

# NOTICE

This scan only represents the application as filed. The information contained herein meets the requirements of K.A.R. 5-3-1 or K.A.R. 5-5-1, and has been found acceptable for filing in the office of the Chief Engineer. The application should not be considered to be a complete application as per K.A.R. 5-3-1b or K.A.R. 5-5-2a.

THE STATE OF KANSAS



KANSAS DEPARTMENT OF AGRICULTURE
Mike Beam, Secretary of Agriculture

DIVISION OF WATER RESOURCES
Earl D. Lewis Jr., Chief Engineer

File Number 50678-A
This item to be completed by the Division of Water Resources.

APPLICATION FOR PERMIT TO APPROPRIATE WATER FOR BENEFICIAL USE

Filing Fee Must Accompany the Application
(Please refer to Fee Schedule attached to this application form.)

To the Chief Engineer of the Division of Water Resources, Kansas Department of Agriculture,
1320 Research Park Drive, Manhattan, Kansas 66502:

- 1. Name of Applicant (Please Print): Jack Herrold
Address: 13204 Woodson Street
City: Overland Park State KS Zip Code 66209
Telephone Number: ( ) Email: jherrold@tyrenergy.com
2. The source of water is: [x] surface water in Wakarusa River (stream)
OR [ ] groundwater in (drainage basin)

Certain streams in Kansas have minimum target flows established by law or may be subject to administration when water is released from storage for use by water assurance district members. If your application is subject to these regulations on the date we receive your application, you will be sent the appropriate form to complete and return to the Division of Water Resources.

- 3. The maximum quantity of water desired is 56 acre-feet OR gallons per calendar year, to be diverted at a maximum rate of 900 gallons per minute OR cubic feet per second.

Once your application has been assigned a priority, the requested maximum rate of diversion and maximum requested quantity of water under that priority number can NOT be increased. Please be certain your requested maximum rate of diversion and maximum quantity of water are appropriate and reasonable for your proposed project and are in agreement with the Division of Water Resources' requirements.

- 4. The water is intended to be appropriated for (Check use intended):
(a) [ ] Artificial Recharge (b) [ ] Irrigation (c) [x] Recreational (d) [ ] Water Power
(e) [ ] Industrial (f) [ ] Municipal (g) [ ] Stockwatering (h) [ ] Sediment Control
(i) [ ] Domestic (j) [ ] Dewatering (k) [ ] Hydraulic Dredging (l) [ ] Fire Protection
(m) [ ] Thermal Exchange (n) [ ] Contamination Remediation

YOU MUST COMPLETE AND ATTACH ADDITIONAL DIVISION OF WATER RESOURCES FORM(S) PROVIDING INFORMATION TO SUBSTANTIATE YOUR REQUEST FOR THE AMOUNT OF WATER FOR THE INTENDED USE REFERENCED ABOVE.

For Office Use Only:
F.O. 1 GMD Meets K.A.R. 5-3-1 [YES] Use REC Source G/S County DG By RRP Date 11/9/21
Code REG Fee \$ 200 TR # PY00031243 Receipt Date 11/09/2021 Check # CC

5. The location of the proposed wells, pump sites or other works for diversion of water is:

**Note:** For the application to be accepted, the point of diversion location must be described to at least a 10 acre tract, unless you specifically request a 60 day period of time in which to locate the site within a specifically described, minimal legal quarter section of land.

(A) One in the SW quarter of the NE quarter of the NE quarter of Section 14, more particularly described as being near a point 4200 feet North and 900 feet West of the Southeast corner of said section, in Township 13 South, Range 20 East, Douglas County, Kansas.

(B) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section \_\_\_\_\_, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township \_\_\_\_\_ South, Range \_\_\_\_\_ East/West (circle one), \_\_\_\_\_ County, Kansas.

(C) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section \_\_\_\_\_, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township \_\_\_\_\_ South, Range \_\_\_\_\_ East/West (circle one), \_\_\_\_\_ County, Kansas.

(D) One in the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of the \_\_\_\_\_ quarter of Section \_\_\_\_\_, more particularly described as being near a point \_\_\_\_\_ feet North and \_\_\_\_\_ feet West of the Southeast corner of said section, in Township \_\_\_\_\_ South, Range \_\_\_\_\_ East/West (circle one), \_\_\_\_\_ County, Kansas.

If the source of supply is groundwater, a separate application shall be filed for each proposed well or battery of wells, except that a single application may include up to four wells within a circle with a quarter (1/4) mile radius in the same local source of supply which do not exceed a maximum diversion rate of 20 gallons per minute per well.

A battery of wells is defined as two or more wells connected to a common pump by a manifold; or not more than four wells in the same local source of supply within a 300 foot radius circle which are being operated by pumps not to exceed a total maximum diversion rate of 800 gallons per minute and which supply water to a common distribution system.

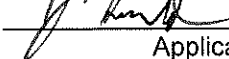
6. The owner of the point of diversion, if other than the applicant is (please print):

Cooper & Herrold Farms, LLC 13204 Woodson Street Overland Park, KS 66209 913-961-0965  
(name, address and telephone number)

\_\_\_\_\_  
(name, address and telephone number)

You must provide evidence of legal access to, or control of, the point of diversion from the landowner or the landowner's authorized representative. Provide a copy of a recorded deed, lease, easement or other document with this application. In lieu thereof, you may sign the following sworn statement:

I have legal access to, or control of, the point of diversion described in this application from the landowner or the landowner's authorized representative. I declare under penalty of perjury that the foregoing is true and correct.

Executed on November 9 \_\_\_\_\_, 2021.  \_\_\_\_\_  
Applicant's Signature

The applicant must provide the required information or signature irrespective of whether they are the landowner. Failure to complete this portion of the application will cause it to be unacceptable for filing and the application will be returned to the applicant.

7. The proposed project for diversion of water will consist of 1 pump \_\_\_\_\_  
(number of wells, pumps or dams, etc.)

and (was)(will be) completed (by) August 1, 2022 \_\_\_\_\_  
(Month/Day/Year - each was or will be completed)

File No. \_\_\_\_\_

8. The first actual application of water for the proposed beneficial use was or is estimated to be \_\_\_\_\_.  
(Mo/Day/Year)

9. Will pesticide, fertilizer, or other foreign substance be injected into the water pumped from the diversion works?  
 Yes  No If "yes", a check valve shall be required.

All chemigation safety requirements must be met including a chemigation permit and reporting requirements.

10. If you are planning to impound water, please contact the Division of Water Resources for assistance, prior to submitting the application. Please attach a reservoir area capacity table and inform us of the total acres of surface drainage area above the reservoir.

Have you also made an application for a permit for construction of this dam and reservoir with the Division of Water Resources?  Yes  No

- If yes, show the Water Structures permit number here \_\_\_\_\_
- If no, explain here why a Water Structures permit is not required no earth work being done, using existing marsh as is, already permitted under LDG-0179

11. The application must be supplemented by a U.S.G.S. topographic map, aerial photograph or a detailed plat showing the following information. On the topographic map, aerial photograph, or plat, identify the center of the section, the section lines or the section corners and show the appropriate section, township and range numbers. Also, please show the following information:

- (a) The location of the proposed point(s) of diversion (wells, stream-bank installations, dams, or other diversion works) should be plotted as described in Paragraph No. 5 of the application, showing the North-South distance and the East-West distance from a section line or southeast corner of section.
- (b) If the application is for groundwater, please show the location of any existing water wells of any kind within ½ mile of the proposed well or wells. Identify each existing well as to its use and furnish the name and mailing address of the property owner or owners. If there are no wells within ½ mile, please advise us.
- (c) If the application is for surface water, the names and addresses of the landowner(s) ½ mile downstream and ½ mile upstream from your property lines must be shown.
- (d) The location of the proposed place of use should be shown by crosshatching on the topographic map, aerial photograph or plat.
- (e) Show the location of the pipelines, canals, reservoirs or other facilities for conveying water from the point of diversion to the place of use.

A 7.5 minute U.S.G.S. topographic map may be obtained by providing the section, township and range numbers to: Kansas Geological Survey, 1930 Constant, Campus West, University of Kansas, Lawrence, Kansas 66047.

12. List any application, appropriation of water, water right, or vested right file number that covers the same diversion points or any of the same place of use described in this application. Also list any other recent modifications made to existing permits or water rights in conjunction with the filing of this application.

None (WR 46802 dismissed)

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13. Furnish the following well information if the proposed appropriation is for the use of groundwater. If the well has not been completed, give information obtained from test holes, if available.

Information below is from:     Test holes     Well as completed     Drillers log attached

Well location as shown in paragraph No.	(A)	(B)	(C)	(D)
Date Drilled	_____	_____	_____	_____
Total depth of well	_____	_____	_____	_____
Depth to water bearing formation	_____	_____	_____	_____
Depth to static water level	_____	_____	_____	_____
Depth to bottom of pump intake pipe	_____	_____	_____	_____

14. The relationship of the applicant to the proposed place where the water will be used is that of owner  
(owner, tenant, agent or otherwise)

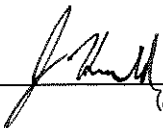
15. The owner(s) of the property where the water is used, if other than the applicant, is (please print):

Cooper & Herrold Farms, LLC 13204 Woodson Street, Overland Park, KS 66209 913-961-0965  
(name, address and telephone number)

\_\_\_\_\_  
(name, address and telephone number)

16. The undersigned states that the information set forth above is true to the best of his/her knowledge and that this application is submitted in good faith.

Dated at Overland Park, Kansas, this 9 day of November, 2021.  
(month) (year)

  
\_\_\_\_\_  
(Applicant Signature)

By \_\_\_\_\_  
(Agent or Officer Signature)

\_\_\_\_\_  
(Agent or Officer - Please Print)

## FEE SCHEDULE

1. The fee for an application for a permit to appropriate water for beneficial use, except for domestic use, shall be (see paragraph No. 2 below if requesting storage):

ACRE-FEET	FEE
0-100	\$200.00
101-320	\$300.00
More than 320	\$300.00 plus \$20.00 for each additional 100 acre-feet or any part thereof.

