

# PUBLIC NOTICE



US ARMY CORPS  
OF ENGINEERS

APPLICANT: SD DEPT. OF  
TRANSPORTATION  
APPLICATION NO: 200330435  
WATERWAY: REDWATER RIVER/  
WILLOW CREEK/  
TRIBUTARIES & WETLANDS

OMAHA DISTRICT

ISSUE DATE: DECEMBER 10, 2003  
EXPIRATION DATE: DECEMBER 31, 2003

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Regulatory Office, 28563 Powerhouse Rd, Room 118, Pierre, SD 57501

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**21 DAY NOTICE**

## JOINT NOTICE OF PERMIT PENDING

US ARMY CORPS OF ENGINEERS  
AND  
SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

The application of the South Dakota Department of Transportation (SD DOT) 700 East Broadway, Pierre, South Dakota 57501, for approval of plans and issuance of a permit under authority of the Secretary of the Army is being considered by the District Engineer, US Army Engineer District, Omaha, Nebraska.

The applicant requests authorization to perform fill placement activities in waters of the United States (Redwater River, Willow Creek, tributaries and wetlands) in association with the addition of two (2) driving lanes and a new turning lane to US Highway 85 from Spearfish to Belle Fourche. The project is located in several sections of Townships 7 and 8 North, Range 2 East, Lawrence and Butte Counties, South Dakota.

The proposed project will consist of constructing new road grade along the east side of the existing highway to include bridge replacement, installation of drainage structures and erosion protection, seeding and mulching of the roadway embankment slopes that may require the temporary construction of detours, work platforms, and stream diversion. Locations that may require temporary detours are at survey stations 252+48 and 392+51 to allow partial (staged) construction while maintaining traffic. A temporary work platform and temporary stream-flow diversion may be required at the Redwater River to facilitate the bridge construction and installation of bank riprap adjacent to the stream. Minor encroachment of the road fill material will occur in two short reaches of the meandering Willow Creek tributary at stations 397+00 - 397+80 and stations 400+80 - 401+40. The project construction will adversely impact a total of 1.35 acres of wetland area in

various locations. The wetland loss will be mitigated (replaced) from the SD DOT existing wetland mitigation bank (Ideal Wetland Bank) located in Tripp County, South Dakota.

The purpose of the project is to improve the roadway for the safety of the traveling public by upgrading the existing two-lane highway to a four-lane highway, including the addition of a left-turn-lane. A high number of accidents have occurred along this road route.

The South Dakota Department of Environment and Natural Resources, Division of Environmental Services, 523 East Capitol Avenue, Pierre, South Dakota, 57501-3181, will review the proposed project for state certification in accordance with the provisions of Section 401 of the Clean Water Act. The certification, if issued, will express the State's opinion that the operations undertaken by the applicant will not result in a violation of applicable water quality standards. The South Dakota Department of Environment and Natural Resources hereby incorporates this public notice as its own public notice and procedures by reference (ARSD 74:51:01).

Omaha District will comply with the National Historic Preservation Act of 1966, as amended. The applicant has indicated that a cultural resources survey report (No. CIS 1687) has been completed and sent to the State Historic Preservation Officer (SHPO) for review. Omaha District will evaluate input by the SHPO in response to the survey report and any additional input by the SHPO and the public in response to this public notice. We may also conduct or require a reconnaissance survey of the permit area or check for unknown historic properties, if warranted.

In compliance with the Endangered Species Act, a preliminary determination has been made that the described work will not affect species designated as threatened or endangered or adversely affect critical habitat. In order to complete our evaluation of this activity, comments are solicited from the U.S. Fish and Wildlife Service and other interested agencies and individuals.

The decision whether to issue a permit will be based on an evaluation of the probable impacts including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposals must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the activity will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production, and, in general the needs and welfare of the people. In addition, the evaluation of the impacts of the project on public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act (40 CFR Part 230).

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental

Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reason for holding a public hearing. The request must be submitted to the US Army Corps of Engineers, South Dakota Regulatory Office, 28563 Powerhouse Road, Room 118, Pierre, South Dakota 57501.

Any interested party (particularly officials of any town, city, county, state, Federal agency, Indian Tribe, or local association whose interests may be affected by the proposed work) is invited to submit to this office, written facts, arguments, or objections on or before December 31, 2003. Any agency or individual having an objection to the proposed work should specifically identify it as an objection with clear and specific reasons. Comments, both favorable and unfavorable, will be accepted, made a part of the record and will receive full consideration in subsequent actions on this permit application. All replies to the public notice should be addressed to the address listed in the previous paragraph. Thomas A Lowin, telephone number (605) 224-8531, may be contacted for additional information.

Comments received after the close of the business day on the expiration date of this public notice will not be considered.

This project, if authorized, will be under the provisions of Section 404 of the Clean Water Act.

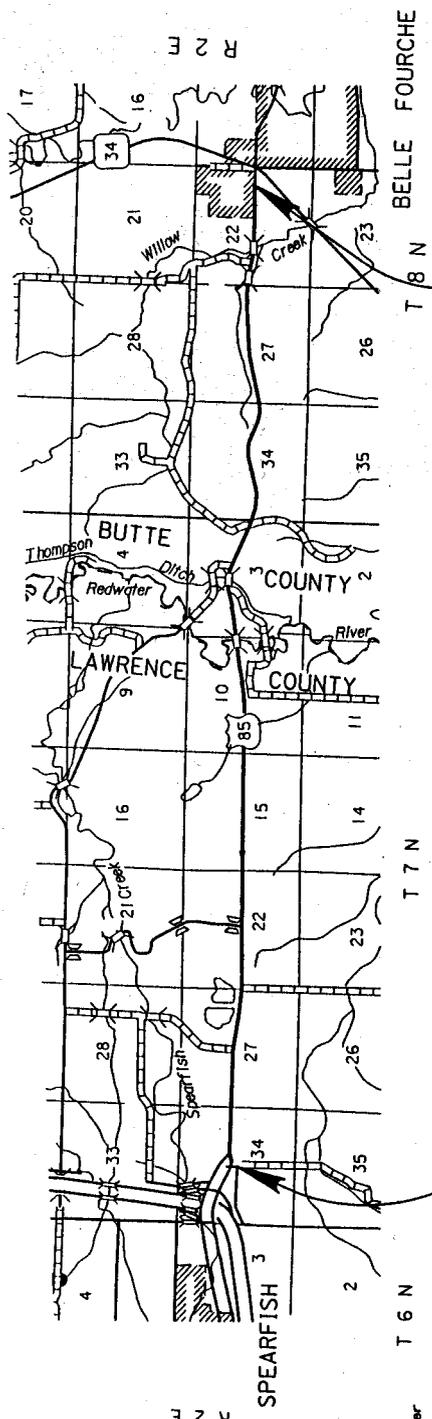
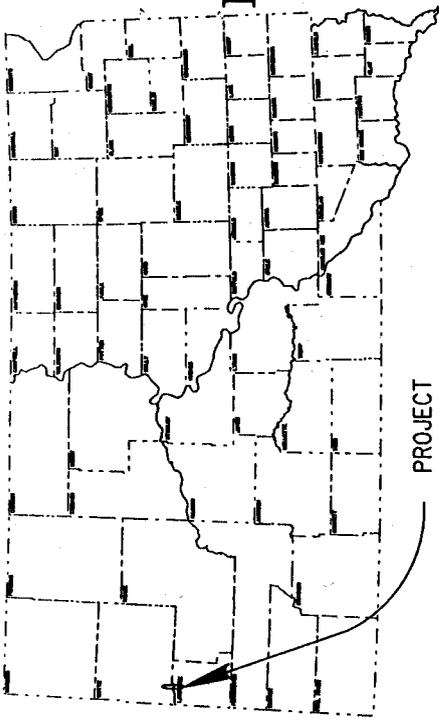
Drawings showing the location and extent of the work are attached to this notice.

STATE OF SOUTH DAKOTA  
 DEPARTMENT OF TRANSPORTATION  
 PLANS FOR PROPOSED

**PROJECT NO. NH 0085(0)45**  
**U.S. HIGHWAY NO. 85**  
**LAWRENCE & BUTTE COUNTIES**

INDEX OF SECTIONS

GRADING, STRUCTURE, INTERIM SURFACING  
 FOR 2 ADDITIONAL LANES  
 PCEMS NO. 5928



**DESIGN DESIGNATION**

ADT (1999)	6305
ADT (2019)	12710
DIV	60 X
D	4.5 X
T	3.5 X
V	ADT
	65 mph

**STORM WATER PERMIT**  
 Major Stream: Redwater River  
 Area Disturbed: Acres

**SCALES**

PLAN	HORIZONTAL	1"=200'
PROFILE	HORIZONTAL	1"=200'
	VERTICAL	1"=20'
CROSS SECTIONS	HORIZONTAL	1"=20'
	VERTICAL	1"=20'

**LEGEND**

STATE AND NATIONAL LINE	---
COUNTY LINE	---
SECTION LINE	---
QUARTER LINE	---
SIXTEENTH LINE	---
CONSTRUCTION LINE	---
R.O.W. LINE	---
WORK LIMITS	---

**BEGIN PROJECT**  
 Station -30+00.00 = Station 30+00.00  
 190-1(19)10 (U.S. 85 Relocation)  
 Approximately 214.86 feet south & 514.72 feet west of the interior 1/4 corner of Section 34 - Township 7 North - Range 2 East.  
 MRM 45.00 + 0.100

