Sq.Yd.
Seeding	n/a Acres

Landowner	Big Bend	#5	Crossing	Location	#5
-----------	----------	----	----------	----------	----

NOTES:

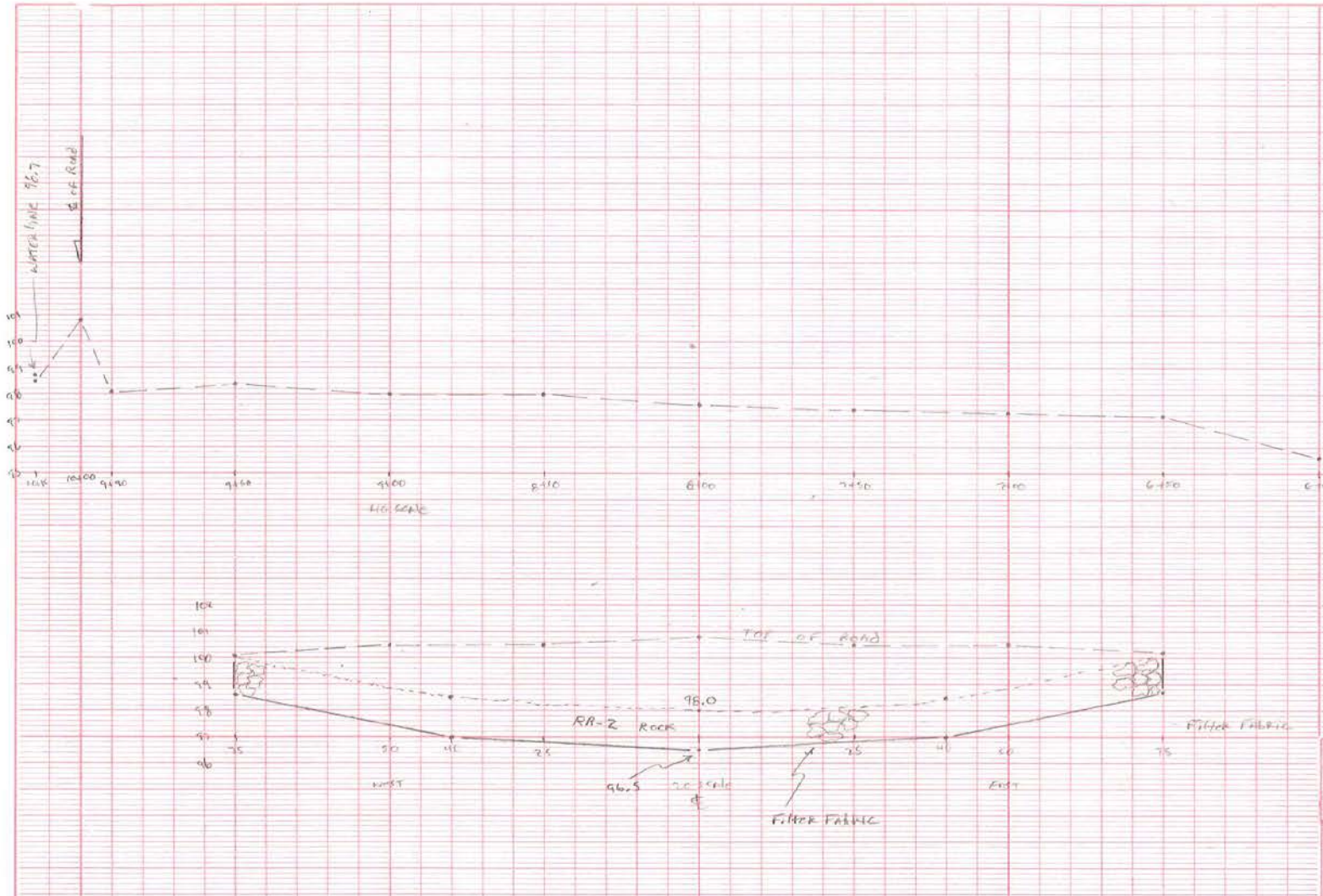
-
- Crossing surface shall be a minimum of 0.2 ft below channel invert.
- Surfacing material shall be compacted so that the entire surface is traversed by not less than one tread track of the load hauling equipment.
- Berms at each end of the crossing shall be constructed to direct surface flow away from excavated crossing, as directed by the engineer.
- All disturbed areas not covered by gravel shall be seeded in accordance with Critical Area Planting Standard (Practice Code 342).
- Excavated material shall be removed from site, used for diversion berms or placed at least 12 feet from top edge of back slope and spread so that the height does not exceed 1 foot. The spoil material shall drain freely.
- Geotextile (non-woven, needle punched) Minimum criteria:
 Grab tensile strength (lb) ASTM D 4632 _____ 202
 Elongation at failure (%) ASTM D 4632 _____ ≥ 50
 Trapezoidal tear strength (lb) ASTM D 4533 _____ 79
 Puncture strength (lb) ASTM D 6241 _____ 433
 Ultraviolet light (% retained strength) ASTM D 4355 _____
 Apparent opening size (AOS) ASTM D 4751 _____ min 50
 max 0.22 mm (US sieve size 70)
 Permittivity sec⁻¹ ASTM D 4491 _____ min 0.70
- Any geotextile splices shall overlap a minimum of 18 inches, with upstream or upslope geotextile overlapping the abutting downslope geotextile.

