

WATER PERMIT NO. 7358-3

Name of Applicant: City of Brookings

Address: PO Box 270, Brookings SD 57006 Phone: 605 692-6629

Amount of Water Claimed: na Total Acres: na

Source of Water Supply: Six Mile Creek

Water to be used for: County: Brookings

Type of Waste Disposal System:

Location: north of airport in Brookings

PRIORITY Date Received: 5-21-2012 Application/License Fee: \$ 700

Corrected Application Received: Period of Annual Use: January 1 – December 31

Remarks: Proposing to relocate a portions of Six Mile Creek

Area involving the relocation: SW ¼ SW ¼ Sec 22,

W ½ NW ¼ Sec 27, E ½ NE ¼ Sec 28; all in

T110N-R50W

Land to be Irrigated: NA

Depth of Well: NA

Well Driller:

Remarks:

Type of Map: aerial

Prepared by: Tevis Holzer, PE

Reviewed and the Number Assigned on: 5-21-12

By: Karen Schlaak

Notice of Hearing - date to intervene: _____

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Mail to: PMB 2020 DENR - Water Rights 523 E Capitol Ave Pierre, SD 57501-3182 ph. (605) 773-3352	No. <u>7358-3</u>	(office use only) Hydrologic Unit <u>10170202</u>
	Basin <u>Sioux River</u>	
	Newspaper <u>Brookings Register</u>	

Application For Permit To Appropriate Water Within The State Of South Dakota

Check use(s) of water:

☐ Municipal	☐ Suburban Housing	☐ Recreational	☐ Institutional
☐ Rural Water System	☐ Commercial	☐ Fish & Wildlife	☐ Geothermal Heat
☐ Domestic (over 18 gpm)	☐ Industrial	☒ Other <u>Reroute Creek</u>	

Type of Application: (check one)

☒ New	☐ Vested Right (Use predates Mar 2, 1955)	☐ Future Use Reservation
☐ Place to Beneficial Use Water Reserved by Future Use Permit No. _____		
☐ Amendment/Correction to Permit No. _____		

Description of amendment/correction: (i.e. change diversion point(s), add diversion point(s), change use, etc.)

1. Name of Applicant City of Brookings Phone (605) 692-6629

(check one) ☒ Owner ☐ Tenant/lessee

Mailing Address PO Box 270 Brookings SD 57006
(Address) (City) (State) (Zip Code)

2. Amount of water claimed *CFS or **GPM ***AF
(*Cubic Feet per Second) (**Gallons per Minute) (**Acre Feet - storage capacity of dam/dugout or annual use if applicable)

3. Source of water supply Six Mile Creek

4. Location of point of diversion (example - 3 wells in SW1/4 NE1/4 section 12-T104N-R53W) County Brookings
SW1/4 SW1/4 section 22-T110N-R50W, W1/2 NW1/4 section 27-T110N-R50W, &
E1/2 NE1/4 section 28-T110N-R50W

5. County or counties where water will be used Brookings

6. Annual period during which water is to be used January 1st - December 31st

7. Give a description of the project. When available include any preliminary engineering report or other reports or information that will help explain the project. (Attach sheet if more space is needed)

The purpose of this project is to reroute a portion of Six Mile Creek to allow for the expansion of the Brookings Regional Airport.

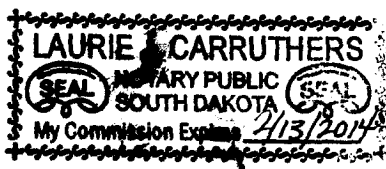
STATE OF SOUTH DAKOTA)
County of Brookings) SS

Attachments: Attach Form 2A if diversion is from a well or dugout, or if storage of water is proposed. Also, attach map and any other technical information. (see instructions)

I, Jeffrey W. Weldon, the applicant, certify that I have read this application, have examined the attached map and that the matters stated are true and that I intend, and am able to complete the necessary construction.

Applicant's signature Jeffrey W. Weldon

Subscribed and sworn to before me this 22nd day of May 20 12



Laurie J. Carruthers
Notary Public signature

**SOUTH DAKOTA
WATER PERMIT NO. 7358-3**

Date of first receipt of application May 21, 2012.

The Chief Engineer, on behalf of the Water Management Board, issues Water Permit No. 7358-3 to City of Brookings, c/o Jeffrey W Weldon, PO Box 270, Brookings SD 57006 authorizing the construction of the project and the placing of water to beneficial use subject to the following limitations, conditions and qualifications:

1. Water Permit No. 7358-3 authorizes relocation of a portion of Six Mile Creek to allow for the expansion of the Brookings Regional Airport. The area involved in the relocation project includes portions of the SW 1/4 SW 1/4 Section 22, W 1/2 NW 1/4 Section 27 and the E 1/2 NE 1/4 Section 28; all in T110N-R50W.
2. The water appropriated shall be used for the purpose of relocation of a portion of Six Mile Creek and may not exceed the amount of water needed for beneficial use.
3. The water is to be used during the following described annual period: January 1 – December 31.
4. The date of approval of Permit No. 7358-3 is July 2, 2012.
5. The date from which applicant may claim right is May 21, 2012.
6. One-fifth of the construction is to be completed on or before January 2, 2015.
7. All construction is to be completed on or before July 2, 2017.
8. Water is to be put to beneficial use on or before July 2, 2021.
9. Water rights obtained in compliance with the laws of the State of South Dakota may not be unlawfully impaired by this appropriation.

QUALIFICATION

Water Permit No. 7358-3 is subject to securing easements and/or land acquisitions on any areas, other than city property, where construction activities will take place or creek channel relocated.

WATER MANAGEMENT BOARD

By: Garland Erbele

Garland Erbele, Chief Engineer
Water Rights Program

Department of Environment and Natural Resources

SEP 07 2012
date



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South Dakota Department of Environment and Natural Resources

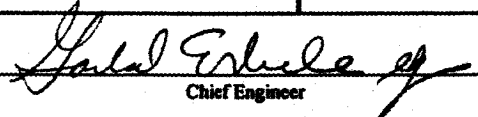
Date 5/21, 20 12

RECEIVED OF City of Brookings PO Box 370 Brookings SD 57006

The following amount in fees for services rendered as provided for by law:

Fee for Application for Permit No. <u>7358-3</u> to Appropriate Water, to construct and to put water to beneficial use	500	00
Fee for Application for Permit No. _____ to Appropriate Water for Future use		
Fee to retain Future Use Permit No. _____ after period of seven years.		
Fee for Inspecting Constructed Works, confirming beneficial use and issuing Water License No. <u>7358-3</u>	200	00
Fee for Filing Transfer Form _____		
Fee for _____		
Fee for Issuing New Well Driller's License No. _____ for C.Y. _____		
Fee for Renewal of Well Driller's License No. _____ for C.Y. _____		
Fee for Issuing Well Pump Installer's License No. _____ for C.Y. _____		
Fee for Renewal of Well Pump Installer's License No. _____ for C.Y. _____		
(Any Other Work Provided by Law)	TOTAL	700 00

No. **05441**

By 
Chief Engineer



Floodplains - BKK Expansion Alternative
Brookings Regional Airport

Figure 14

Helms ASSOCIATES
THE ENGINEERING & ARCHITECTURAL FIRM

RHNTB

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MAY 21 2012

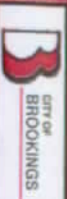
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Prelim. don't use
Typical Section A-A



Proposed Six Mile Creek Reroute
and Compensatory Storage
Brookings Regional Airport



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Helms
ASSOCIATES
THE ENGINEERING FIRM
ANTB

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Civil Engineers & Land Surveyors

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May 14, 2012

PMB2020 Department of Environment and Natural Resources
Water Rights Program
Attn: Mr. Eric Gronlund
523 East Capitol Ave
Pierre, SD 57501-3182

RE: Water Permit for Nonirrigation Uses -- City of Brookings Six Mile Creek Realignment

Mr. Gronlund,

Attached with this letter is the water permit application for nonirrigation uses and pertinent information for the realignment of Six Mile Creek in Brookings, SD. The purpose of the realignment is to allow the Brookings Regional Airport to expand.

If you have any questions, please feel free to contact me.

Respectfully,

Tevis Holzer, E.I.T.
Civil Design Inc.

ATTACHMENT "A"**a. Activity**

The proposed activity will include relocation of Six Mile Creek, filling the existing channel with the cut from the proposed channel, obliteration of 469th Ave from Sta. 10 to Sta. 29, construction of a maintenance road, bridge, and access road, and expansion/realignment of the airport runways. The work will take place in the SW1/4 SW1/4 section 22-T110N-R50W, W1/2 NW1/4 section 27-T110N-R50W, & E1/2 NE1/4 section 28-T110N-R50W.

The Six Mile Creek relocation will involve construction of approximately 4,400 feet of stream channel involving excavation of approximately 73,000 cubic yards of material. The proposed relocated channel will be a grass-lined trapezoidal section with a 90 foot bottom width, 4H:1V riprap side slopes, and average 4 feet in depth (see bridge general drawing for flow line elevations). The proposed channel capacity will be approximately 838 cfs – approximately a 10 year frequency flood. The 100 year flood event equals 4,000 cfs.

The maintenance road constructed to access the 11/29 runway from 212th St will be approximately 2,800 feet long. The road will have a top width of 20 feet and 4H:1V slopes. The height of the road above existing ground level varies but will be approximately 2-3 feet. A bridge will be constructed at approximately Sta. 12 of the maintenance road. The slopes of the road will be protected with some form of turf reinforcement in the event that the road overtops during a flood event. There is a 500' overtopping section of the road from approximately Sta. -18+00 to Sta. -23+00.

A wetland mitigation plan is being implanted at the following location: N 1/2 NE 1/4 EXC OLS M & C, & EXC S 226' THEREOF & L 2 & 3 OF CHRISTIE ADDN & E 1038.1' OF N 280.5' 11-109-50 MEDARY TWP.

b. Purpose

The purpose of the activities described above is to facilitate the construction of the Brookings Regional Airport expansion and runway realignment.

c. Discharge of Dredged or Fill Material

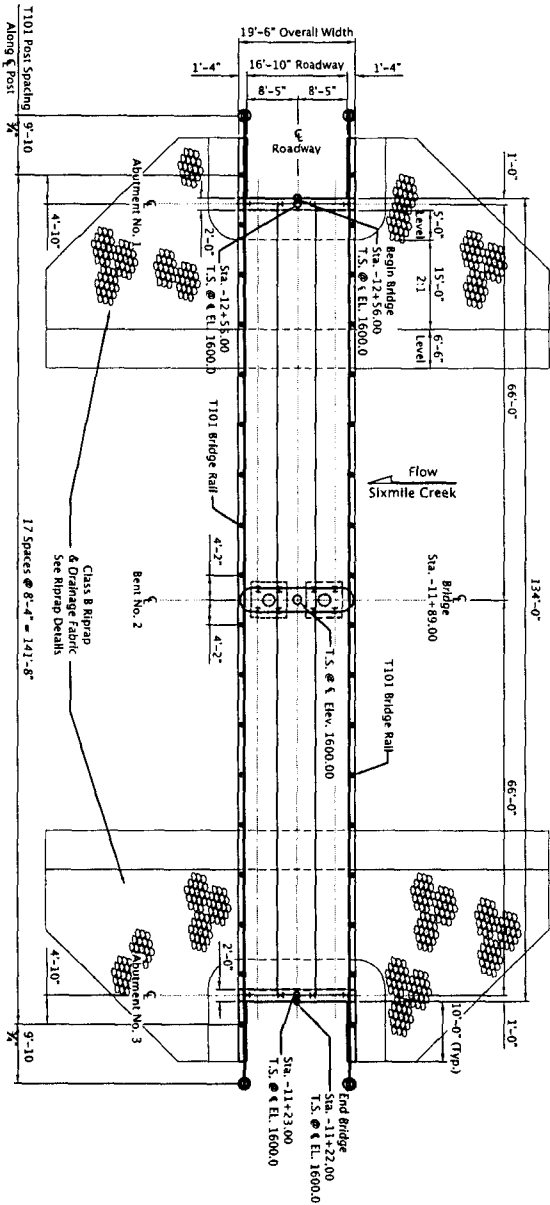
The approximately 73,000 cubic yards of material will be placed in the existing channel.