GROSS LENGTH 8.377 MILES  
 LENGTH OF EXCEPTIONS MILES  
 NET LENGTH MILES

**END PROJECT**  
 Station 437+50 = Station 85+53  
 Project F 011-5(2)  
 Approximately 493.66 feet south & 20.92 feet east of the north 1/4 corner of Section 22 - Township 8 North - Range 2 East  
 MRM 54.00 + 0.064

**PURPOSE:** Road Safety  
**APPLICATION BY:** SD-DOT

**IN various streams/wetlands**  
**AT Townships 7&8-N/Range 2-E**  
**COUNTY Lawrence/Butte**  
**DATE 12/10/2003**  
**SHEET 1 of 17**

No. 200330435

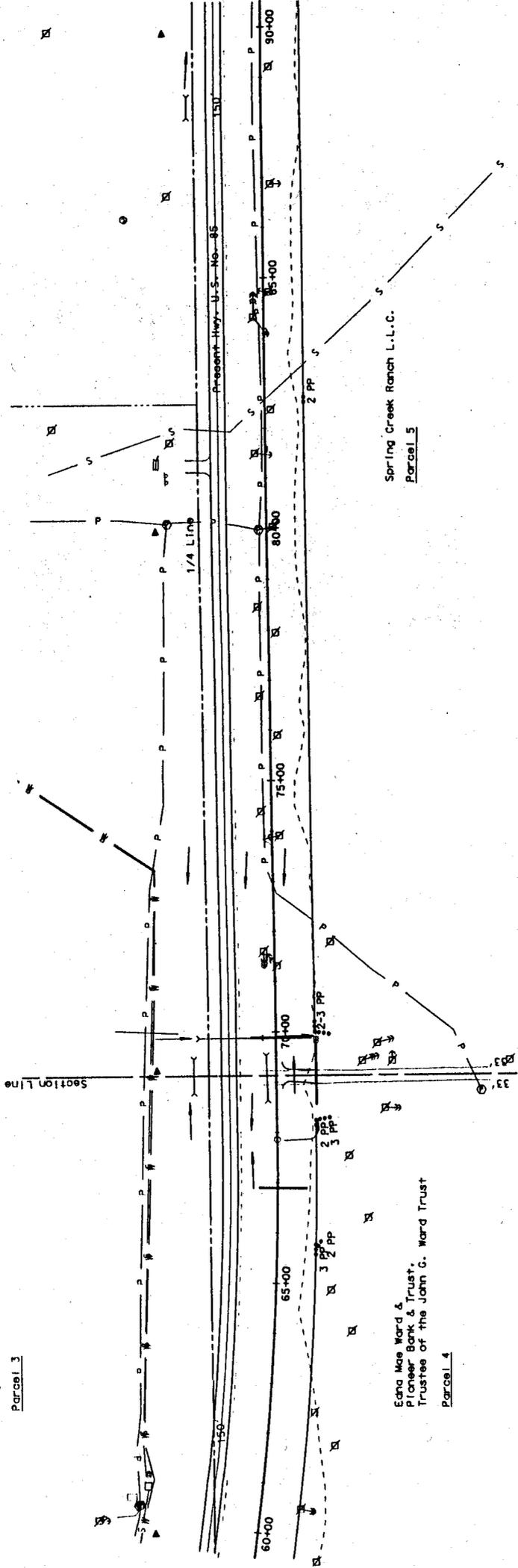


81+20-L  
Retain Ent

SEC. 22 - T7N - R2E

- 66+89  
Install 24"-84" RCP  
& 2 Sloped Ends
- 69+13-80' R(90 AC)  
Install 30"-118" CMP  
& 2 Flared Ends
- 69+40-80' R  
Install Bank and Channel  
Protection Gabions  
(6.0 CY)
- 69+88 (25 AC)  
Install 36"-32" RCP Class 3  
Reset 36"-18" RCP Class 3  
24" x 36" RCP Tee Class 3  
1 7/8" RCP Flare Drain  
& 1 Reset Flared End
- 69+88 36"-102" RCP Class 3  
& Retain 1 Flared End  
Remove for Reset  
36"-18" RCP Class 3 &  
Remove for Reset 1 Flared End

City of Spearfish  
Parcel 3



SEC. 27 - T7N - R2E

Wetland No. 2  
Sta. 66 to 73 +/-  
Type: PEMC  
Impact: 51,000 ft<sup>2</sup> (east side)

Edna Mae Ward &  
Pioneer Bank & Trust,  
Trustee of the John G. Ward Trust  
Parcel 4

Spring Creek Ranch L.L.C.  
Parcel 5



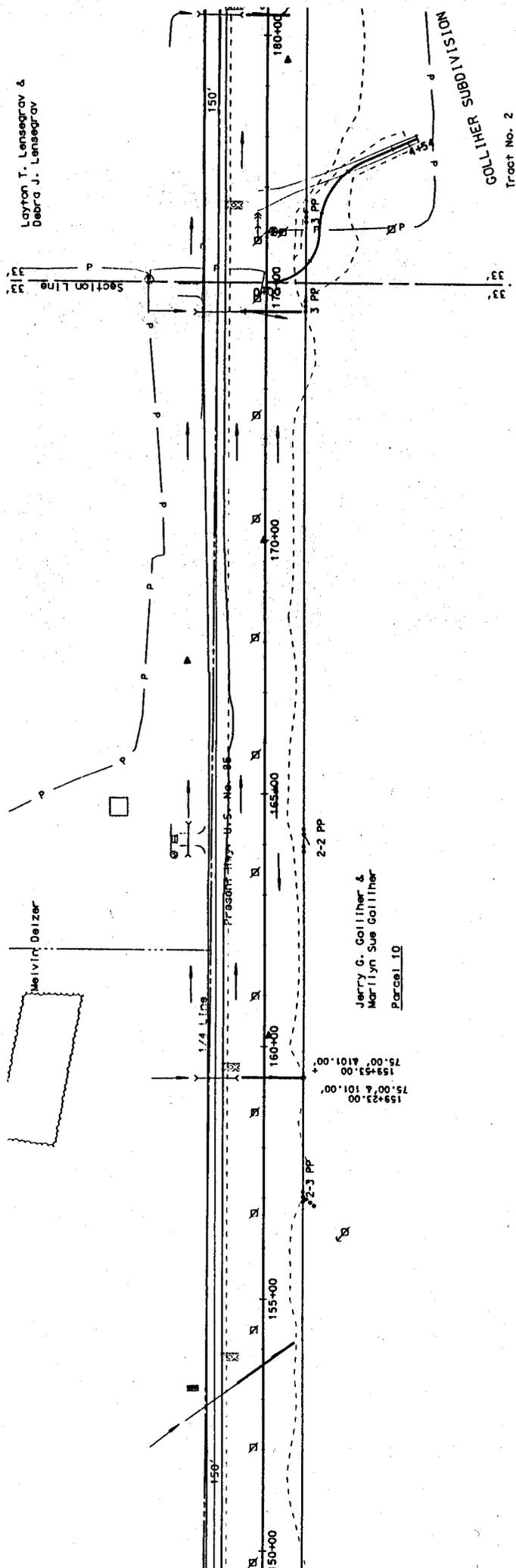
174+52 Retain 24"-36" RCP  
 Retain 1' Flared End  
 & Takeout 1' Flared End  
 174+52 (18 AC)  
 Install 24"-76" RCP  
 Install 24"-30" CMP (10' & 20')  
 An 2-15.0° Elbows  
 & 1-24" RCP to CMP Outlet Transition  
 & 1 CMP Flared End  
 174+52-48'L  
 Install 1 Type M Median Drain  
 174+92-L  
 Retain Ent

164+09-140'L  
 Retain 18"-57" CMP  
 164+09-175'L  
 Retain 18"-38" CMP  
 159+38 (22 AC)  
 Install 24"-60" RCP  
 Install 24"-42" CMP (10' & 32')  
 An 2-12.55° Elbows  
 & 1-24" RCP to CMP Outlet Transition  
 & 1 CMP Flared End  
 164+09-L  
 Retain Ent

159+38 (22 AC)  
 Install 24"-60" RCP  
 Install 24"-42" CMP (10' & 32')  
 An 2-12.55° Elbows  
 & 1-24" RCP to CMP Outlet Transition  
 & 1 CMP Flared End  
 159+38-76'R  
 Install Bank and Channel  
 Protection Gabions  
 (4.5 CY)

153+53 (Skew 36° RHF)  
 Retain 32"-132" RCP  
 Remove For Reset 42"-22" RCP  
 153+69 (Skew 36° RHF) (161 AC)  
 Install 42"-132" RCP  
 Install 1-42" RCP Wye  
 Install 1-24"-6" RCP Riser  
 Install 1 Type M Median Drain  
 & Reset 42"-22" RCP