Design	Z. [Signature]
Drawn	M. [Signature]
Checked	[Signature]
Approved	[Signature]

ROCK V.P.O. 05/11/16

NRCS
 National Resource Conservation Service
 United States Department of Agriculture

File No. IL-ENG-
 Drawing No. _____
 Page 1 of 1
 Sheet 01



TBM Elev. 100.00
 Top of wooden hub W of pipe
 N side of road

COOPERATOR Eric Rupp SEC. 9 TWP. R 4E
 COOPERATING WITH ARC
 COUNTY Whiteside STATE IL
 SURVEYED T. Roy DATE 4/13/15

#5 Peck casing

U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

Designed T. Roy DATE 4/15 Approved by [Signature]
 Drawn ARC SHEET No. 1/1 Title _____
 Traced _____ Filter _____
 Checked HL DATE 4/15 Sheet No. _____ Drawing No. _____

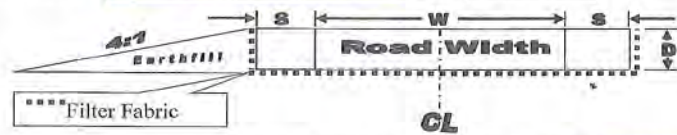


CALL JULIE 1-800-892-0123
 WITH THE FOLLOWING:
 COUNTY Whiteside
 CITY-TOWNSHIP EXIE
 SEC. & 1/4 SEC. No. # SEC 9 SE 1/4
48 Hours Before You Dig.
 (TWO WORKING DAYS)



ACCESS ROAD – TWO-WAY TRAFFIC Ver 1.09 updated 02-01-12 S.Hobson/M. Johnson
TYPICAL CROSS SECTION

Landowner: **Big Bend #6 Crossing** Date **4/20/15**



Choose Gravel Conversion Factor **2.05** Tons/CY

ESTIMATED QUANTITIES:

L = Length of Road (Feet)	D = Depth of Gravel (Inches) *Min. 6-In	W = Width of Road (Feet) *Min. 16-ft	S = Shoulder Width (Feet each side)	Total Width of Road + Shoulders (Feet) 8 *Min. 20 ft	Total Tons of Gravel (Tons)	*Fabric Sq. Yd. (L x (W+2S)) Includes 18 inch overlap of fabric
200	6	16	2	20	152.0	500.0

* no overlap calculated for length lap usually every 300-ft

Construction Notes:

- Filter fabric shall be installed as recommended by manufacturer's instructions. Overlaps minimum 18 inches.
- Filter Fabric shall be as specified in IL-ENG-81 Standard Drawing - ACCESS ROAD DETAIL
- Rock size shall be as specified in IL-ENG-81 Standard Drawing - ACCESS ROAD DETAIL
- Either** - excavate typical road cross-section or add earthfill adjacent to both shoulders.
- Typical Road Cross-Section is symmetrical along the centerline (CL).
- Crown and construct per NRCS Technical Guide Standard - Access Road Code 560.
- Geotextile requirements as per IL-ENG-81 shall allow Puncture (lb) for ASTM D4833 or D6241 ≥ 80

COARSE AGGREGATE GRADATIONS – IDOT Standard Specs for Road and Bridge Construction Jan. 1, 2007
Page 716 Sieve Size Percent Passing (by weight)

Grad No.	3 in.	2 1/2 in.	2 in.	1 1/2 in.	1 in.	3/4 in.	1/2 in.	3/8 in.	No. 4	No. 16	No. 50	No. 200
CA 1	100	95+5	60+15	15+15	3+3							8+4
CA 2		100	95+5		75+15		50+15		30+10	20+15		
CA 3		100	93+7	55+20	8+8		3+3					
CA 4			100	95+5	85+10		60+15		40+10	20+15		8+4
CA 5				97+3	40+25		5+5		3+3			
CA 6				100	95+5		75+15		43+13	25+15		8+4
CA 7				100	95+5		45+15		5+5			
CA 8				100	97+3	85+10	65+10		10+5	3+3		
CA 9				100	97+3		60+15		30+15	10+10		6+6
CA 10					100	95+5	80+15		50+10	30+15		9+4
CA 11					100	92+8	45+15		6+6	3+3		

Sheet **1** of **1**

Designed by _____ Date **4/20/2015**

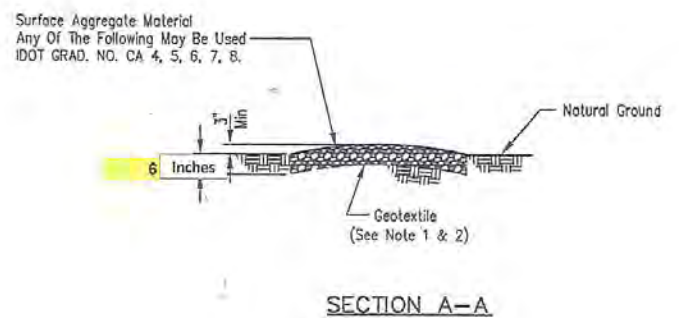
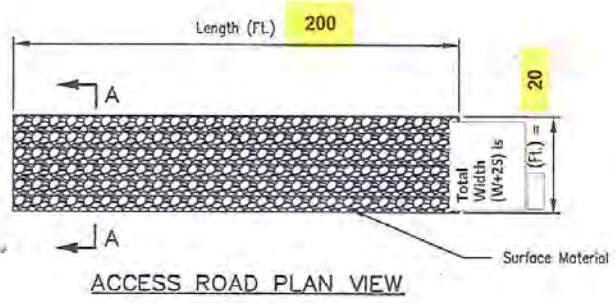
Checked by **zsl** Date **4/10**

Approved by **[Signature]** Date **4/15**

#16

(16)

17



BILL OF MATERIAL		
Length	Feet	200
Width, Total	Feet	20
Surface Material	Tons	152
Geotextile	Sq. Yd.	500
Depth	Inches	6

Designed by S. Hobson 02/2012
 Drawn by
 Checked by
 Approved by

ACCESS ROAD DETAIL



- NOTES:
- Geotextile (non-woven) minimum criteria:
 - Weight of Geotextile (oz/sq.yd.) _____ 6
 - Tensile strength (lb) ASTM D 4632 _____ 180
 - Elongation at failure (%) ASTM D 4632 _____ > 50
 - Puncture (lb) ASTM D 4833 _____ or D6241 _____ 80
 - Ultraviolet light (% residual tensile strength) _____
 - ASTM D 4355 _____ min 70
 - Apparent opening size (AOS) ASTM D 4751 max 40 sieve
 - Permittivity sec⁻¹ ASTM D 4491 _____ min 0.70
 - Any geotextile splices shall overlap a minimum of 18 inches, with upstream or upslope geotextile overlapping the abutting downslope geotextile.
 - Crown the surface aggregate 3" to 6" above natural ground to prevent water from ponding on the surface.
 - The top shall be or composted with the track or tire of the equipment used for construction over the entire surface and shall not leave any large depressions or irregularities that would not drain.

