

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
Jackie McClaskey, Secretary of Agriculture

DIVISION OF WATER RESOURCES
David W. Barfield, Chief Engineer

File Number 49734

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.)

KDWPT Trost-Borchardt WRP

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1:41

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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): USDA-NRCS
Address: 760 S. BROADWAY BLVD.
City: SALINA State KS Zip Code 67401
Telephone Number: (785) 823-4537

2. The source of water is: surface water in Tributary to Salt Creek (stream)
OR groundwater in Republican River (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 228.7 (Dike 2) acre-feet OR _____ gallons per calendar year, to be diverted at a maximum rate of N/A 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) 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. 3 GMD 2 Meets K.A.R. 5-3-1 (YES / NO) Use REC Source G/S County RP By KAB Date 12/1/16
Code REG Fee \$ 200 TR # _____ Receipt Date 12/1/16 Check # credit

12/5/2016 LHM

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 NW quarter of Section 29, more particularly described as being near a point 4035 feet North and 3655 feet West of the Southeast corner of said section, in Township 4 South, Range 2 East (West (circle one)), Republic 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):

KDWPT % Robert Unruh
 (name, address and telephone number)
2446 250 Road Webber, Kansas 66970
 (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 11/28, 2016.

Roger Madencher Agent for
 Applicant's Signature USDA-NRCS

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 Structure for Water Level Control in Dike 2
 (number of wells, pumps or dams, etc.)

and (was) (will be) completed (by) September 30, 2016 Feb. 28, 2017 RQm
 (Month/Day/Year - each was or will be completed)

8. The first actual application of water for the proposed beneficial use was or is estimated to be May 1, 2017
 (Mo/Day/Year)

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- 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. **See Attached Table**

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 _____

- 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 1/2 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 1/2 mile, please advise us.
- (c) If the application is for surface water, the names and addresses of the landowner(s) 1/2 mile downstream and 1/2 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. **See Attached Plan Sheet 2**

- 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.

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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 Easement Holder
(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):
Kansas Department of Wildlife Parks and Tourism
(name, address and telephone number)
2446 250 Road, Webber, KS 66970
(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 Salina, Kansas, this 9 day of November, 2016.
(month) (year)

USDA - NRCS
(Applicant Signature)

By Roger Masenthin
(Agent or Officer Signature)

Roger Masenthin, Water Resources Planning Specialist
(Agent or Officer - Please Print)

Assisted by PETER A. CLARK DESIGN ENGINEER Date: 01/27/16
(office/title)

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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

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**RECREATIONAL USE
SUPPLEMENTAL SHEET**

File No. 49734

Name of Applicant (Please Print): USDA-NRCS

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

2. Please summarize how the water will be used and justify the quantity of water requested: _____

Water will be used to enhance activities under the USDA-NRCS Wetlands Reserve Program.

The quantity of water requested is the volume of storage in the structure when full to maximum elevation (top of stoplogs in Structure 1) equaling 86.2 ac-ft with 47.53 surface acres.

Indirect use by evaporation = $47.53 \times 19 / 12 = 75.89$ ac-ft, combining for 162.1 ac-ft.

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	162.1 ac-ft
Year 2	162.1 ac-ft
Year 3	162.1 ac-ft
Year 4	162.1 ac-ft
Year 5	162.1 ac-ft

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.

NW4 Section 29, Township 4S, Range 2W

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

Lower surface areas obtained from Stage-Storage Module

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Reservoir Capacity Table					
Dike 3 Basin - 32.8 ac Drainage Area					
Elev	Depth	Surface Area	Area	Cumulative Volume	
ft	ft	sf	ac	ac-ft	
1330.2	0.0	0	0.00	0.00	
1330.6	0.4	224	0.01	0.0	
1331.0	0.8	26682	0.61	0.1	
1331.4	1.2	36990	0.85	0.4	
1331.8	1.6	68526	1.57	0.9	
1332.2	2.0	144988	3.33	1.9	
1332.6	2.4	259223	5.95	3.7	
1333.0	2.8	393269	9.03	6.7	
1333.4	3.2	513502	11.79	10.9	Top of Stoplogs
1333.6	3.4	563041	12.93	13.4	Auxiliary Spillway
1335.0	4.8	1031913	23.69	39.0	Top of Dike

<15 ac-ft

KDWPT Trost-Borchardt WRP

Reservoir Capacity Table					
Dike 2 Basin - 120.9 ac Drainage Area					
Elev	Depth	Surface Area	Area	Cumulative Volume	
ft	ft	sf	ac	ac-ft	
1329.4	0.0	1154	0.03	0.00	
1329.8	0.4	8050	0.18	0.0	
1330.2	0.8	17862	0.41	0.2	
1330.6	1.2	120169	2.76	0.8	
1331.0	1.6	164174	3.77	2.1	
1331.4	2.0	628873	14.44	5.7	
1331.8	2.4	1579288	36.26	15.9	
1332.2	2.8	2365969	54.32	34.0	
1332.6	3.2	2812204	64.56	57.8	
1333.0	3.6	3037803	69.74	84.6	
1333.4	4.0	3176852	72.93	113.2	Top of Stoplogs
1333.6	4.2	3271456	75.10	128.0	Auxiliary Spillway
1335.0	5.6	3586436	82.33	238.2	Top of Dike

KDWPT Trost-Borchardt WRP

Reservoir Capacity Table					
Dike 1 Basin - 53.4 ac Drainage Area					
Elev	Depth	Surface Area	Area	Cumulative Volume	
ft	ft	sf	ac	ac-ft	
1329.4	0.0	1325	0.03	0.00	
1329.8	0.4	7045	0.16	0.0	
1330.2	0.8	18734	0.43	0.2	
1330.6	1.2	134875	3.10	0.9	
1331.0	1.6	371537	8.53	3.2	
1331.4	2.0	905959	20.80	9.1	
1331.8	2.4	1316671	30.23	19.3	
1332.2	2.8	1694419	38.90	33.1	
1332.6	3.2	1895404	43.51	49.6	
1333.0	3.6	2010555	46.16	67.5	
1333.4	4.0	2070332	47.53	86.2	Top of Stoplogs
1333.6	4.2	2088648	47.95	95.8	Auxiliary Spillway
1335.0	5.6	2213871	50.82	164.9	Top of Dike

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NEW STREAM WORKSHEET

ES AJW

Date: 12/2/16

File No. 49,734

Basin Name: Republican Basin No. 27

Stream Name: East Salt Creek Trib 2

Stream location (confluence with parent stream):

Section 29, Township 4 S South, Range 2 ^W (East)

Map Color Coding:

Basin Stream - Blue

Named Main Stream off Basin Stream - Yellow

Named Stream off Main Stream - Green

Unnamed Trib (1, 2, 3, 4, etc.) - Pink

Unnamed Trib to Unnamed Trib (A, B, C, etc.) - Orange

Unnamed Trib to Unnamed Trib to Unnamed Trib (1, 2, 3, etc.) - Purple

Stream No. 3889 (computer assigned - entered by data entry staff)

Date Entered 12/5/2016 By LLM



1320 Research Park Drive
Manhattan, Kansas 66502
Jackie McClaskey, Secretary

Phone: (785) 564-6700
Fax: (785) 564-6777
Email: ksag@kda.ks.gov
www.agriculture.ks.gov
Sam Brownback, Governor

December 5, 2016

FILE COPY

USDA-NRCS
760 S BROADWAY BLVD
SALINA KS 67401

RE: Application
File No. 49734

Dear Sir or Madam:

Your application for permit to appropriate water in 29-4S-2W in Republic County, was received and has been assigned the file number noted above.

As a matter of record, the Division of Water Resources has on hand a large number of applications awaiting processing. Therefore to be fair to all concerned, and so that we can process those applications on hand in the order they were received, we intend to concentrate on the backlog of applications until the issue is resolved. Once review of your application has begun, we will contact you, if additional information is required.

In accordance with the provisions of the Kansas Water Appropriation Act, a portion of which is included below, the use of water as proposed prior to approval of the application is unlawful. Once approved, compliance with the terms, conditions and limitations of the permit is necessary. Conservation of the water resources of Kansas is required.

Section 82a-728 of the Kansas Water Appropriation Act, provides (a) except for the appropriation of water for the purpose of domestic use, . . . it shall be unlawful for any person to appropriate or threaten to appropriate water from any source without first applying for and obtaining a permit to appropriate water in accordance with the provisions of the Water Appropriation Act or for any person to violate any condition of a vested right, appropriation right or an approved application for a permit to appropriate water for beneficial use.

(b) (1) The violation of any provision of this section by any person is a class C misdemeanor . . .

A class C misdemeanor is punishable by a fine not to exceed \$500 and/or a term of confinement not to exceed one month in the county jail. Each day that the violation occurs constitutes a separate offense.

If you have any questions, please contact me at (785) 564-6645. If you wish to discuss a specific file, please have the file number ready so that we may help you more efficiently.

Sincerely,

Brent A Turney, P.G.
Change Application Unit Supervisor
Water Appropriation Program

BAT: dlw
pc: STOCKTON Field Office
GMD

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KANSAS

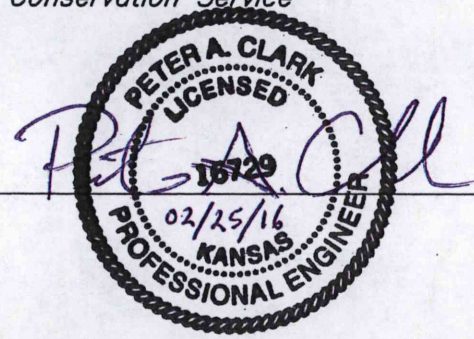
Owners: KDWPT (TROST & BORCHARDT EASEMENTS)

Practice: WETLAND RESERVE PROGRAM

Location: Portions of Sections 20, 21, 28, & 29
Township 4S Range 2W

County: REPUBLIC COUNTY

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



Before any investigation or construction activity, the excavator is responsible for calling KANSAS ONE-CALL at 800-344-7233 (800-DIG-SAFE) or 811

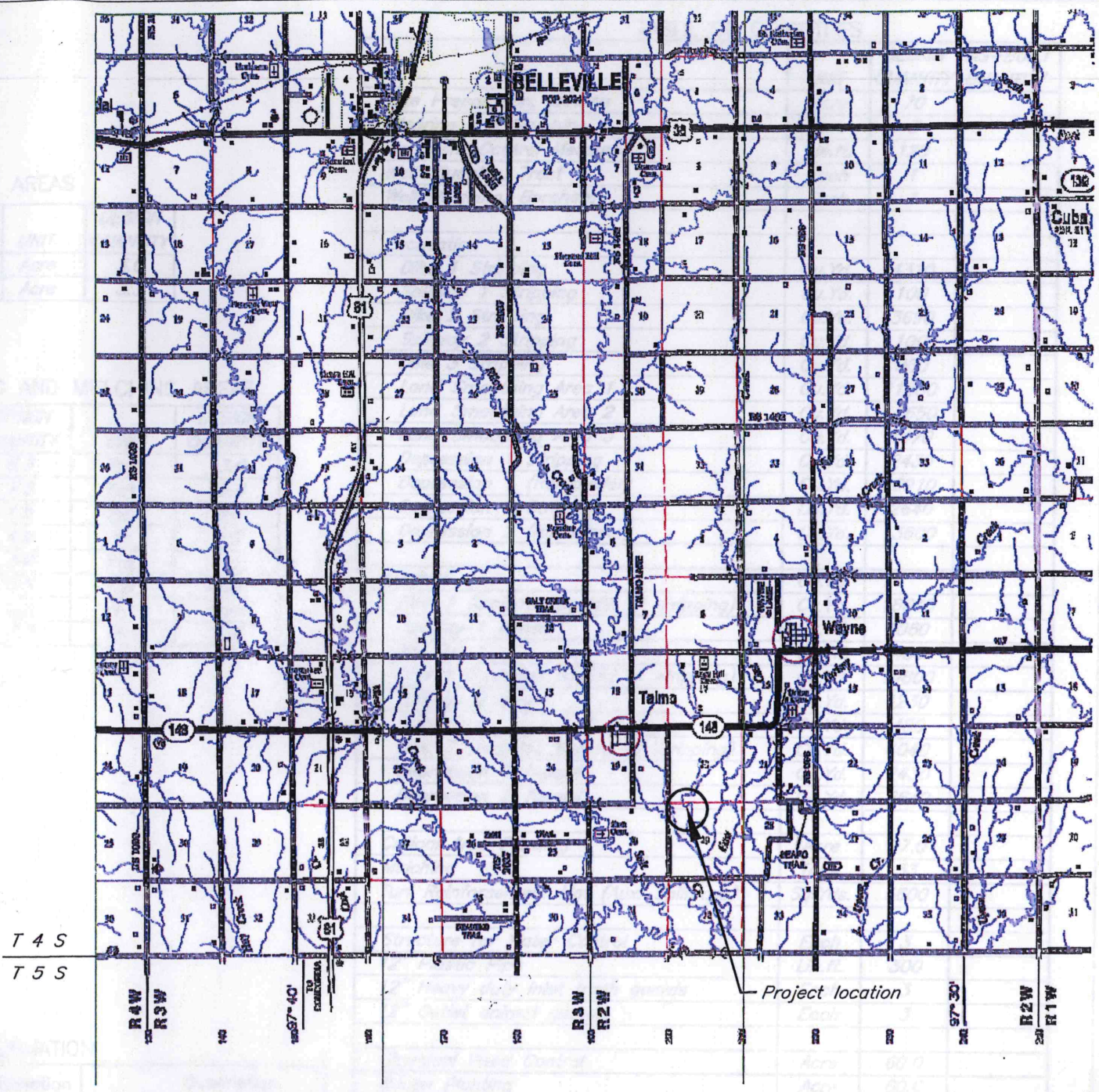
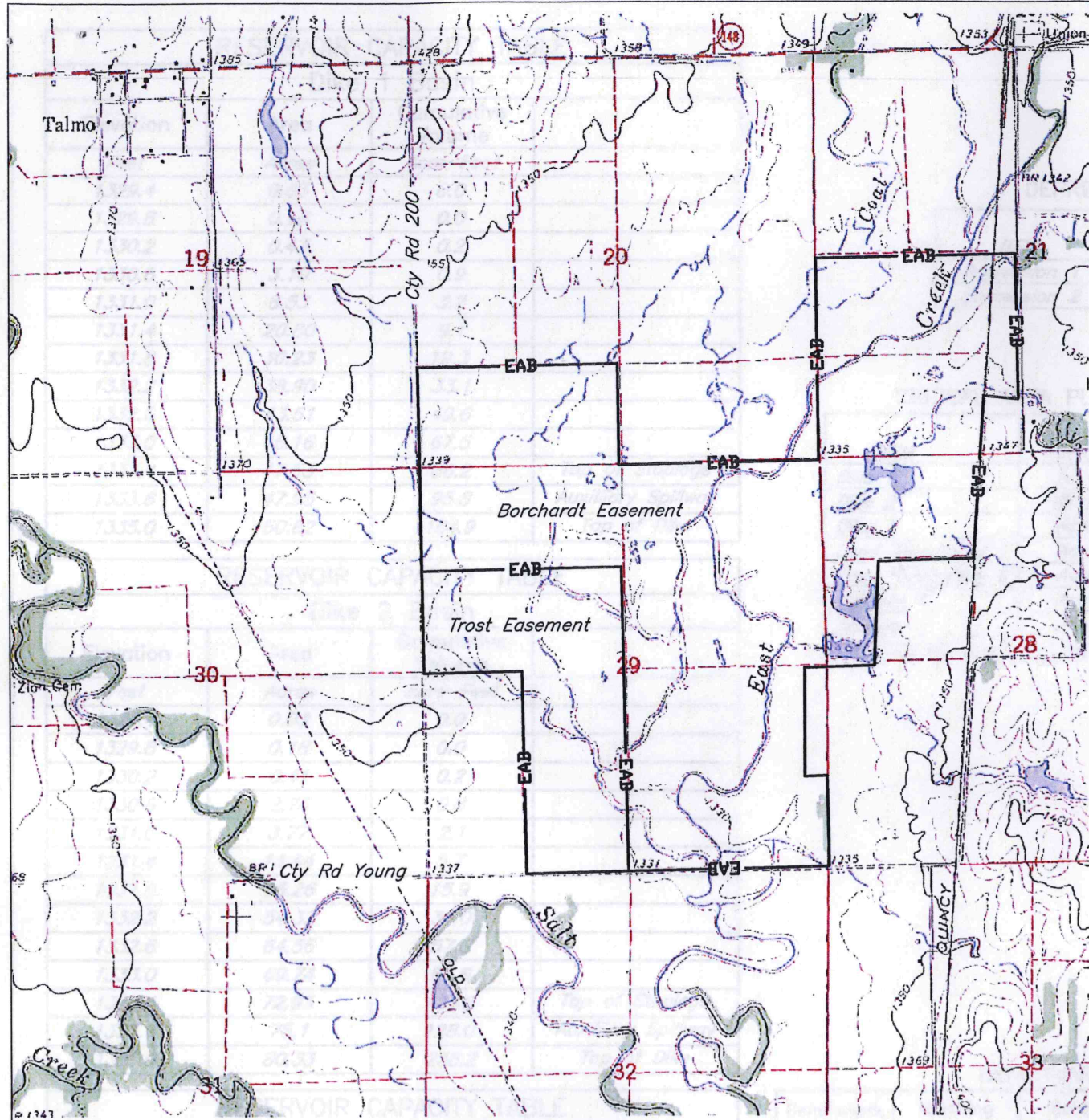
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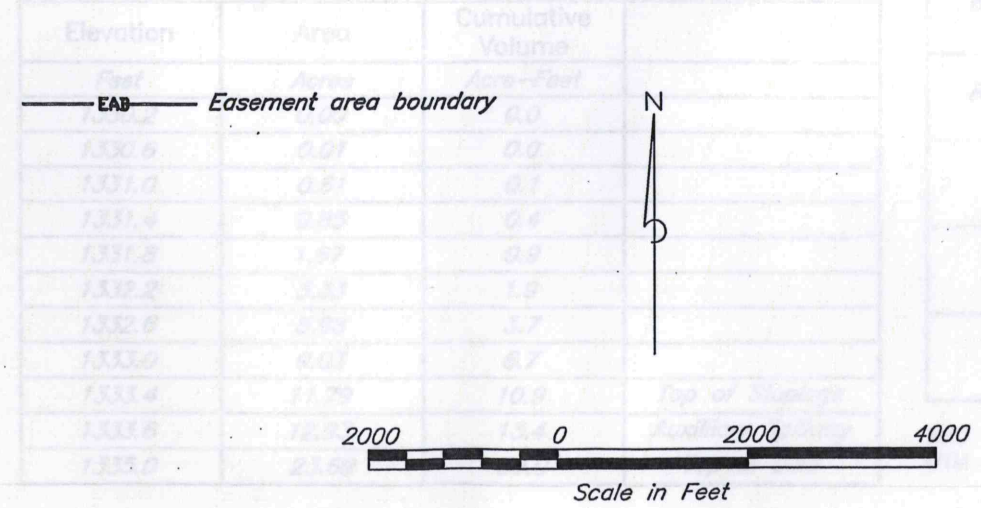
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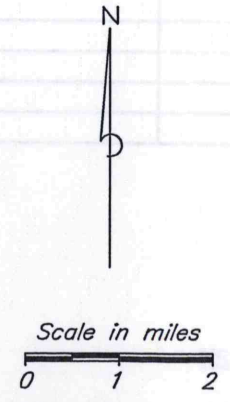
T 4 S
T 5 S

RAW RSW R3W R2W R1W

Project location



The approximate ingress location is 0.5 mile east of Talmo then 0.75 miles south on Road 200 in Republic County.