Sec. 15 - T7N - R2E

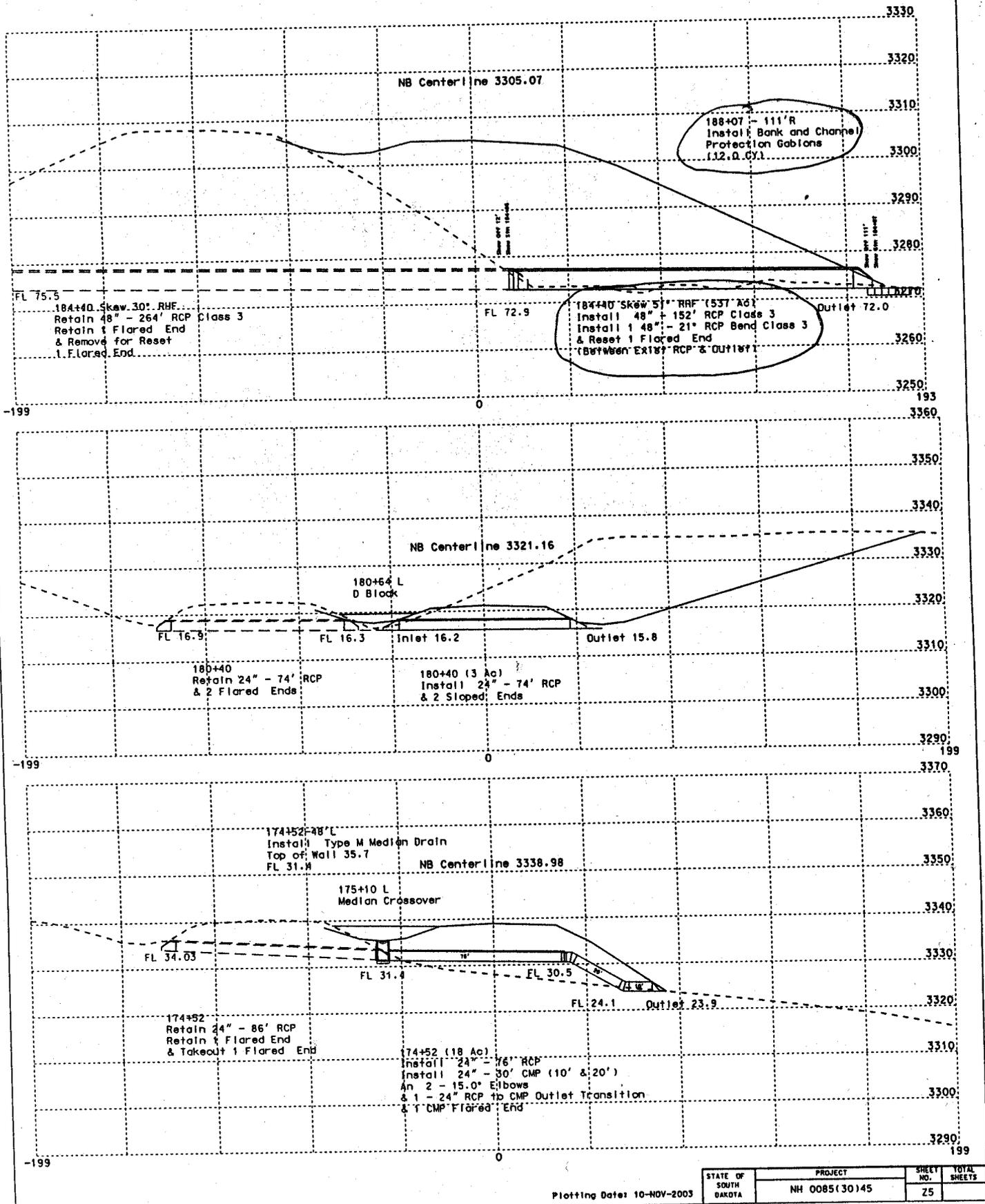


Wetland No.3  
 Sta. 152-155+/-  
 Type: PEMA  
 Impact: 1100 ft.<sup>2</sup> (east side)

James L. Barker  
 Parcel 11 & 11A

Tract No. 2





**Application:** No. 200330435  
**BY:** SD-DOT

**DATE** 12/10/2003  
**SHEET** 5 of 17

STATE OF SOUTH DAKOTA	PROJECT	SHEET NO.	TOTAL SHEETS
	NH 0085(30)45	25	

Plotting Date: 10-NOV-2003



214+14  
 Install 24"-44" RCP (10' & 30')  
 And 24" RCP to 24" RCP Transition  
 & 1 RCP Sloped End  
 & 1 CMP Flared End

216+67-71/R  
 Install 18"-104" CMP  
 & 2 Safety Ends

218+94-135' L  
 Retain 18"-46" CMP

217+79  
 Retain 24"-66" RCP  
 & 2 Flared Ends

217+79 (18' AG)  
 Install 24"-86" RCP  
 & 2 Sloped Ends

220+32-34' L  
 Retain Twin 4' x 3' - 127'  
 R C Box Culvert & Extend

220+49  
 R C Box Culvert

225+55 to 227+13-84' L  
 Retain 44" x 159.3  
 Continuous Concrete Bridge

225+55.75 to 227+15.25  
 Install 159"-6"  
 Continuous Concrete Bridge

229+14-144' L  
 Retain 18"-83" CMP

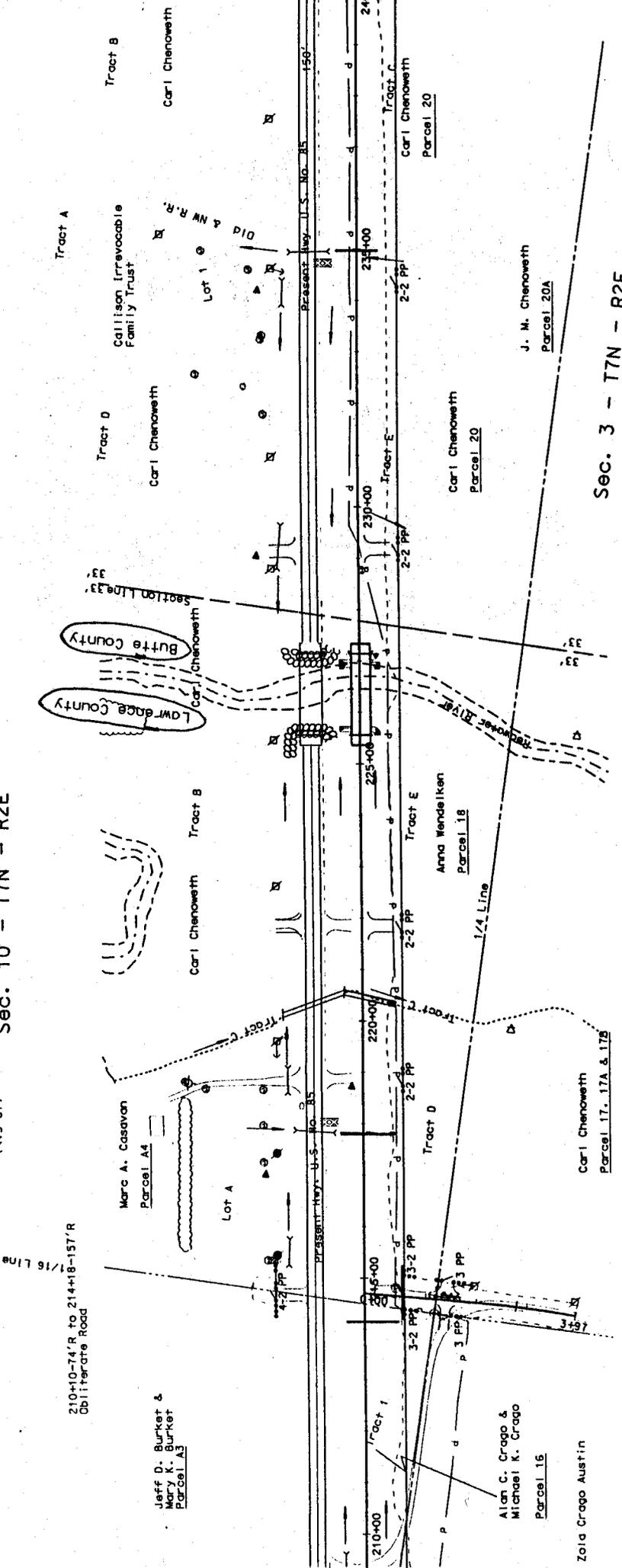
229+14 L  
 Retain Ent

234+21-135' L  
 Retain 18"-46" CMP

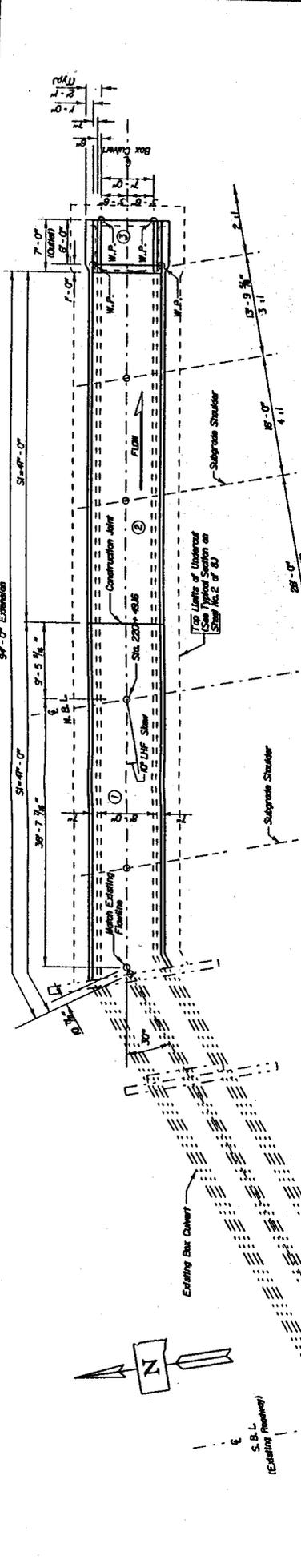
234+97  
 Install 24"-66" RCP  
 & 2 Flared Ends