IDOT = Illinois Department Of Transportation

MODIFIED IL-ENG-81

Drawing No.
 Sheet 1 of 1

#6



CALL JULIE 1-800-892-0123

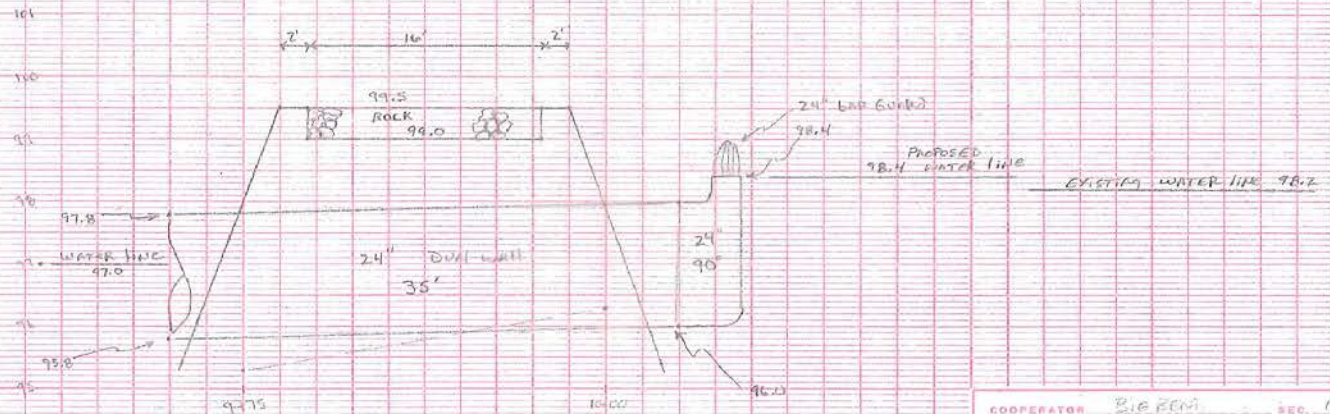
WITH THE FOLLOWING:

COUNTY WALSH

CITY-TOWNSHIP EPIC

SEC. & 1/4 SEC. No. # SEC 10 SW 1/4

48 Hours Before You Dig.
(TWO WORKING DAYS)

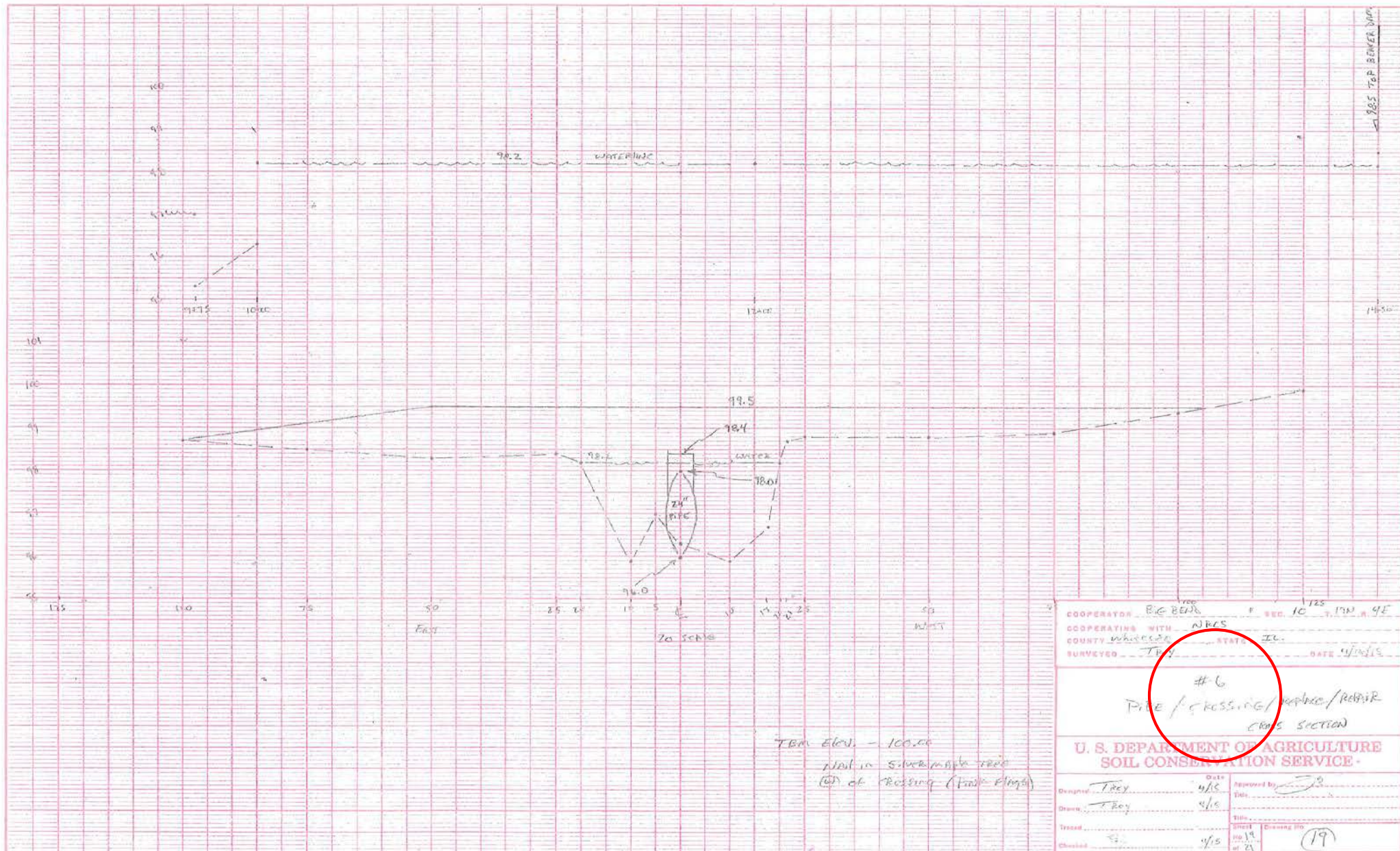


COOPERATOR BIG BERN SEC. 10 T. 100 R. 4E
COOPERATING WITH DESS
COUNTY WALSH ESTATE DESS
SURVEYED THUR DATE 4/15/15

#6
Pipe / crossing / bridge / fence
Profile

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed T. Box Date 4/15 Approved By [Signature]
Drawn T. Box Date 4/15 Title _____
Checked SSJ Date 4/15 Title _____
Sheet 16 of 21 Drawing File (18)