2. The fee for an application in which storage is requested, except for domestic use, shall be:

ACRE-FEET	FEE
0-250	\$200.00
More than 250	\$200.00 plus \$20.00 for each additional 250 acre-feet of storage or any part thereof.

Note: If an application requests both direct use *and* storage, the fee charged shall be as determined under No. 1 or No. 2 above, whichever is greater, but not both fees.

3. The fee for an application for a permit to appropriate water for water power or dewatering purposes shall be \$100.00 plus \$200.00 for each 100 cubic feet per second, or part thereof, of the diversion rate requested.

Note: The applicant shall notify the Chief Engineer and pay the statutorily required field inspection fee of \$400.00 when construction of the works for diversion has been completed, except that for applications filed on or after July 1, 2009, for works constructed for sediment control use and for evaporation from a groundwater pit for industrial use shall be accompanied by a field inspection fee of \$200.00.

### **MAKE CHECKS PAYABLE TO THE KANSAS DEPARTMENT OF AGRICULTURE**

#### **ATTENTION**

A Water Conservation Plan may be required per K.S.A. 82a-733. A statement that your application for permit to appropriate water may be subject to the minimum desirable streamflow requirements per K.S.A. 82a-703a, b, and c may also be required from you. After the Division of Water Resources has had the opportunity to review your application, you will be notified whether or not you will need to submit a Water Conservation Plan. You also may be required to install a water flow meter or water stage measuring device on your diversion works prior to diverting water. There may be other special conditions or Groundwater Management District regulations that you will need to comply with if this application is approved.

#### **CONVERSION FACTORS**

1 acre-foot equals 325,851 gallons

1 million gallons equal 3.07 acre-feet

## RECREATIONAL USE SUPPLEMENTAL SHEET

File No. \_\_\_\_\_

Name of Applicant (Please Print): Jack Herrold

1. Please indicate type of recreational use (boating, fishing, swimming, etc.): Hunting

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2. Please summarize how the water will be used and justify the quantity of water requested: 9.32 surface acres x 2 foot fill = 18.64 AF

18.64 AF x 3 fills = 56 AF

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3. Please complete the following table showing estimated future water requirements:

**ESTIMATED FUTURE WATER DIVERTED/STORED**

NEXT 5 YEARS	WATER TO BE DIVERTED (ACRE-FEET OR GALLONS)
Year 1	56 AF
Year 2	56 AF
Year 3	56 AF
Year 4	56 AF
Year 5	56 AF

Please attach any additional information, tables, or curves showing past, present and estimated future water requirements to substantiate the amount of water requested.

4. Please designate the legal description of the location where the water is to be used by providing the fractional part of the Section, Township and Range.

Marsh in the NE ¼ 14-13S-20E

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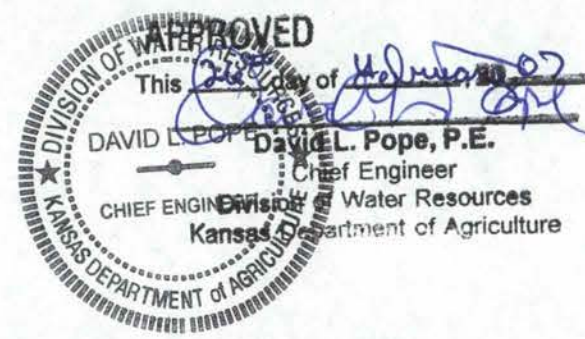
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You may attach any additional information you believe will assist in informing the Division of the need for your request.



# KANSAS

Owner: WaknDuk LLC Site #1  
 Practice: Wetland Creation - WHIP Program  
 Location: N2 NE4 Section 14-T13S-R20E  
 County: Douglas  
 Latitude:        Longitude:       



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 KS DEPT OF AGRICULTURE

### INDEX TO DRAWINGS

Sheet No.	Description
1	Cover Sheet
2	Location Map & Table of Quantities
3	Plan View
4	Stage-Storage Tables
5	Embankment Cross-Section @ ILWLCS
6	Anti-Seep Collar & ILWLCS
7	Profile of Embankment
8	Cross-Sections of Embankment @ 6" Fill Tube, Island, Earthen Block, and Auxiliary Spillway
9	Diversion Profile & Cross-Sections
10	Erosion Control Plan View
11	Grass Seeding Detail
12-16	Specifications
17	Buried Utility Safety
18	Operation & Maintenance

BEFORE ANY INVESTIGATION OR CONSTRUCTION ACTIVITY, THE EXCAVATOR IS RESPONSIBLE FOR CALLING KANSAS ONE-CALL AT 800-344-7233 (800-DIG-SAFE)

I certify that the plans and detailed specifications for this project were developed in accordance with the policy and procedures of the Natural Resources Conservation Service.

Emery F. Wiens 8/29/06  
 Emery F. Wiens, Civil Engineer Date  
 (Signature)  
Andrew J. Broxterman 8/25/06  
 Andrew J. Broxterman, Civil Engineer Date  
 (Approving Signature)



DESIGNED	efw	DATE	07/06
DRAWN	efw	DATE	07/06
TRACED	ADG	DATE	05/06
CHECKED		DATE	

APPROVED BY	efw	TITLE	civil engineer
		TITLE	

WaknDuk LLC Site #1  
 Wetland Creation - WHIP Program  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas

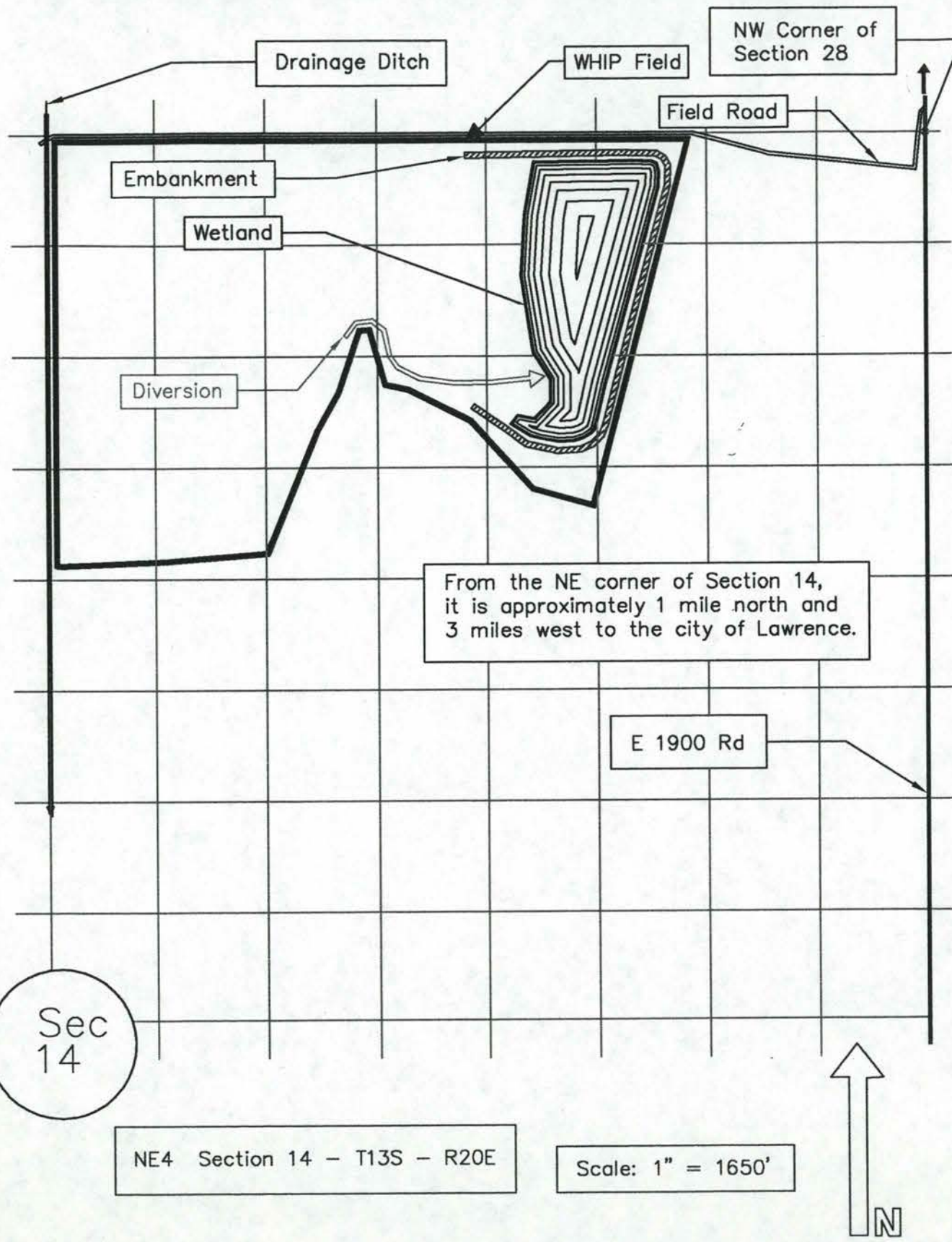


REVISIONS					
DES.	DATE	CHKD.	DATE	APPR.	DATE

CAN PROJECT FILE NAME  
 400.JS  
 DRAWING NAME  
 SHEET NO. 1 OF 18



# GENERAL LOCATION MAP



NE4 Section 14 - T13S - R20E

Scale: 1" = 1650'