234+97  
 Install 24"-70" RCP  
 & 2 Sloped Ends

Sec. 10 - T7N - R2E



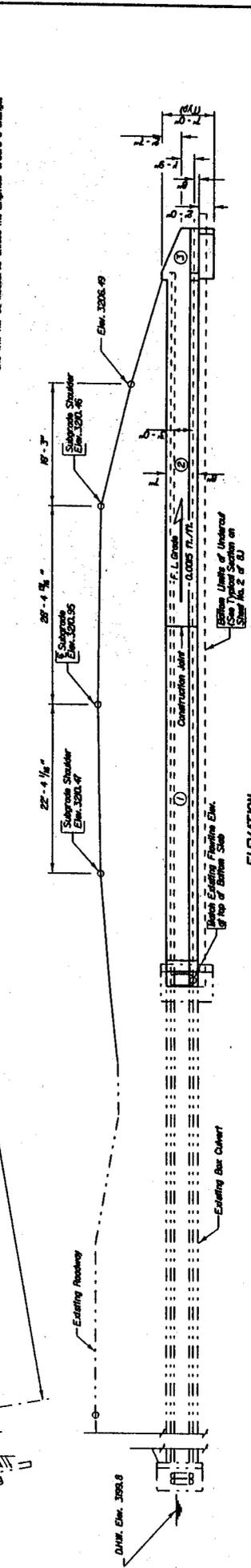
Sec. 3 - T7N - R2E



ITEM	UNIT	QUANTITY
Class A15 Concrete Box Culvert	CU.Yd.	63.1
Box Culvert Undercut	CU.Yd.	57
Install Dashed In Concrete	EAch	24
Reinforcing Steel	LA	15,736
Structure Exception Bar Culvert	CU.Yd.	27.1

For payment, quantity is based on plan shown, undercut dimensions and will not be measured unless the Engineer orders a change.

PLAN



ELEVATION

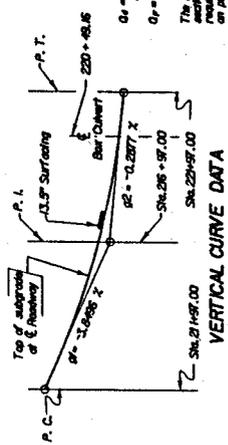
INDEX OF BRIDGE SHEETS -

- Sheet No. 1 - General Drawing & Quantities
- Sheet No. 2 - Notes and Undercut Details
- Sheet No. 3 - Outlet Details
- Sheet No. 4 - SI Barrel Interior Section Details (4'-0")
- Sheet No. 5 - SI Barrel End Section Details (4'-0")
- Sheet No. 6 - Dashed Installation Details
- Sheet No. 7 - Details of Structure Plans No. 60033 & 60040
- Sheet No. 8 - Details of Standard Plans No. 60016

HYDRAULIC DATA

Q <sub>1</sub>	20 cfs
V <sub>1</sub>	13 m.p.h.
V <sub>2</sub>	1.6 f.p.s.
Q <sub>2</sub>	240 cfs

Q<sub>1</sub> - Design discharge for the proposed culvert based on 100-year return period flood, E.I. 0.005 ft/ft.  
 Q<sub>2</sub> - Discharge at existing roadway based on 1% frequency.  
 The hydraulic data in these pages is valid only if the overtopping water is measured immediately upstream of the culvert. It is the responsibility of the contractor to verify the hydraulics of this site to determine on public safety.



P. I. Sta. 206+97.00  
 E. I. Sta. 3211.57' (Subgr.)  
 V. C. = 1000'

VERTICAL CURVE DATA

GENERAL DRAWING AND QUANTITIES  
 FOR

8' X 3' BOX CULVERT EXTENSION  
 STA. 220+49.16  
 OVER CONCORDIA DITCH IRRIGATION SEC. 10-T7N-R2E  
 STR. NO. 41-094-01  
 PCMS NO. 5928  
 10-SKEW L.H.F.  
 NH 008530435  
 HS 20-44  
 (& A.L.T.)

LAWRENCE COUNTY  
 S. D. DEPT. OF TRANSPORTATION  
 SEPTEMBER 2003

1 OF 8

DESIGNED BY: DRAWN BY: CHECKED BY: APPROVED BY:  
 NH 008530435  
 LAWRENCE COUNTY ENGINEER

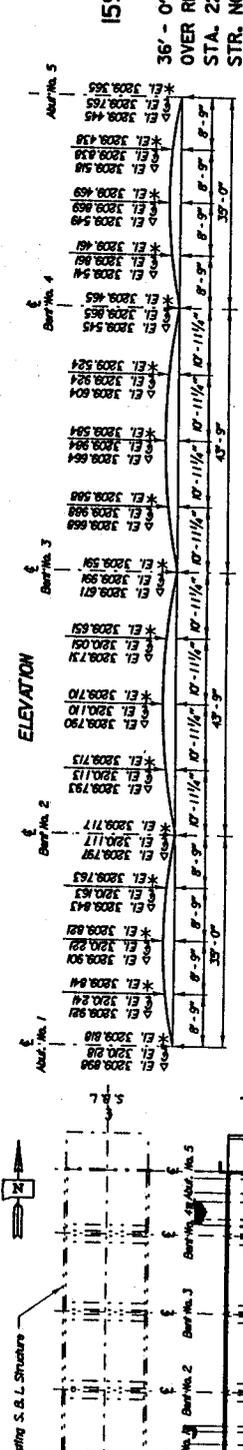
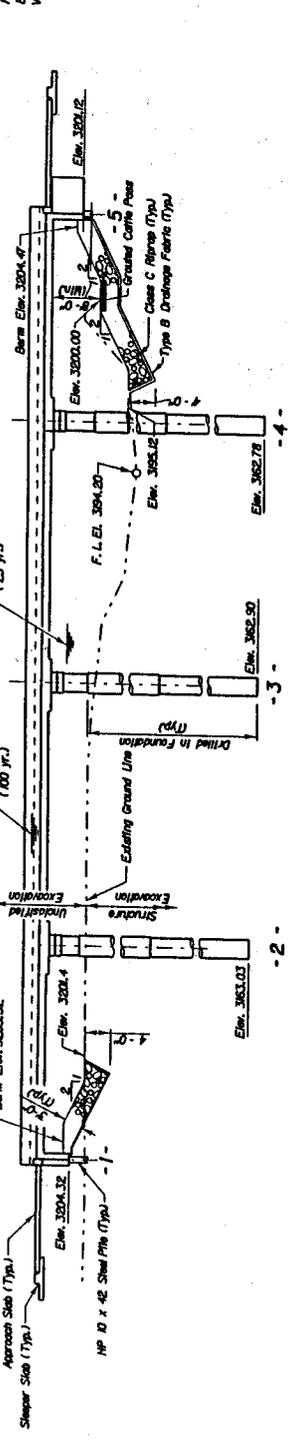
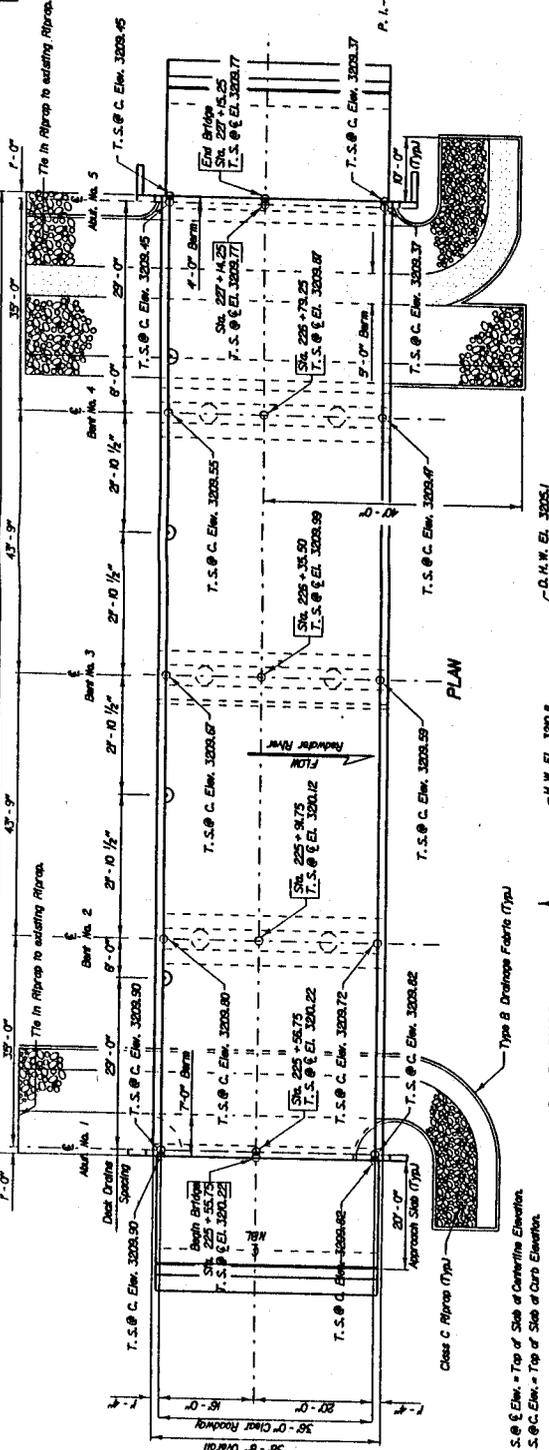
PLANS BY: OFFICE OF BRIDGE DESIGN, SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