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Location Maps

Date	02/16
Designed	PAC
Drawn	PAC
Checked	PTL
Approved	

KDWPT Trost-Borchardt Wetland Reserve Program
Portions of Sections 20, 21, 28 & 29 T4S R2W
Republic County

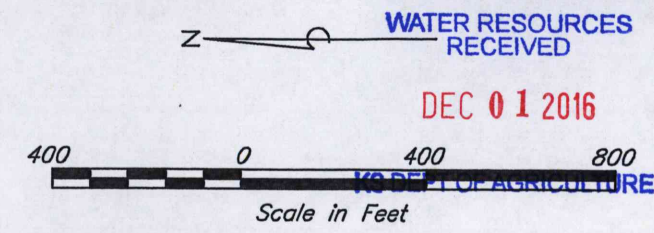
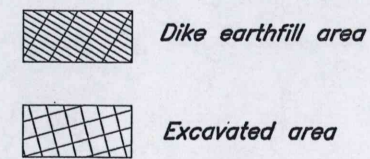
United States Department of Agriculture
USDA
Natural Resources Conservation Service

Drawing Name
Talmo Marsh_TB
2/23/16 2:44 PM
Sheet 2 of 24



Image: 2014

Notes: 1. Excavated areas are source of borrow for constructed fill areas.
 2. Construction traffic beyond Approved Disturbance Area Boundary is limited to the planting operation.



Expanded Plan View



Date	02/16
Designed	PAC
Drawn	PAC
Checked	PTL
Approved	

KDWPT Trost-Borchardt
 Wetland Reserve Program
 Portions of Sections 20, 21, 28 & 29 T4S R2W
 Republic County

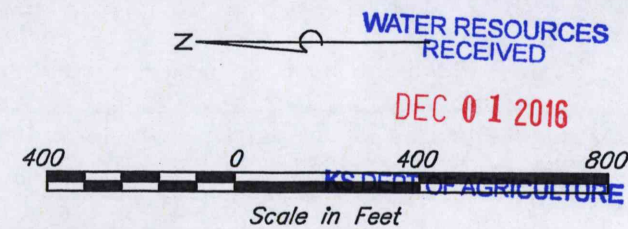


Drawing Name
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 Sheet 4 of 24



 Site preparation, mowing
 Waste disposal area

Notes: 1. Mowing is done to shred vegetation and to facilitate stakeout. Mow on or adjacent to existing spoil piles only as is practical.
 2. Clearing and grubbing shall be done within 20 feet of toes of earthfill and excavation areas.
 3. Cleared and grubbed materials as well as unsuitable materials from stripping operations shall be disposed of in the designated disposal areas.



Site Preparation

Date	02/16
Designed	PAC
Drawn	PAC
Checked	PTL
Approved	

KDWPT Trost-Borchart
 Wetland Reserve Program
 Portions of Sections 20, 21, 28 & 29 T4S R2W
 Republic County

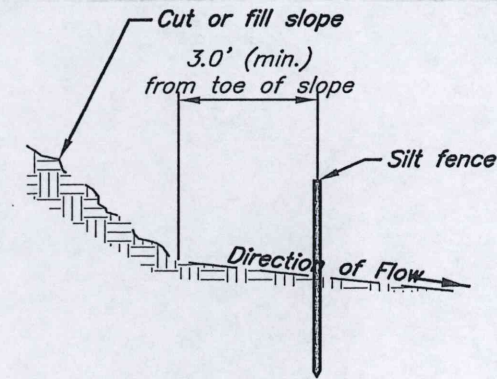
United States
 Department of
 Agriculture

 Natural Resources
 Conservation Service

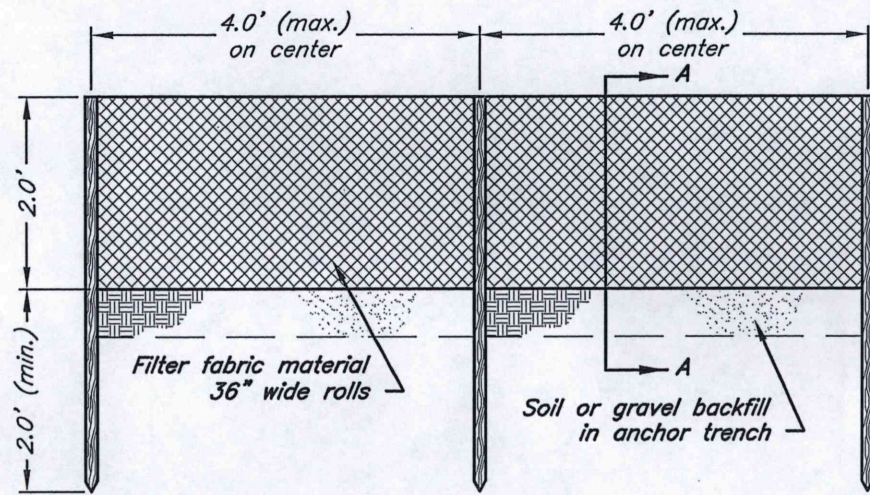
Drawing Name
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 2/25/16 11:04 AM
 Sheet 5 of 24

GENERAL NOTES FOR SILT FENCE:

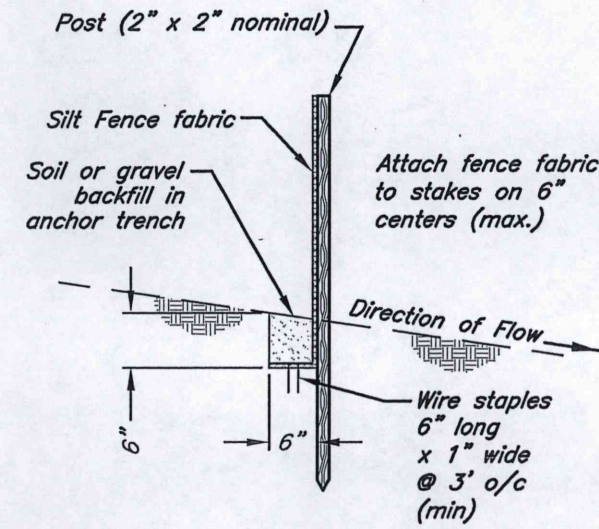
1. Posts are to be installed on the downhill side of the filter fabric.
2. Backfill anchor trench with compacted soil or gravel.
3. Install silt fence along contour lines, with a short section turned upgrade at each end of the barrier.
4. Where possible, lay out the silt fence 5.0 ft to 6.0 ft beyond the toe of the slope.
5. Extend the bottom 12" of the filter fabric to line the front and bottom of the trench.
6. Maintain a properly functioning silt fence throughout the duration of the project or until disturbed areas have been vegetated.
7. Remove sediment as it accumulates and place it in a stable area approved by the engineer.
8. Fasteners: The geotextile may be attached to the posts using geotextile pockets, staples, or nails. Staples shall be no. 17 gauge minimum and shall have a minimum 0.75 in. wide crown and 0.5 in. long legs. Nails shall be a minimum of 14 gauge, 1 inch long, with 0.75 in. button heads. Spacing shall be 6" maximum.
9. When joints are necessary, geotextile shall be spliced together at a support post with a minimum overlap of 18 inches, and securely sealed.



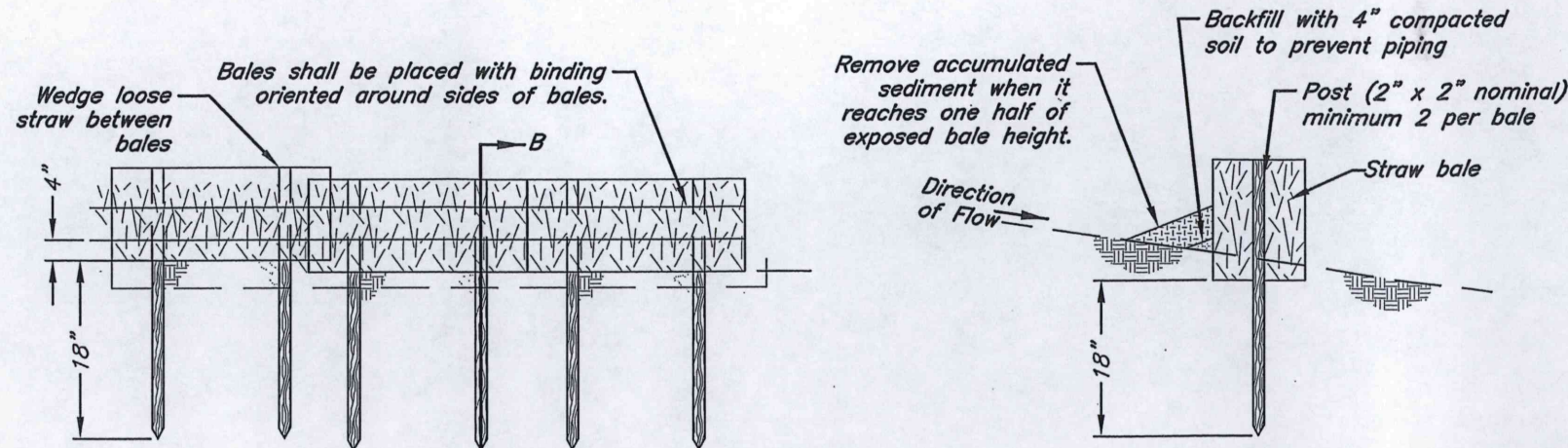
TYPICAL SILT FENCE PLACEMENT



SILT FENCE BARRIER FRONT VIEW



SECTION A-A



STRAW BALE BARRIER FRONT VIEW

SECTION B-B

GENERAL NOTES FOR BALE BARRIERS:

1. Bales shall be placed in a single row on the contour, with ends of adjacent bales tightly abutting one another.
2. All bales shall be either wire-bound or string-tied.
3. Straw bales shall be installed so that binding is oriented around the sides rather than along the tops and bottoms of the bales.
4. The straw bale barrier shall be installed in a trench excavated to the width of the bale and to a minimum uphill depth of 4 inches.
5. Each bale shall be anchored by at least two stakes each having minimum dimensions of 2" x 2" x 36". The first stake in each bale shall be driven toward the previously laid bale to force the bales together.
6. Gaps between adjacent bales shall be packed with straw.
7. Remove sediment as it accumulates and place it in a stable area approved by the engineer.
8. The use of bales containing noxious weeds will not be permitted.

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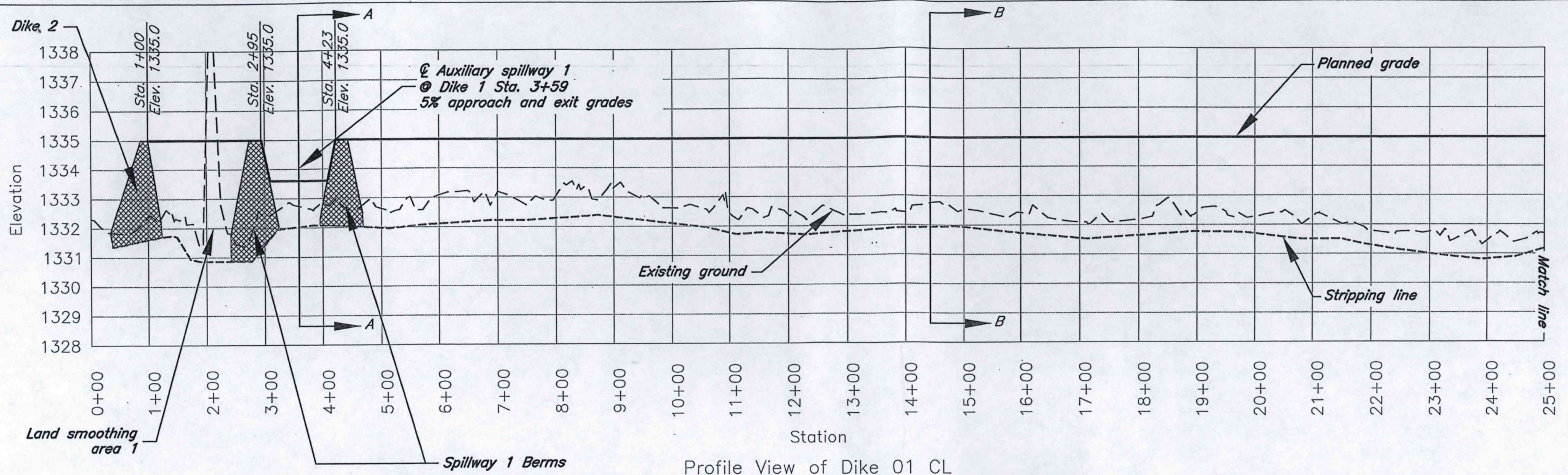
Date	02/16
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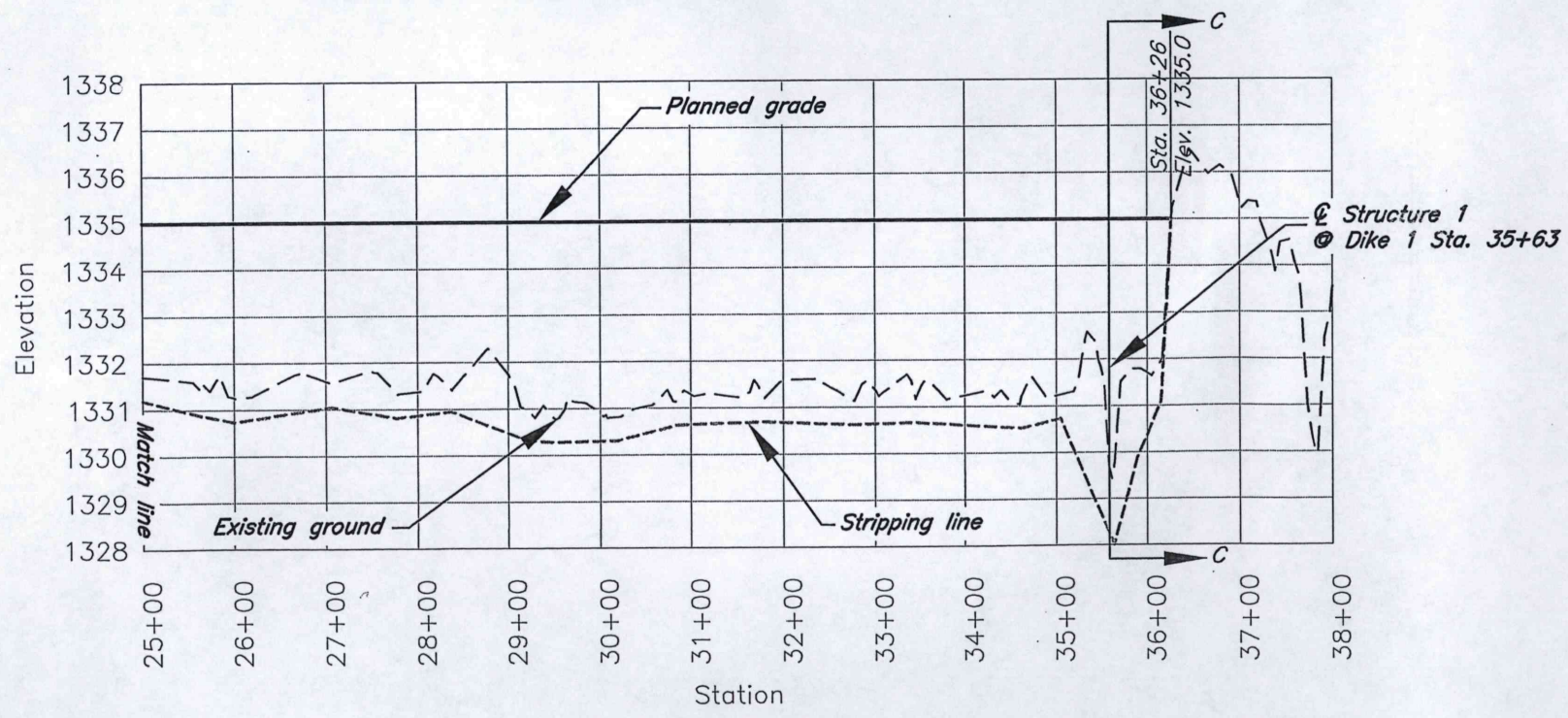
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Sediment Control Details



Profile View of Dike 01 CL

Note: Strip base of dike approximately 0.5' deep minimum to remove vegetation, topsoil, and other non-suitable material prior to installation of fill material.