d. Adjacent Property Owners

Location (S-T-R)	Property Owner(s)
-AIRPORT THIRD ADDN, BLOCK 2 BROOKINGS CITY 16.23 ACRES IN SEC. 22-110-50, -SE 1/4 LYING SOUTHERLY OF RR ROW & EXC S 6 RODS OF SE 1/4 SE 1/4 SE 1/4, THEREOF & SE 1/4 SW 1/4 LYING SOUTHERLY OF RR ROW 90 ACRES IN SEC. 21-110-50, -OUTLOTS ADDITION, OL A IN SEC. 27-110-50, BROOKINGS CITY ESTIMATE 84.0 ACRES - SUBLOT "A" OF OL 1 OF SW 1/4 NW 1/4 SEC. 27- 110-50 7.06 AC	City of Brookings (applicant) P.O. Box 270 Brookings, SD 57006
-SE 1/4 NE 1/4 EXC N 842' OF E 630' THEREOF & THAT PART OF SE 1/4 LYING NORTHERLY OF EXISTING RR R-O-W ALL IN SEC 21-110-50 - OL 1 IN SEC. 28-110-50 - OL 2 IN SEC. 28-110-50	Leo & Eleanor Moriarty 2485 Virginia Parkway Webster City, IA 50595 William A. Mix P.O. Box 375 Arlington, SD 57212
- JAMES ADDN TRACT 2 10.27 ACRES IN SEC. 28- 110-50 - JAMES ADDN TRACT 1 98.00 ACRES IN SEC. 28- 110-50	Jason Voss 141 Main Ave S Brookings, SD 57006
- NE 1/4 SE 1/4 SEC. 28-110-50 - OL 4 IN SEC. 28-110-50	Lyle D. Olson 410 W 16 th Ave S Brookings, SD 57006 Barry A. Goodwin 1113 E Beechnut Ave Brandon, SD 57005
- OL 2 OF NW 1/4 SW 1/4 IN SEC. 27-110-50 3.85 AC - SUBLOT B OF OL 1 OF SW 1/4 NW 1/4 SEC. 27- 110-50 16.15 ACRES	Robert J. Lacher 127 W 16 th Ave S Brookings, SD 57006
- SW 1/4 NW 1/4 EXC. SUBLOTS A & B OF OL 1 IN SEC. 27-110-50 - W 1/2 SW 1/4 EXC. S 765' & OL 2 IN SEC. 27-110- 50	Dorothy C. Lees 2135 Elmwood Dr Brookings, SD 57006
- W 1/2 EXC AIRPORT THIRD ADDN SW 1/4 & EXC LOT A NW 1/4 NW 1/4 270.99 AC IN SEC. 22-110- 50	South Dakota State University Brookings, SD 57007

The elevations shown in these plans are based on the National Geodetic Survey (NGS) North American Vertical Datum of 1988 (NAVD88).

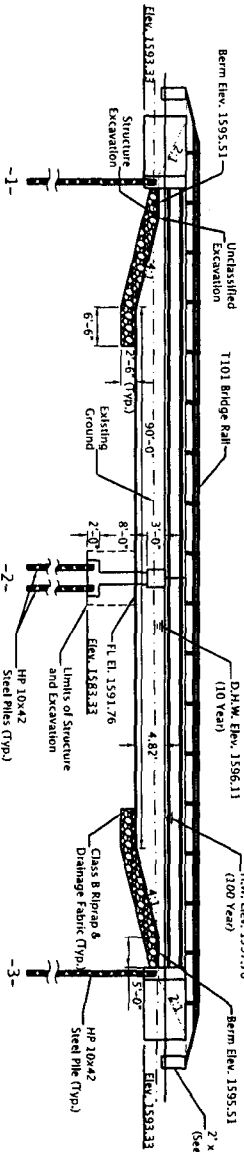
GENERAL DRAWING 134' PRESTRESSED CONCRETE RAIL TEE BRIDGE 16'-10" ROADWAY OVER SIXMILE CREEK, 0° SKEW



PLAN

NOTE:
T.S. @ E.L. = Top of Slab at Center Line Elevation

ELEVATION

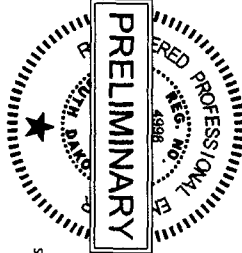
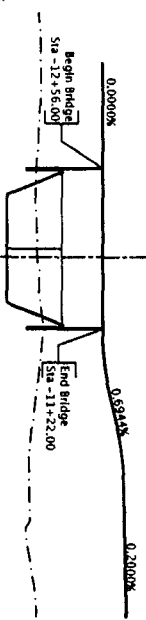


* Includes majority of Q100 flows sheet flowing across hydraulic data above reflects Manning's n values and formwork. However, elevation data of MSSS reflects modeled results using XFSWMM. XFSWMM results show lower stream velocity due to the flat slope of the channel; therefore Manning's values were used to be a more conservative design of the bridge.

HYDRAULIC DATA

Qd	3.8 cfs
Vd	3.0 ft/s
Qd	Unknown
Q100	4,000.0 cfs
Qd	Unknown
Vmax	2.4 ft/s

Qd = Design discharge for the proposed bridge based on 10 year frequency. EL. 1596.11
Q100 = Computed discharge for the design frequency. EL. 1597.76, based on old HEC-2 model by CE.
Vmax = Maximum computed outlet velocity for the proposed bridge based on flow to low beam elevation, and Manning's n=0.015.



STRUCTURE SHEET
1 OF 16

Brookings Regional Airport
Runway 11/29 Realignment - Phase 1

CAD Filename:
General Drawing

CDI Project No.
2011-056

Drawn By:
JDS/CAB

Checked By:
CLB

Scale:
No Scale

Date:
05/15/2012

DESIGN INC.

609 Main Ave S
Brookings, SD
605-686-3200

Sheet No:

of No:

SITE LAYOUT

Proposed Property Line

212th St (6th St)

OUTLOT - 1

MALSR & Service Road Alignment

Section 28 T110N R50W

Bridge
Sixmile Creek Realignment Sta. = 175+13.53
MALSR & Service Road Alignment Sta. = -11+89.00

469th Ave Alignment

Sixmile Creek Realignment

OUTLOT - 2

TRACT - 1

TRACT - 2

SUBLOT - B

Begin Channel Realignment
Sta. 156+47.74

End Channel Realignment
Sta. 193+78.05

Phase I - Sixmile Creek Grading Limits
(See Sixmile Creek Plan & Profile)

Sixmile Creek Alignment

Section 27 T110N R50W

North

Runway 11/29 Taxiway

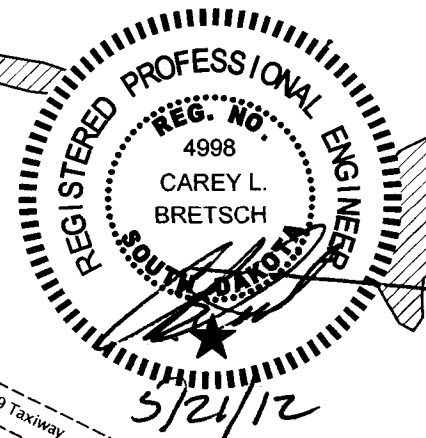
Runway 11/29 Realignment

SW 1/4 NW 1/4
EXC SUBLOTS A & B &
OUTLOT 1

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SITE LEGEND

- Monument Recovered
- ++++ DM&E Mainline
- Sixmile Creek Realignment
- - - Proposed Property Line
- - - Section Line
- Existing Property Line
- ▨ Jurisdictional Wetland

ALIGNMENTS

Alignment	Sta	to	Sta
Sixmile Creek Realignment	156+47.74		193+78.05
Sixmile Creek	156+00.00		182+18.97
MALSR & Service Road	-27+93.97		-10+00.00
Runway Safety End Area	-10+00.00		0+00.00
Runway 11/29 Realignment	0+00.00		60+00.00
469th Ave	10+00.00		29+29.28
Access Road	0+00.00		5+81.71

Brookings Regional Airport
Runway 11/29 Realignment - Phase I

CAD Filename:
Site Layout

CDI Project No.
2011-056

Drawn By:
DAF

Checked By:
CLB

Scale:
1" = 250'

Date:
5/21/2012

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SITE LAYOUT

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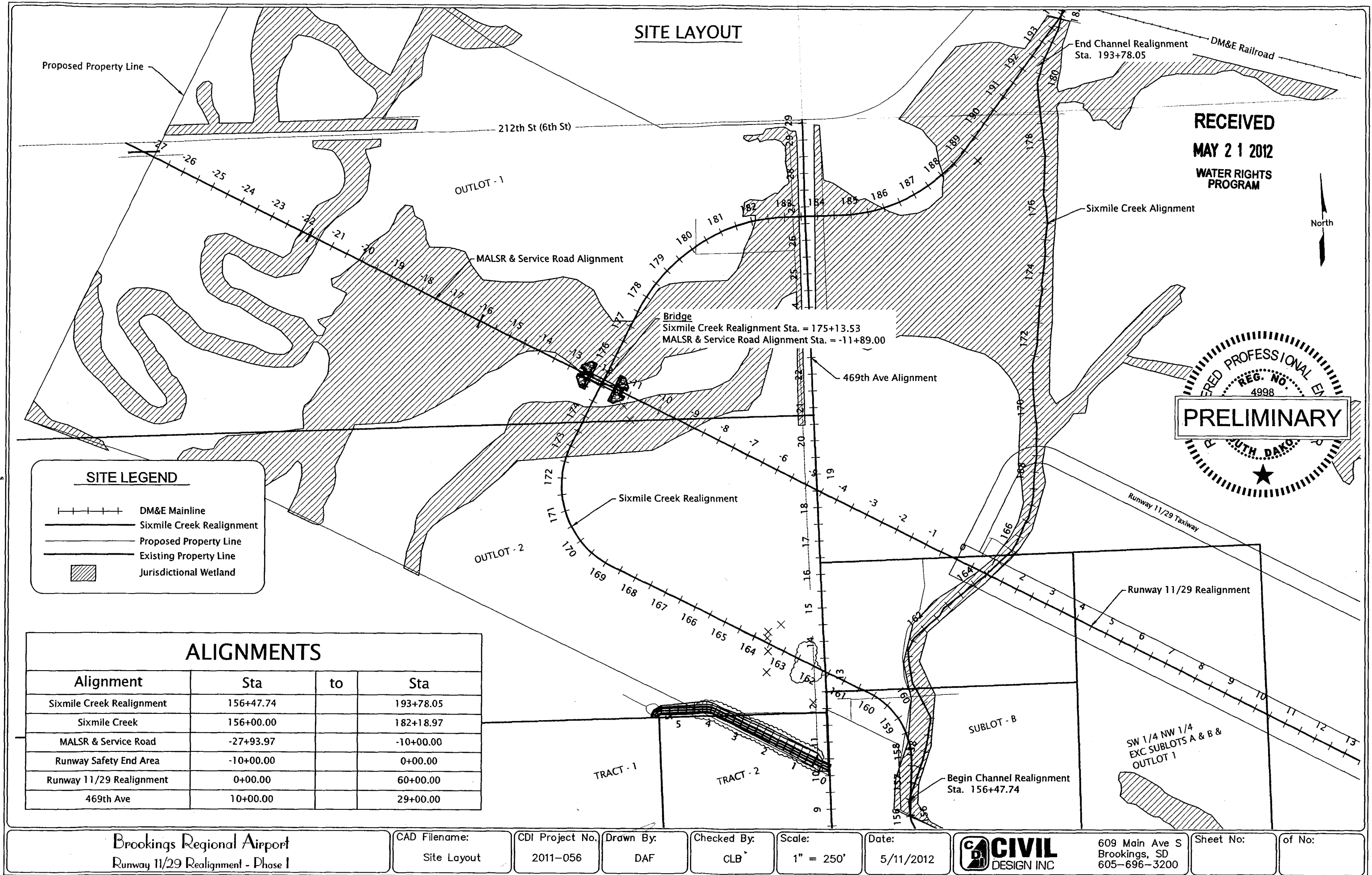


SITE LEGEND

- DM&E Mainline
- Sixmile Creek Realignment
- Proposed Property Line
- Existing Property Line
- Jurisdictional Wetland

ALIGNMENTS

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MALSR & Service Road	-27+93.97		-10+00.00
Runway Safety End Area	-10+00.00		0+00.00
Runway 11/29 Realignment	0+00.00		60+00.00
469th Ave	10+00.00		29+00.00