TBM Elev. - 100.00
 Nail in silver mark tree
 (W) of Resting (first flight)

COOPERATOR	B.G. BEYER	REC	125	MIN	95
COOPERATING WITH	NRCS	SEC	10		
COUNTY	Whiteside	STATE	IL		
SURVEYED	TRAY	DATE	4/15/15		
#6 Pipe / crossing / Rehab / Repair cross section					
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE					
Designed	TRAY	Date	4/15	Approved by	[Signature]
Drawn	TRAY	Date	4/15	Checked	[Signature]
Traced		Date		Sheet	19
Checked	[Signature]	Date	4/15	of 21	



STATE	ILL. No. 6	PROJECT	Rock Notch on Levee / Repair		
BY	J. Roy	DATE	2/19/15	CHECKED BY	DATE
SUBJECT	#9				JOB NO.
					SHEET _____ OF _____

(Actual Note)
200' x 70'

265' x 60' x 2.0'

$31800 \text{ cu ft} \times 160 \text{ lbs per cu ft} \div 2000 = 2544 \text{ TONS}$

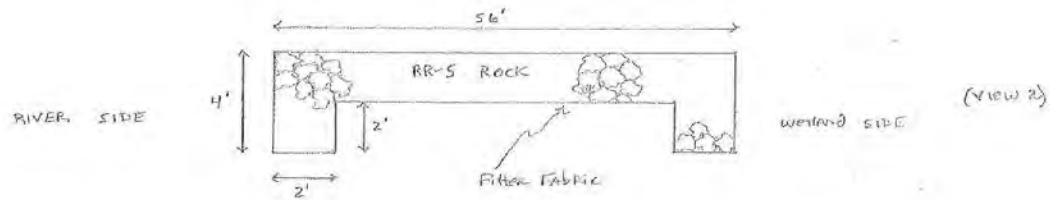
2544 tons (RR-5) @

6 Rolls of Fabric @

Labels:

2 Pieces of Equip. @ 4 Days @ 10 hr Days x 2 = 80 hours

80 hours @





Computation Sheet

NRCS-ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

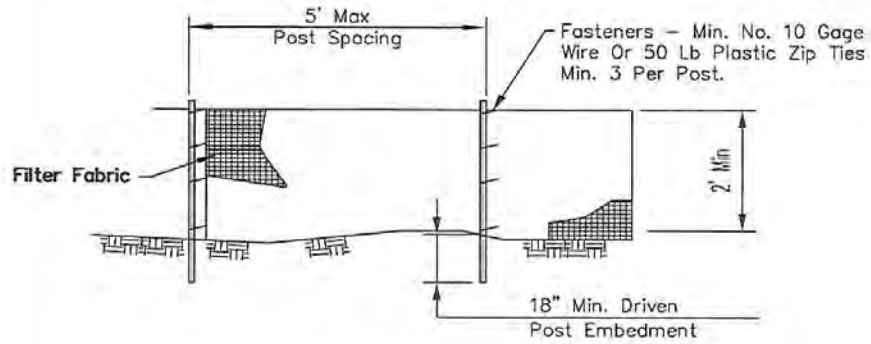
State <u>ILLINOIS</u>		Project <u>#110 MAINTENANCE</u>		
By <u>TR</u>	Date <u>3/19/15</u>	Checked by	Date	Job No. <input checked="" type="checkbox"/>
Subject <u>#10</u>				Sheet _____ of _____

-CUT OUT UPPER AND LOWER END OF CULVERT

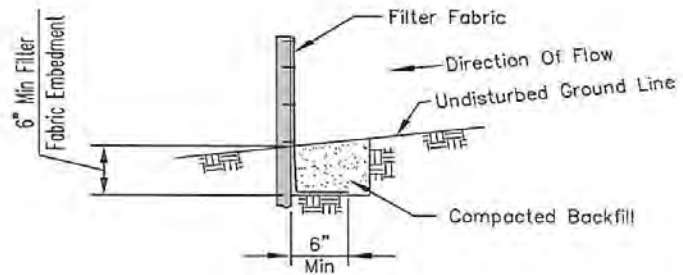
60' x 10' x 2' upper 45 cu yds

60' x 10' x 2' lower 45 cu yds

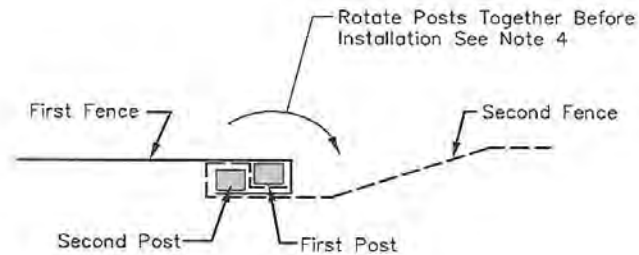
90 cu yds TOTAL



ELEVATION



FABRIC ANCHOR DETAIL



SPLICE DETAIL-PLAN VIEW

NOTES:

1. Temporary silt fence shall be installed prior to any grading work in the area to be protected. Fence shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 50 for woven.
3. Fence posts shall be either wood post with a minimum cross-sectional area of 1.5" X 1.5" or a standard steel post.
4. When splices are necessary make splice at post according to splice detail. Place the end post of the second fence inside the end post of the first fence. Rotate both posts together at least 180 degrees to create a tight seal with the fabric material. Cut the fabric near the bottom of the posts to accommodate the 6 inch flap. Then drive both posts and bury the flap. Compact backfill well.