Profile View of Dike 01 CL

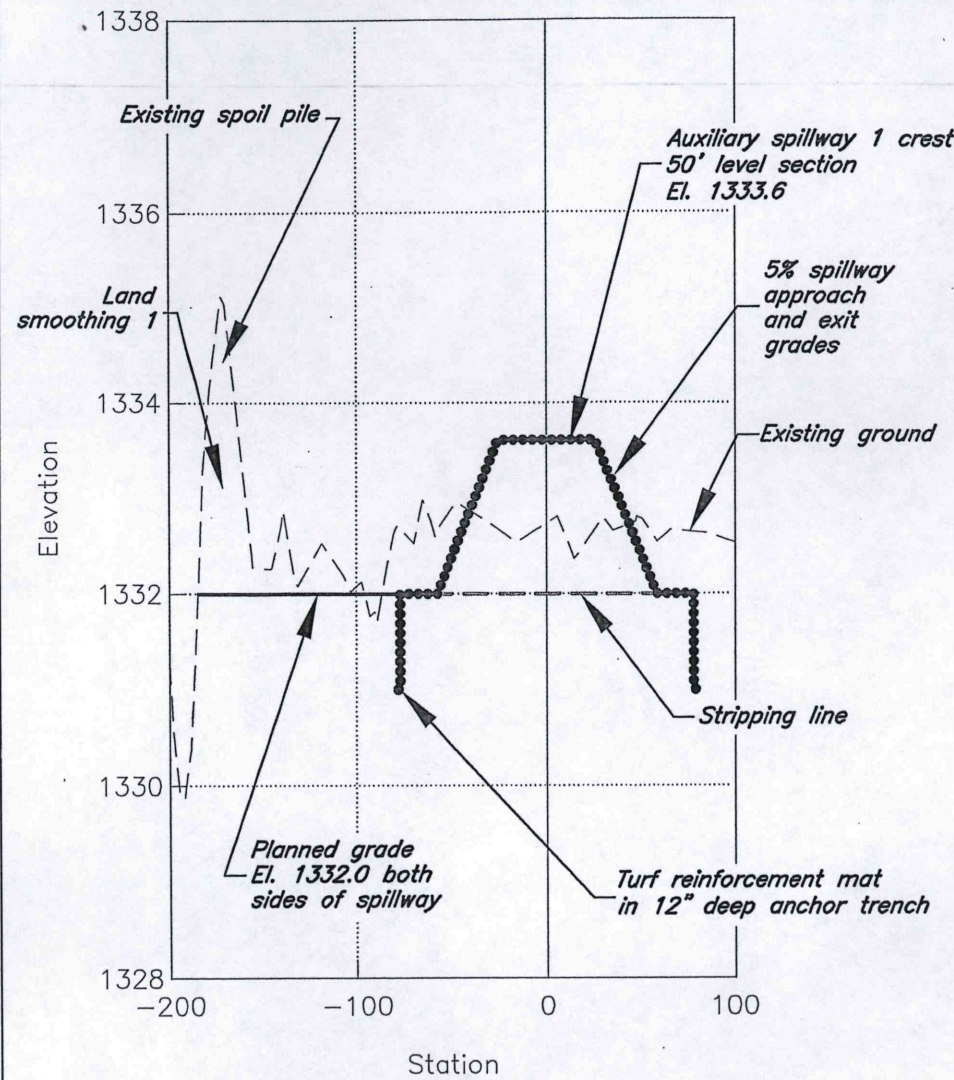
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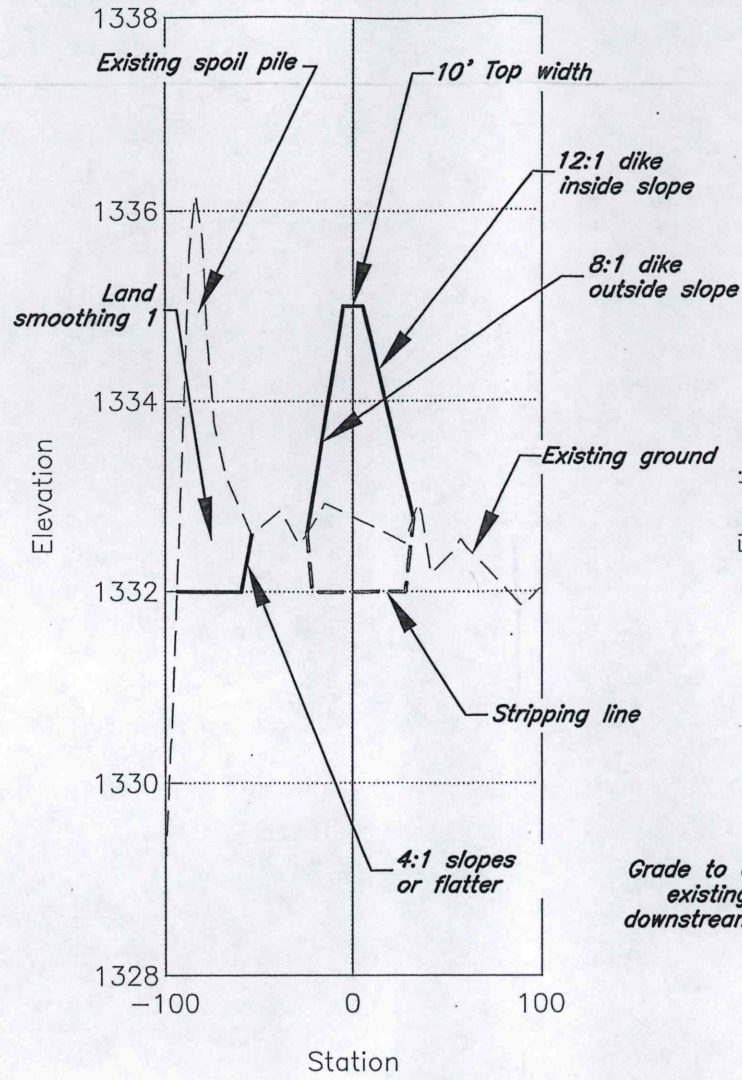
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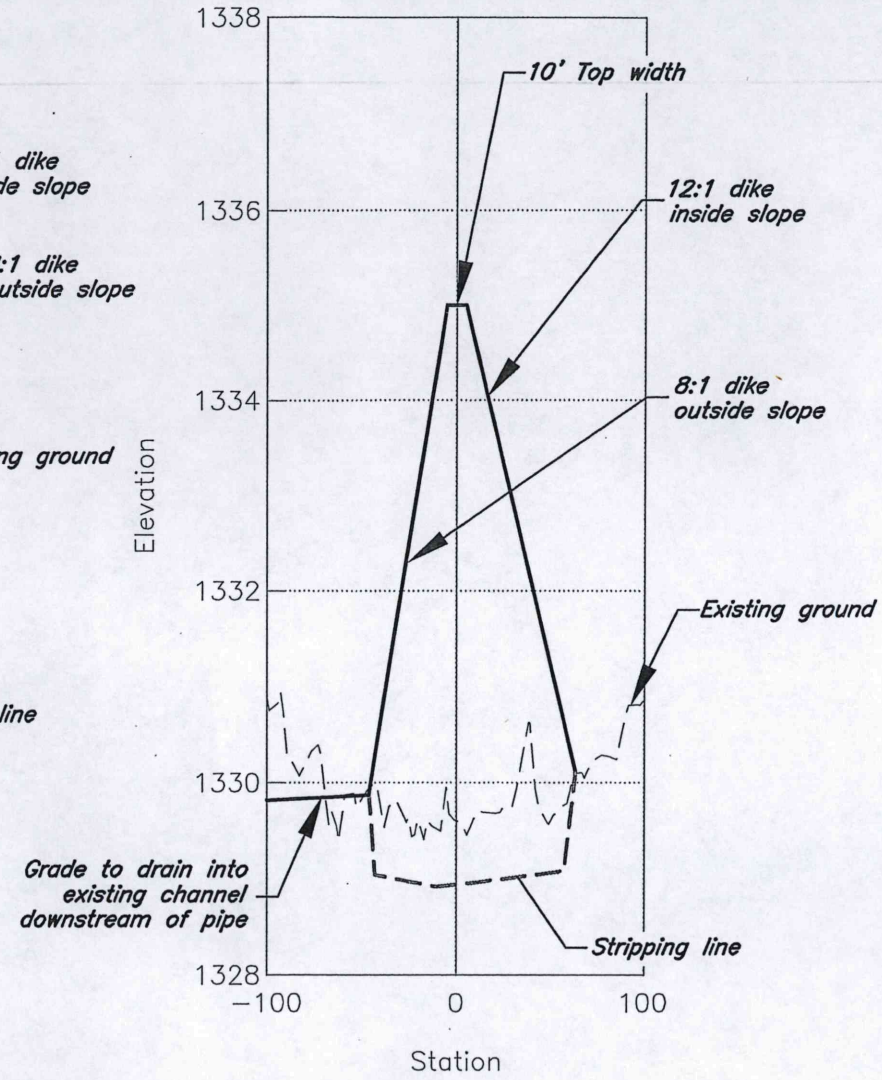
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Sheet 10 of 24



Section A-A



Section B-B



Section C-C

Dike 1 Table		
Sta.	Planned Elev.	As-Built Elev.
1+00	1335.0	
2+95	1335.0	
Spillway 1		
4+23	1335.0	
6+00	1335.0	
8+00	1335.0	
10+00	1335.0	
12+00	1335.0	
14+00	1335.0	
16+00	1335.0	
18+00	1335.0	
20+00	1335.0	
22+00	1335.0	
24+00	1335.0	

Dike 1 Table		
Sta.	Planned Elev.	As-Built Elev.
26+00	1335.0	
28+00	1335.0	
30+00	1335.0	
32+00	1335.0	
34+00	1335.0	
36+26±	1335.0	

Auxiliary Spillway 1 Table					
Distance	Stripping Subgrade Elev.	Planned Bottom Elev.	50' Left As-Built Elev.	Center As-Built Elev.	50' Right As-Built Elev.
-57.0	1332.0	1332.0			
-41.0	1332.0	1332.8			
-25.0	1332.0	1333.6			
0	1332.0	1333.6			
25.0	1332.0	1333.6			
41.0	1332.0	1332.8			
57.0	1332.0	1332.0			

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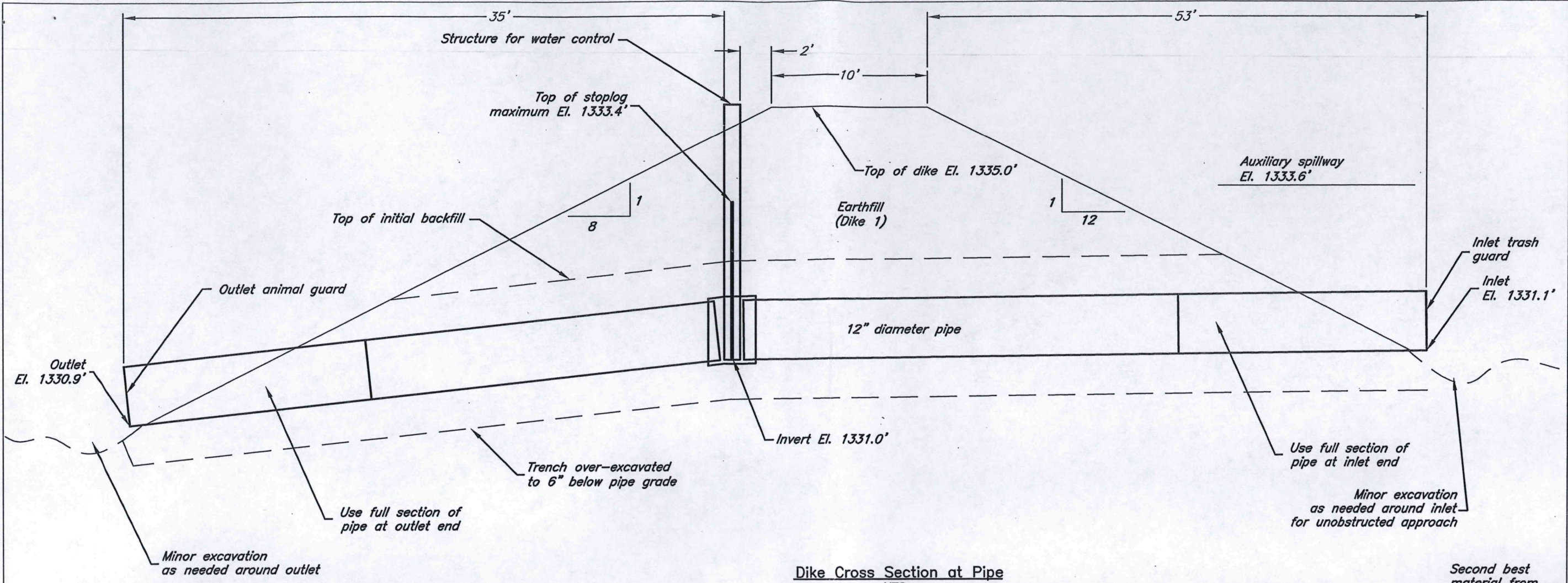
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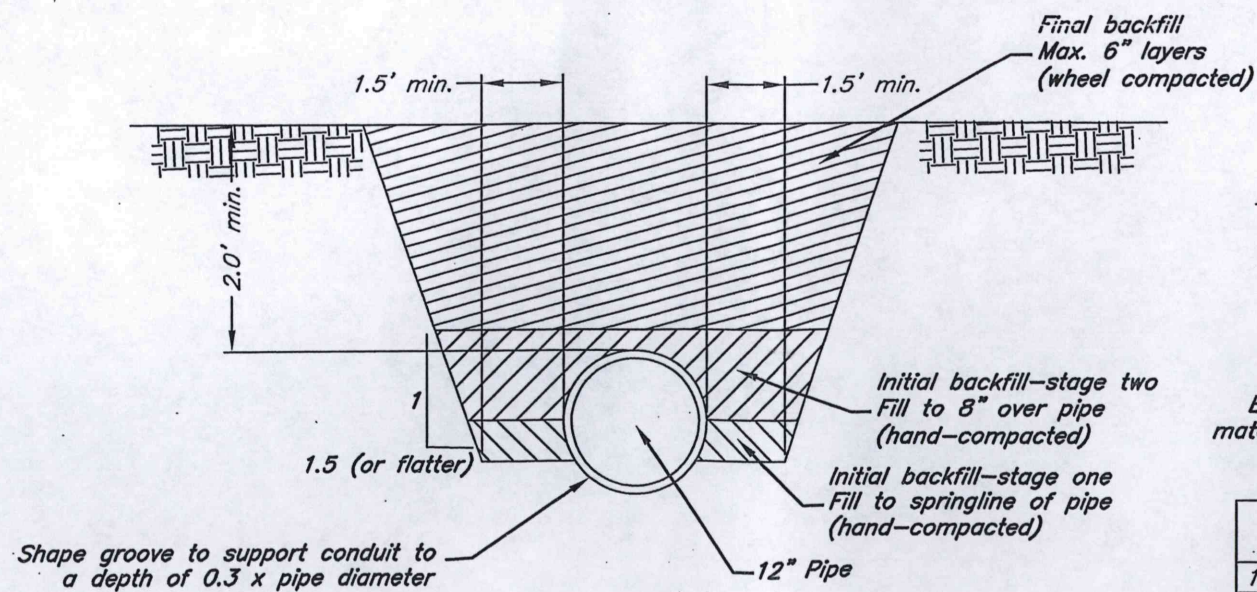
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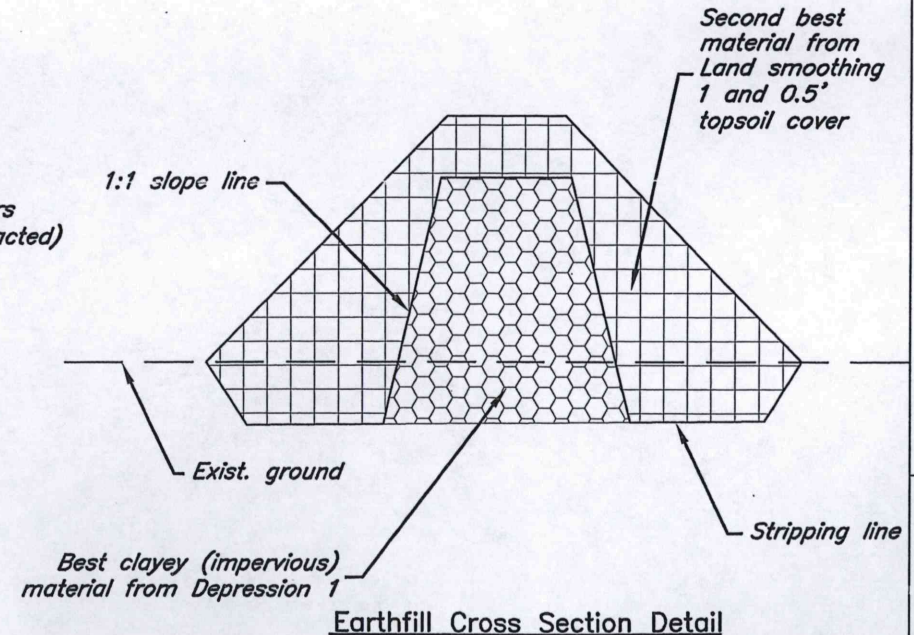
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 Drawing Name Talmo Marsh_TB
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 Sheet 11 of 24