Brookings Regional Airport
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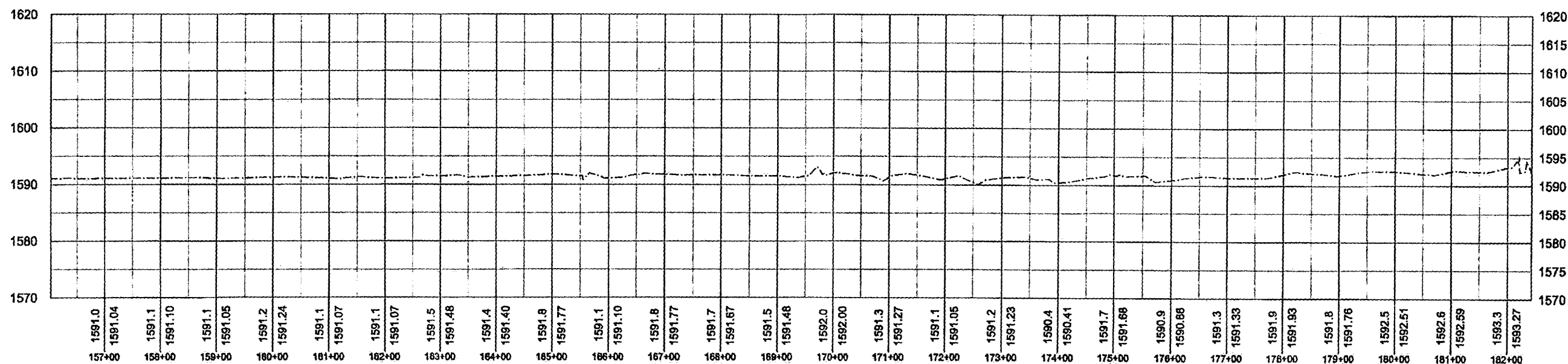
609 Main Ave S
Brookings, SD
605-696-3200

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EXHIBIT 7

Existing Sixmile Creek



$$S = \frac{1.5}{2396.93} = .000626' / 1' = .0626\%$$

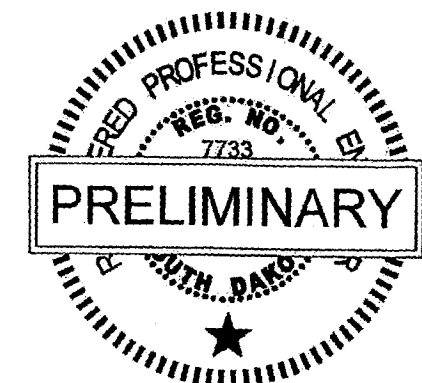
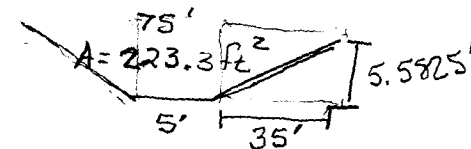
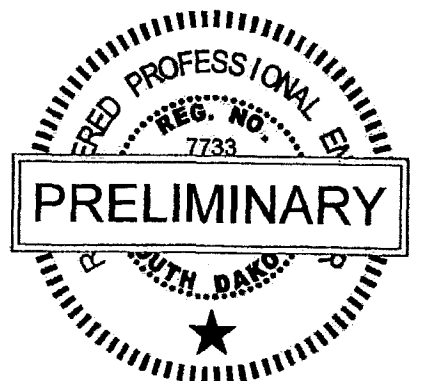
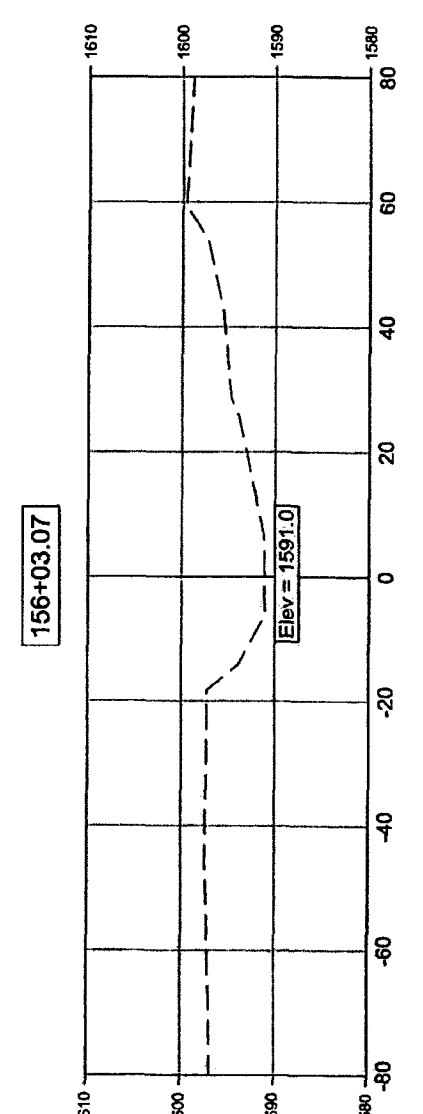
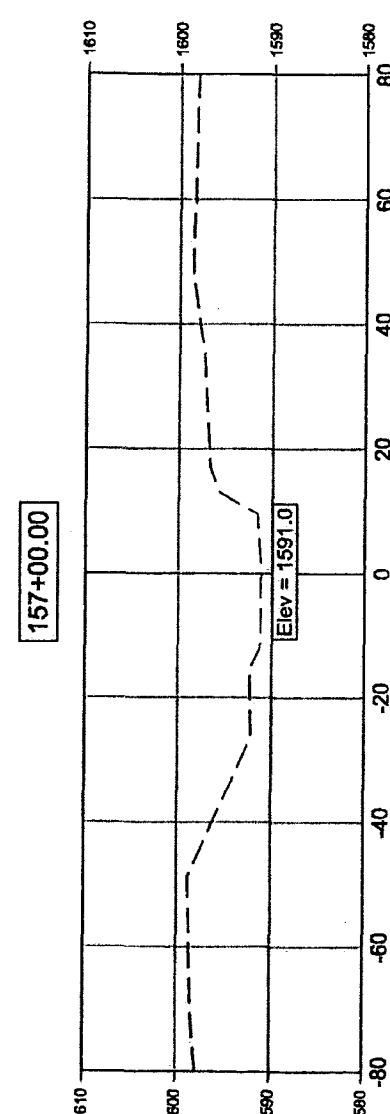
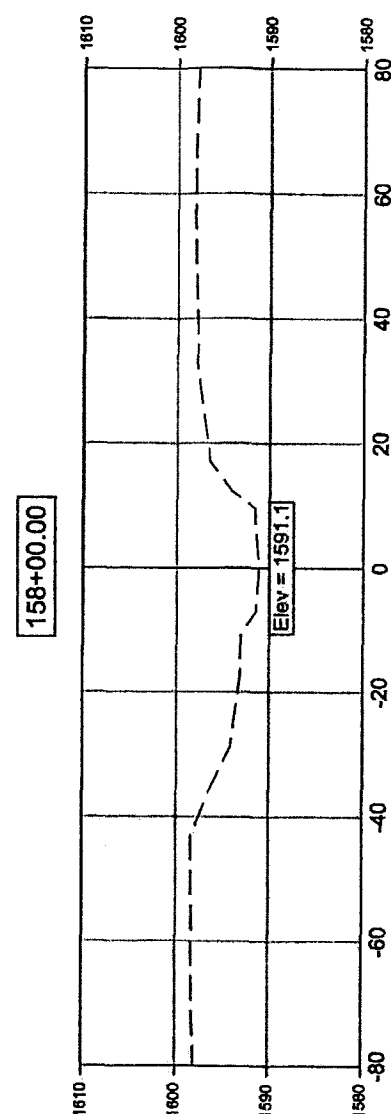
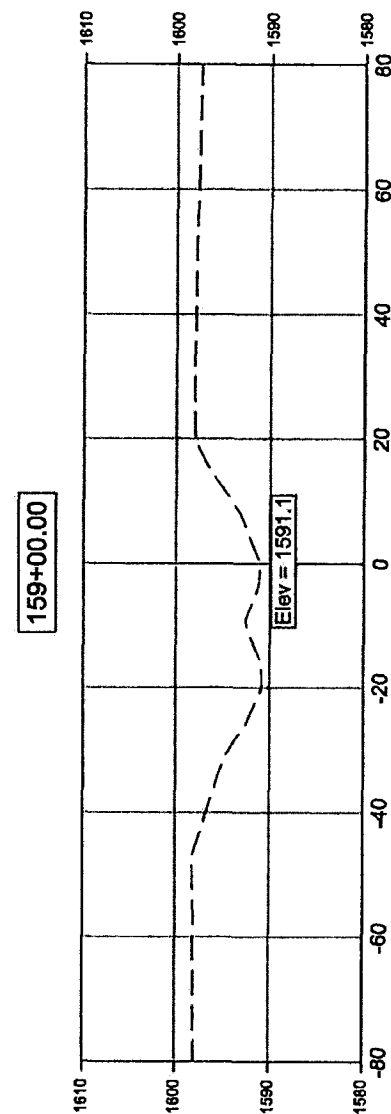
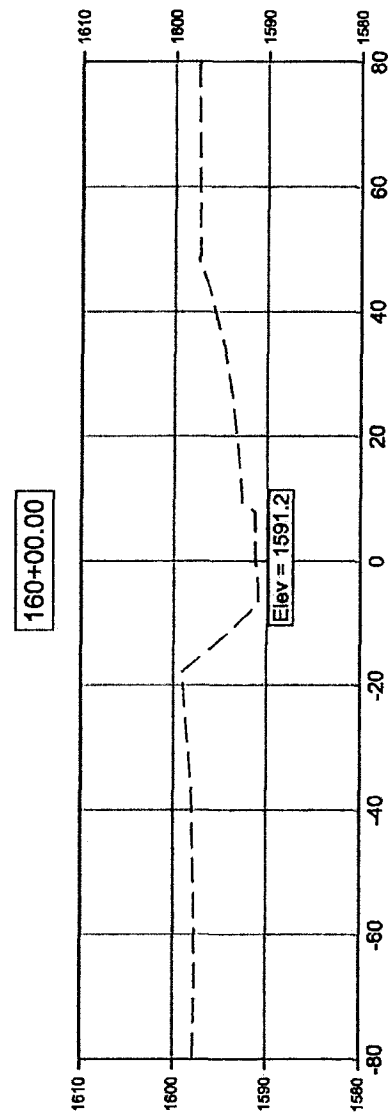


EXHIBIT 8



Brookings Airport - Exhibit 8

CAD Filename:
Cross Sections

CDI Project No.
2011-056

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SRS

Scale:
H: 1" = 30'
V: 1" = 20'