DATE 12/10/2003  
 SHEET 7 of 17

Application: No. 200330435  
 BY: SD-DOT

**INDEX OF BRIDGE SHEETS-**

- Sheet No. 1 - General Drawing & Layout
- Sheet No. 2 - Details of Structures Overlaid & Notes
- Sheet No. 3 - Notes (Continued)
- Sheet No. 4 - Notes (Continued)
- Sheet No. 5 - Substructure Investigation, Piling and Other Start Layout
- Sheet No. 6 - Pier Details
- Sheet No. 7 - Abutment No. 1 Details
- Sheet No. 8 - Superstructure Details
- Sheet No. 9 - End Block, Barrier Deck & Deck Drain Detail
- Sheet No. 10 - Details of Approach Slab (Left)
- Sheet No. 11 - Details of Approach Slab (Right)
- Sheet No. 12 - Details of Approach Slab (Left to Bridge)
- Sheet No. 13 - Approach Slab Joint Details
- Sheet No. 14 - A - Built Elevation Survey
- Sheet No. 15 - Details of Standard Plans No. 480.02 and 480.05
- Sheet No. 16 - Details of Standard Plans No. 530.40 and 620.15
- Sheet No. 17 - Details of Standard Plans No. 630.92



**GRADELINE DATA**

Station	Grade	Height
0+0	5485.0	5485.0
0+1	773.0	773.0
0+2	773.0	773.0
0+3	5485.0	5485.0
0+4	5485.0	5485.0
0+5	5485.0	5485.0
0+6	5485.0	5485.0
0+7	5485.0	5485.0
0+8	5485.0	5485.0
0+9	5485.0	5485.0
1+0	5485.0	5485.0

**GENERAL DRAWING AND LAYOUT FOR 159'-6" CONT. CONCRETE BRIDGE (NORTHBOUND LANES)**

36'-0" ROADWAY OVER REDWATER RIVER

SEC. 10-TT5-R2E STA. 225+55.75 TO 227+45.25

SEC. 10-TT5-R2E NH 0085(30)45 HS 25-44

STR. NO. 4I-095-010 PCENS NO. 5928, (& ALT.)

**GENERAL DRAWING AND LAYOUT FOR 159'-6" CONT. CONCRETE BRIDGE (NORTHBOUND LANES)**

36'-0" ROADWAY OVER REDWATER RIVER

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STR. NO. 4I-095-010 PCENS NO. 5928, (& ALT.)

LAWRENCE COUNTY  
S. D. DEPT. OF TRANSPORTATION  
NOVEMBER 2003

-X020- (1) OF (18)

DESIGNED BY: J.S. JAV  
CHECKED BY: J.S. JAV  
APPROVED BY: J.S. JAV  
DATE: 12/10/2003

Application: No. 200330435  
BY: SD-DOT

DATE 12/10/2003  
SHEET 8 OF 17

PLANS BY: J.S. JAV  
OFFICE: BRIDGE DESIGN, SOUTH DIVISION, DEPARTMENT OF TRANSPORTATION



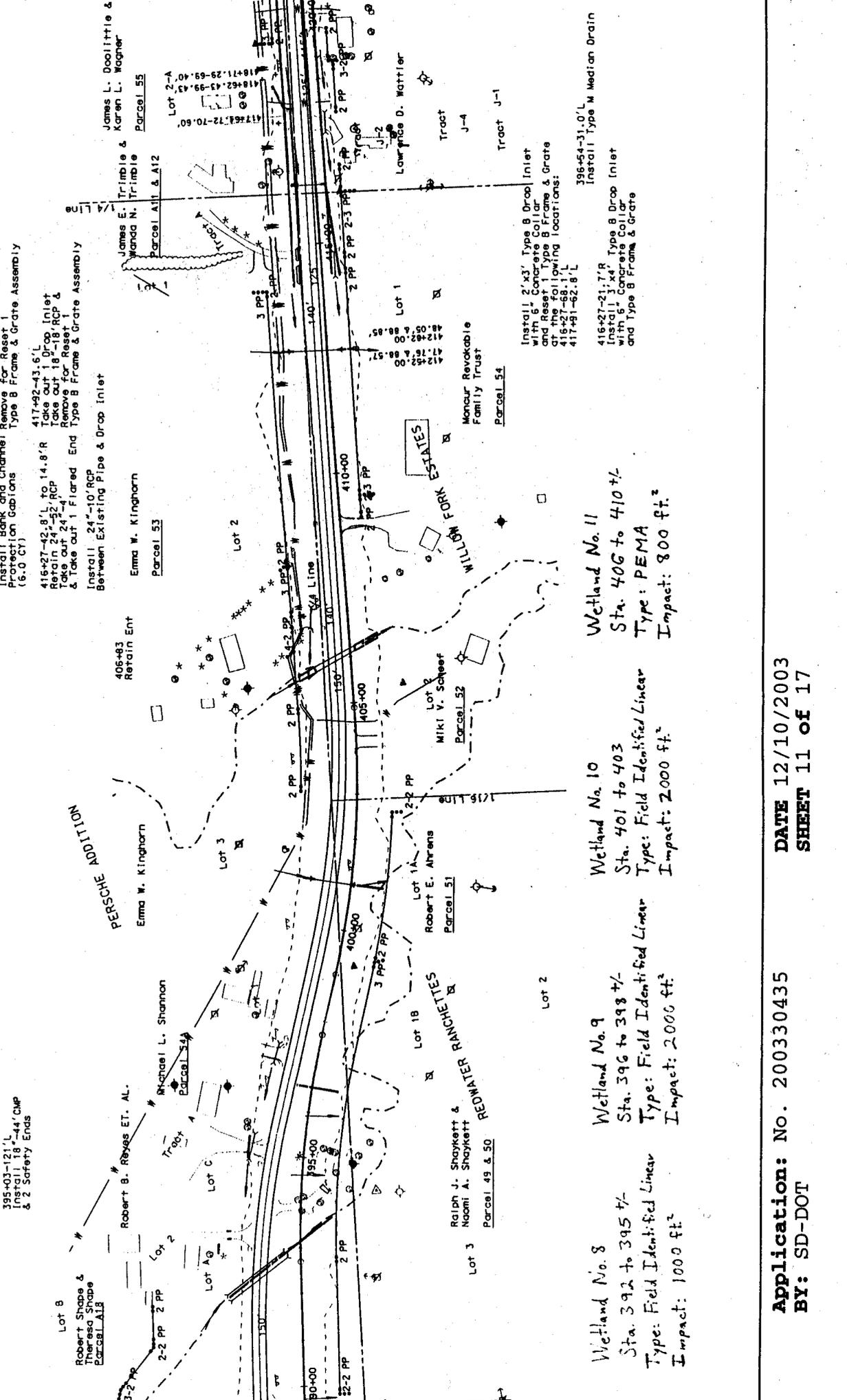


412+67  
 Retain 16"-100' RCP  
 & Remove for Reset 2 Flared Ends  
 412+67 (51 Ac)  
 Install 36"-20' RCP  
 & Reset 1 Flared End  
 412+67  
 Install 36"-28' RCP  
 & Reset 1 Flared End  
 412+67-59'R  
 Install Bank and Channel  
 Protection Gabions  
 (6.0 CY)  
 416+27-42.8'L to 417+92-43.6'L  
 Remove for Reset 18"-154' RCP  
 Take out 18"-8 RCP  
 416+27-68.1'L to 417+91-62.8'L  
 Install 18"-8 RCP &  
 Reset 18"-158' RCP  
 (Between Drop Inlets)  
 416+27-68.1'L to 416+29-42.8'L  
 (Between Drop Inlets)  
 416+27-42.8'L  
 Take out 1 Drop Inlet &  
 Type B Frame & Grate Assembly  
 417+92-43.6'L  
 Take out 1 Drop Inlet  
 Retain 24"-22' RCP  
 Remove for Reset 1  
 Type B Frame & Grate Assembly  
 & Take out 1 Flared End  
 Install 24"-10' RCP  
 Between Existing Pipe & Drop Inlet

401+00  
 Retain 24"-30' RCP  
 Remove for Reset 1 Flared End  
 & Takeout 1 Flared End  
 401+00  
 Install 24"-26' RCP  
 & Reset 1 Flared End  
 And 2-12.5' Elbows  
 & 1-24' RCP to CMP  
 Outlet Transition  
 & 1 CMP Flared End  
 401+00 (4 Ac)  
 Install 24"-22' RCP  
 & Reset 1 Flared End  
 & 2 Safety Ends

395+19-112'L  
 Take out 18"-55' CMP  
 (Incidental Work)  
 397+27-103'L  
 Take out 18"-43' CMP  
 (Incidental Work)  
 395+03-L  
 Retain Ent  
 397+16-L  
 Retain Ent  
 396+54  
 Install 18"-44' CMP  
 & 2 Safety Ends  
 (Between Median Drain & Outlet)  
 395+03-121'L  
 Install 18"-44' CMP  
 & 2 Safety Ends

393+14 (Skew 40° RH)  
 Remove for Reset 18"-268' RCP Arch  
 Take out 18"-2 Sloped Ends  
 Take out 108"-40'  
 Take out 2 Sloped Ends  
 391+95-159'L to 393+71-70'R (860 Ac)  
 Reset 108"-268' RCP Arch  
 & 2 Sloped Ends  
 389+62-390'L  
 Install 18"-44' CMP  
 & 2 Safety Ends



406+08  
 Retain 10' x 10' -96'  
 RC Box Culvert & Extend  
 406+08-104'L  
 Install 18"-46' CMP  
 & 2 Safety Ends

405+03  
 Retain Ent  
 Emma W. Kinghorn  
 Parcel 53

406+08  
 Retain 10' x 10' -96'  
 RC Box Culvert & Extend  
 406+08-104'L  
 Install 18"-46' CMP  
 & 2 Safety Ends