Dike Cross Section at Pipe
NTS



Pipe Trench Detail
NTS



Earthfill Cross Section Detail

ITEM	UNIT	DESIGN QUANTITY	AS-BUILT QUANTITY
12" Plastic pipe	Lin.Ft.	100	
Structure for Water Control (4' tall)	Each	1	
Inlet Trash Guard	Each	1	
Outlet Animal Guard	Each	1	

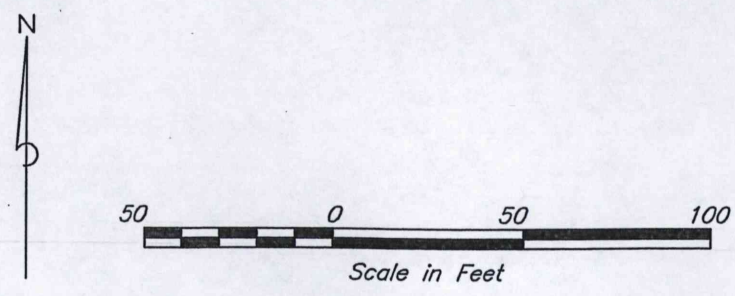
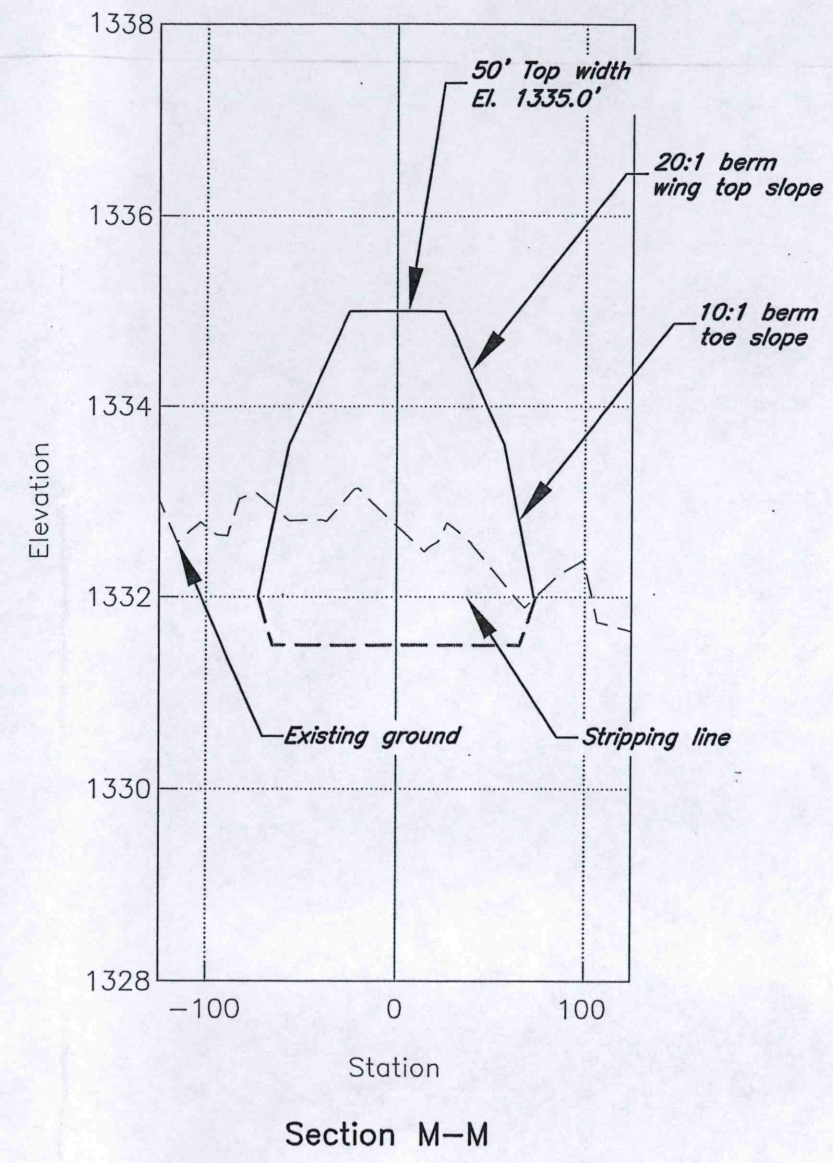
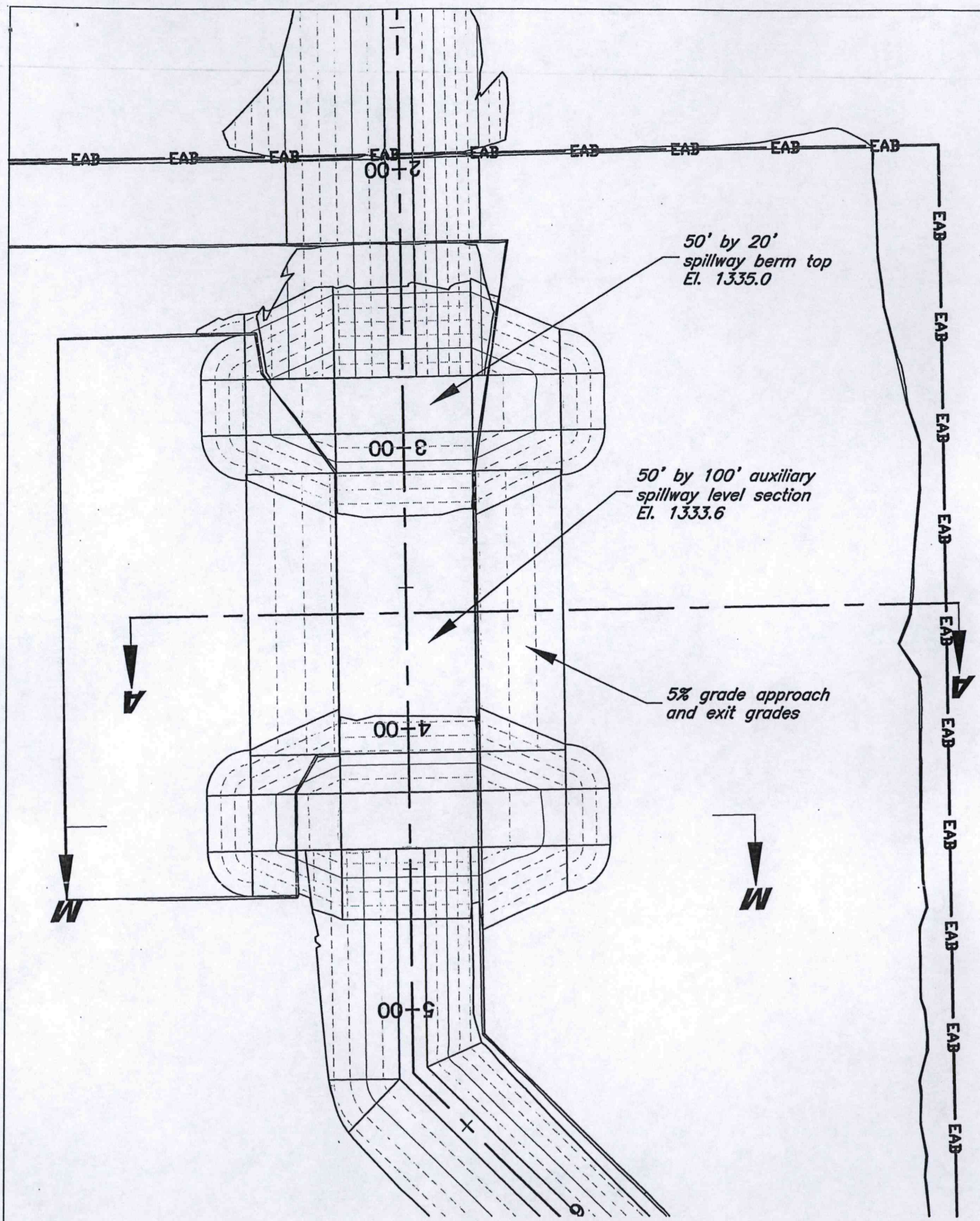
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Structure for Water Control 1 Details



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Auxiliary Spillway 1 Details

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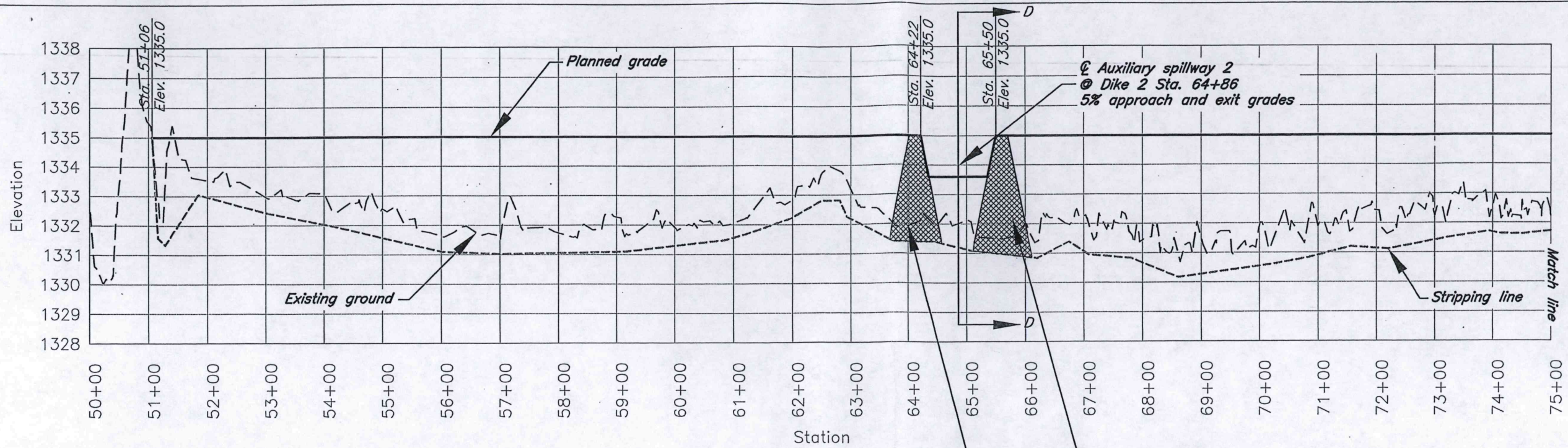
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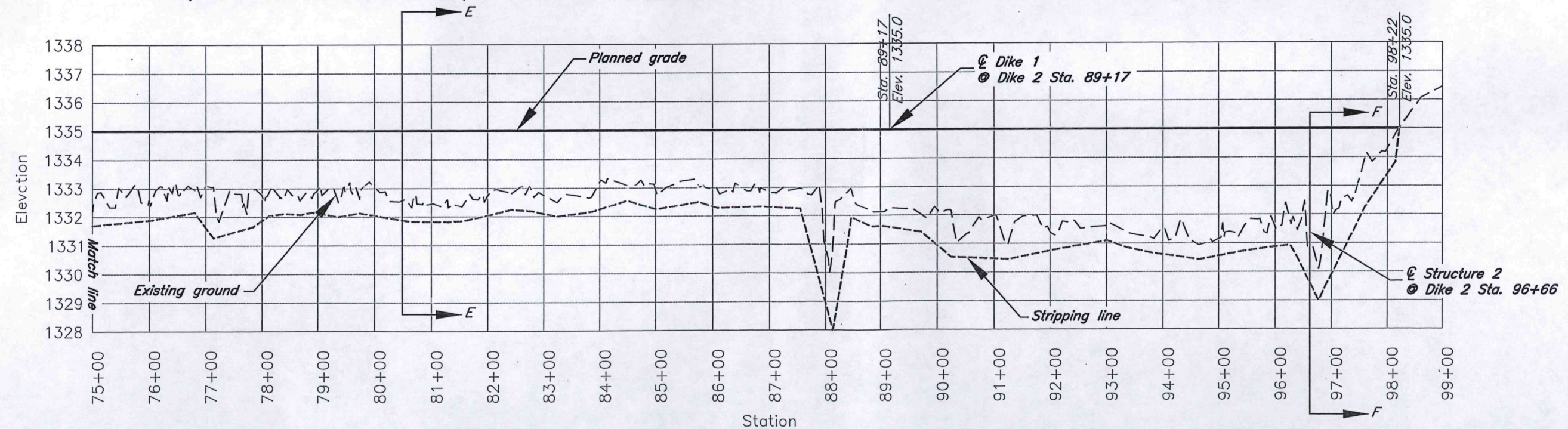
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Profile View of Dike 2 CL

Note: Strip base of dike approximately 0.5' deep minimum to remove vegetation, topsoil, and other non-suitable material prior to installation of fill material.