Date:
2/8/2012

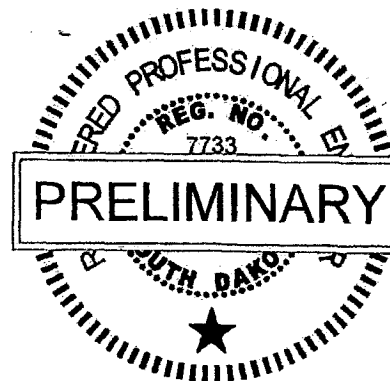
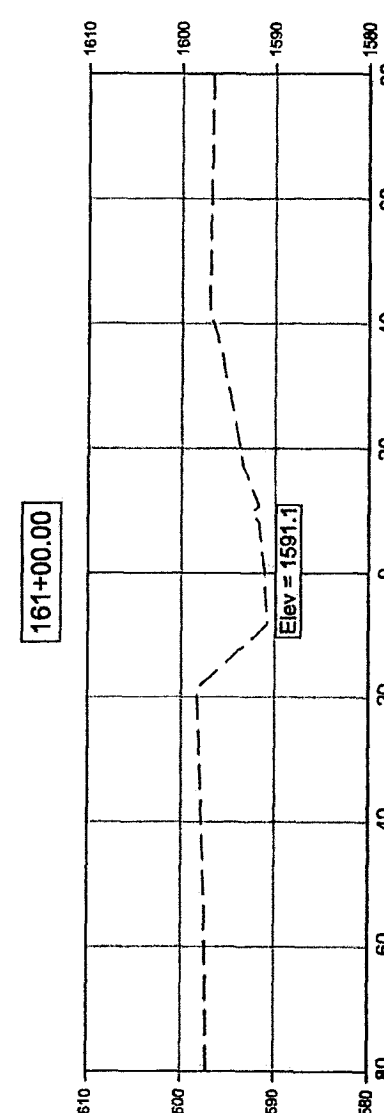
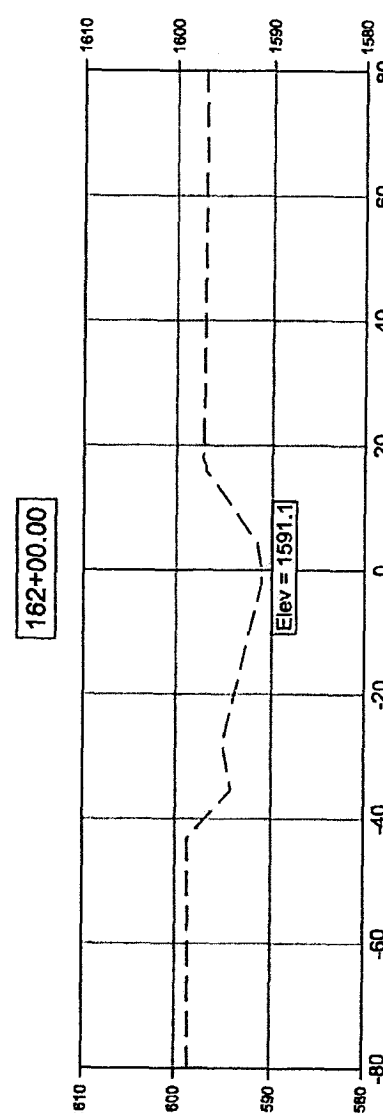
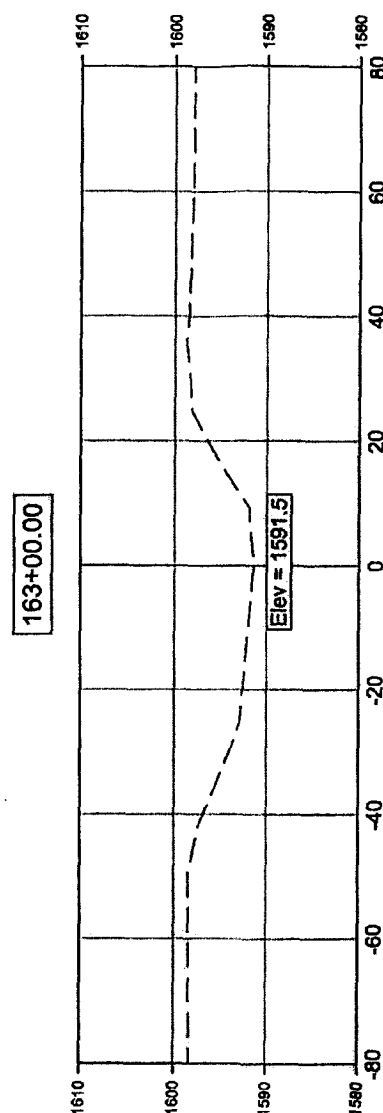
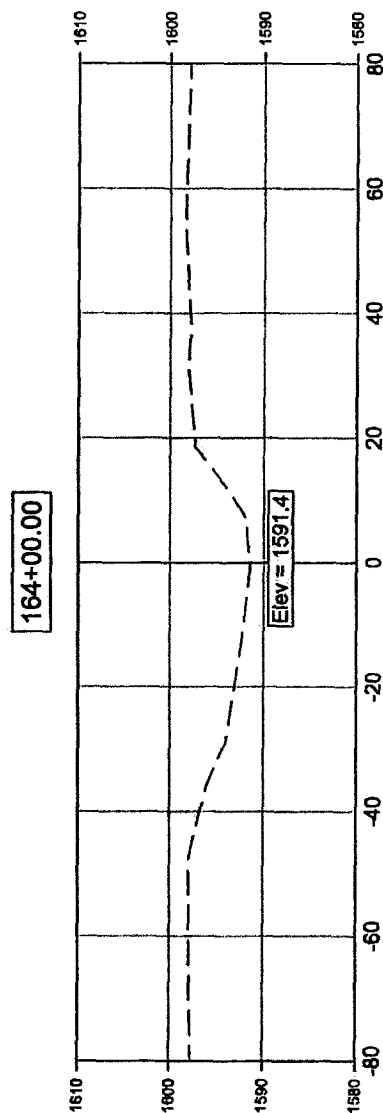
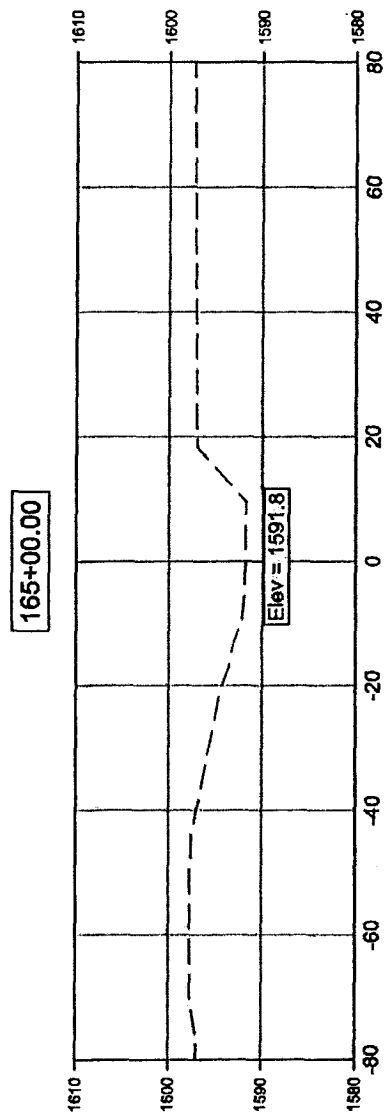


609 Main Ave S
Brookings, SD
605-696-3200

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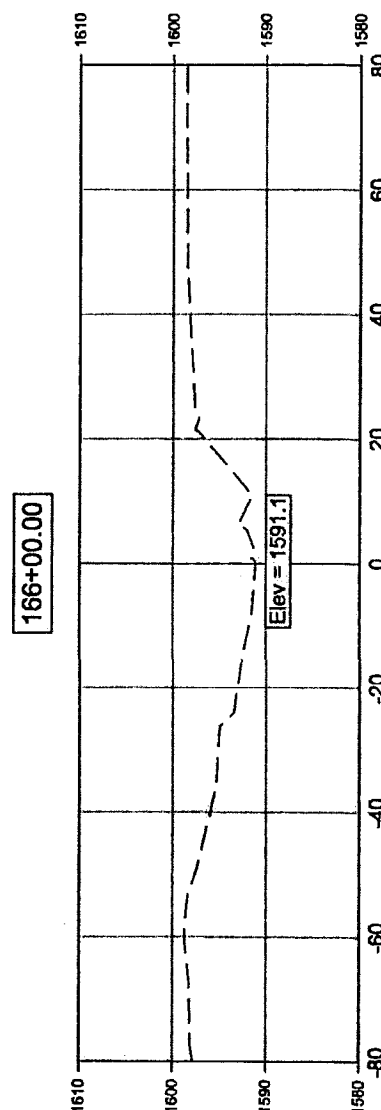
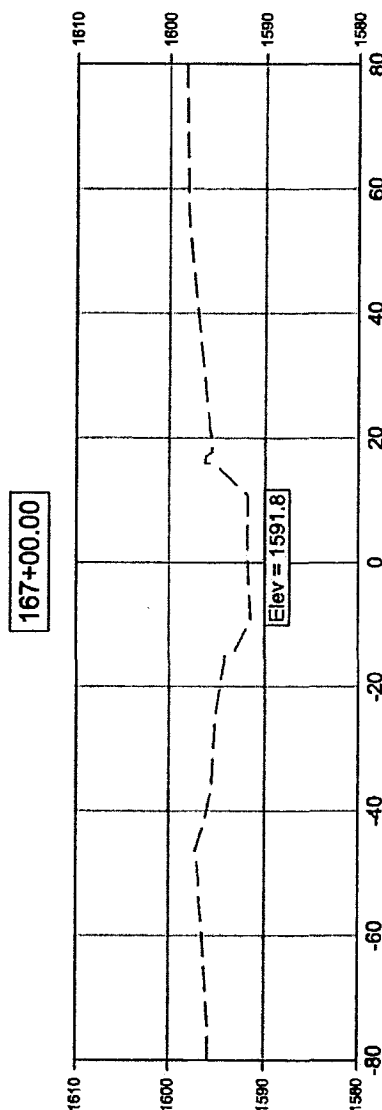
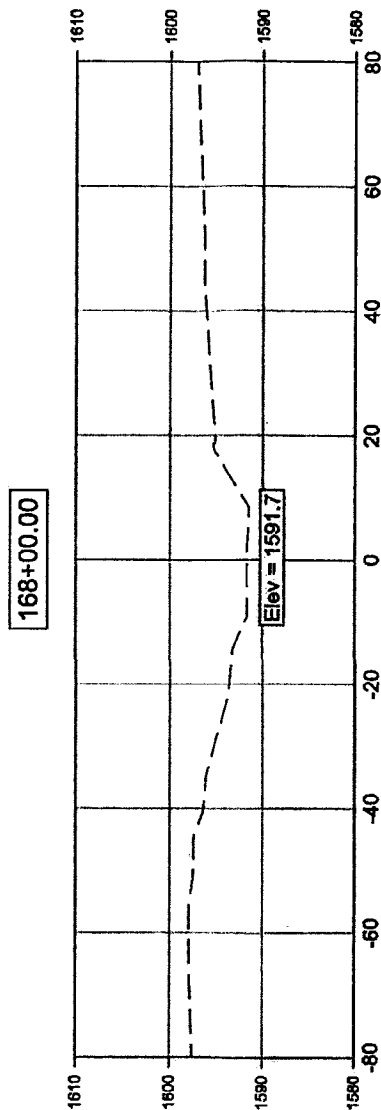
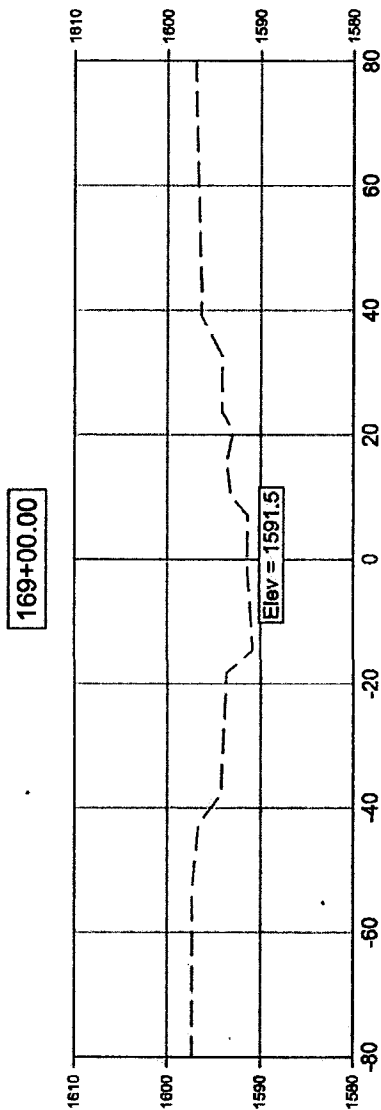
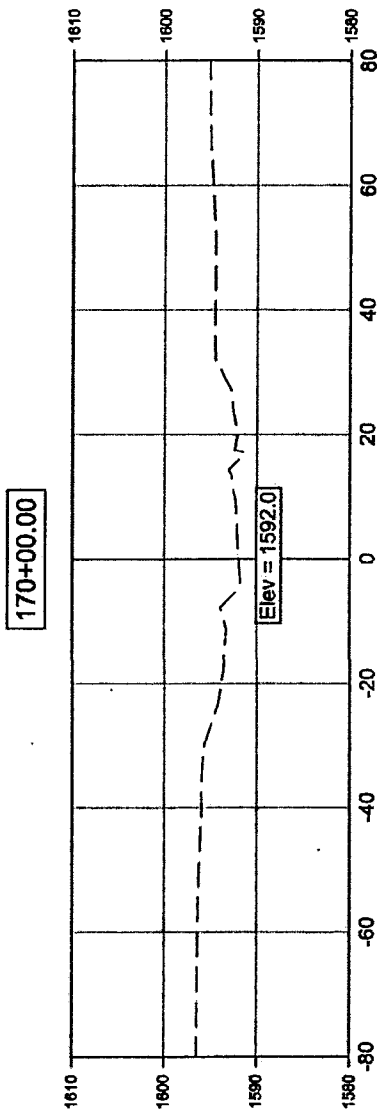