# TABLE OF QUANTITIES

ITEM	UNIT	DESIGN QUANTITY	INSTALLED QUANTITY
Earthfill: Embankment	cu yd	4901	
Earthfill: Diversion	cu yd	470	
Earthfill: Island	cu yd	37	
Earthfill: Earthen Block	cu yd	2	
Excavation: Core Trench	cu yd	708	
Excavation: Stripping	cu yd	2609	
In-Line Water Level Control Structure: 4'x10"	each	1	
Back-Flap in Bottom Board of ILWLCS, 10"	each	1	
PVC Pipe 10" dia sm-in corr-out ASTM F949	lin ft	56	
Bar Guard (Heavy Duty) for 10" PVC Pipe	each	1	
Anti-Seep Collar 5'x5', Rigid PE for 10" pipe	each	1	
Rodent Guard for 10" dia	each	1	
Manually Tamped Backfill: Pipe, 10" dia	lin ft	56	
Manually Tamped Backfill: ILWLCS	lin ft	4	
Sheepsfooting MPP in 3 directions	acres	6.55	
PVC Pipe 6" dia sm-in corr-out ASTM F949	lin ft	62	
Bar Guard (Heavy Duty) for 6" PVC Pipe	Each	1	
Anti-Seep Collar, 5'x5', Rigid PE for 6" Pipe	Each	1	
Manually Tamped Backfill: 6" Pipe	62	lin ft	
Rodent Guard for 6" PVC Pipe	Each	1	
Check Valve (Plastic) for 6" Pipe	Each	1	
Ditch Checks for Erosion Control	lin ft	461	
Seeding Embank./AS/Block/Diversion/Island	acres	1.7	

**APPROVED**  
 David L. Pope, P.E.  
 FEB 26 2007  
 Chief Engineer  
 Division of Water Resources  
 Kansas Dept. of Agriculture

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 KS DEPT OF AGRICULTURE

Date 07/06  
 Designed efw  
 Drawn efw  
 Checked efw  
 Approved Emery F. Wiens 07/06

WakDak LLC Site #1  
 Wetland Creation  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas

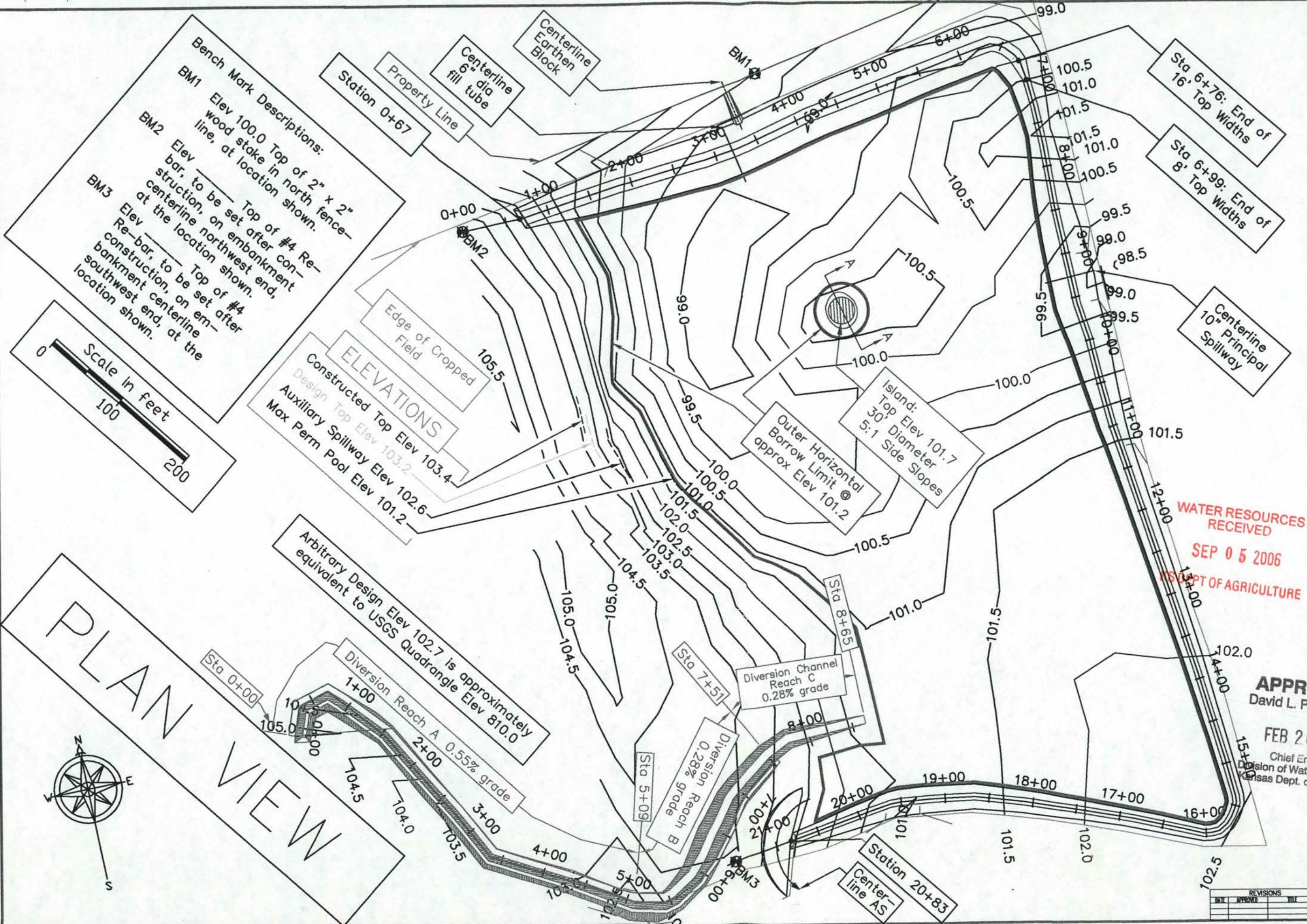


General Location Map & Table of Quantities

REVISIONS		
DATE	APPROVED	TITLE

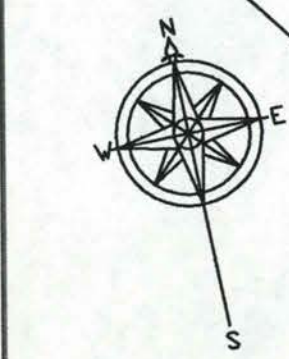
File Name  
 Drawing Name  
 Sheet 2 of 18





**PLAN VIEW**

Scale in feet  
0 100 200



**Bench Mark Descriptions:**  
 BM1 Elev 100.0 Top of 2" x 2" wood stake in north fence line, at location shown.  
 BM2 Elev 100.0 Top of #4 Re-bar, to be set after construction, on embankment centerline northwest end, at the location shown.  
 BM3 Elev 100.0 Top of #4 Re-bar, to be set after construction, on embankment centerline southwest end, at the location shown.

**ELEVATIONS**  
 Constructed Top Elev 103.4  
 Design Top Elev 103.2  
 Auxiliary Spillway Elev 102.6  
 Max Perm Pool Elev 101.2

Arbitrary Design Elev 102.7 is approximately equivalent to USGS Quadrangle Elev 810.0

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 SEP 05 2006  
 US DEPT OF AGRICULTURE

Date 07/06  
 Designed *efr*  
 Drawn *efr*  
 Checked *efr*  
 Approved *efr*

WaknDuk LLC Site #1  
 Wetland Creation  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas

**APPROVED**  
 David L. Pope, P.E.  
 FEB 26 2007  
 Chief Engineer  
 Division of Water Resources  
 Kansas Dept. of Agriculture



File Name  
 Drawing Name  
 Sheet 3 of 18

REVISIONS		
NO.	APPROVED	DATE



# STAGE-STORAGE TABLES

Pre-Construction				
Item	Elevation	Area (ac)	Volume (af)	Accum Vol (af)
Lowest Point	98.6	0.00	0.00	0.00
	99.5	1.46	0.48	0.48
	100.0	2.94	1.10	1.58
	100.5	4.50	1.86	3.44
	101.0	5.39	2.47	5.91
Max Permanent Pool	101.2	5.97	1.22	7.13
	101.5	6.84	1.84	8.97
	102.0	8.55	3.85	12.82
	102.5	9.54	4.52	17.34
	102.6	9.62	1.00	18.34
Auxiliary Spillway	103.0	9.94	3.87	22.21
	103.2	10.11	2.03	24.24
Design Top	103.2	10.11	2.03	24.24
Constructed Top	103.4	10.28	2.03	26.27

Post-Construction (estimated)				
Item	Elevation	Area (ac)	Volume (af)	Accum Vol (af)
Lowest Point	98.6	0.30	0.00	0.00
Lowest Borrow Elev	98.8	1.10	0.22	0.22
	99.0	1.90	0.22	0.44
	99.5	3.11	1.25	1.69
	100.0	4.00	1.78	3.47
	100.5	5.00	2.25	5.72
Max Permanent Pool	101.0	5.60	2.65	8.37
	101.2	6.55	1.22	9.59
	101.5	7.35	2.08	11.67
	102.0	8.56	3.98	15.65
	102.5	9.21	4.44	20.09
Auxiliary Spillway	102.6	9.32	0.79	20.88
	103.0	9.78	3.96	24.84
Design Top	103.2	10.18	2.06	26.90
Constructed Top	103.4	10.59	2.05	28.95

Stage-Storage Tables

REVISIONS		
NO.	DESCRIPTION	DATE

Designed <i>efv</i>	Date <u>07/06</u>
Drawn <i>efv</i>	Date <u>07/06</u>
Checked	Emery F. Wiens
Approved	07/06

WakanDuk LLC Site #1  
 Wetland Creation  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas

**APPROVED**  
 David L. Pope, P.E.  
 FEB 26 2007  
 Chief Engineer  
 Division of Water Resources  
 Kansas Dept. of Agriculture