Profile View of Dike 2 CL

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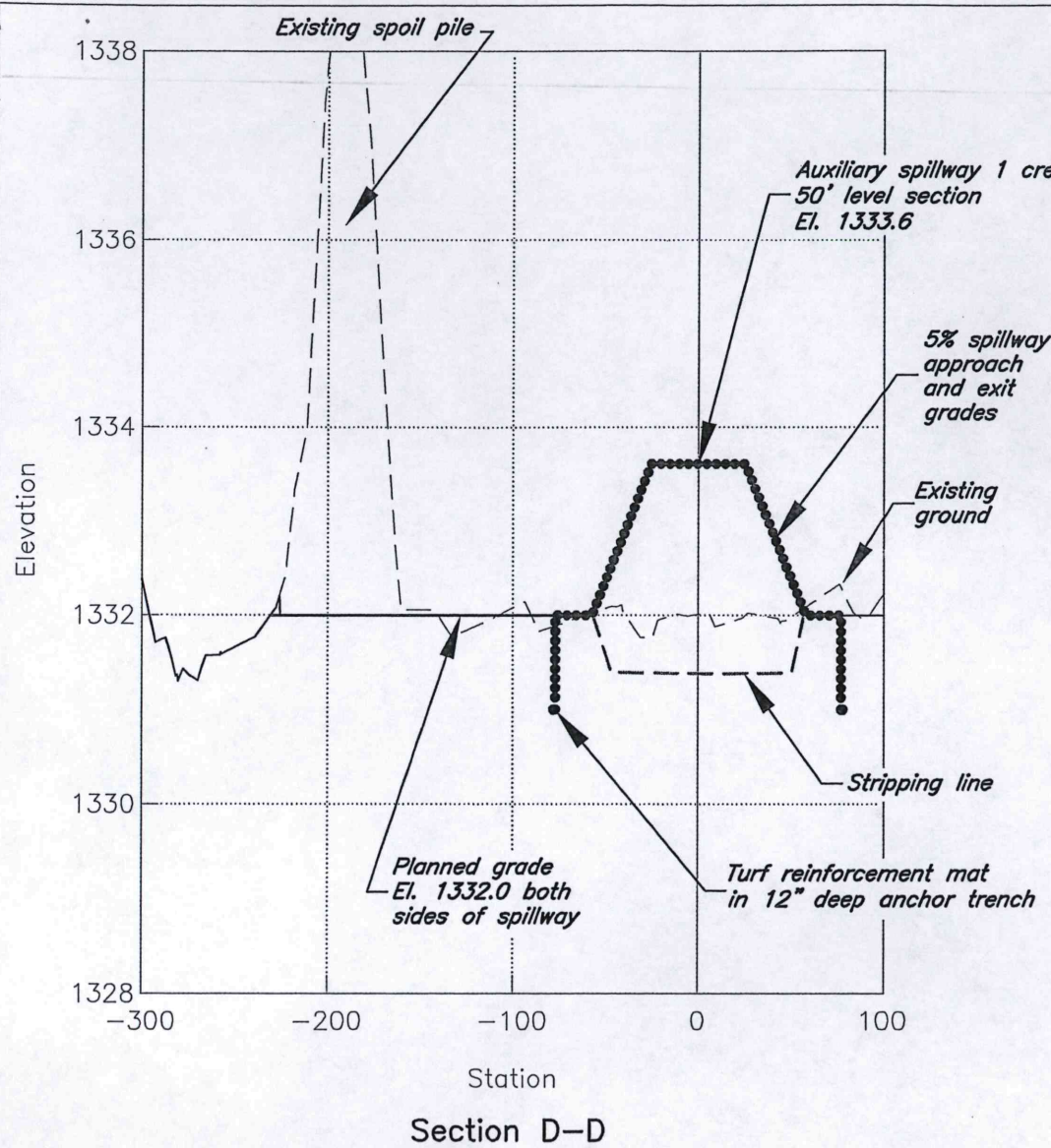
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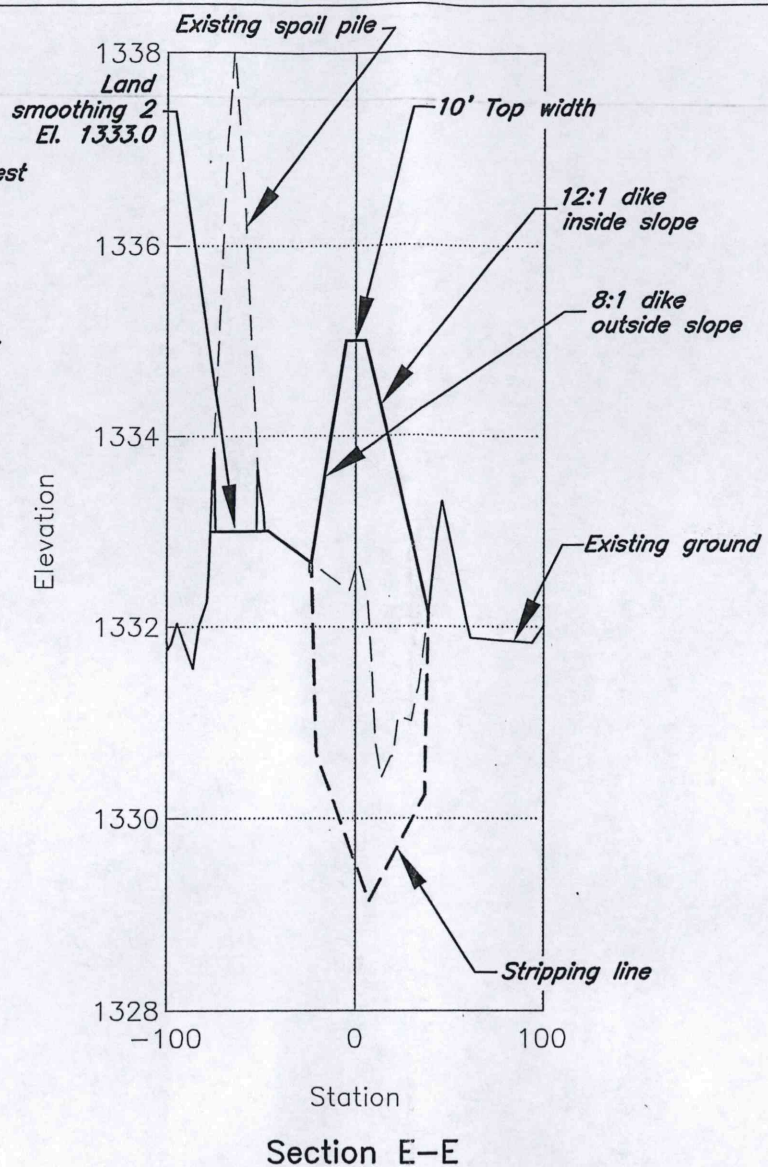


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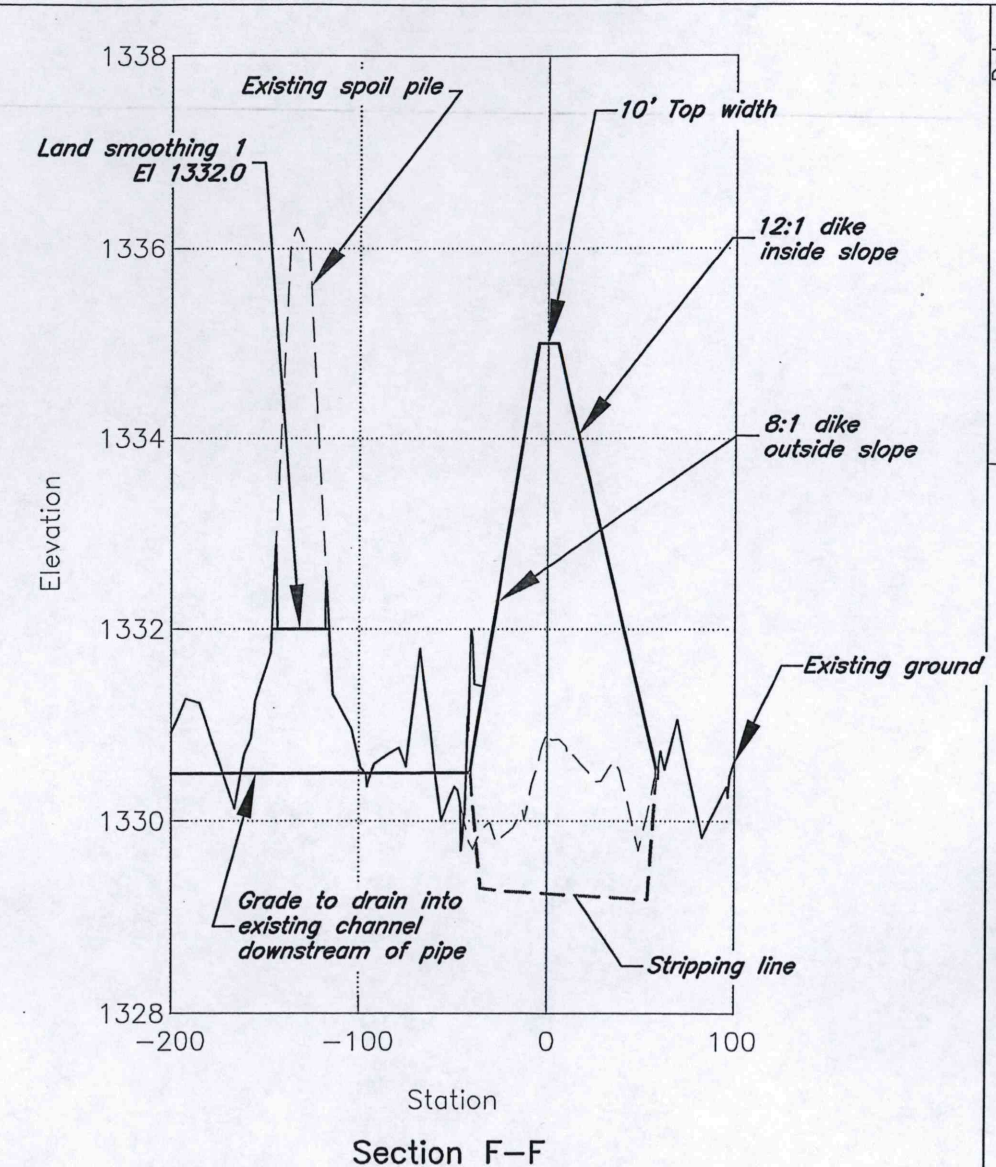
Dike 2 Details (1 of 2)



Section D-D



Section E-E



Section F-F

Dike 2 Table		
Sta.	Planned Elev.	As-Built Elev.
51+06±	1335.0	
53+00	1335.0	
55+00	1335.0	
57+00	1335.0	
59+00	1335.0	
61+00	1335.0	
63+00	1335.0	
64+22	1335.0	
Spillway 2		
65+50	1335.0	
67+00	1335.0	
69+00	1335.0	
71+00	1335.0	
73+00	1335.0	

Dike 2 Table		
Sta.	Planned Elev.	As-Built Elev.
75+00	1335.0	
77+00	1335.0	
79+00	1335.0	
81+00	1335.0	
83+00	1335.0	
85+00	1335.0	
87+00	1335.0	
89+00	1335.0	
Dike 1		
91+00	1335.0	
93+00	1335.0	
95+00	1335.0	
97+00	1335.0	
98+22±	1335.0	

Auxiliary Spillway 2 Table					
Distance	Stripping Subgrade Elev.	Planned Bottom Elev.	50' Left As-Built Elev.	Center As-Built Elev.	50' Right As-Built Elev.
-57.0	1332.0	1332.0			
-41.0	1332.0	1332.8			
-25.0	1332.0	1333.6			
0	1332.0	1333.6			
25.0	1332.0	1333.6			
41.0	1332.0	1332.8			
57.0	1332.0	1332.0			

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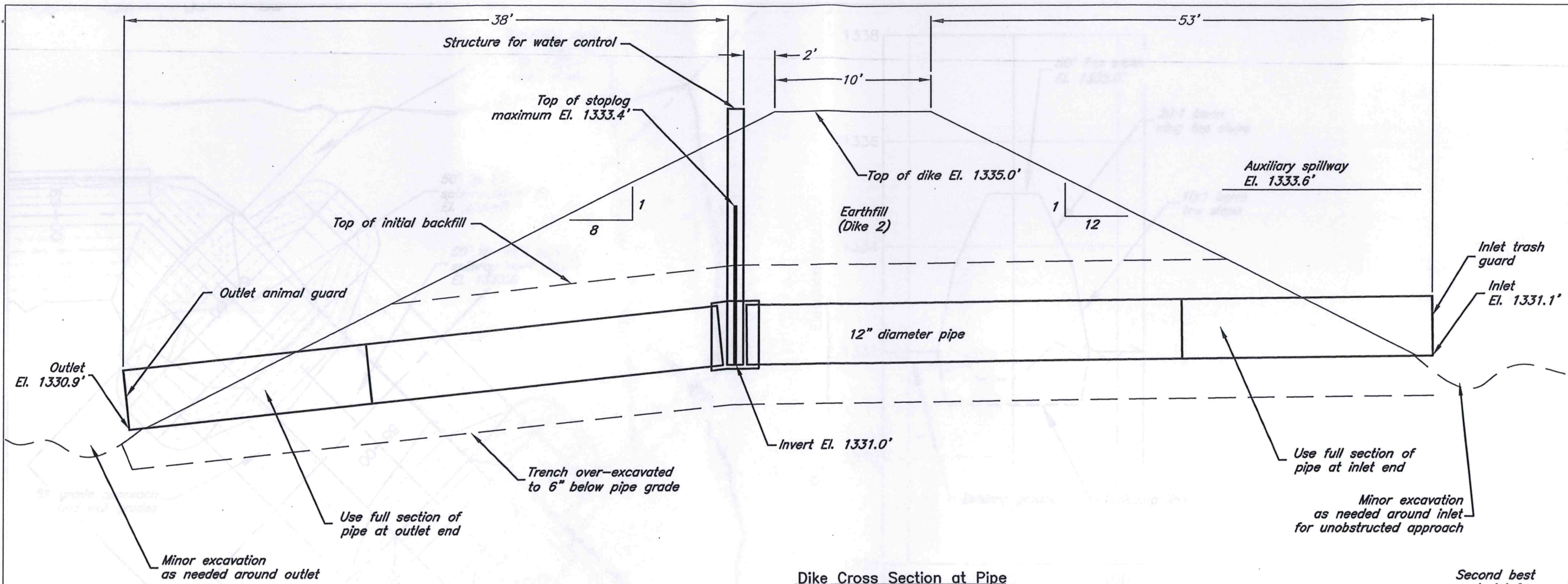
Dike 2 Details (2 of 2)

Date	02/16
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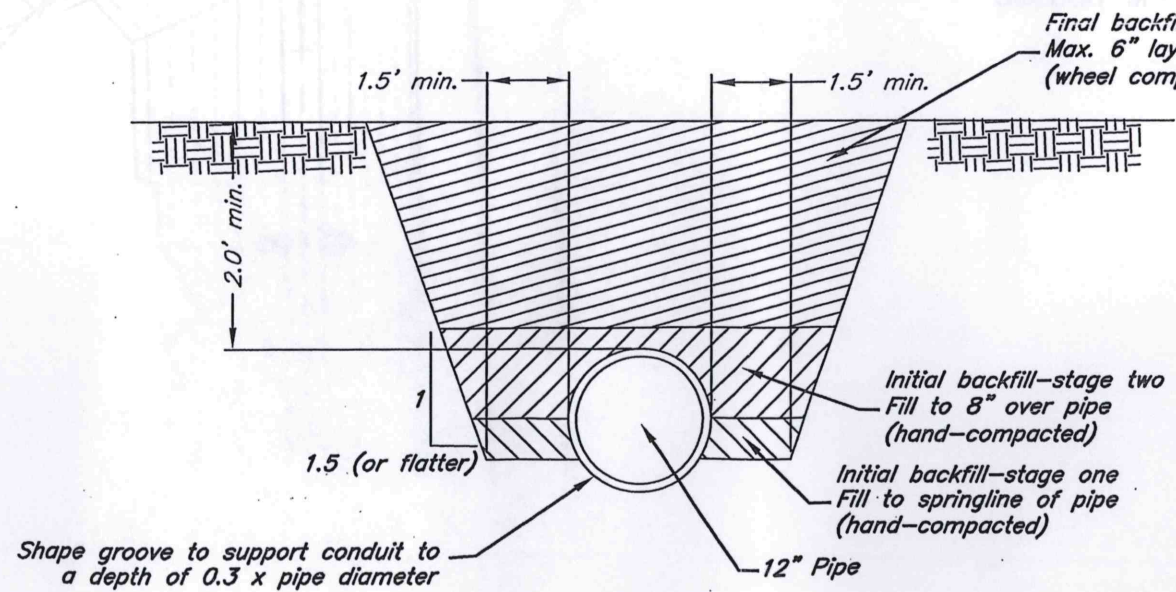
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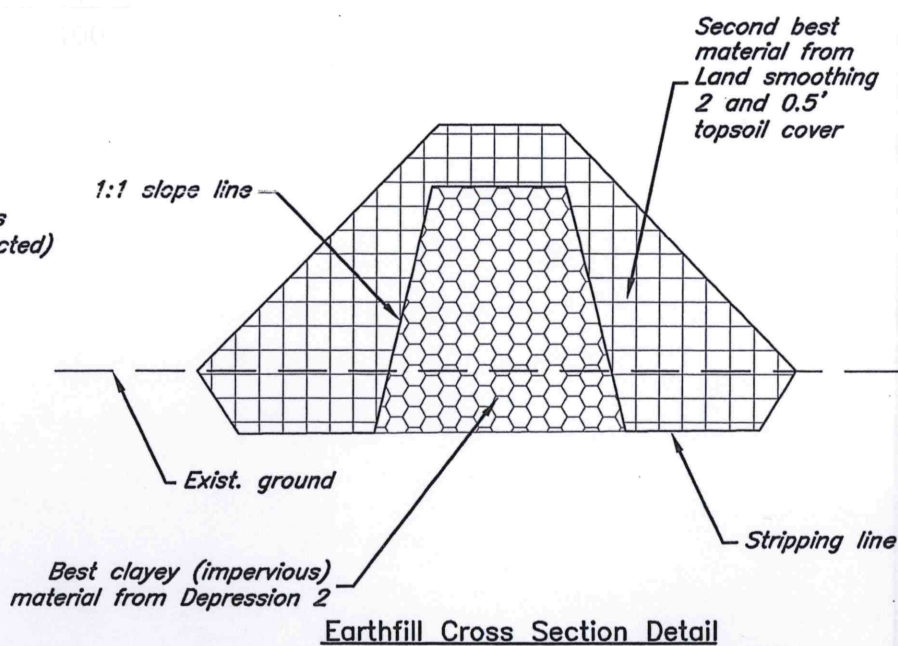
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 Sheet 15 of 24



Dike Cross Section at Pipe
NTS



Pipe Trench Detail
NTS



Earthfill Cross Section Detail

ITEM	UNIT	DESIGN QUANTITY	AS-BUILT QUANTITY
12" Plastic pipe	Lin.Ft.	100	
Structure for Water Control (4' tall)	Each	1	
Inlet Trash Guard	Each	1	
Outlet Animal Guard	Each	1	