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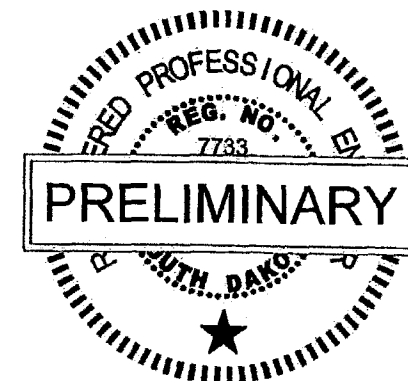
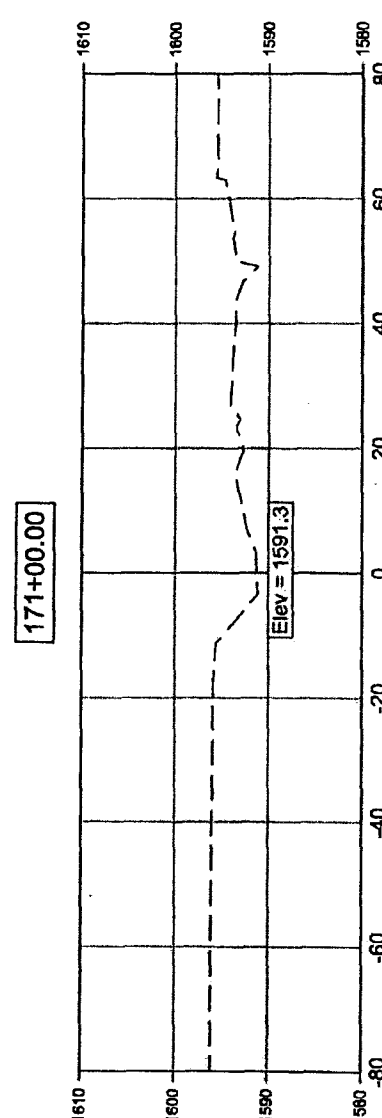
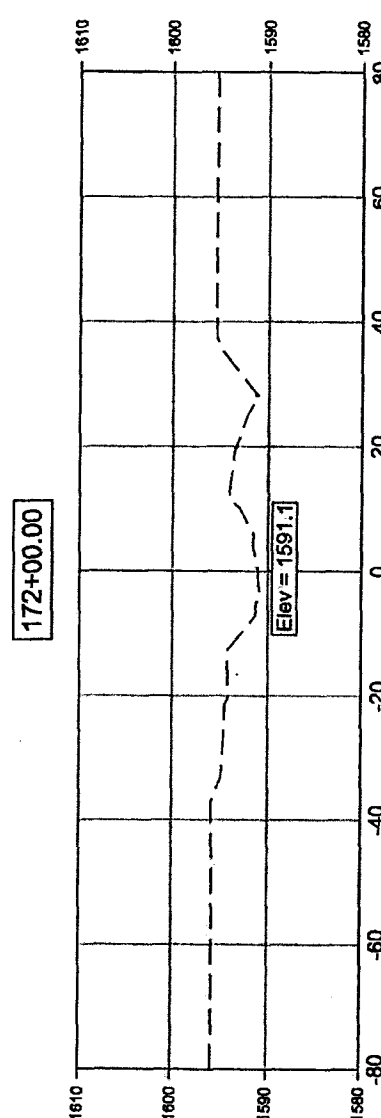
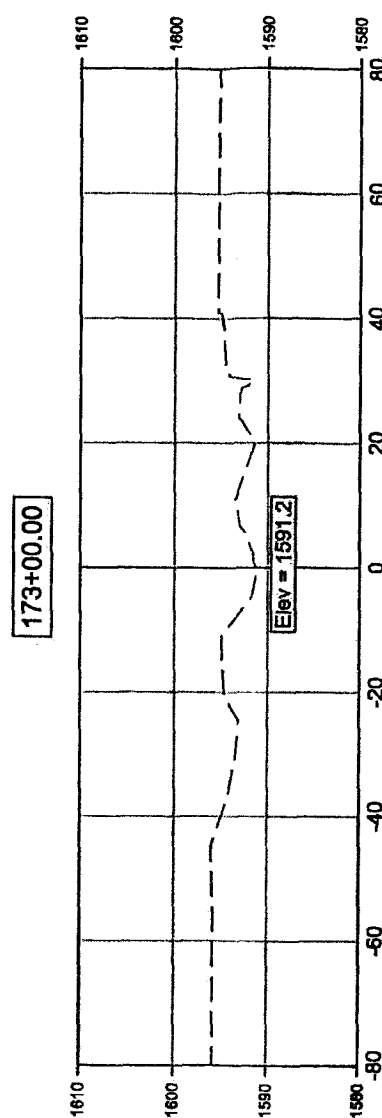
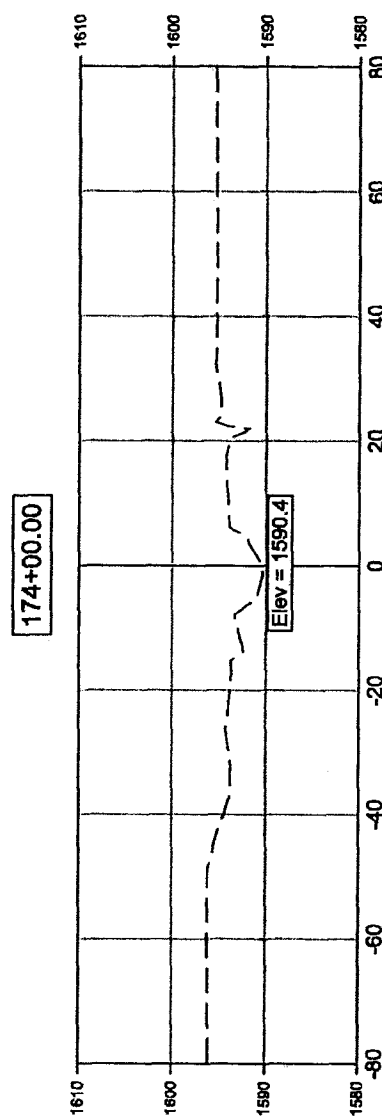
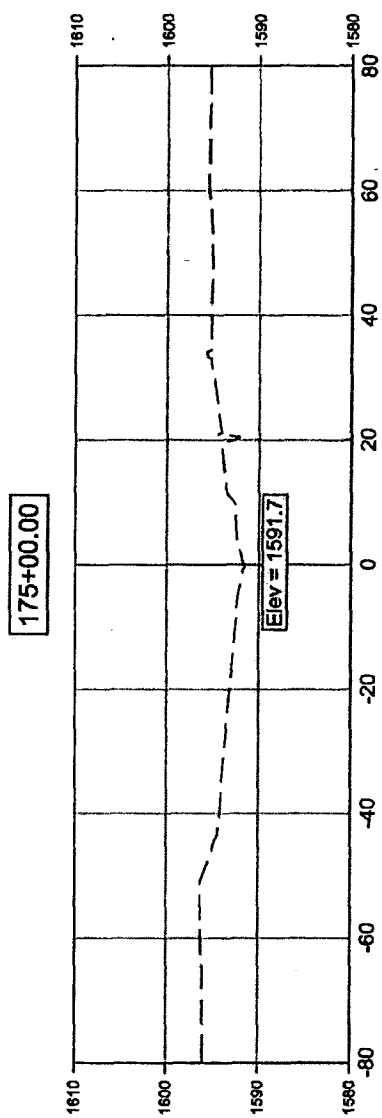


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CAD Filename:
Cross Sections

CDI Project No.
2011-056

Drawn By:
DAF

Checked By:
SRS

Scale:
H: 1" = 30'
V: 1" = 20'

Date:
2/8/2012

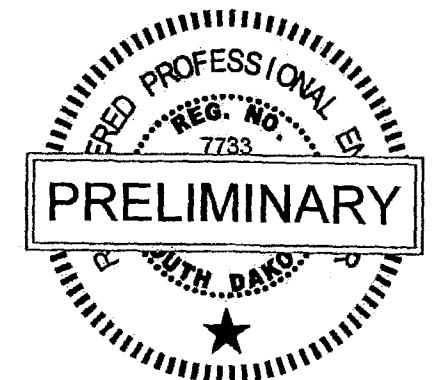
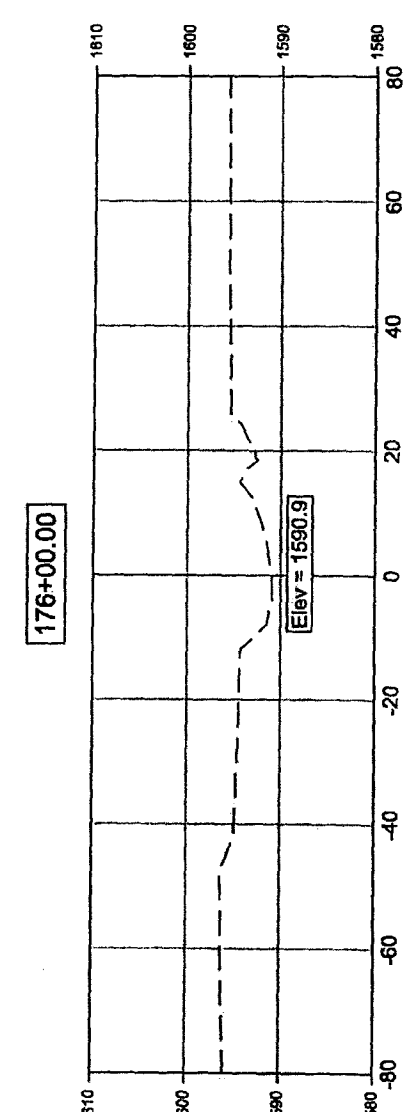
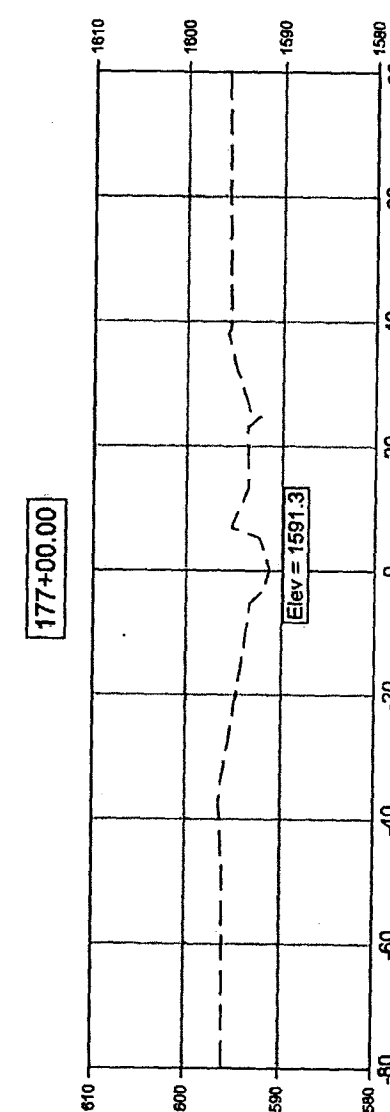
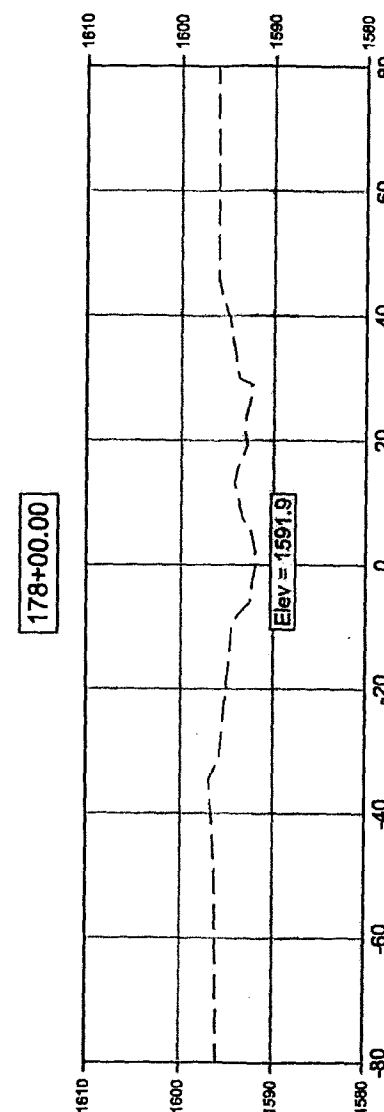
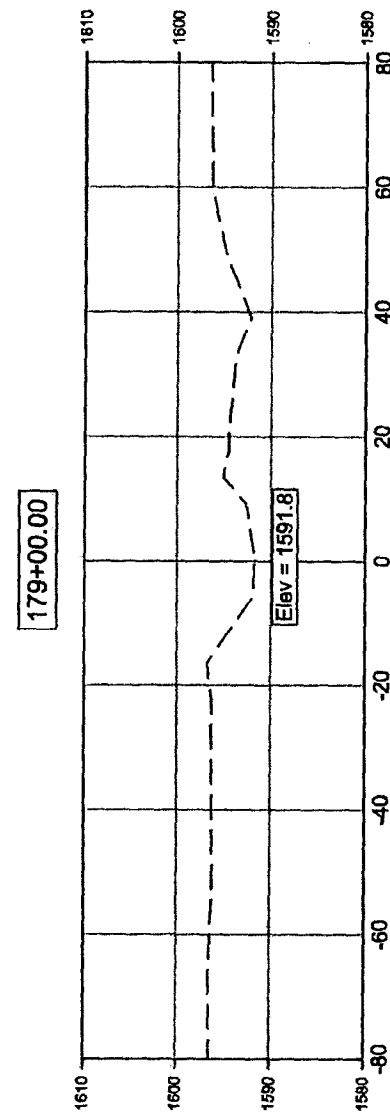
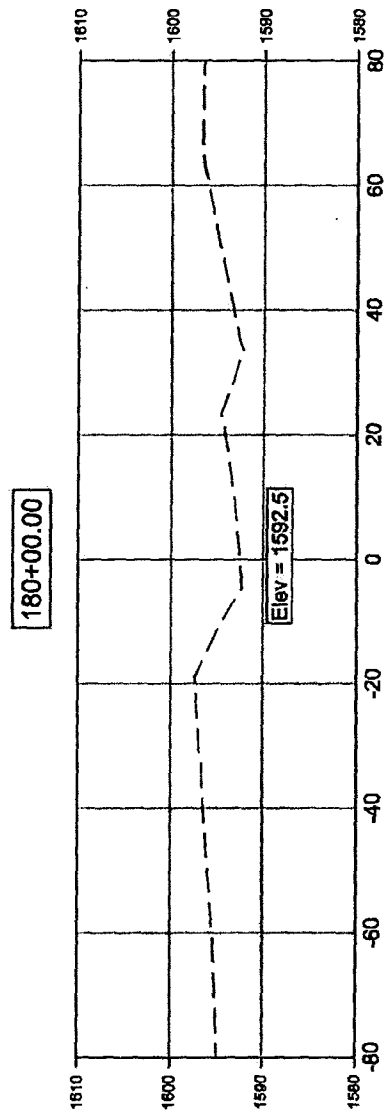