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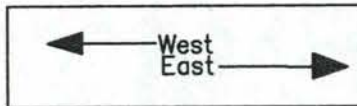
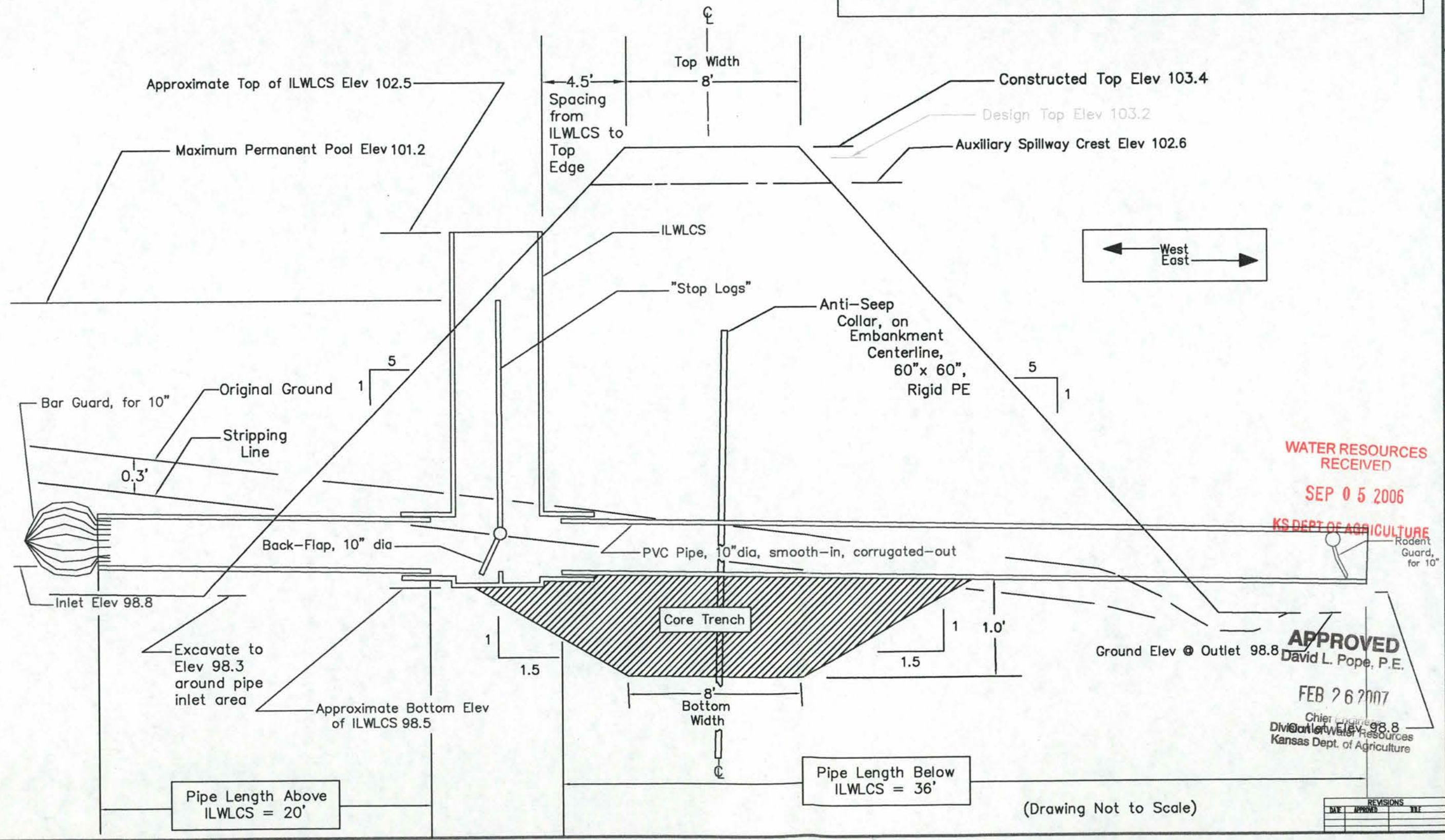


File Name \_\_\_\_\_  
 Drawing Name \_\_\_\_\_  
 Sheet 4 of 18



# CROSS-SECTION at IN-LINE WATER LEVEL CONTROL STRUCTURE

Embankment Station 9+27



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KS DEPT OF AGRICULTURE  
Rodent Guard, for 10"

APPROVED  
David L. Pope, P.E.

FEB 26 2007  
Chief Engineer  
Division of Water Resources  
Kansas Dept. of Agriculture

Pipe Length Above ILWLCS = 20'

Pipe Length Below ILWLCS = 36'

(Drawing Not to Scale)

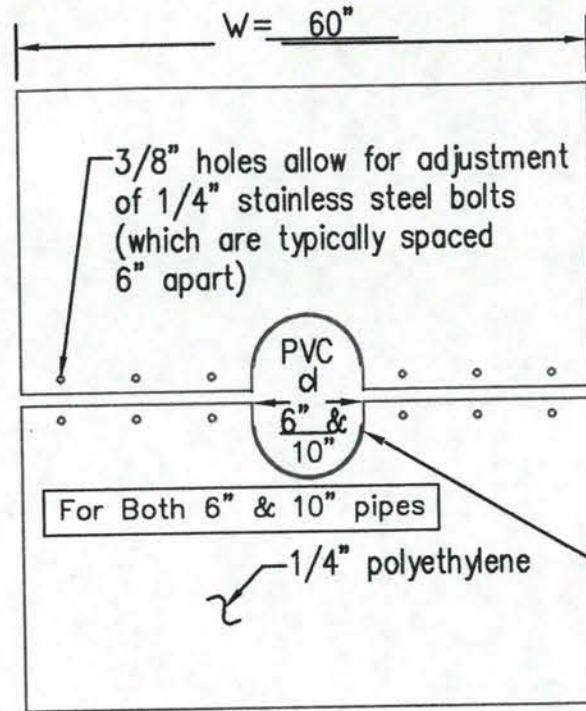
REVISIONS	
DATE	BY

Date	07/06
Designed	efw
Drawn	efw
Checked	
Approved	Emery F. Wiens 07/06

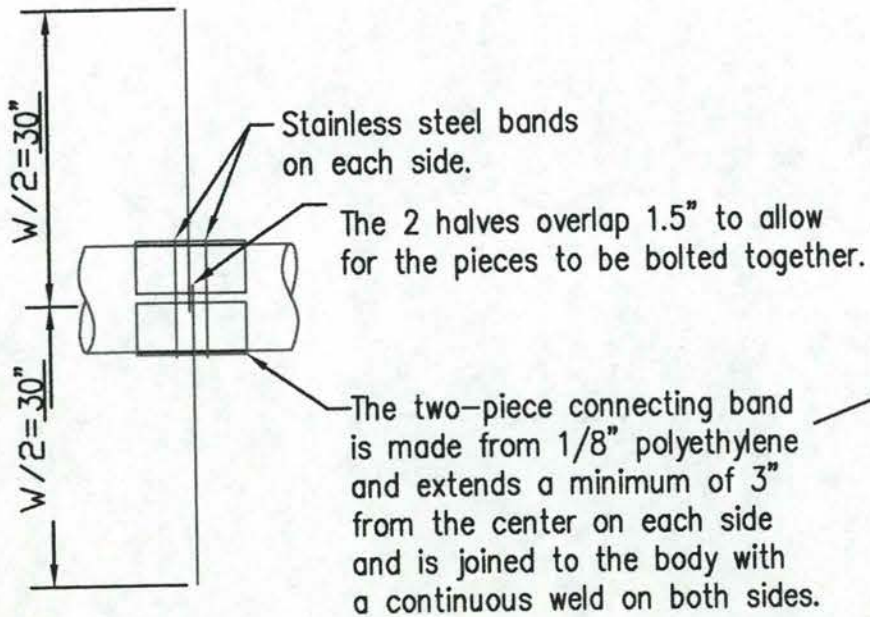
WaknDuk LLC Site #1  
Wetland Creation  
N2 NE4 Section 14 - T13S - R20E  
Douglas County, Kansas



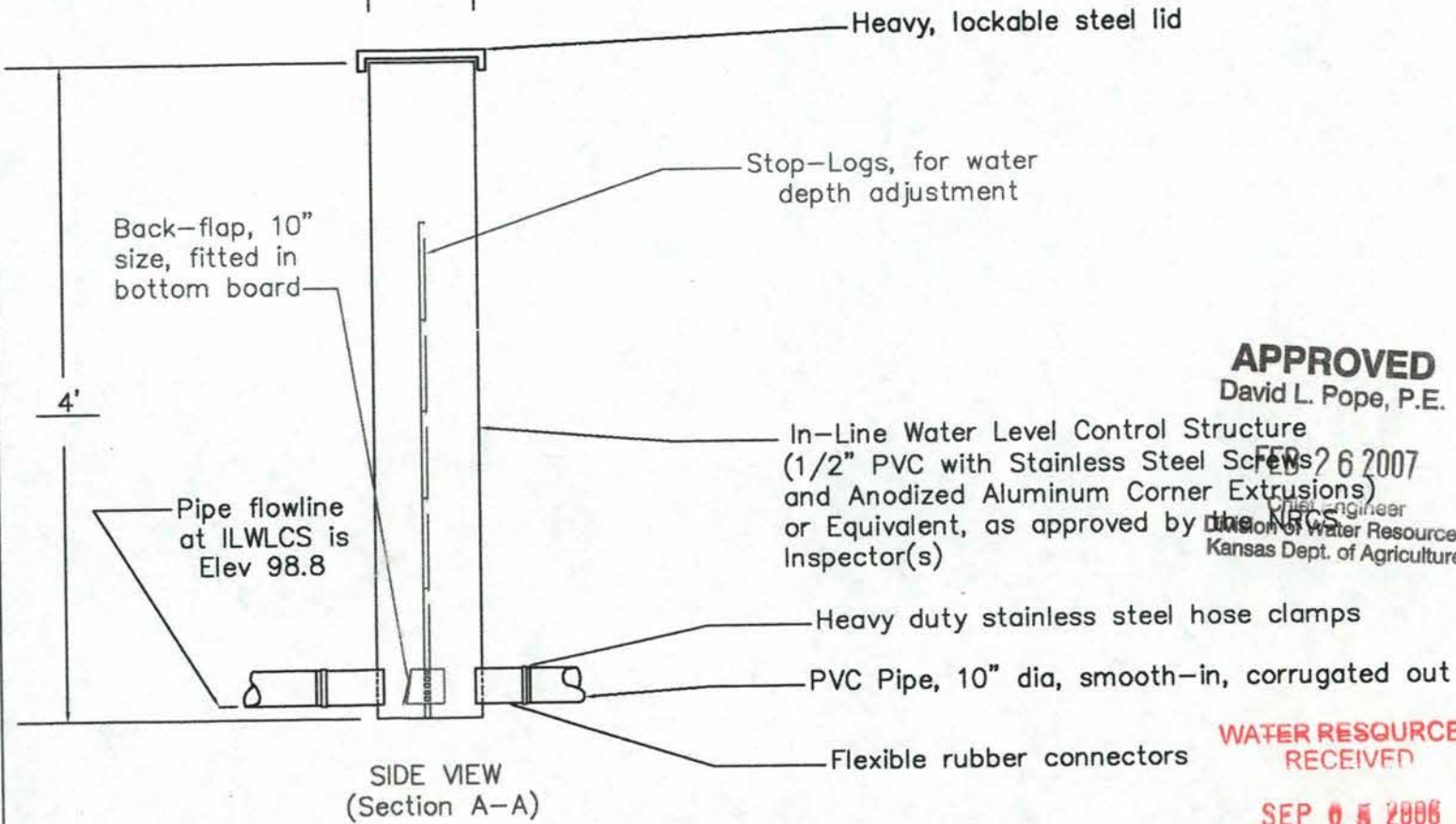
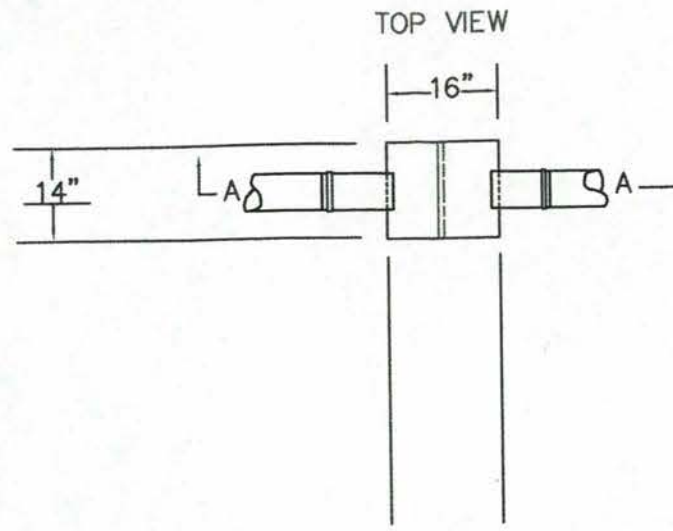