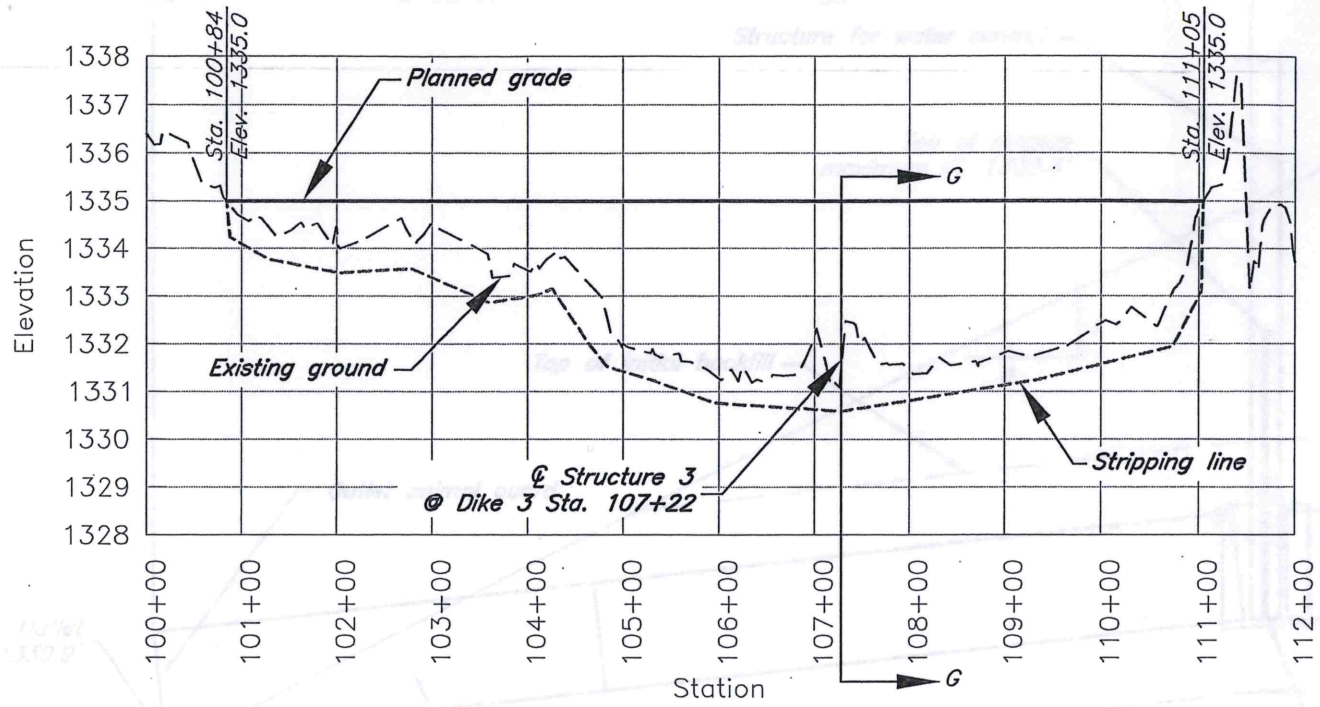
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Designed	PAC
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Checked	PTL
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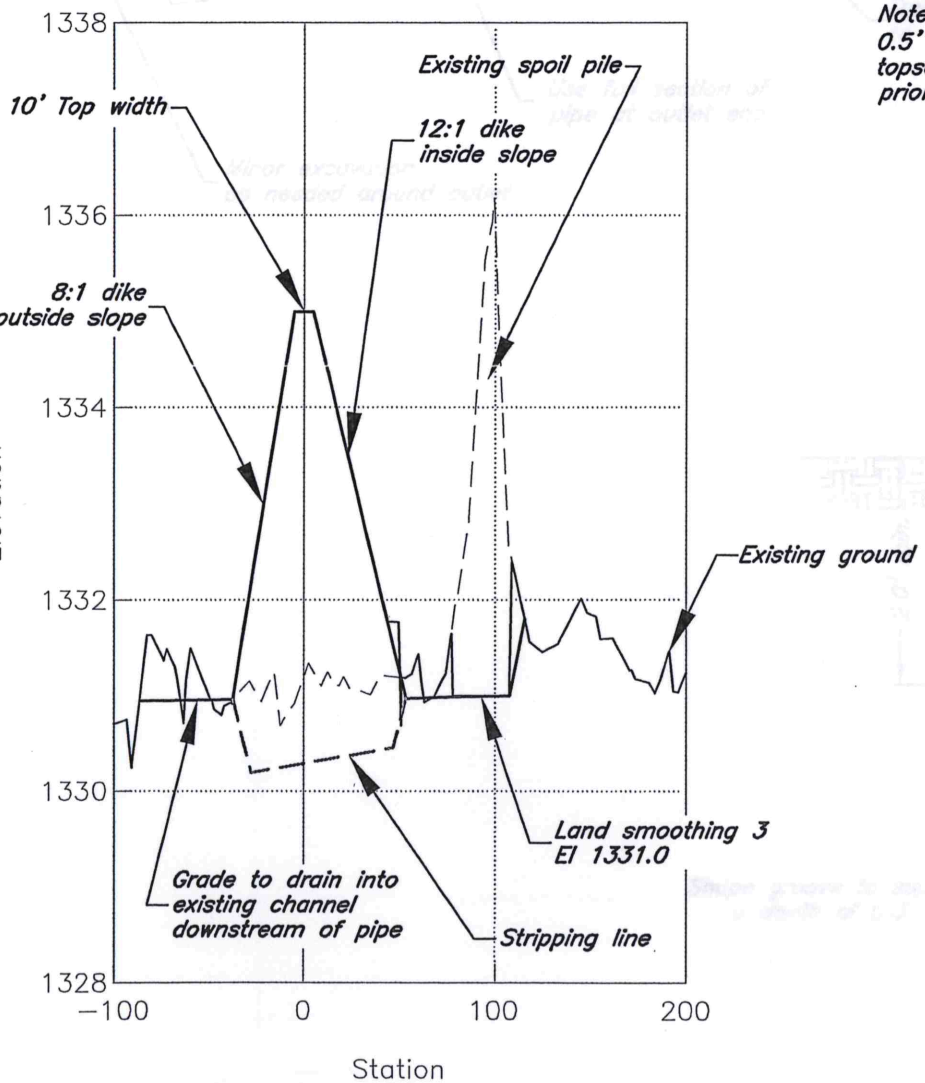
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Profile View of Dike 3 CL



Section G-G

Note: Strip base of dike approximately 0.5' deep minimum to remove vegetation, topsoil, and other non-suitable material prior to installation of fill material.

Sta.	Planned Elev.	As-Built Elev.
100+84±	1335.0	
103+00	1335.0	
105+00	1335.0	
107+00	1335.0	
109+00	1335.0	
111+05±	1335.0	

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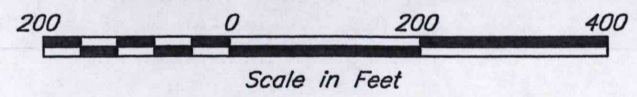
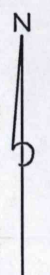
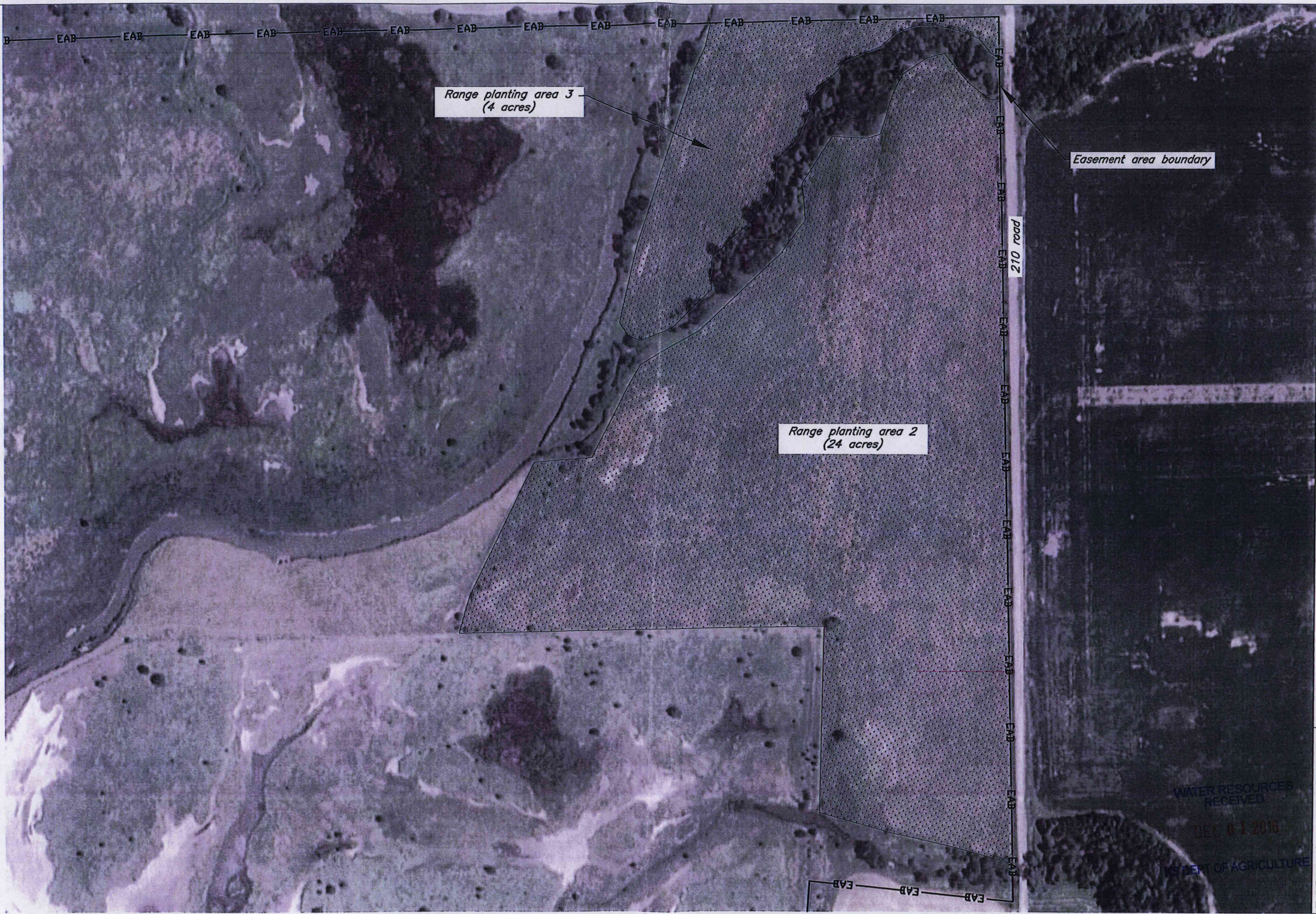
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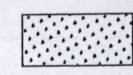
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Dike 3 Details



 Chemical weed control and range planting

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Drawn	PAC		02/16
Checked	PTL		02/16
Approved			

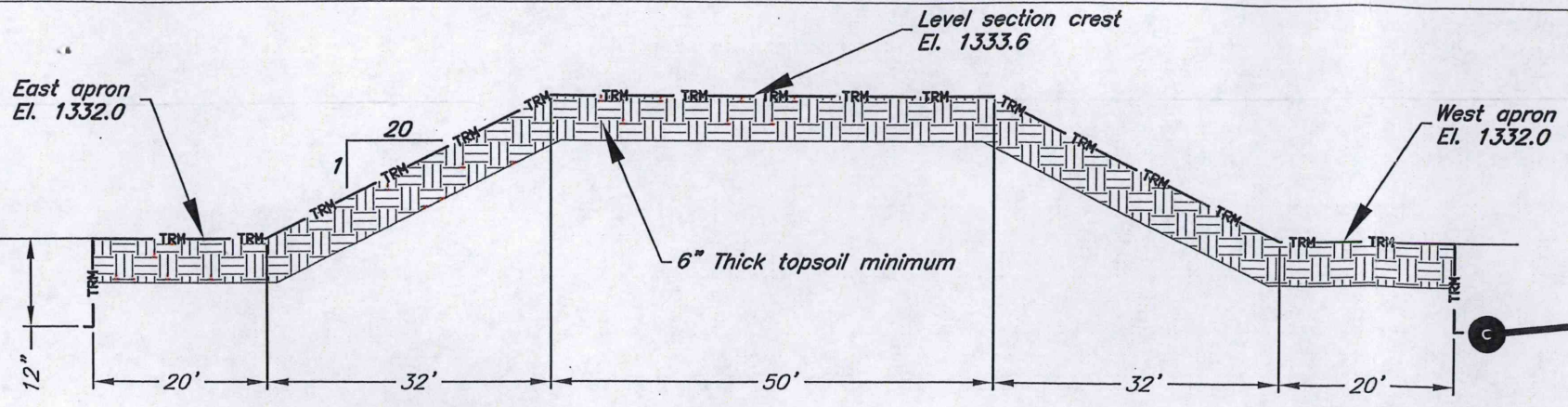
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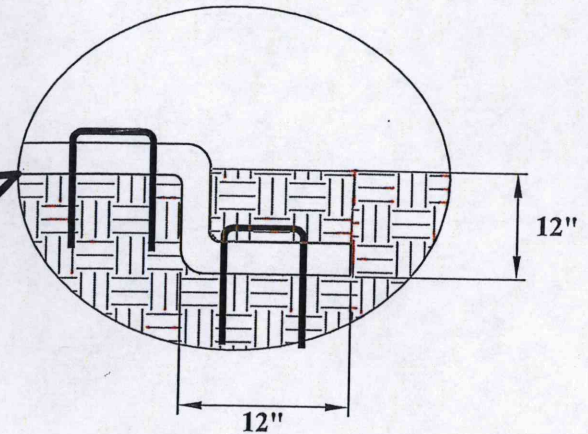
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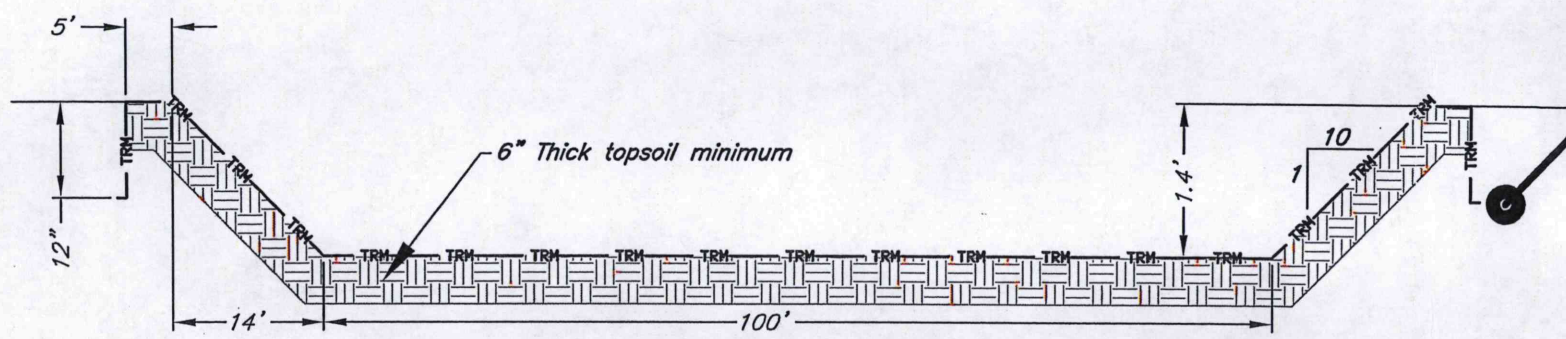
Planting Details 4



Profile of Auxiliary Spillway Centerline (typical)
(not to scale)



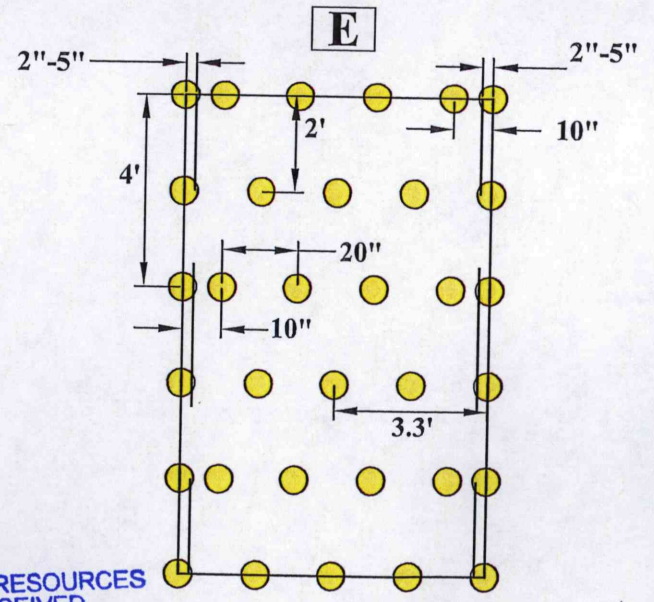
Anchor Trench Detail



Cross Section of Auxiliary Spillway at Centerline of Dike (typical)
(not to scale)

Installation Notes

1. Prepare topsoil before installing TRM, including any necessary rolling or packing and drilling seed.
2. Install TRM rolls parallel to the flow of water.
3. Anchor the TRM with a row of staples and anchors approximately 12" apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to compacted soil.
4. All TRM must be securely fastened to soil surface by placing anchors in appropriate locations as shown in the anchor pattern guide on this sheet.
5. Place consecutive TRM end-over-end (shingle style) with a 6" - 8" overlap. Use a double row of staples staggered 4" apart and 4" on center to secure TRM.
6. Adjacent TRM must be overlapped approximately 8" and fastened.
7. Approximately one-half the distance down the 20% slope, install a double row of staples staggered 4" apart and 4" on center over entire width of the channel (known as a "staple check slot").
8. Earth embedment depth of anchors shall be 6" minimum.