609 Main Ave S
Brookings, SD
605-696-3200

Sheet No:

of No:

EXHIBIT 8



Brookings Airport - Exhibit 8

CAD Filename:
Cross Sections

CDI Project No.
2011-056

Drawn By:
DAF

Checked By:
SRS

Scale:
H: 1" = 30'
V: 1" = 20'

Date:
2/8/2012



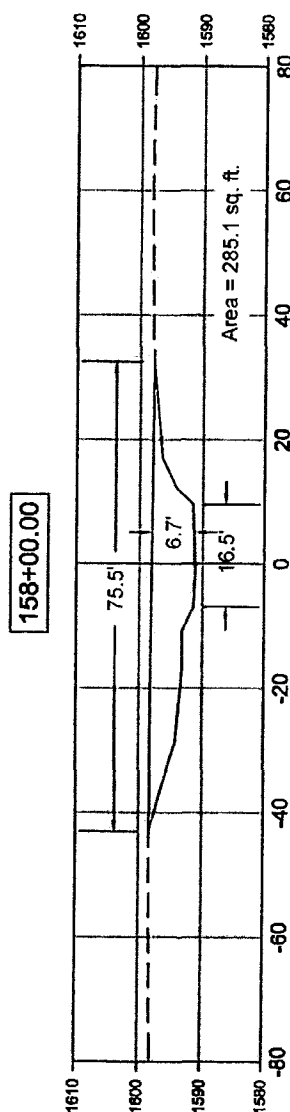
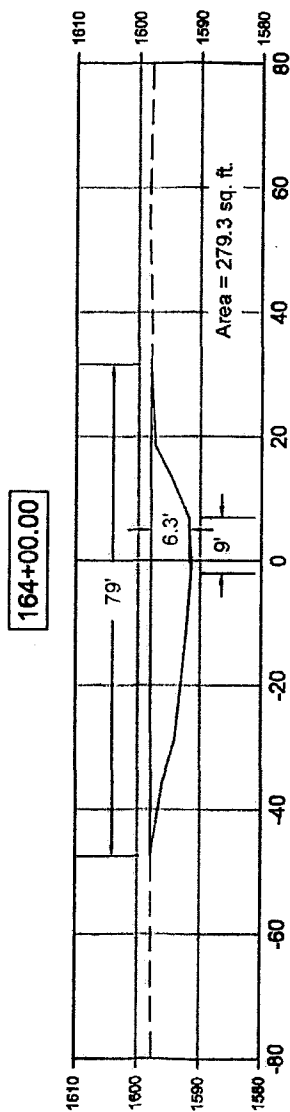
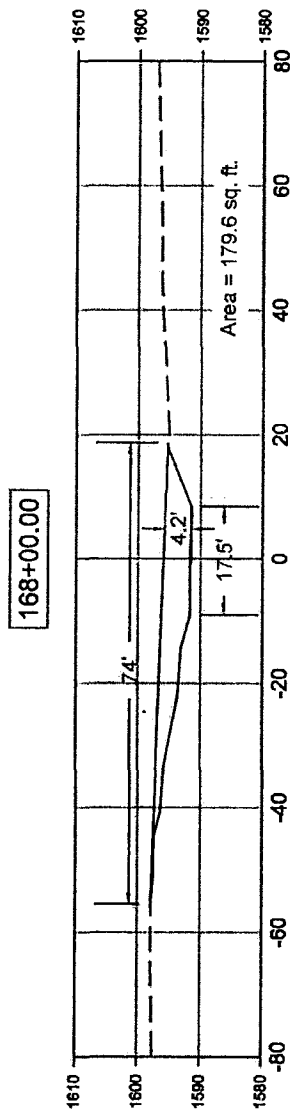
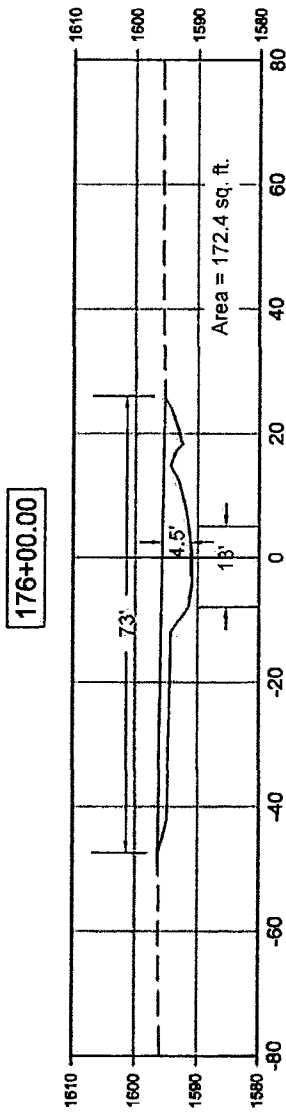
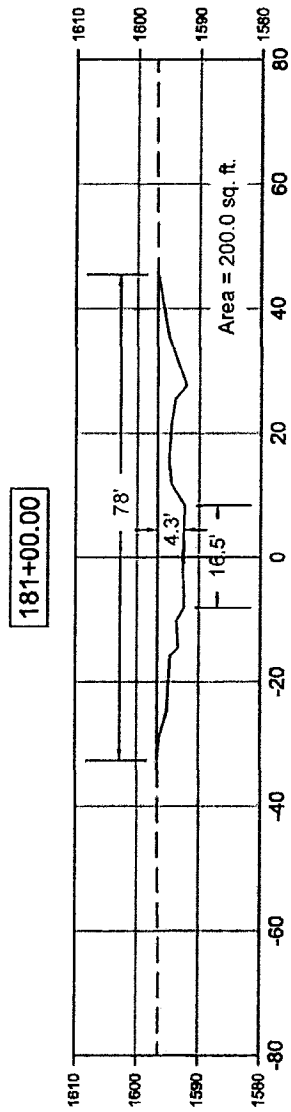
609 Main Ave S
Brookings, SD
605-696-3200

Sheet No:

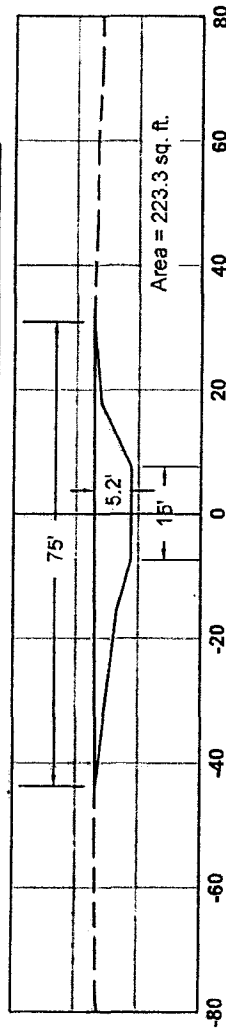
of No:

REPRESENTATIVE CROSS SECTIONS

Approximately 140' South of DM&E
Railroad bridge.



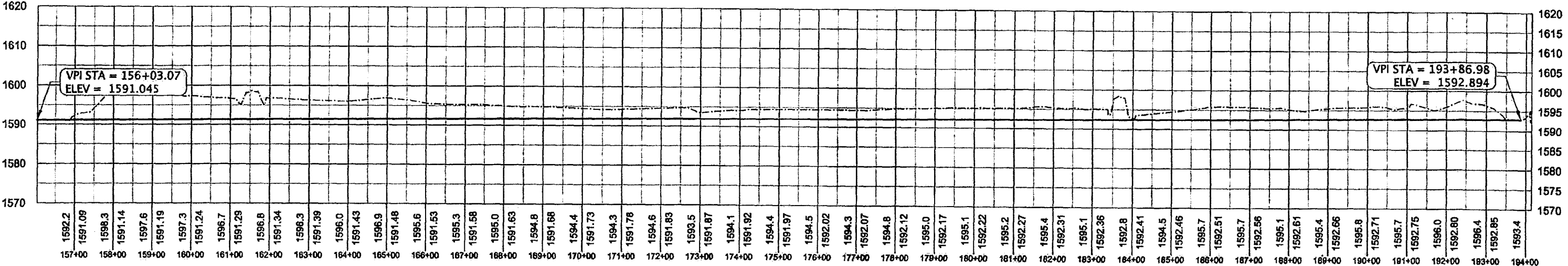
COMBINED AVERAGE TYPICAL SECTION - SIXMILE CREEK



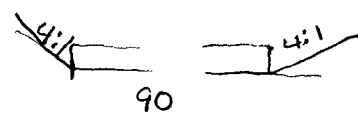
Stationing shown refers to River Station in
feet from confluence of Big Sioux River
Date of Survey : December, 2011

EXHIBIT 9

Proposed Sixmile Creek



$$S = \frac{1.849'}{3783.91} = .000489 = .0489\%$$



$$\begin{aligned} 2.5' &= 90(2.5) \\ &= 225 \\ 2' &= 90(2) \\ &= 180 + 16 \\ 2.25' &= 202.5 \div 90 \\ &= 2.25 \end{aligned}$$