Designed	TRV	4/15
Drawn	M. GUNN	6/1/14
Checked		5/15
Approved		5/15

SILT FENCE
BIG BEND SFWA

United States Department of Agriculture
Natural Resources Conservation Service

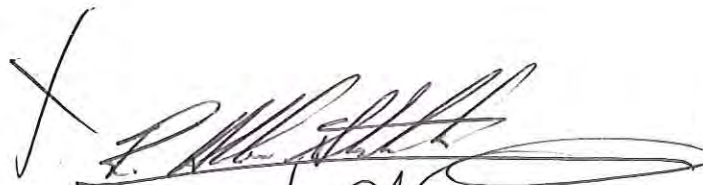

File No. IL-ENG-49
Drawing No.
Page 1 of 1
Sheet of

SEE ATTACHED INFO FOR LOCATION



Big Bend 2015 Statement of Work

- 1 The duration of the project shall be no more than 2 weeks/14 days once the bid has been awarded and mobilization approval by the IDNR and the Whiteside County Soil and Water Conservation District.
- 2 Contractor mobilization to site shall be within 7 days of IDNR and Whiteside County Soil and Water Conservation District approval.
- 3 Stabilization of spoil material (per NRCS specifications) shall be in place before deposition in the designated areas (see enclosed map).
- 4 Erosion and sediment control measures shall consist of the following as called for by NRCS specifications: silt fence around the spoil area and critical seeding on all rebuild berms.
- 5 Stockpiling of rock shall be in an area near site number nine. Pile will be done in such a manner as to not damage existing trees and will be for no more than 7 days from the beginning work on site number 9. All remaining rock must removed within 7 days after site 9 is complete.
- 6 All ingress and egress shall be on existing roads and trails. Any damage to roads or trails is the responsibility of the bid awardee (contractor) to repair.
- 7 All state, local, and federal labor/wage laws must be adhered to including prevailing wage laws. A prevailing wage certification must be signed by the bid awardee (contractor).
- 8 Once all site projects are certified as built according to NRCS specifications and the Whiteside County Soil and Water Conservation District and IDNR approve, a single payment will be issued. No partial payments will be issued.
- 9 As much as is practical all existing practices including roads, trails, native grass, wetlands, and trees/shrubs shall be protected.
- 10 Contacts for the project are IDNR and the Whiteside County Soil and Water Conservation District.
- 11 IDNR and the Whiteside County Soil and Water Conservation District reserve the right to reject any and all bids.

X 
Date: 9/24/15
 9/24/15

Additional tasks completed for the subject restoration project:

Site #9.