3.75 Staples per SQ.YD.

Anchor Pattern

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Turf Reinforcement Mat Details

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RESERVOIR CAPACITY TABLE			
Dike 1 Basin			
Elevation	Area	Cumulative Volume	
Feet	Acres	Acre-Feet	
1329.4	0.03	0.0	
1329.8	0.16	0.0	
1330.2	0.43	0.2	
1330.6	3.10	0.9	
1331.0	8.53	3.2	
1331.4	20.80	9.1	
1331.8	30.23	19.3	
1332.2	38.90	33.1	
1332.6	43.51	49.6	
1333.0	46.16	67.5	
1333.4	47.53	86.2	Top of Stoplogs
1333.6	47.95	95.8	Auxiliary Spillway
1335.0	50.82	164.9	Top of Dike

RESERVOIR CAPACITY TABLE			
Dike 2 Basin			
Elevation	Area	Cumulative Volume	
Feet	Acres	Acre-Feet	
1329.4	0.03	0.0	
1329.8	0.18	0.0	
1330.2	0.41	0.2	
1330.6	2.76	0.8	
1331.0	3.77	2.1	
1331.4	14.44	5.7	
1331.8	36.26	15.9	
1332.2	54.32	34.0	
1332.6	64.56	57.8	
1333.0	69.74	84.6	
1333.4	72.93	113.2	Top of Stoplogs
1333.6	75.1	128.0	Auxiliary Spillway
1335.0	80.33	238.2	Top of Dike

RESERVOIR CAPACITY TABLE			
Dike 3 Basin			
Elevation	Area	Cumulative Volume	
Feet	Acres	Acre-Feet	
1330.2	0.00	0.0	
1330.6	0.01	0.0	
1331.0	0.61	0.1	
1331.4	0.85	0.4	
1331.8	1.57	0.9	
1332.2	3.33	1.9	
1332.6	5.95	3.7	
1333.0	9.03	6.7	
1333.4	11.79	10.9	Top of Stoplogs
1333.6	12.93	13.4	Auxiliary Spillway
1335.0	23.69	39.0	Top of Dike

DEPRESSION AREAS

ITEM	UNIT	DESIGN QUANTITY
Depression 1	Acre	3.0
Depression 2	Acre	3.3

CRITICAL AREA PLANTING AND MULCHING AREAS

ITEM	UNIT	DESIGN QUANTITY	UNIT	DESIGN QUANTITY
Dike 1	Acre	6.5	Ton	13.0
Dike 2	Acre	7.9	Ton	15.8
Dike 3	Acre	1.5	Ton	3.0
Land Smoothing 1	Acre	4.0	Ton	8.0
Land Smoothing 2	Acre	3.8	Ton	7.6
Spillway 1	Acre	0.5	Ton	None
Spillway 2	Acre	0.5	Ton	None
Misc. Disturbance	Acre	2.3	Ton	4.6

BENCHMARK INFORMATION

Benchmark	Northing	Easting	Elevation	Description
BM 1	14411689.73	2041443.18	1338.58'	Top of Warren Easement boundary survey cap 10
BM 3	14414313.55	2041391.76	1339.58'	Top of Warren Easement boundary survey cap 01

NAD 83 (CORS96) (ITRF 2000)
UTM Zone 14F NAVD 88 Geoid 03

TABLE OF QUANTITIES

ITEM	UNIT	DESIGN QUANTITY	AS-BUILT QUANTITY
Site Preparation, Mowing	Acre	70	
Clearing and Grubbing	Acre	3	
Sediment Control Measure	Lin.ft.	120	
Well Plugging, Trost	Each	1	
Well Plugging, Borchardt	Each	1	
Excavation			
Dike 1 Stripping	Cu.Yd.	4310	
Spillway 1 Stripping	Cu.Yd.	100	
Dike 2 Stripping	Cu.Yd.	3690	
Spillway 2 Stripping	Cu.Yd.	100	
Dike 3 Stripping	Cu.Yd.	980	
Land Smoothing Area 1	Cu.Yd.	11880	
Land Smoothing Area 2	Cu.Yd.	11650	
Land Smoothing Area 3	Cu.Yd.	4470	
Depression 1 Stripping	Cu.Yd.	2430	
Depression 1 (Remainder)	Cu.Yd.	10910	
Depression 2 Stripping	Cu.Yd.	2640	
Depression 2 (Remainder)	Cu.Yd.	13600	
Earthfill	Cu.Yd.		
Dike 1 (includes backfill of stripping)	Cu.Yd.	18640	
Spillway 1 Berms	Cu.Yd.	1060	
Spillway 1	Cu.Yd.	450	
Dike 2 (includes backfill of stripping)	Cu.Yd.	19800	
Spillway 2 Berms	Cu.Yd.	1230	
Spillway 2	Cu.Yd.	480	
Dike 3 (includes backfill of stripping)	Cu.Yd.	4040	
Depression 1 Topsoil	Cu.Yd.	2430	
Depression 2 Topsoil	Cu.Yd.	2640	
Critical Area Planting	Acre	27.0	
Mulching	Tons	53	
Turf Reinforcement Mat (Aux. Spillways)	Sq.Yds.	5600	
Structure for Water Control	Each	3	
12" Plastic Pipe	Lin.ft.	300	
12" Heavy duty inlet trash guards	Each	3	
12" Outlet animal guards	Each	3	
Chemical Weed Control	Acre	60.0	
Range Planting	Acre	60.0	

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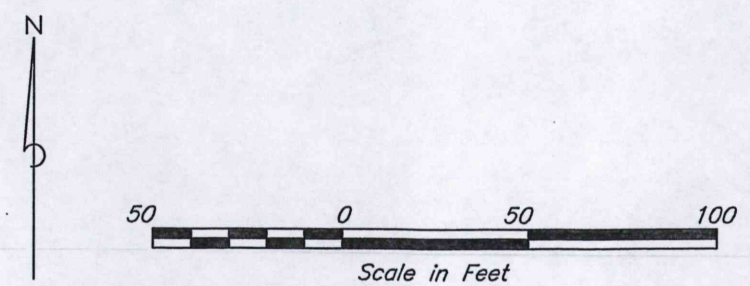
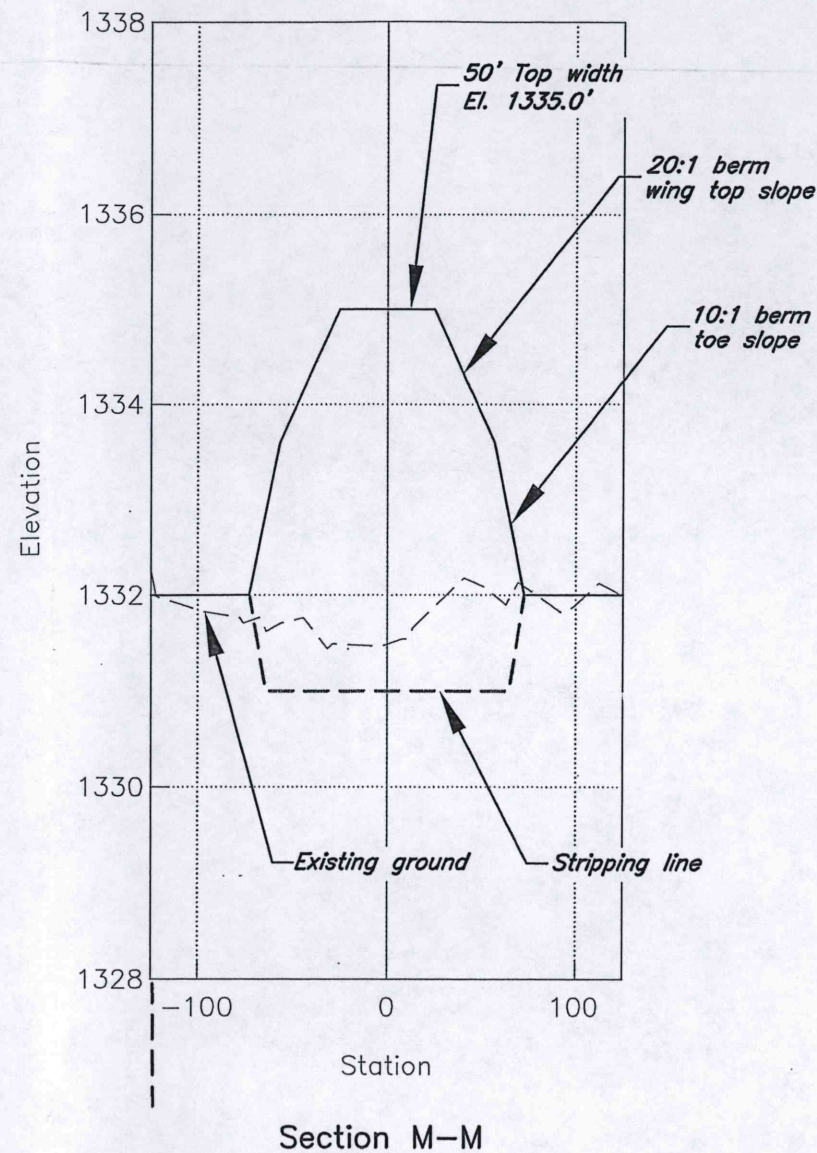
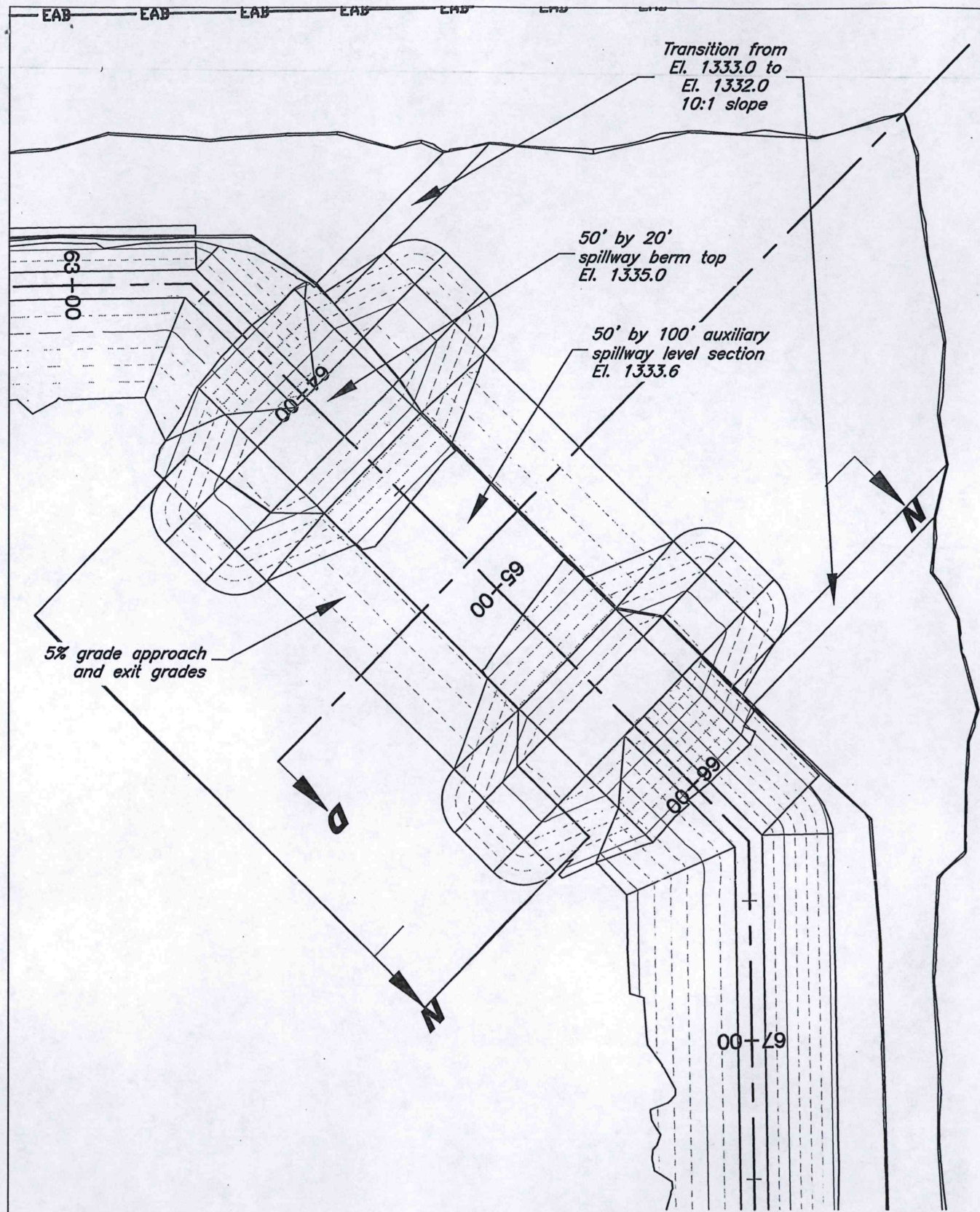
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Tables

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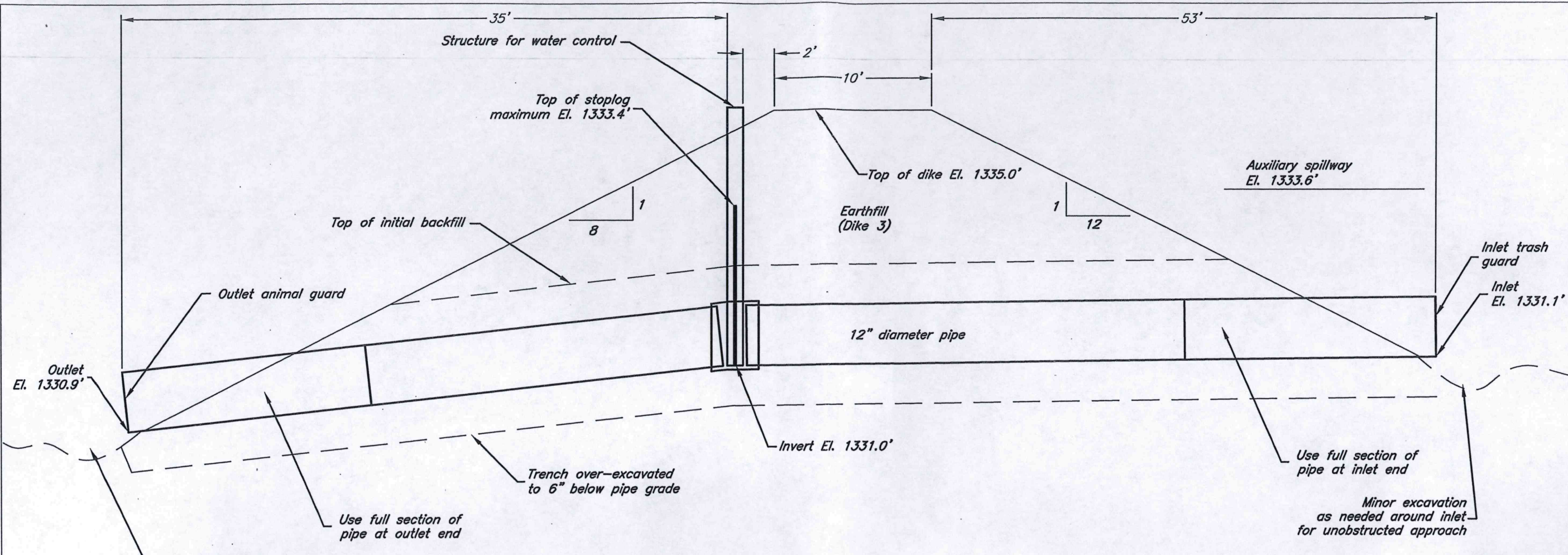
Date	02/16
Designed	PAC
Drawn	PAC
Checked	PTL
Approved	

KDWPT Trost-Borchardt
 Wetland Reserve Program
 Portions of Sections 20, 21, 28 & 29 T4S R2W
 Republic County