For 6" & 10" dia pipes



RIGID POLYETHYLENE ANTISEEP COLLAR



- NOTES:
1. ILWLCS uses 5" and 7" stoplogs, plus a taller stoplog with a backflap, and a lid.
  2. The pipe shall be firmly and uniformly bedded so the lower one-sixth of the circumference will bear against original ground or compacted fill.
  3. ILWLCS, including stoplogs, shall be water tight.

**APPROVED**  
David L. Pope, P.E.  
FEB 26 2007  
Professional Engineer  
Division of Water Resources  
Kansas Dept. of Agriculture

WATER RESOURCES RECEIVED  
SEP 05 2006  
KS DEPT OF AGRICULTURE

DETAIL OF IN-LINE WATER LEVEL CONTROL STRUCTURE

ILWLCS & ANTI-SEEP COLLAR FOR PVC PIPE

REVISIONS		
DATE	APPROVED	BY

Date	07/06
Designed	afz
Drawn	afz
Checked	Emery F. Wilens
Approved	07/06

WakDuk LLC Site #1  
Wetland Creation  
N2, NE4 Section 14 - T13S - R20E  
Douglas County, Kansas



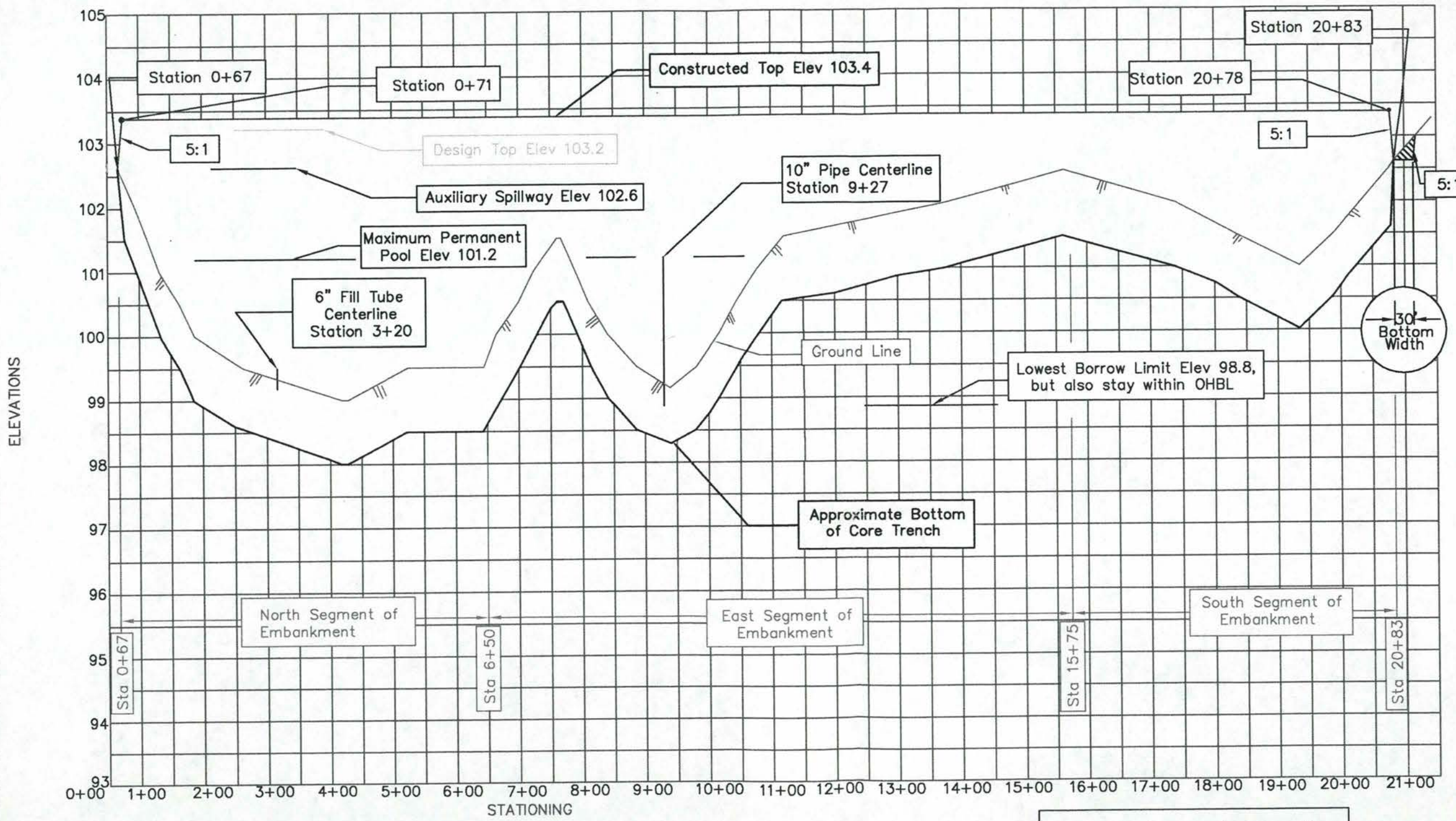
File Name  
Drawing Name



# Embankment Profile

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 SEP 05 2006  
 KS DEPT OF AGRICULTURE

Date 07/06  
 Designed *efr*  
 Drawn *efr*  
 Checked  
 Approved Emery F. Wiens 07/06



WaknDuk LLC Site #1  
 Wetland Creation  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas