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 Retain 10' x 10' -96'  
 RC Box Culvert & Extend  
 406+08-104'L  
 Install 18"-46' CMP  
 & 2 Safety Ends

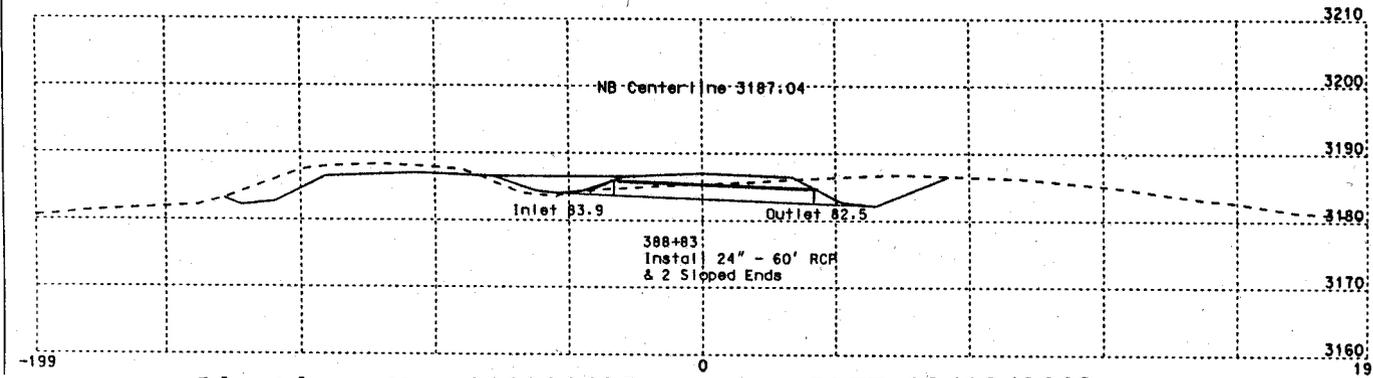
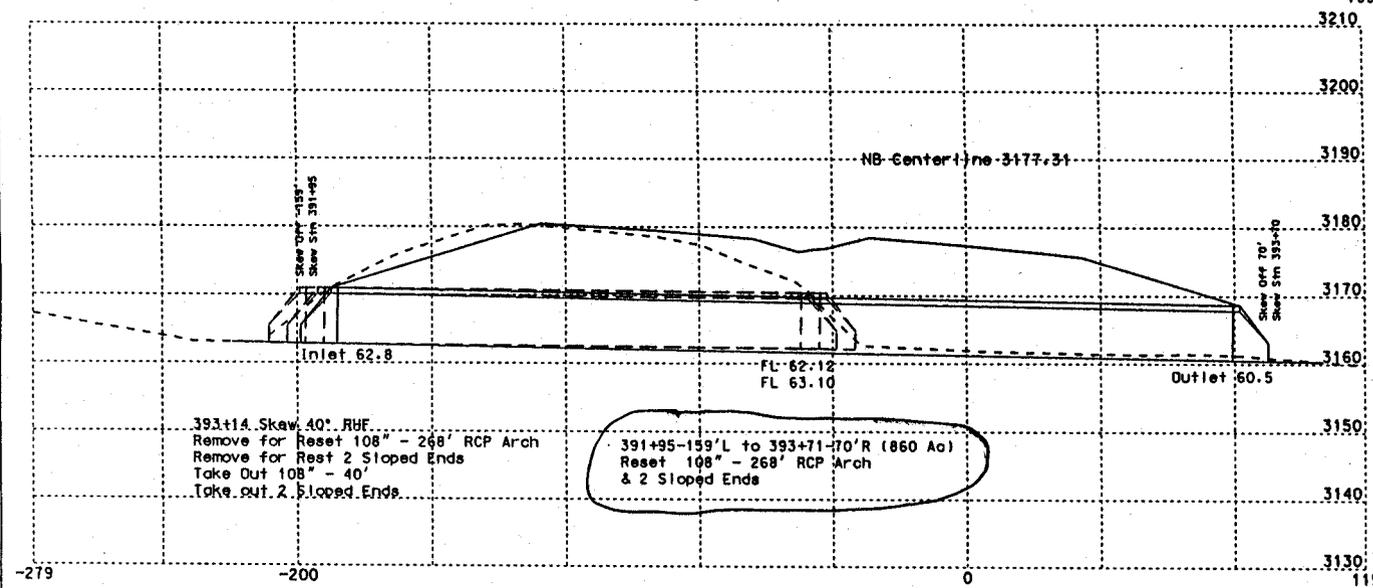
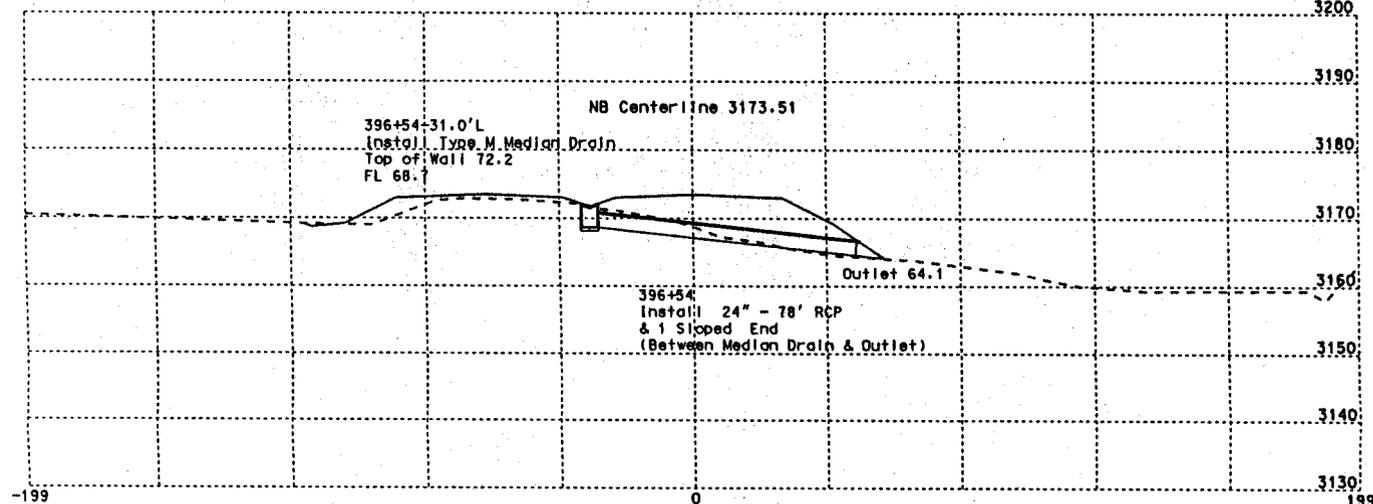
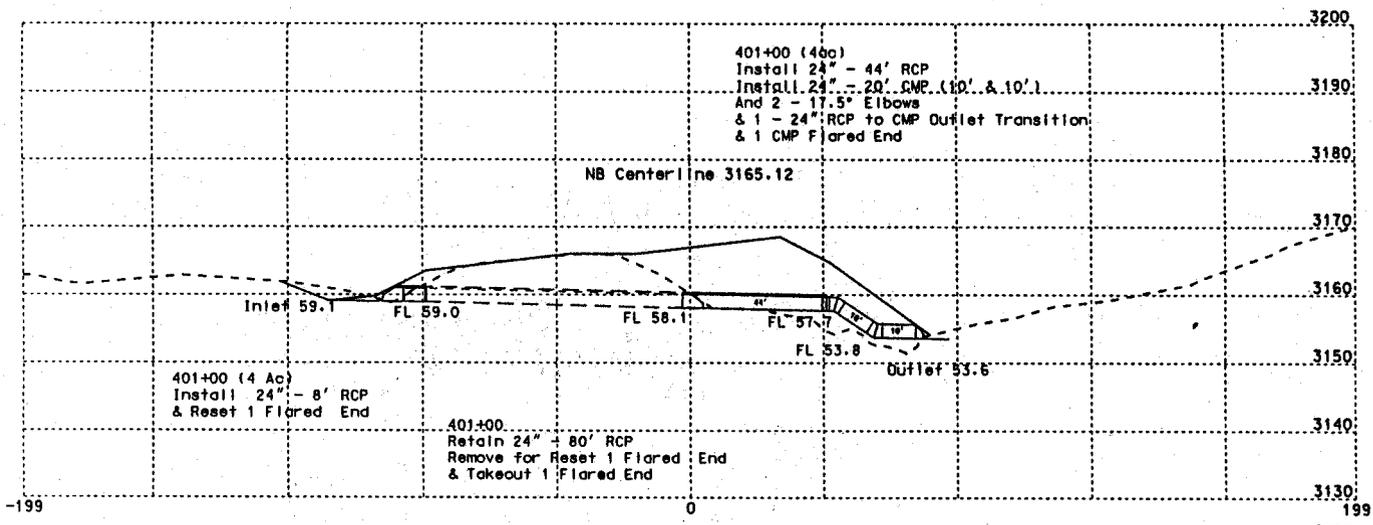
405+03  
 Retain Ent  
 Emma W. Kinghorn  
 Parcel 53