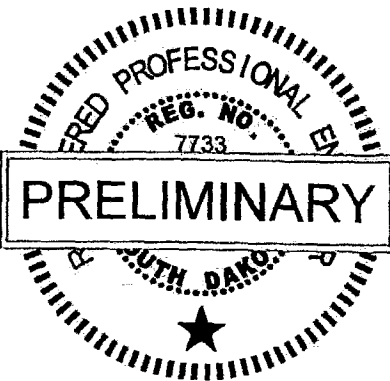


EXHIBIT 10

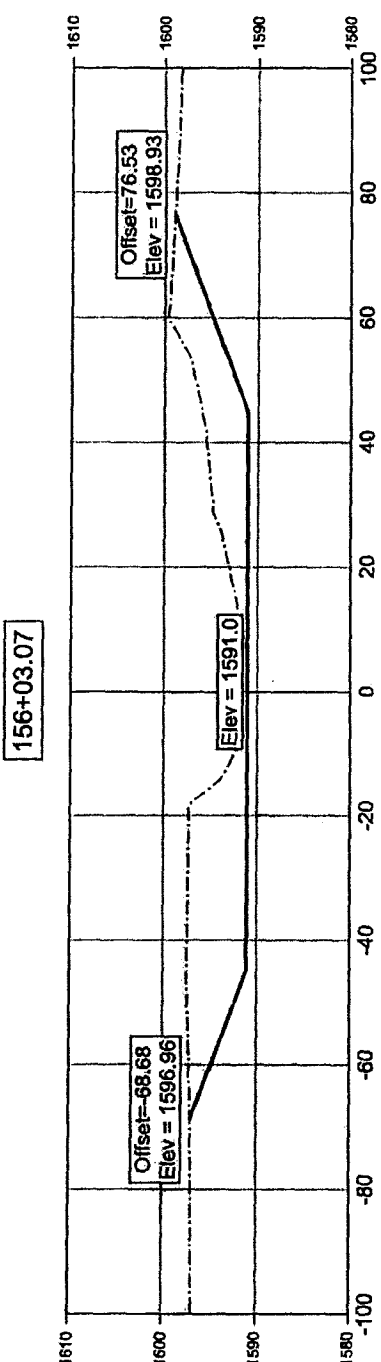
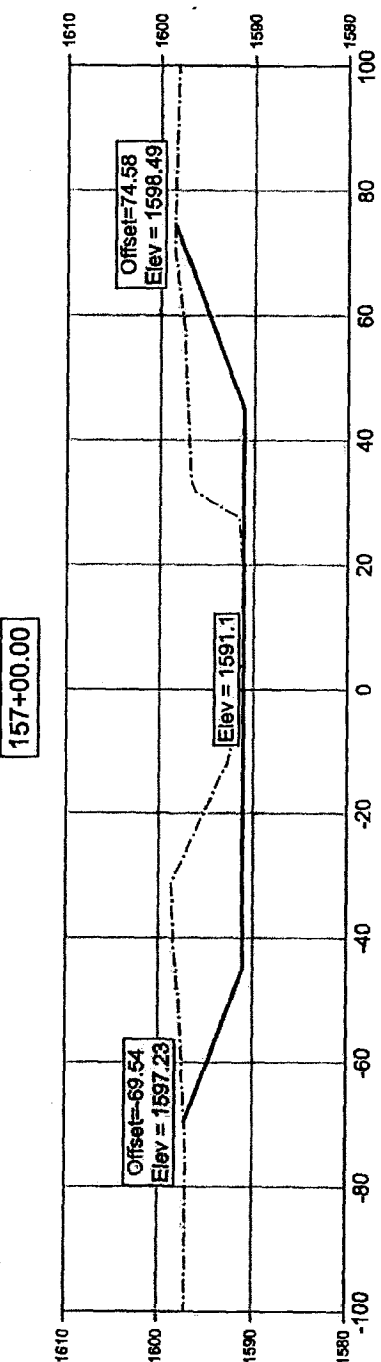
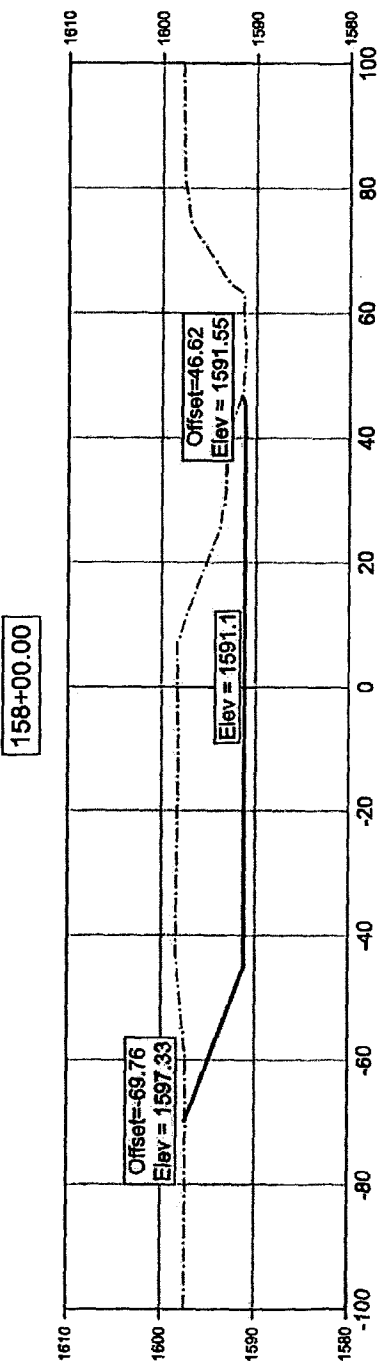
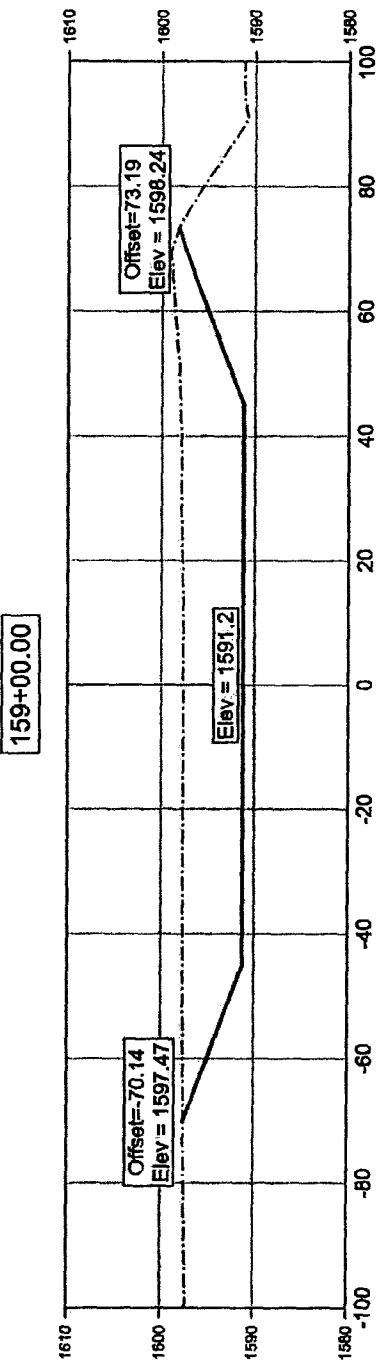
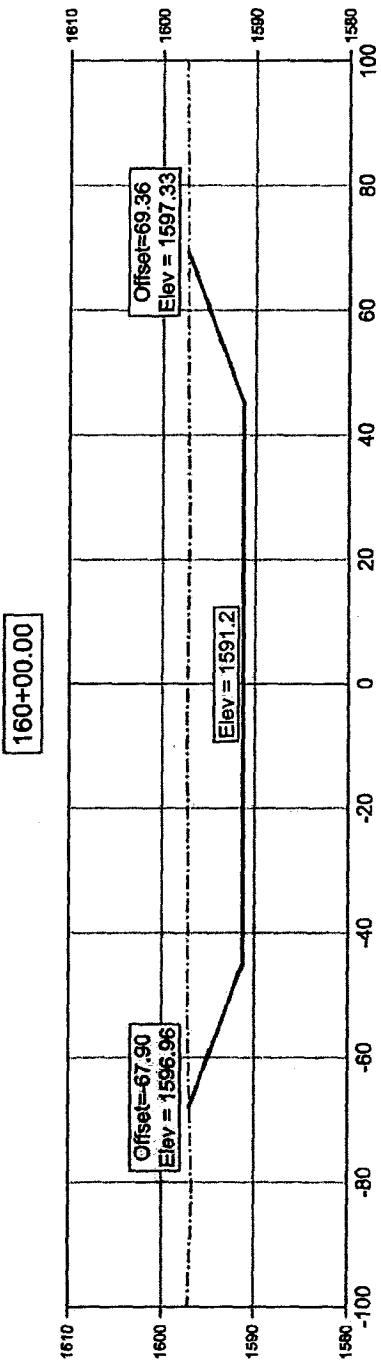
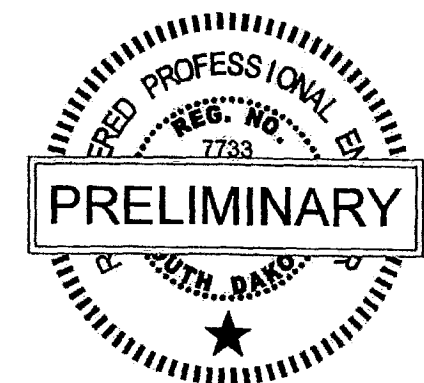
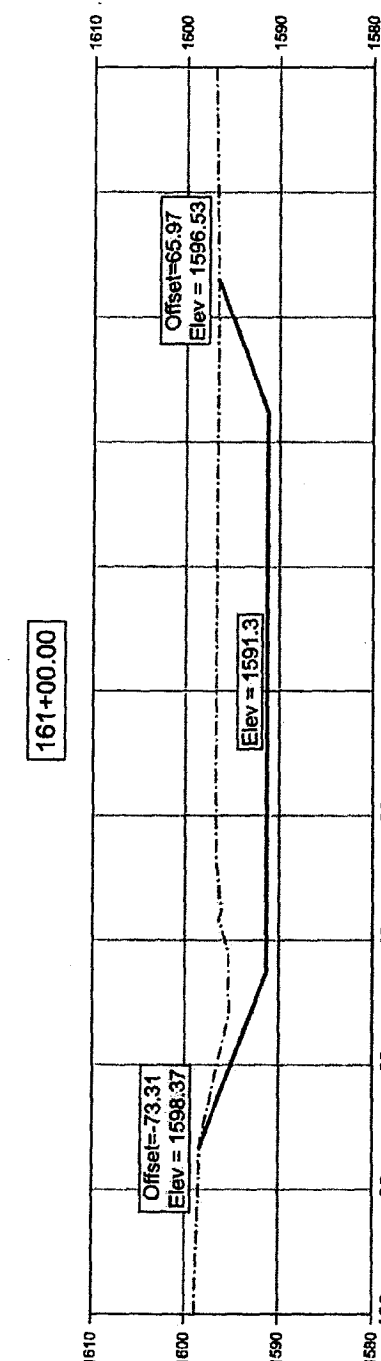
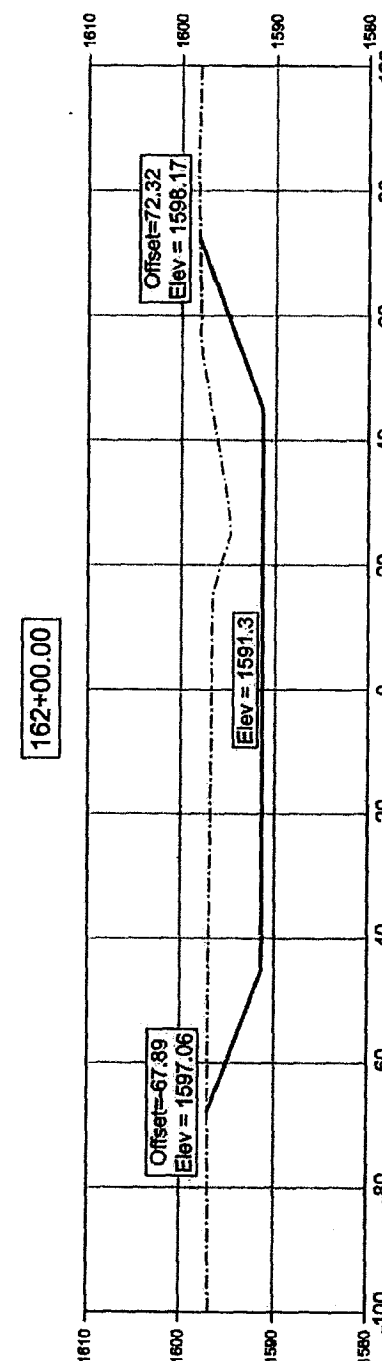
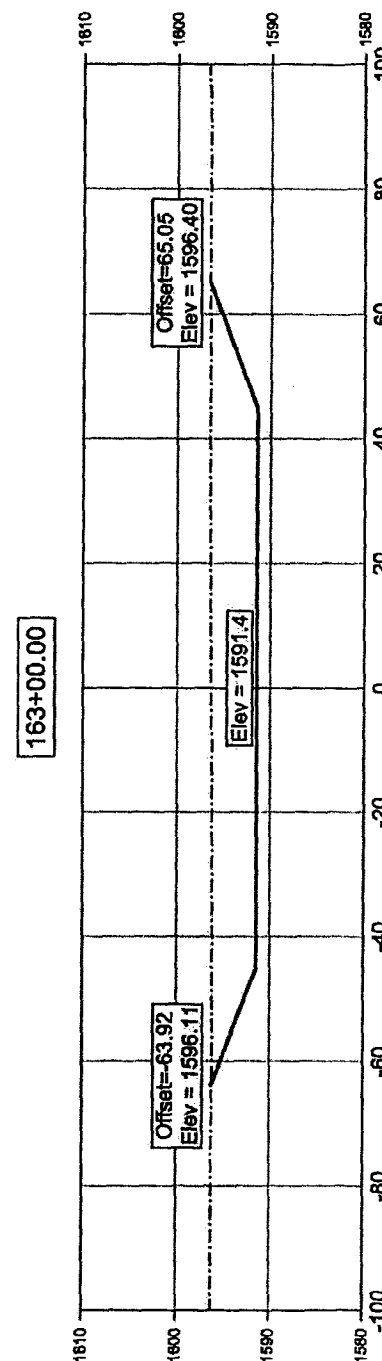
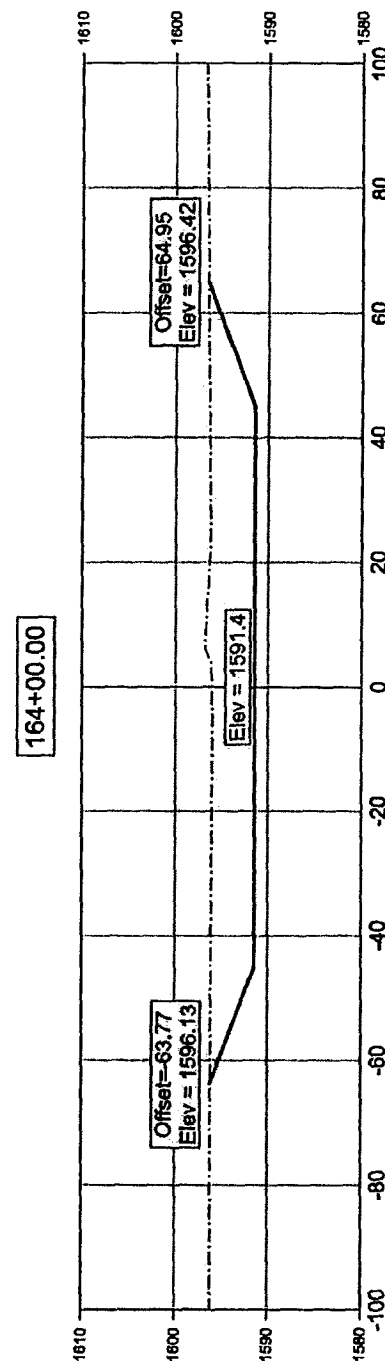
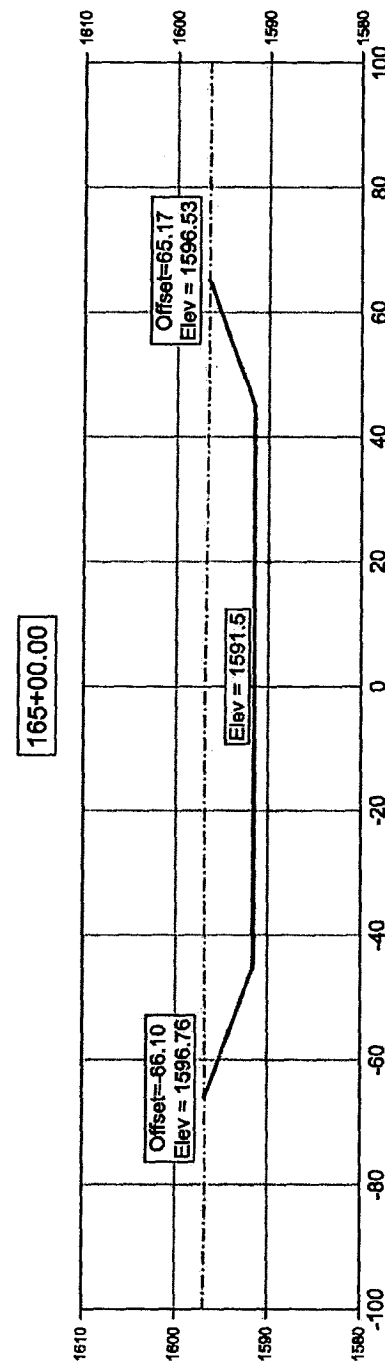