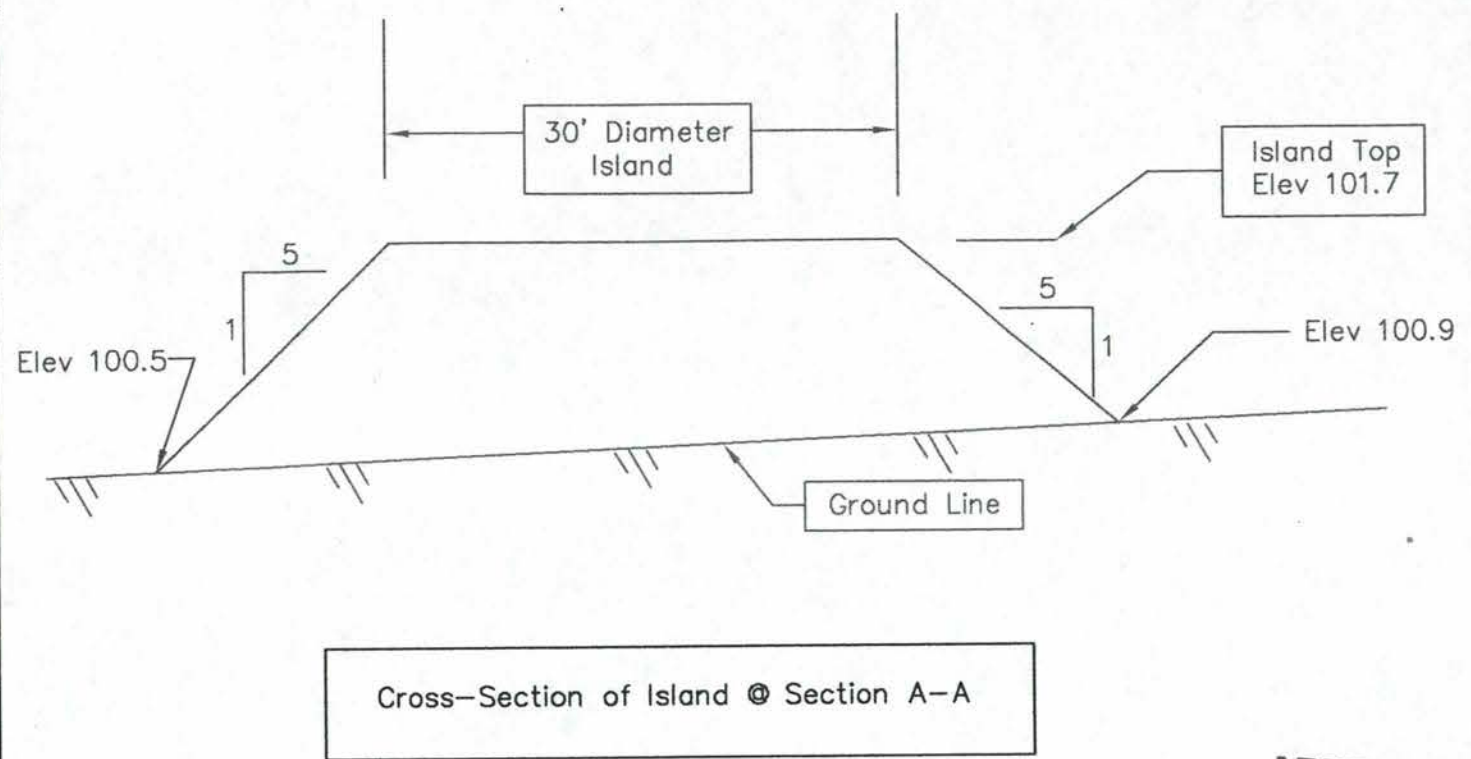
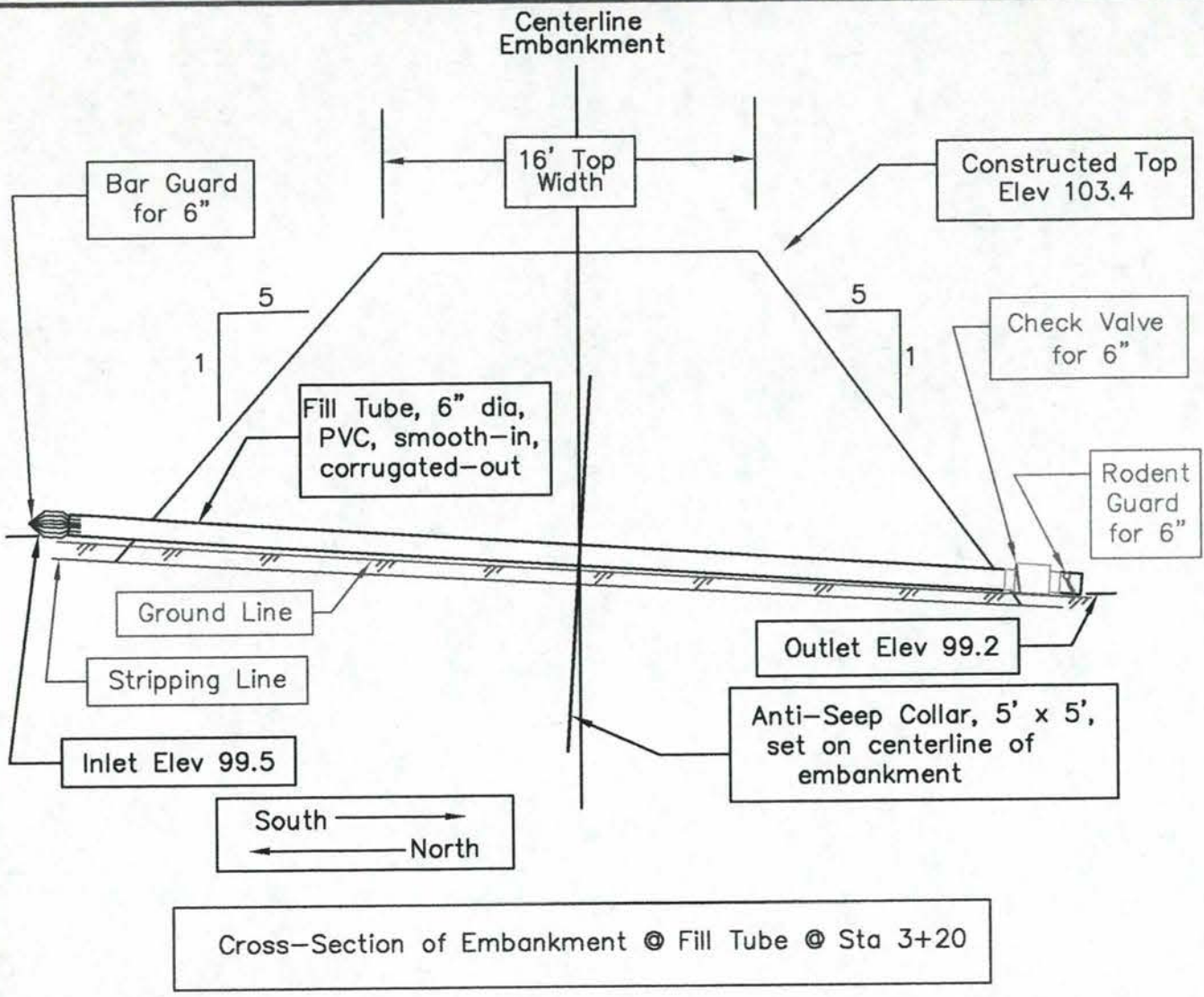
PROVED  
 David L. Pope, P.E.

File Name FEB 26 2007  
 Drawing Name  
 Chief Engineer  
 Division of Water Resources  
 Kansas Dept. of Agriculture  
 Sheet 7 of 18

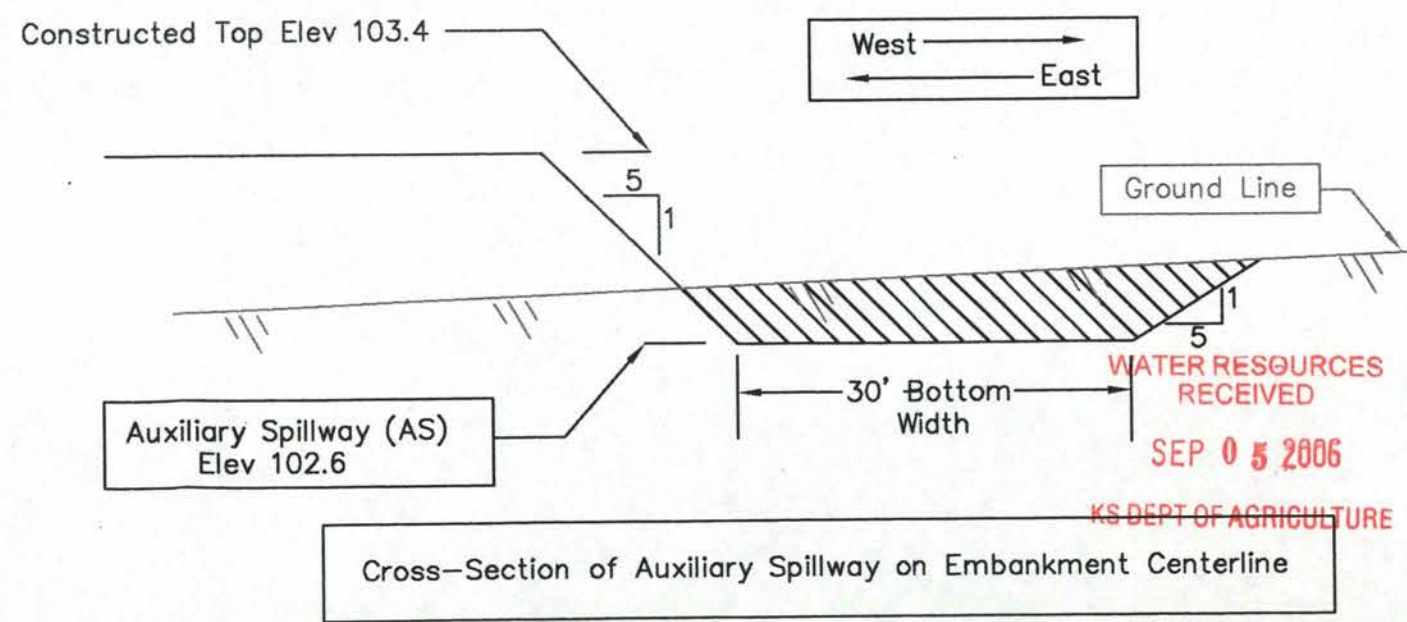
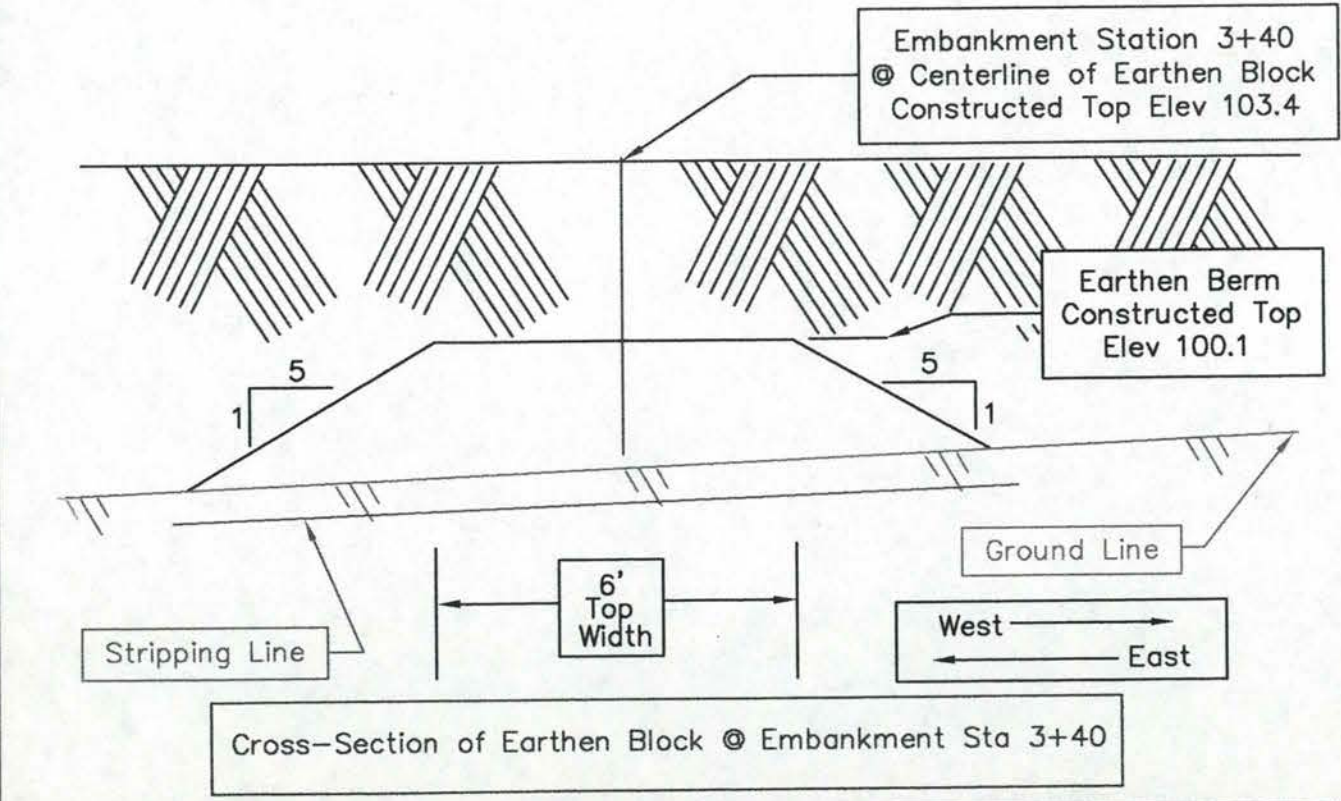
# Embankment Profile