- Extension on 3' water control structure
- 4 trash panels

Site A. Rock and Fabric for 100' crossing

Site #15. Rock and Fabric for 850' crossing

Site E. Construction of 1.4 acre shallow water area



#9

E

#15

A

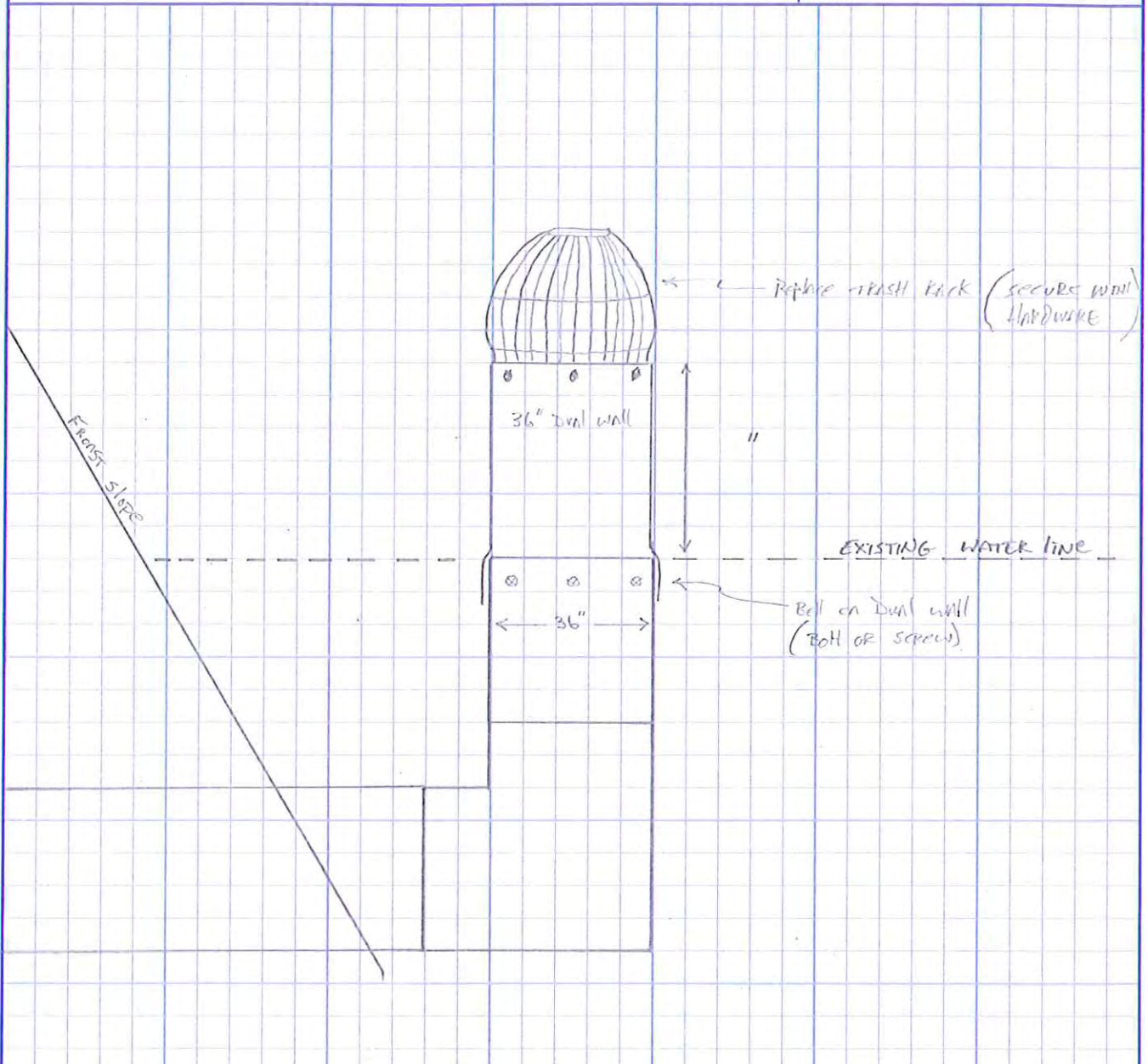
Computation Sheet

SITE #9

NRCS-ENG-523A Rev. 6-2002

U.S. Department of Agriculture
Natural Resources Conservation Service

State ILLINOIS		Project SITE 9		
By Terry	Date 9/23/15	Checked by JH	Date 9/15	Job No.
Subject SITE #9 DRAWING				Sheet _____ of _____

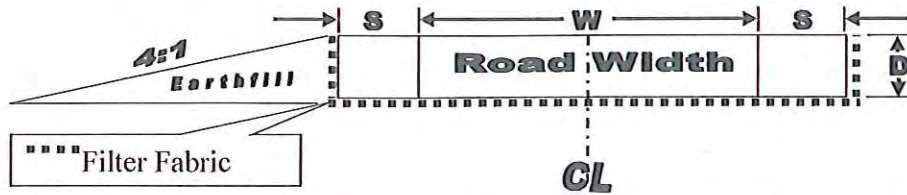


- * NOTES: - ADD " of 36" DIAL WALL PIPE
- SECURE 36" PIPE TO EXISTING PIPE WITH APPROPRIATE HARDWARE.
 - REPLACE OLD TRASH RACK AND SECURE WITH APPROPRIATE HARDWARE.
 - REPLACE HOG PANELS AROUND RACK. (4 PANELS) USING EXISTING PILES

ACCESS ROAD – ONE-WAY TRAFFIC Ver 1.09 updated 02-01-12 S.Hobson/M. Johnson

TYPICAL CROSS SECTION

Landowner: **Big bend Site A** Date **9/23/15**



Choose Gravel Conversion Factor **2.05** Tons/CY

ESTIMATED QUANTITIES:

L = Length of Road (Feet)	D = Depth of Gravel (Inches) *Min. 6-In	W = Width of Road (Feet) *Min. 10-ft	S = Shoulder Width (Feet each side)	Total Width of Road + Shoulders (Feet) *Min 14 ft	Total Tons of Gravel (Tons)	*Fabric Sq. Yd. (L x (W+2D)) Includes 18 inch overlap if W>10 OR D > 6
100	12	10	2	14	107	195

* no overlap calculated for length lap usually every 300-ft

Construction Notes:

1. Filter fabric shall be installed as recommended by manufacturer's instructions. Overlaps minimum 18 inches.
2. Filter Fabric shall be as specified in IL-ENG-81 Standard Drawing - ACCESS ROAD DETAIL
3. Rock size shall be as specified in IL-ENG-81 Standard Drawing - ACCESS ROAD DETAIL
4. Either - excavate typical road cross-section or add earthfill adjacent to both shoulders.
5. Typical Road Cross-Section is symmetrical along the centerline (CL).
6. Crown and construct per NRCS Technical Guide Standard – Access Road Code 560.
7. Geotextile requirements as per IL-ENG-81 shall allow Puncture (lb) for ASTM D4833 or D6241 ≥ 80

COARSE AGGREGATE GRADATIONS – IDOT Standard Specs for Road and Bridge Construction Jan. 1, 2007 Page 716 Sieve Size Percent Passing (by weight)

Grad No.	3 in.	2 1/2 in.	2 in.	1 1/2 in.	1 in.	3/4 in.	1/2 in.	3/8 in.	No. 4	No. 16	No. 50	No. 200
CA 1	100	95+5	60+15	15+15	3+3							
CA 2		100	95+5		75+15		50+15		30+10	20+15		8+4
CA 3		100	93+7	55+20	8+8		3+3					
CA 4			100	95+5	85+10		60+15		40+10	20+15		8+4
CA 5				97+3	40+25		5+5		3+3			
CA 6				100	95+5		75+15		43+13	25+15		8+4
CA 7				100	95+5		45+15		5+5			
CA 8				100	97+3	85+10	55+10		10+5	3+3		
CA 9				100	97+3		60+15		30+15	10+10		6+6
CA 10					100	95+5	80+15		50+10	30+15		9+4
CA 11					100	92+8	45+15		6+6	3+3		

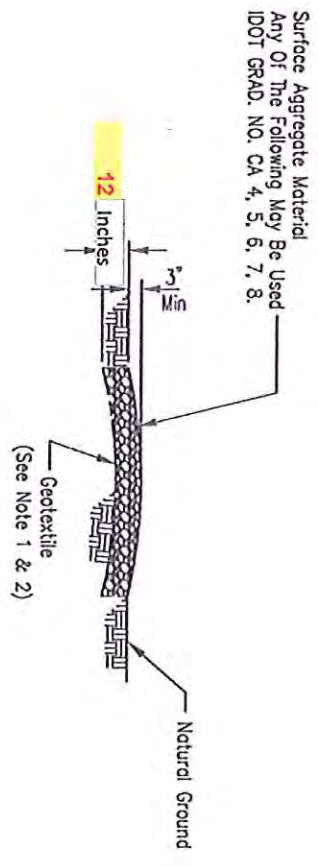
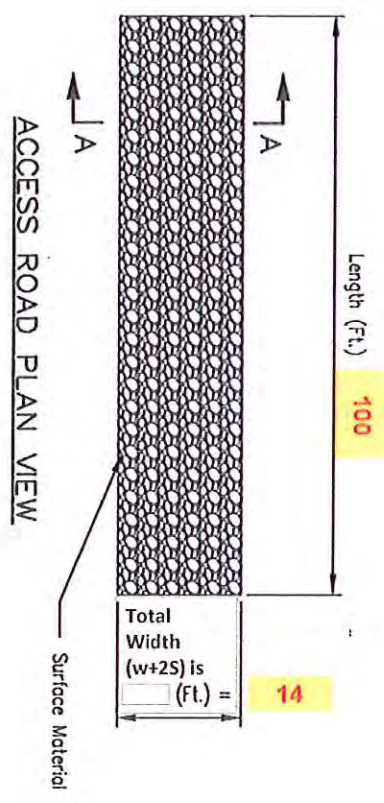
Sheet **1** of **2**