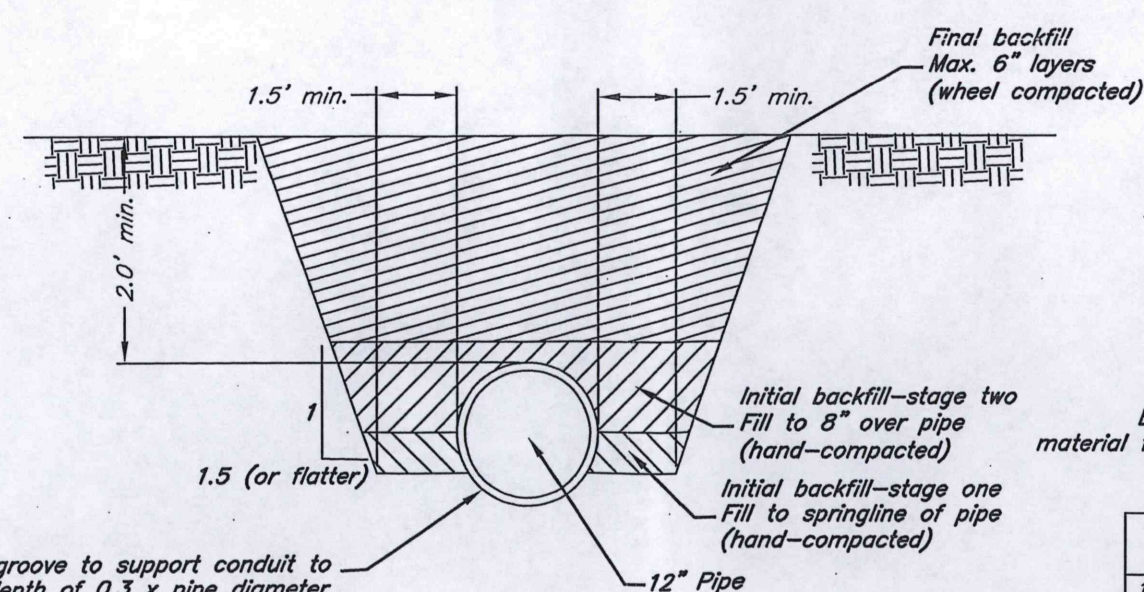
United States Department of Agriculture
USDA
 Natural Resources Conservation Service

Drawing Name
 Talmo Marsh_TB
 2/23/16 3:58 PM
 Sheet 17 of 24

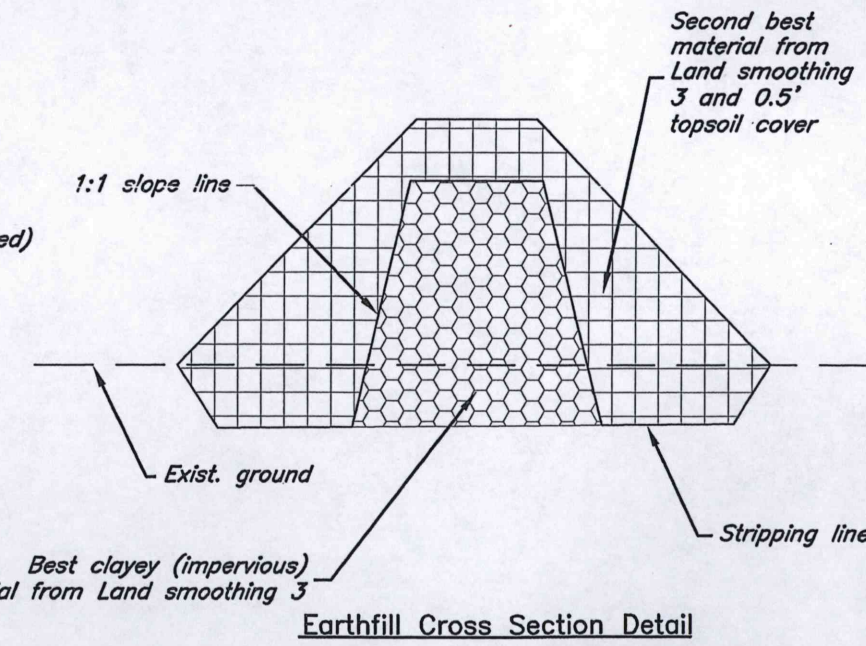
Auxiliary Spillway 2 Details



Dike Cross Section at Pipe
NTS



Pipe Trench Detail
NTS



Earthfill Cross Section Detail

ITEM	UNIT	DESIGN QUANTITY	AS-BUILT QUANTITY
12" Plastic pipe	Lin.Ft.	100	
Structure for Water Control (4' tall)	Each	1	
Inlet Trash Guard	Each	1	
Outlet Animal Guard	Each	1	

Structure for Water Control 3 Details

Date	Designed	Drawn	Checked	Approved
02/16	PAC	PAC	PTL	

KDWPT Trost-Borchardt
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Portions of Sections 20, 21, 28 & 29 T4S R2W
Republic County

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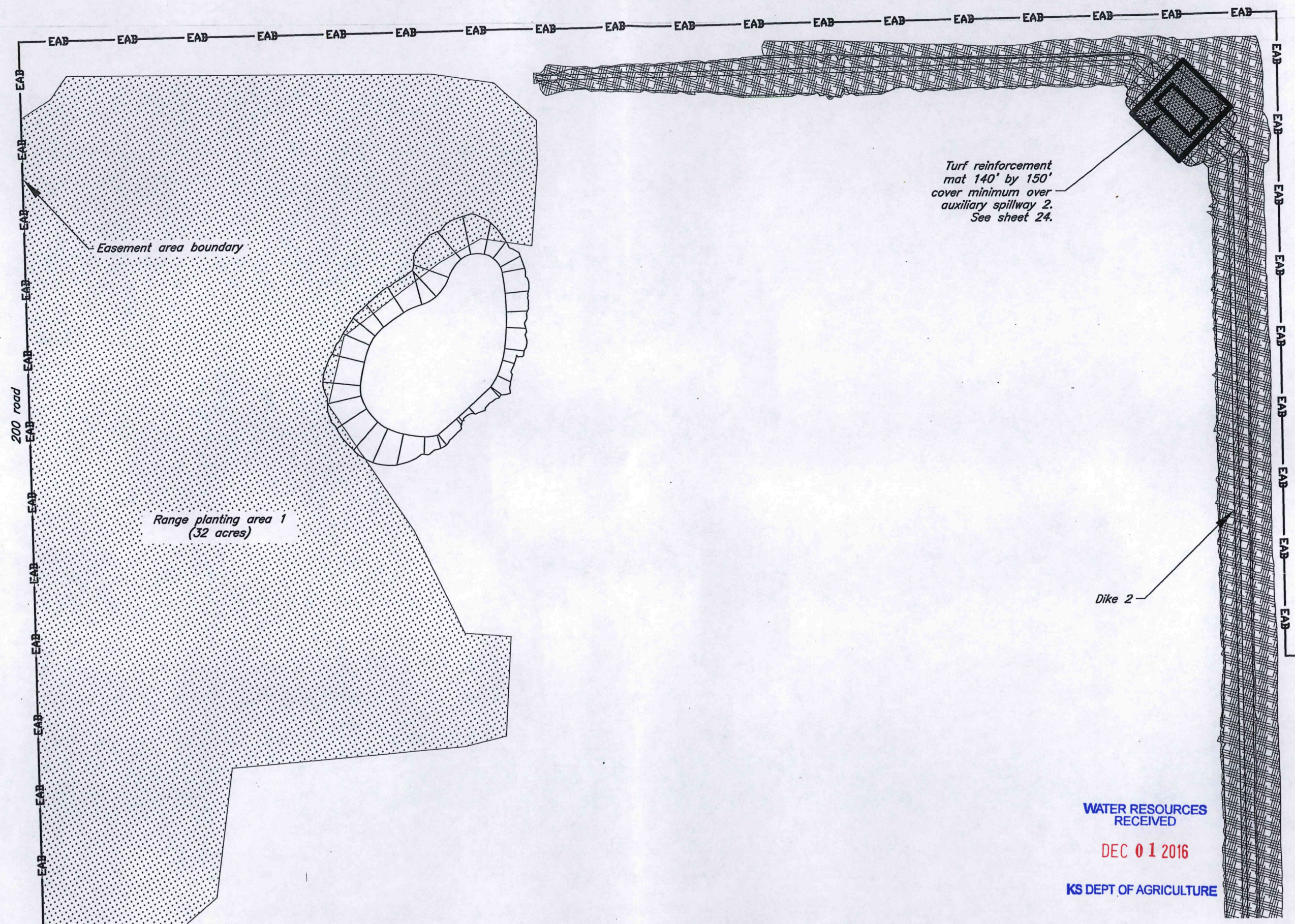
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Turf reinforcement
 mat 140' by 150'
 cover minimum over
 auxiliary spillway 2.
 See sheet 24.

Easement area boundary

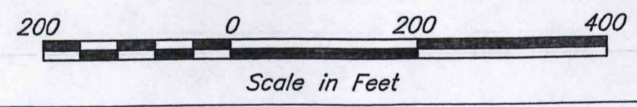
Range planting area 1
 (32 acres)

Dike 2

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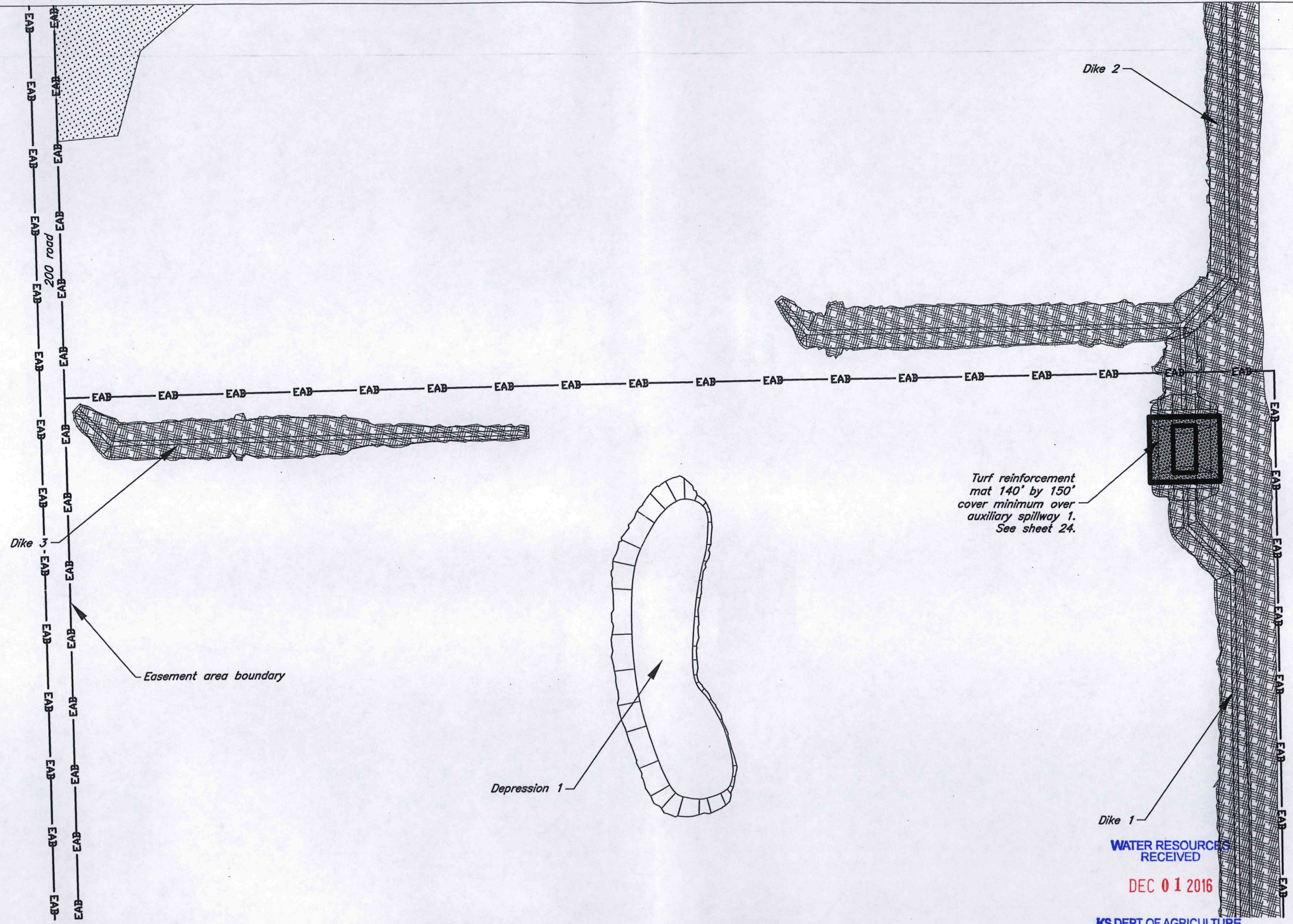
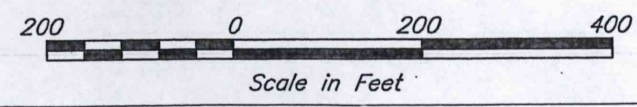
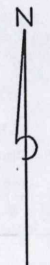
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- Chemical weed control and range planting
- Critical area planting and mulching
- Turf reinforcement mat

Planting Detail 1



- Chemical weed control and range planting
- Critical area planting and mulching
- Turf reinforcement mat

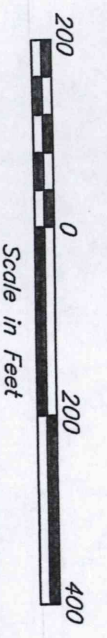
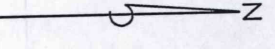
United States Department of Agriculture

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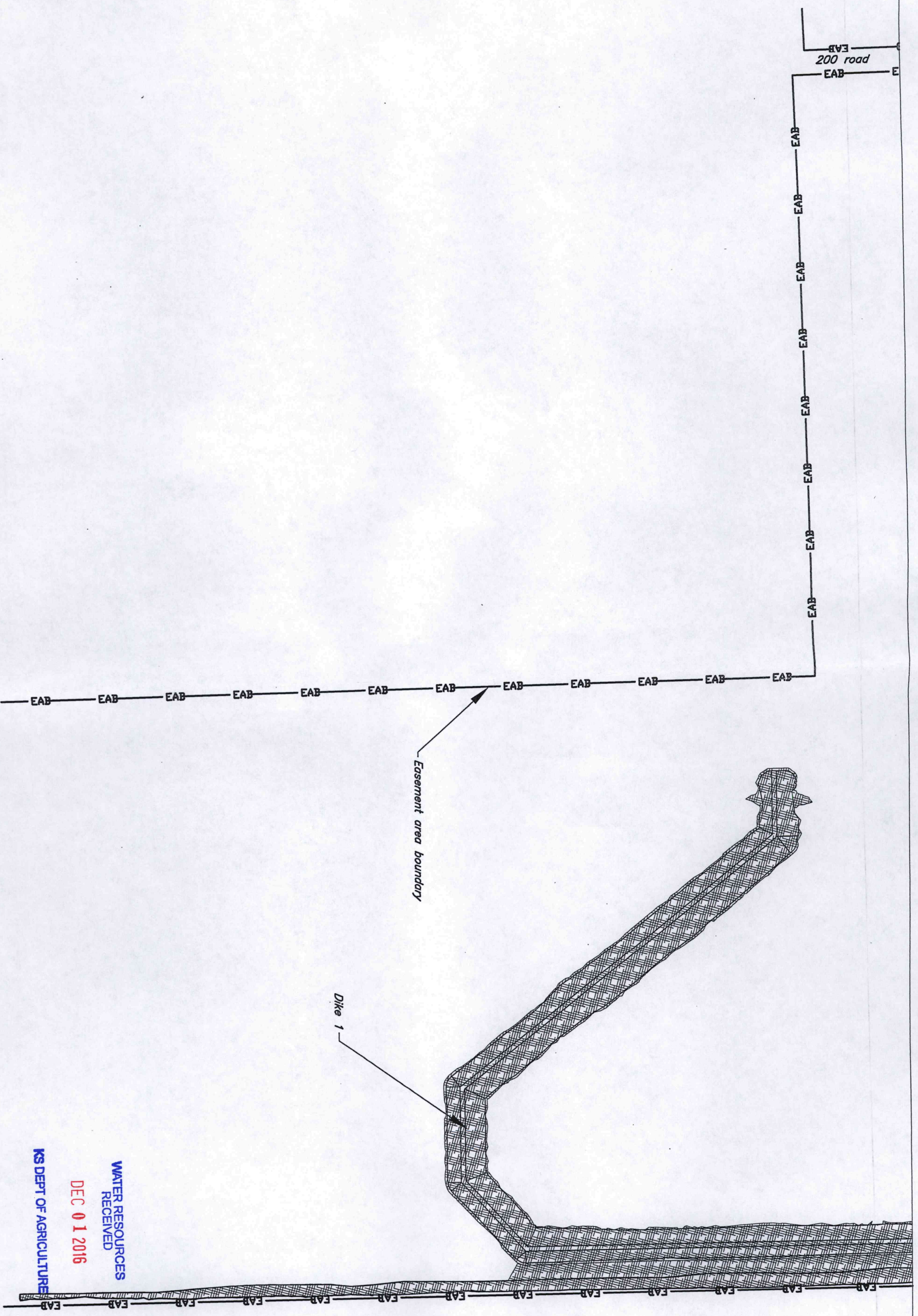
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Planting Details 2

United States Department of Agriculture Natural Resources Conservation Service	KDWPT Trust—Borchardt Wetland Reserve Program Portions of Sections 20, 21, 28 & 29 T4S R2W Republic County
Drawing Name Talmo Marsh_TB 2/23/16 4:30 PM Sheet 21 of 24	Date 02/16 02/16 02/16
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Critical area planting
and mulching



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Planting Details 3

 United States Department of Agriculture Natural Resources Conservation Service	KDWPT Trost-Borchardt Wetland Reserve Program Portions of Sections 20, 21, 28 & 29 T4S R2W Republic County		Date 02/16
	Drawing Name Talmo Marsh_TB 2/23/16 4:30 PM Sheet 22 of 24	Designed <u>PAC</u> Drawn <u>PAC</u> Checked <u>PTL</u> Approved _____	Date 02/16 02/16