REVISIONS		
NO.	DATE	DESCRIPTION





**APPROVED**  
 David L. Pope, P.E.  
 FEB 26 2007  
 Chief Engineer  
 Division of Water Resources  
 Kansas Dept. of Agriculture



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 SEP 05 2006  
 KS DEPT OF AGRICULTURE

Cross-Sections of Embankment @ Fill Tube, of Island, and of Aux Spwy on Embankment CL

REVISIONS		
DATE	APPROVED	TITLE

Date 07/06  
 Designed efr  
 Drawn efr  
 Checked Emery F. Wiens  
 Approved 07/06

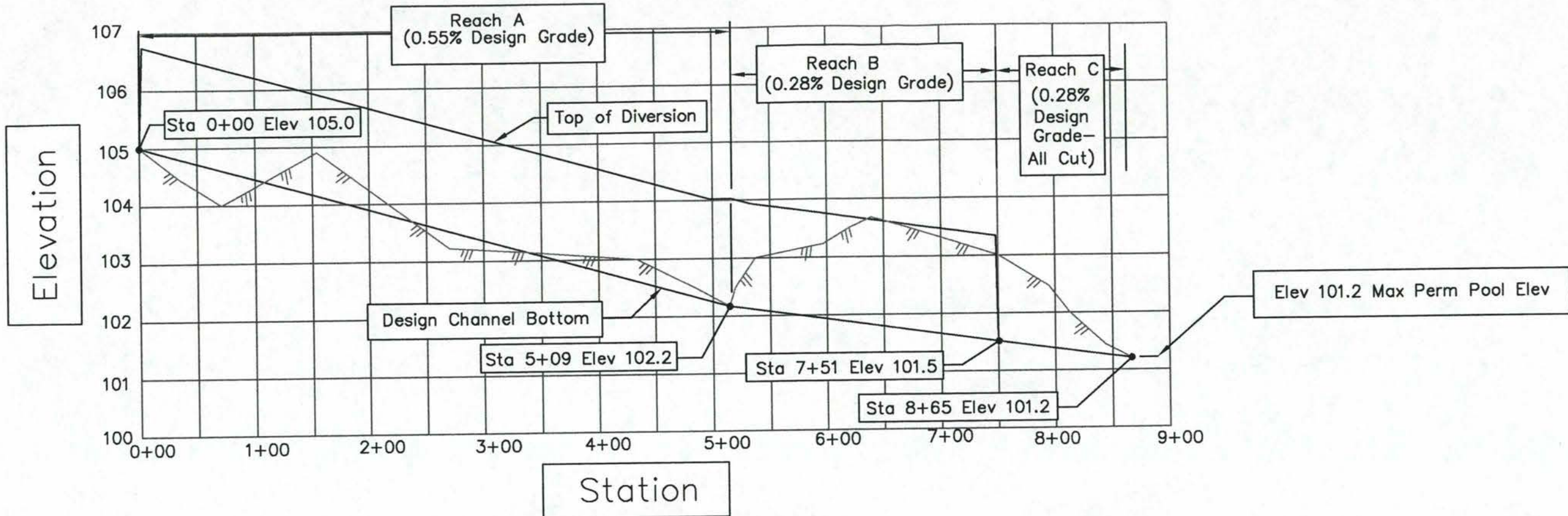
WaknDuk LLC Site #1  
 Wetland Creation  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas

**NRCS**  
 Natural Resources Conservation Service  
 United States Department of Agriculture

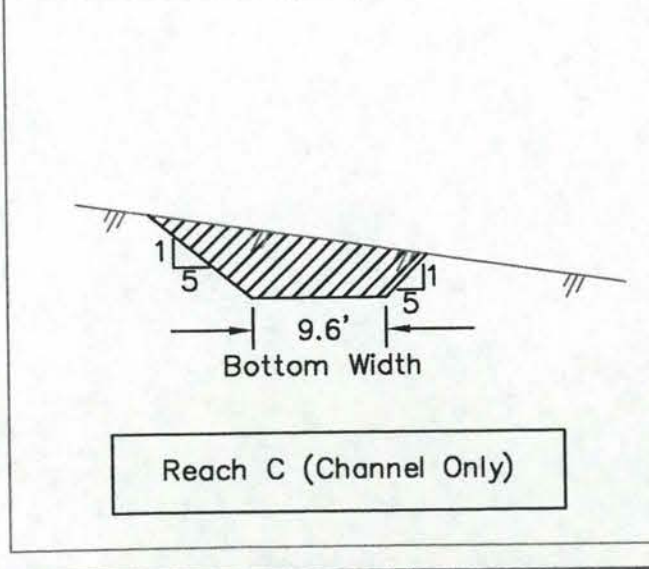
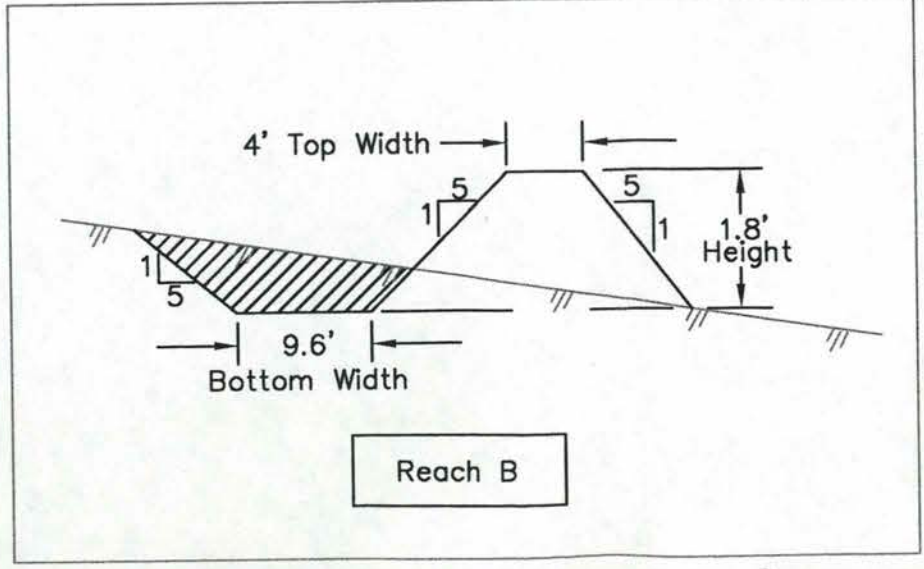
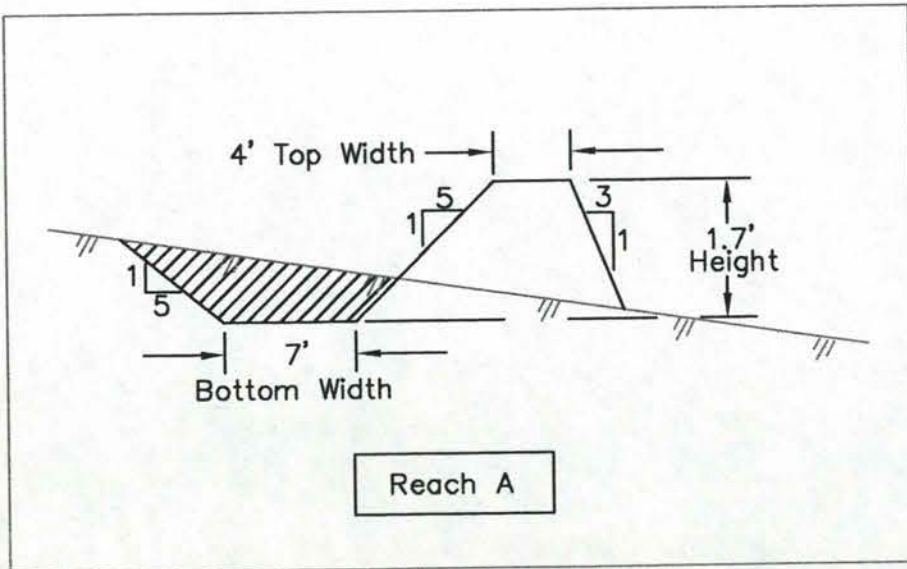
File Name  
 Drawing Name  
 Sheet 8 of 18



# Profile of Diversion



# Typical Cross-Sections of the Diversion Reaches



**APPROVED**  
 David L. Pope, P.E.  
 FEB 26 2007  
 Chief Engineer  
 Division of Water Resources  
 Kansas Dept. of Agriculture