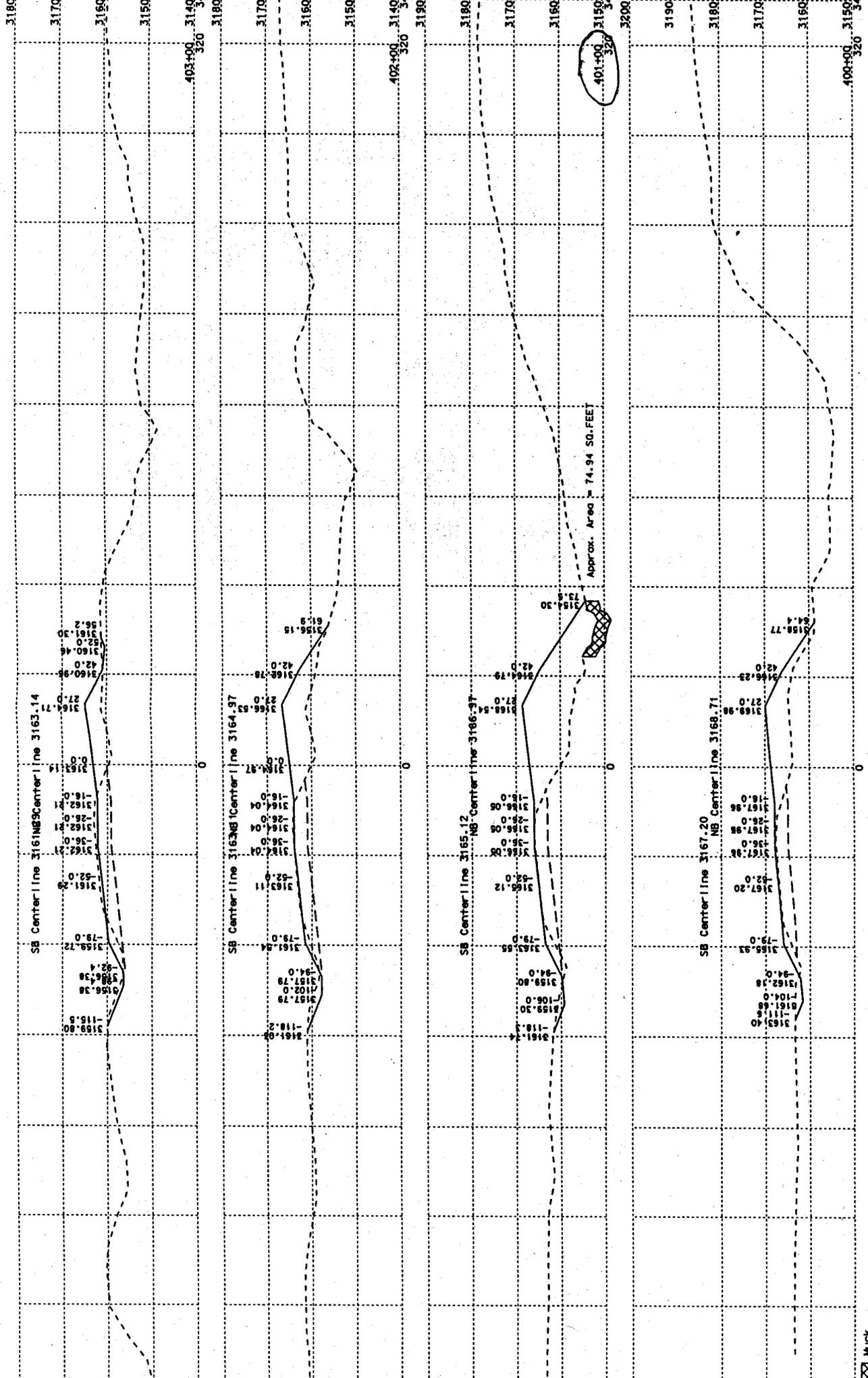
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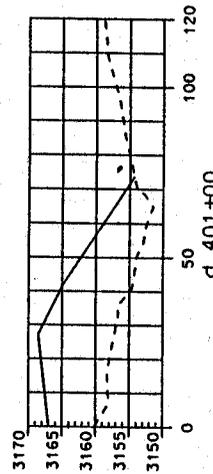
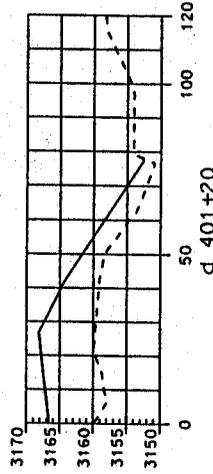
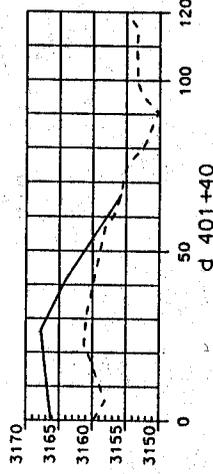
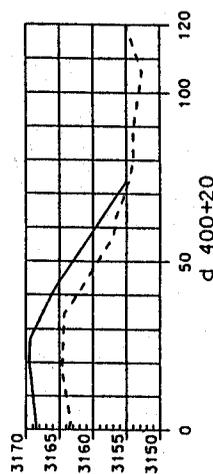
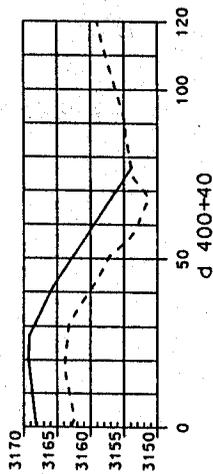
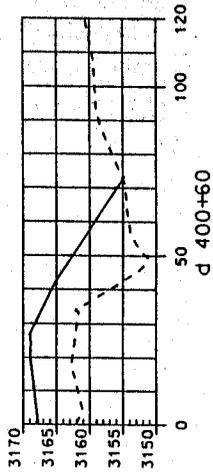
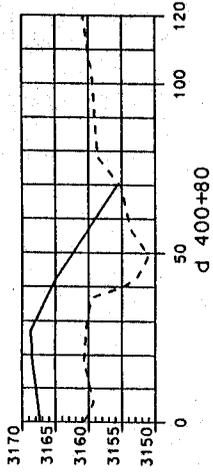
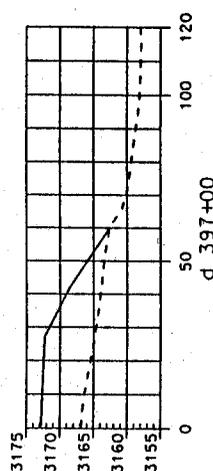
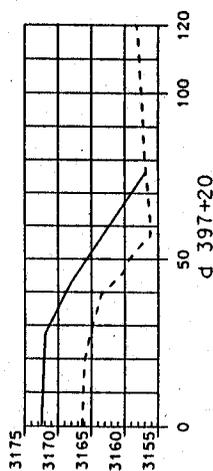
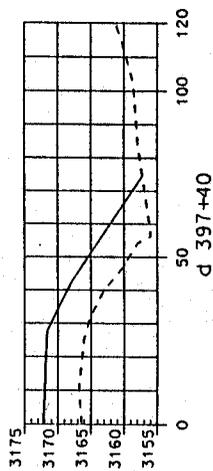
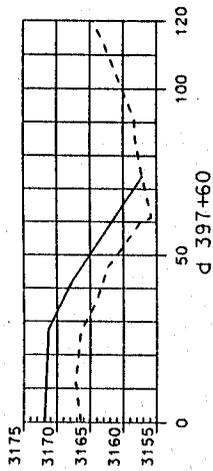
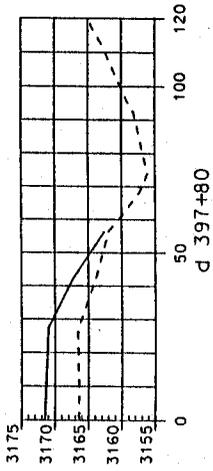




Highway Cross Sections (where Station 0 = northbound lane centerline)