Designed by **T.Roy** Date **9/23/2015**

Checked by **[Signature]** Date **9/15**

Approved by **[Signature]** Date **9/15**

SITE "A"



SECTION A-A

BILL OF MATERIAL		
Length	Feet	100
Width, Total	Feet	14
Surface Material	Tons	107
Geotextile	Sq. Yd.	195
Depth	Inches	12

NOTES:

1. Geotextile (non-woven) minimum criteria:
 Weight of Geotextile (oz/sq.yd.) _____ min 180
 Tensile strength (lb) ASTM D 4632 _____ min 180
 Elongation at failure (%) ASTM D 4632 _____ min 250
 Puncture (lb) ASTM D 4833 _____ min 80
 Ultraviolet light (% residual tensile strength) _____ min 70
 Apparent opening size (AOS) ASTM D 4751 _____ min 40 sieve
 Permittivity sec⁻¹ ASTM D 4491 _____ min 0.70
2. Any geotextile splices shall overlap a minimum of 18 inches, with upstream or upslope geotextile overlapping the down slope geotextile.
3. Crown the surface aggregate 3" to 6" above natural ground to prevent water from ponding on the surface.
4. The top shall be or compacted with the track or tire of the equipment used for construction over the entire surface and shall not leave any large depressions or irregularities that would not drain.

IDOT = Illinois Department Of Transportation

MODIFIED IL-ENG-81

ACCESS ROAD DETAIL



Designed	T. Roy	2/18
Drawn	S. Hobson	02/2012
Checked	[Signature]	2/18
Approved	[Signature]	2/18

Drawing No.

Date

Name BIG BEND Program # _____ Contract # _____

Date 7/22/15 Tract _____ Farm _____

Cost Estimate For Wetland

By: Jim Doeden 1/18/00

Typical Wetland Sizes

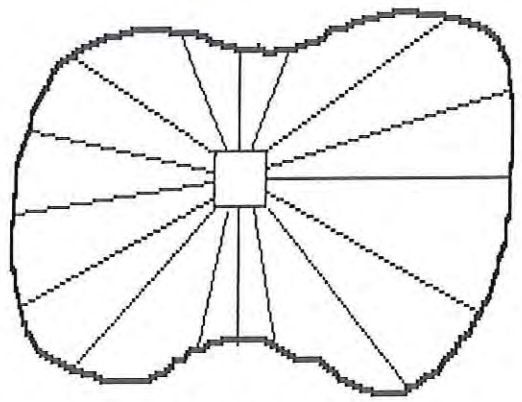
200' X 300'

1111 Cu. Yds. *1.4 ac*

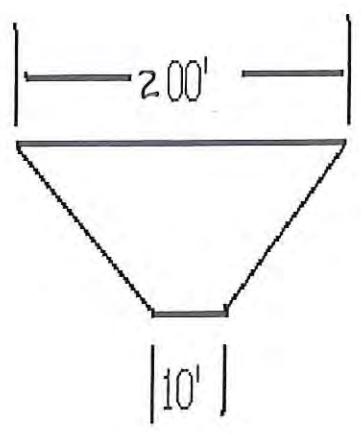
Minimum side slopes

8:1

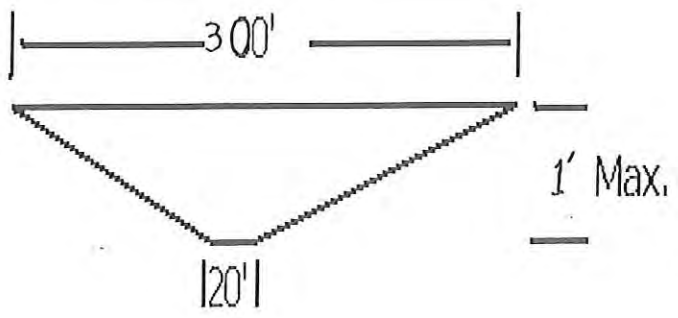
Top View



End View



Side View

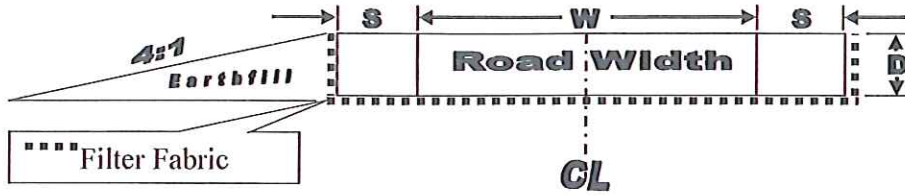


CALL JULIE 1-800-892-0123
WITH THE FOLLOWING:
COUNTY Whiteside
CITY-TOWNSHIP ERIE TWP
SEC. & 1/4 SEC. No.# SEC 9 SE 1/4
48 Hours Before You Dig.
(TWO WORKING DAYS)

ACCESS ROAD – ONE-WAY TRAFFIC Ver 1.09 updated 02-01-12 S.Hobson/M. Johnson

TYPICAL CROSS SECTION

Landowner: **Site 15** Date **9/23/15**



Choose Gravel Conversion Factor **2.05** Tons/CY

ESTIMATED QUANTITIES:

L = Length of Road (Feet)	D = Depth of Gravel (Inches) *Min. 6-In	W = Width of Road (Feet) *Min. 10-ft	S = Shoulder Width (Feet each side)	Total Width of Road + Shoulders (Feet) *Min 14-ft	Total Tons of Gravel (Tons)	*Fabric Sq. Yd. (L x (W+2D)) Includes 18 inch overlap if W>10 OR D > 6
850	6	10	2	14	452	1417

* no overlap calculated for length lap usually every 300-ft

Construction Notes:

1. Filter fabric shall be installed as recommended by manufacturer's instructions. Overlaps minimum 18 inches.
2. Filter Fabric shall be as specified in IL-ENG-81 Standard Drawing - ACCESS ROAD DETAIL
3. Rock size shall be as specified in IL-ENG-81 Standard Drawing - ACCESS ROAD DETAIL
4. Either - excavate typical road cross-section or add earthfill adjacent to both shoulders.
5. *Typical Road Cross-Section is symmetrical along the centerline (CL).*
6. *Crown and construct per NRCS Technical Guide Standard – Access Road Code 560.*
7. *Geotextile requirements as per IL-ENG-81 shall allow Puncture (lb) for ASTM D4833 or D6241 ≥ 80*

COARSE AGGREGATE GRADATIONS – IDOT Standard Specs for Road and Bridge Construction Jan. 1, 2007
Page 716

Grad No.	Sieve Size Percent Passing (by weight)											
	3 in.	2 ½ in.	2 in.	1 ½ in.	1 in.	¾ in.	½ in.	3/8 in.	No. 4	No. 16	No. 50	No. 200
CA 1	100	95+5	60+15	15+15	3+3							
CA 2		100	95+5		75+15		50+15		30+10	20+15		8+4
CA 3		100	93+7	55+20	8+8		3+3					
CA 4			100	95+5	85+10		60+15		40+10	20+15		8+4
CA 5				97+3	40+25		5+5		3+3			
CA 6				100	95+5		75+15		43+13	25+15		8+4
CA 7				100	95+5		45+15		5+5			
CA 8				100	97+3	85+10	55+10		10+5	3+3		
CA 9				100	97+3		60+15		30+15	10+10		6+6
CA 10					100	95+5	80+15		50+10	30+15		9+4
CA 11					100	92+8	45+15		6+6	3+3		

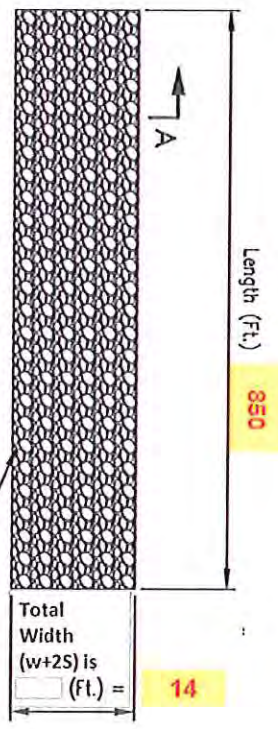
Sheet **1** of **2**

Designed by **Trey** Date **9/23/2015**

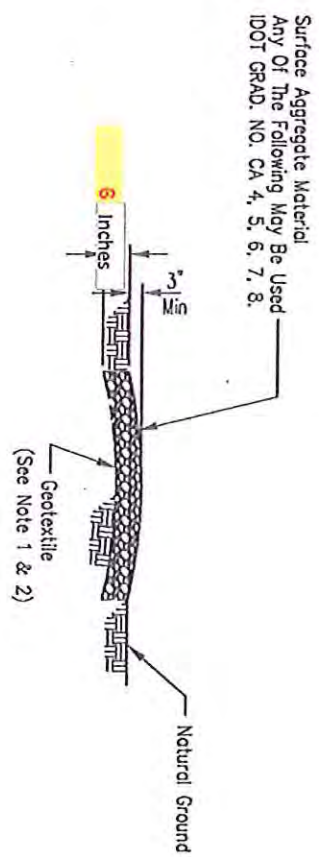
Checked by **2/1** Date **9/15**

Approved by **[Signature]** Date **5/15**

SITE #15



ACCESS ROAD PLAN VIEW



SECTION A-A

BILL OF MATERIAL	
Length	Feet 850
Width, Total	Feet 14
Surface Material	Tons 452
Geotextile	Sq. Yd. 1417
Depth	Inches 6

NOTES:

1. Geotextile (non-woven) minimum criteria:
 Weight of Geotextile (oz/sq.yd.) _____
 Tensile strength (lb) ASTM D 4832 _____ 180
 Elongation at failure (%) ASTM D 4832 _____ ≥ 50
 Puncture (lb) ASTM D 4833 _____ 80
 Ultraviolet light (% residual tensile strength) _____
 ASTM D 4335 _____ min 70
 Apparent opening size (AOS) ASTM D 4751 _____ max 40 sieve
 Permittivity sec-1 ASTM D 4491 _____ min 0.70
2. Any geotextile splices shall overlap a minimum of 18 inches, with upstream or upslope geotextile overlapping the abutting downstream geotextile.
3. Crown the surface aggregate 3" to 6" above natural ground to prevent water from ponding on the surface.
4. The top shall be or compacted with the track or tire of the equipment used for construction over the entire surface and shall not leave any large depressions or irregularities that would not drain.

IDOT = Illinois Department Of Transportation

MODIFIED IL-ENG-81

ACCESS ROAD DETAIL

SITE #15



Drawn by	Trey	Date	02/2012
Checked	S. Hobson	Date	2/8
Approved	[Signature]	Date	2/8

Drawing No.

Sheet 1 of 1



Whiteside County
Soil and Water Conservation District

USDA BLDG., RR #1, 16255 Liberty Street - MORRISON, ILLINOIS 61270
PHONE (815) 772-3811

November 23, 2015

Dear Beth Whetsell,

Per our phone conversation, here are the documents you requested pertaining to the Big Bend Project. The projects performed at Big Bend SWFA have been completed and do meet NRCS specifications.

Any questions, comments or concerns please feel free to call us at 815-772-2124 ext 3.

Sincerely,

A handwritten signature in blue ink that reads "Patricia Paxson".

Patricia Paxson, Administrative Coordinator
Whiteside County SWCD