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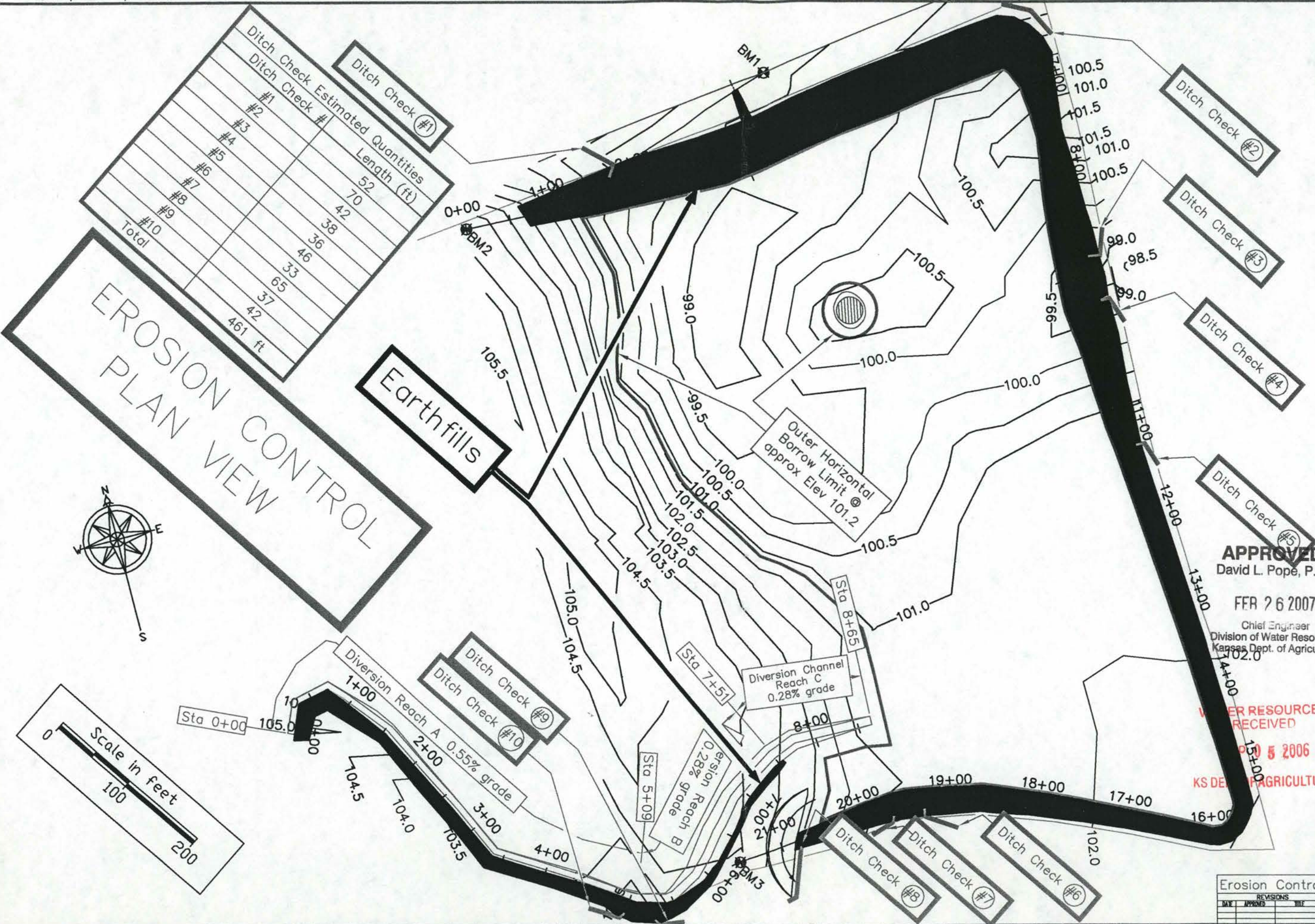
Date	07/06
Designed	efr
Drawn	efr
Checked	
Approved	

WaknDuk LLC Site #1  
 Wetland Creation  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas





Don't have to do.



Ditch Check #1	
Ditch Check #	Length (ft)
#1	52
#2	70
#3	42
#4	38
#5	36
#6	46
#7	33
#8	65
#9	37
#10	42
<b>Total</b>	<b>461 ft</b>

Designed	efr	Date	07/06
Drawn	efr	Checked	07/06
Approved	Emercy F. Wiens	Approved	07/06

WaknDuk LLC Site #1  
 Wetland Creation  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas

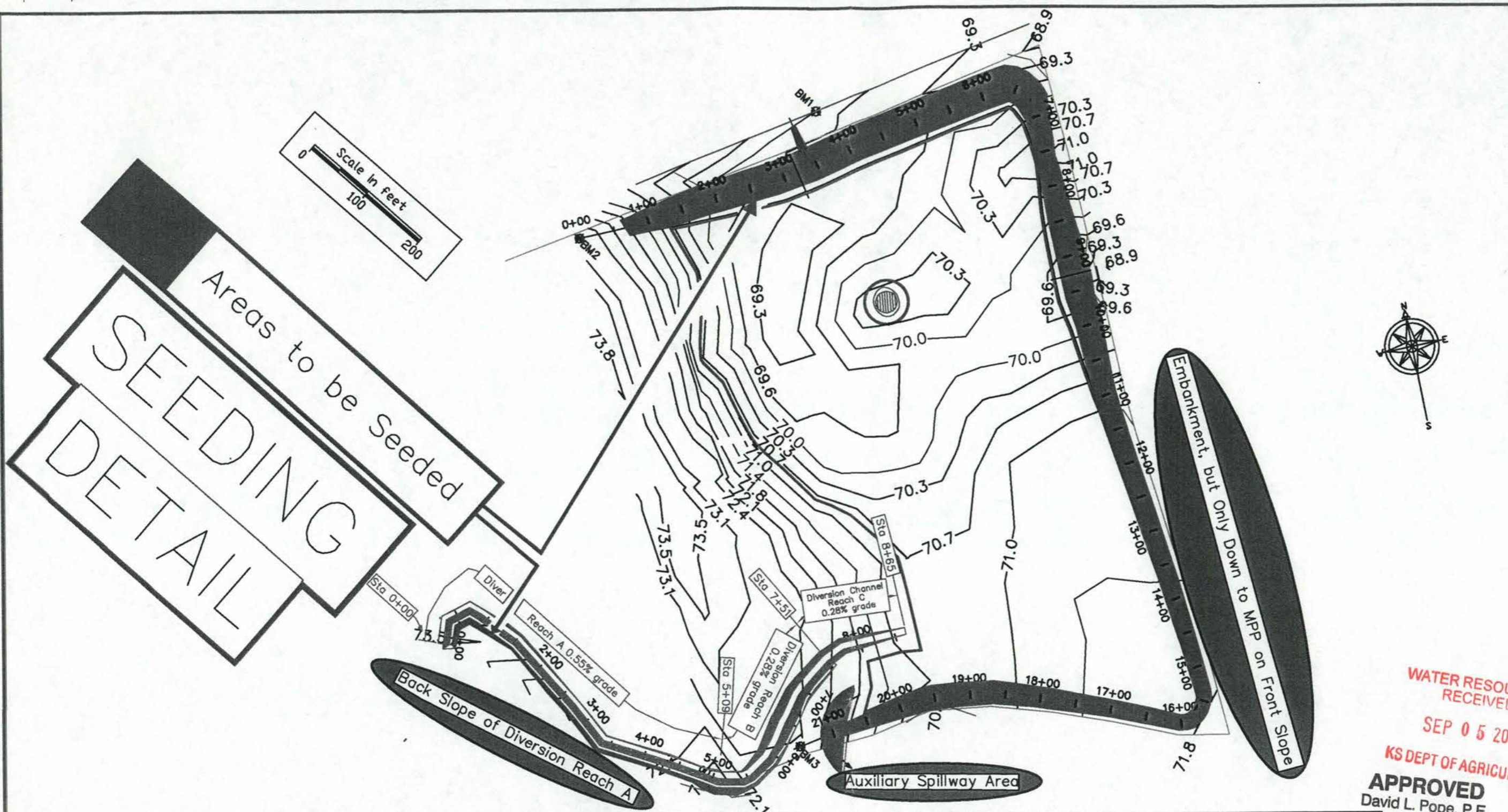
**APPROVED**  
 David L. Pope, P.E.  
 FEB 26 2007  
 Chief Engineer  
 Division of Water Resources  
 Kansas Dept. of Agriculture

**NRCS**  
 Natural Resources Conservation Service  
 United States Department of Agriculture

File Name  
 Drawing Name  
 Sheet 10 of 18

EROSION CONTROL		
REVISIONS		
DATE	APPROVED	TITLE





SEEDING  
DETAIL

Areas to be Seeded

Date 07/06  
 Designed efr  
 Drawn efr  
 Checked ESU  
 Approved 08/06

Wakduk LLC Site #1  
 Wetland Creation  
 N2 NE4 Section 14 - T13S - R20E  
 Douglas County, Kansas

WATER RESOURCES  
RECEIVED  
SEP 05 2006  
KS DEPT OF AGRICULTURE

APPROVED

David L. Pope, P.E.  
 Chief Engineer  
 Division of Water Resources  
 Kansas Dept. of Agriculture



CRITICAL AREA SEEDING      Total Acres = 1.7

PLANNED						APPLIED			
SPECIES	VARIETY	PLS lbs/ac	PERCENT of MIX	PLS lbs/ac	ACRES	TOTAL PLS lbs	BULK SEEDED lbs	PERCENT PLS	TOTAL PLS SEEDED lbs
Big Bluestem	Kaw	12	10	1.2	1.7	2.1			
Little Bluestem	Aldous	8	20	1.6	1.7	2.7			
Indiangrass	Osage	12	10	1.2	1.7	2.1			
Switchgrass	Blackwell	6	10	0.6	1.7	1.1			
Sideoats Grama	El Reno	12	25	3.0	1.7	5.1			
Western Wheatgrass	Barton	20	25	5.0	1.7	8.5			

Note: Approved Seeding Dates are December 1st to June 1st. Seeding outside of these dates will require prior approval from NRCS and mulching of seeded areas.

REVISIONS		
DATE	APPROVED	BY

File Name  
 Drawing Name  
 Sheet 11 of 18