NH 0085(30)45  
Lawrence/Butte Counties  
PCEMS 5928

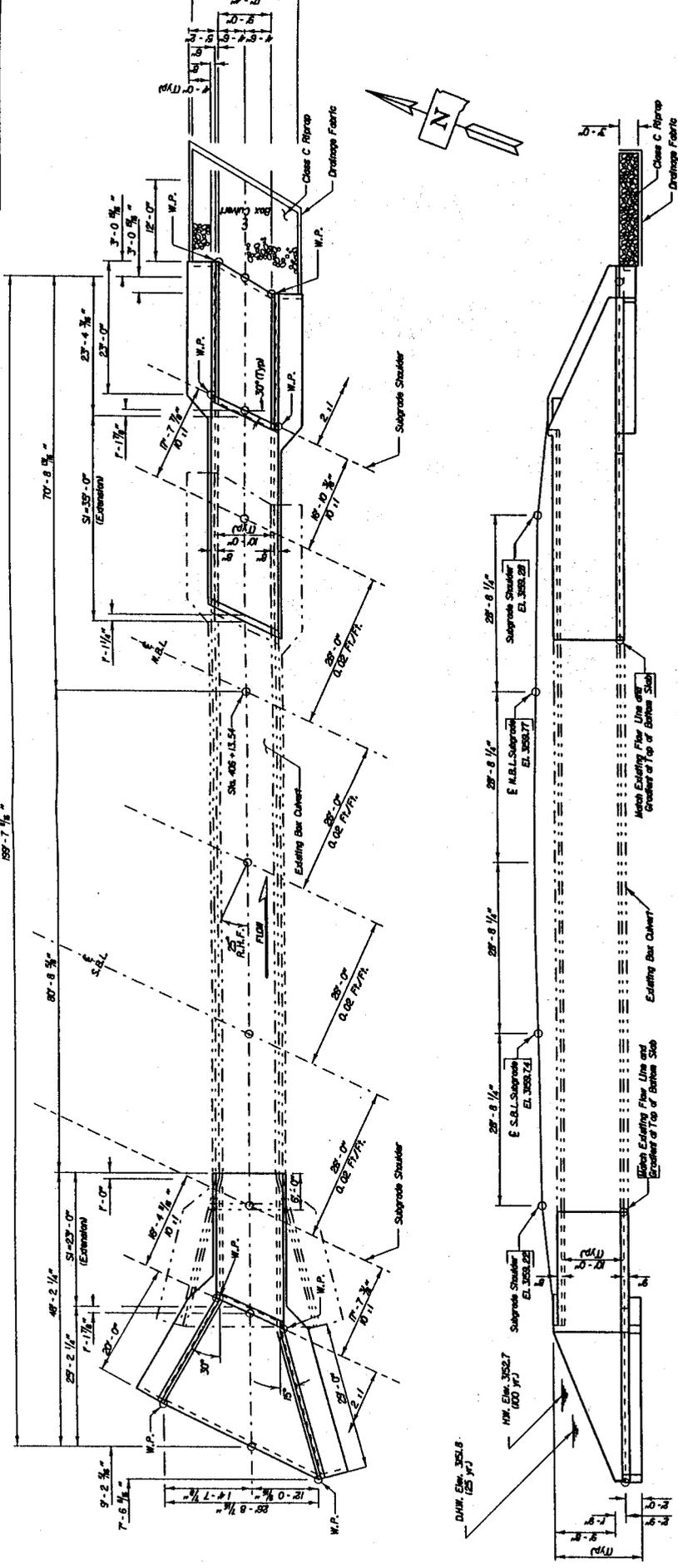
Horizontal Scale: 1 in = 40 ft  
Vertical Scale: 1 in = 20 ft



*Channel Change - Willow Creek Tributary*

Application: No. 200330435  
BY: SD-DOT

DATE 12/10/2003  
SHEET 14 of 17



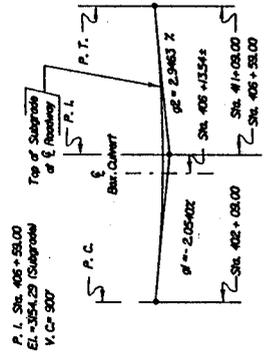
**ESTIMATED QUANTITIES**

ITEM	UNIT	QUANTITY
Reinforcing Steel	CU.Yd.	
Structural Expansion Bar Culvert	CU.Yd.	
Bar Culvert Undercut	CU.Yd.	
Class C Riprap	Ton	
Type B Drainage Fabric	CU.Yd.	
Structural Concrete	CU.Yd.	
Vertical Doweled in Concrete	Each	
PVC Control Bank and Channel Protection Gabion	CU.Yd.	

**HYDRAULIC DATA**

$Q_d$	87 cfs
$A_d$	16 sq.ft.
$V_d$	5.37 fpm
$Q_{100}$	382 cfs
$V_{100}$	13.3 fpm

$Q_d$  = Design discharge for the proposed culvert based on 25 year frequency. E.I. 352.8  
 $Q_{100}$  = Designated peak discharge for the basin approaching proposed project based on 100 year frequency.  
 $Q_{10}$  = Computed discharge for the basin approaching proposed project based on 10 year frequency. E.I. 352.7  
 $V_{max}$  = Maximum computed water velocity for the proposed culvert based on a 100 year frequency.



GENERAL DRAWING AND QUANTITIES  
 FOR  
**10' X 10' BOX CULVERT EXTENSION**  
 STA. 406+13.54+  
 OVER WILLOW CREEK  
 STR. NO. 10-095-397  
 PCENS NO. 5928

25° SKEW RHF  
 SEC. 22-T8N-R2E  
 NH 0085C3045  
 HS 20-44  
 (& ALT.)

BUTTE COUNTY  
 S. D. DEPT. OF TRANSPORTATION  
 JANUARY 2003

DESIGNED BY: DRAWN BY: CHECKED BY: APPROVED: [Signature]  
 DATE: 12/10/2003

404 Quantities

Types of Material Being Discharged and the Amount of Each Type in Cubic Yards

<p><b>Sta 184+40</b>                  Sec 10 - T7N R2E  <u>Tributary to Redwater River</u></p> <p><u>1 - 48" RCP Extension</u></p> <p>Ordinary Highwater Depth                  Concrete Pipe Precast Units                  Gabions                  Total</p>	<p>0.5 ft                  152 linear ft.                  12 cu. yd.  <u>12 cu. yd. + 152 linear ft.</u></p>	<p><b>Sta 252+48</b>                  Sec 3 - T7N R2E  <u>Lower Power Canal (Irrigation)</u></p> <p><u>1 - 60" RCP Arch</u></p> <p>Ordinary Highwater Elevation                  Concrete Pipe Precast Units                  Temporary Detour Fill                  Total</p>	<p>3223.1 ft (1.9 ft depth)                  186 linear ft.                  20 cu. yd.  <u>20 cu. yd. + 186 linear ft.</u></p>
<p><b>Sta. 220+49</b>                  Sec 10 - T7N R2E  <u>Concordia Ditch (Irrigation)</u></p> <p><u>1 - 8' X 3' RCBC Extension</u></p> <p>Ordinary Highwater Elevation                  Backfill of RCBC Undercut                  Concrete                  Embankment Fill                  Temporary Fill                  Total</p>	<p>3201.4 ft (3.4 ft depth)                  57 cu. yd.                  60 cu. yd.                  110 cu. yd.                  20 cu. yd.  <u>247 cu. yd.</u></p>	<p><b>Sta. 392+51</b>                  Sec 22 - T8N R2E  <u>Tributary to Willow Creek</u></p> <p><u>1 - 108" RCPA (reset and extend)</u></p> <p>Ordinary Highwater Elevation                  Concrete Pipe Precast Units                  Riprap                  Embankment Fill                  Temporary Detour Fill                  Total</p>	<p>3163.8 ft (1.1 ft depth)                  268 linear ft.                  10 cu. yd.                  100 cu. yd.                  20 cu. yd.  <u>130 cu. yd + 268 linear ft.</u></p>
<p><b>Sta. 226+36</b>                  Sec 10 - T7N R2E  <u>Redwater River</u></p> <p><u>159'-6" Continuous Concrete Bridge (with drilled shaft piers)</u></p> <p>Ordinary Highwater Elevation                  Concrete                  HP 10X42 Steel Bearing Pile                  Riprap                  Embankment Fill                  Temporary Fill                  Total</p>	<p>3201.4 ft (6.4 ft depth)                  61 cu. yd.                  244 linear ft.                  385 cu. yd.                  100 cu. yd.                  40 cu. yd.  <u>586 cu. yd. + 244 linear ft.</u></p>	<p><b>Sta. 400+30 Rt. to Sta. 401+20 Rt.</b>                  Sec. 22 - T8N R2E  <u>Tributary to Willow Creek</u></p> <p>Ordinary Highwater Depth                  Embankment Fill (east side of road)                  Total</p>	<p>2.0 ft+                  130 cu. yd.  <u>130 cu. yd.</u></p>
<p><b>Sta. 406+83</b>                  Sec 22 - T8N R2E  <u>Willow Creek</u></p> <p><u>1 - 10' X 10' RCBC Extension</u></p> <p>Ordinary Highwater Elevation                  Backfill of RCBC Undercut                  Concrete                  Riprap                  Embankment Fill                  Temporary Fill                  Total</p>	<p>3151.0 ft (5.0 ft depth)                  110 cu. yd.                  102 cu. yd.                  24 cu. yd.                  120 cu. yd.                  20 cu. yd.  <u>376 cu. yd.</u></p>		

**Table 1**  
**Wetland Impacts**  
**NH 0085(30)45 PCEMS 5928**  
**Lawrence/Butte Counties**

Wetland Number	Wetland Type	Wetland Impacts (ft. <sup>2</sup> )	Comments
1	PEMAh	0	No Impact
2	PEMC	51000	
3	PEMA	1100	
4	PEMA	1000	1000
5	PEMA	0	No Impact
6	PUBF <sub>x</sub>	0	No Impact
7	PABFh	0	No Impact
8	Field Identified Linear	1000	
9	Field Identified Linear	2000	
10	Field Identified Linear	2000	
11	PEMA	800	
Total ft. <sup>2</sup>		58,900 ft. <sup>2</sup>	
Total Wetland Acres Impacted:		1.35 acres	

**WATERWAY PROTECTION FOR TEMPORARY WORKS**

Below the ordinary high water elevation within the waterway; no excavation shall be made outside of caissons, cribs, cofferdams, steel piling, or sheeting; and the natural streambed shall not be disturbed without permission from the Engineer. The ordinary high water elevation is 3201.4 for the project.

All dredged or excavated materials shall be placed at a site above the ordinary high water elevation in a confined area (not classified as a wetland) to prevent return of such material to the waterway.

The construction of temporary work platforms or berms below the ordinary high water elevation will be allowed provided that all material placed below the ordinary high water elevation consists of Class B or larger riprap. All fill material shall be free of toxic pollutants in toxic amounts.

All temporary caissons, cribs, cofferdams, steel piling, sheeting, work platforms, and berms shall be removed with minimal disturbance to the streambed. Proper construction practices shall be used to minimize increases in suspended solids and turbidity in the waterway.

Bridge berms, wing dams, traffic diversions, channel reconstruction, grading, etc. shall be constructed in close conformity with the plans to ensure that the hydraulic capacity of the waterway is not changed.