EXHIBIT 10



Brookings Airport - Exhibit 10

CAD Filename:
Proposed Cross Sections

CDI Project No.
2011-056

Drawn By:
DAF

Checked By:
SRS

Scale:
H: 1" = 30'
V: 1" = 20'

Date:
2/10/2012



609 Main Ave S
Brookings, SD
605-696-3200

Sheet No:

of No:

EXHIBIT 10

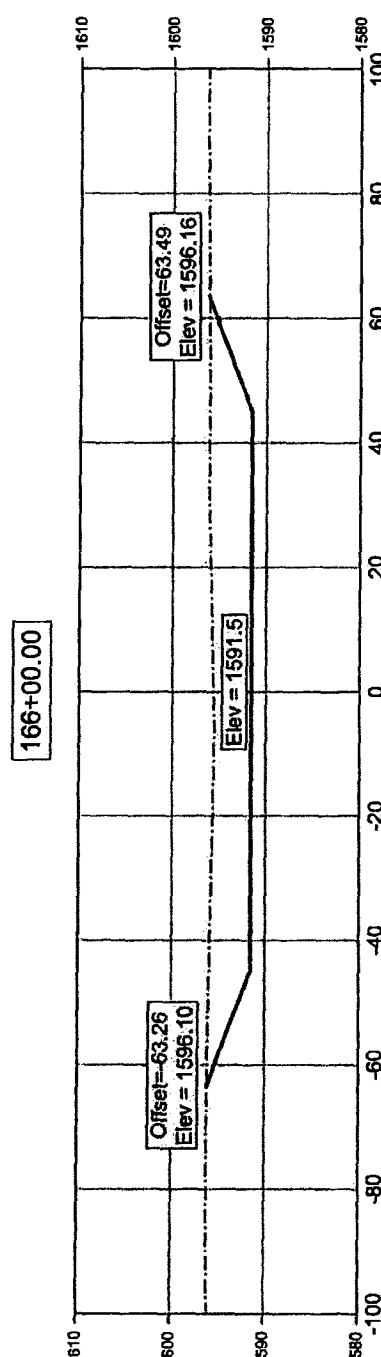
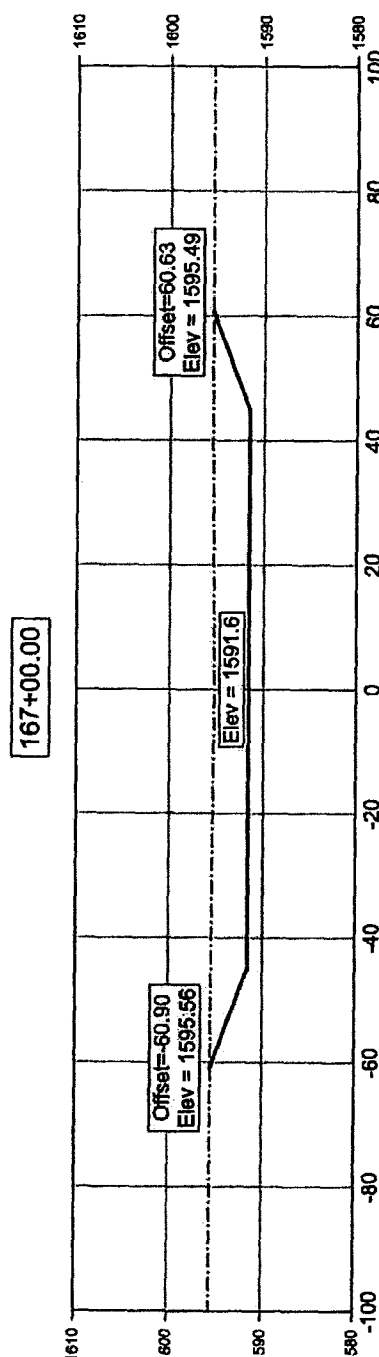
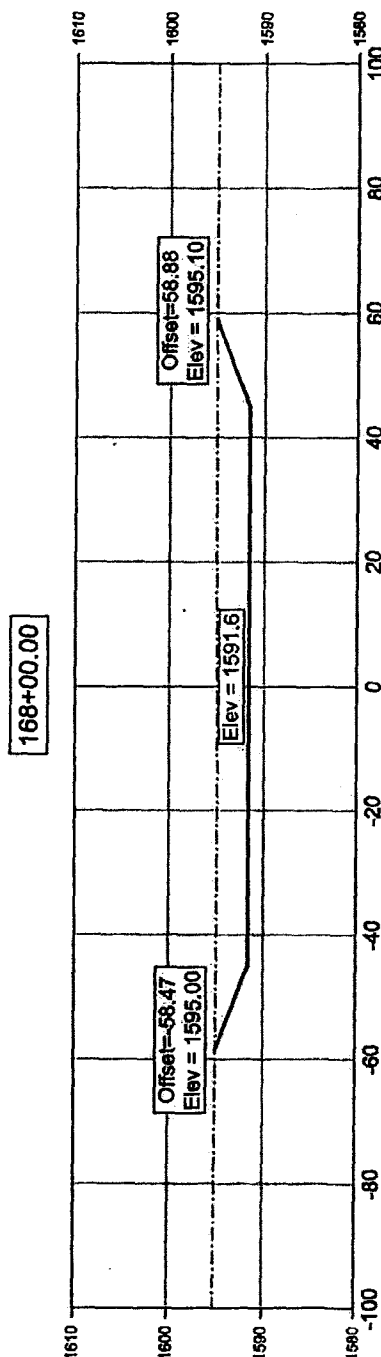
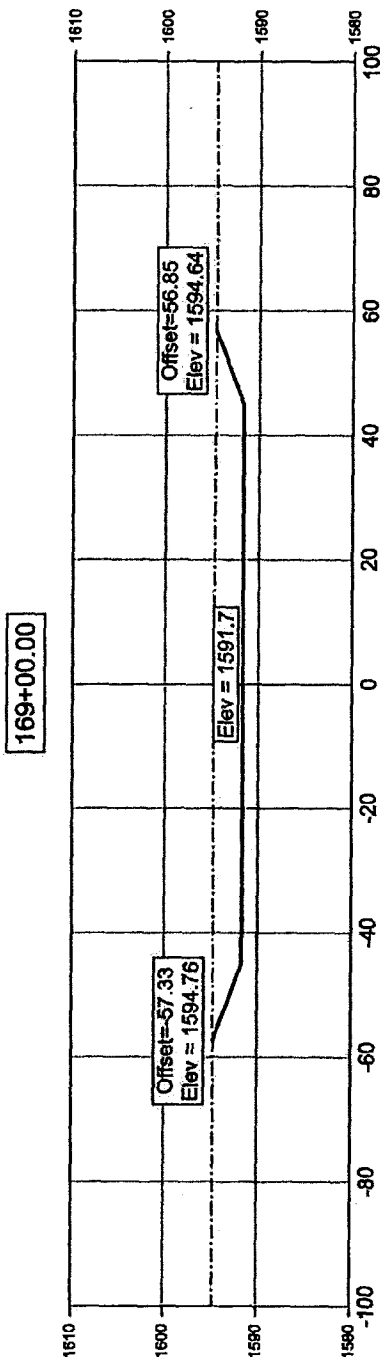
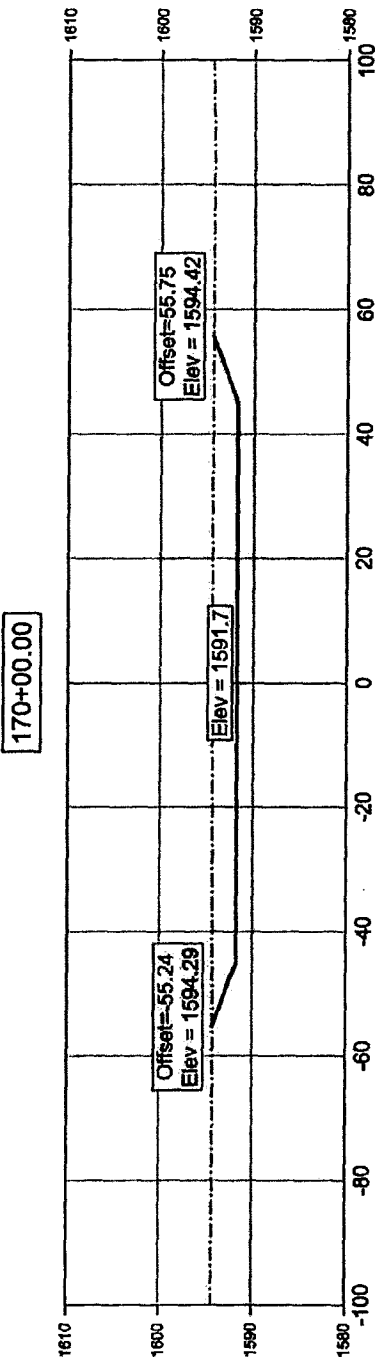
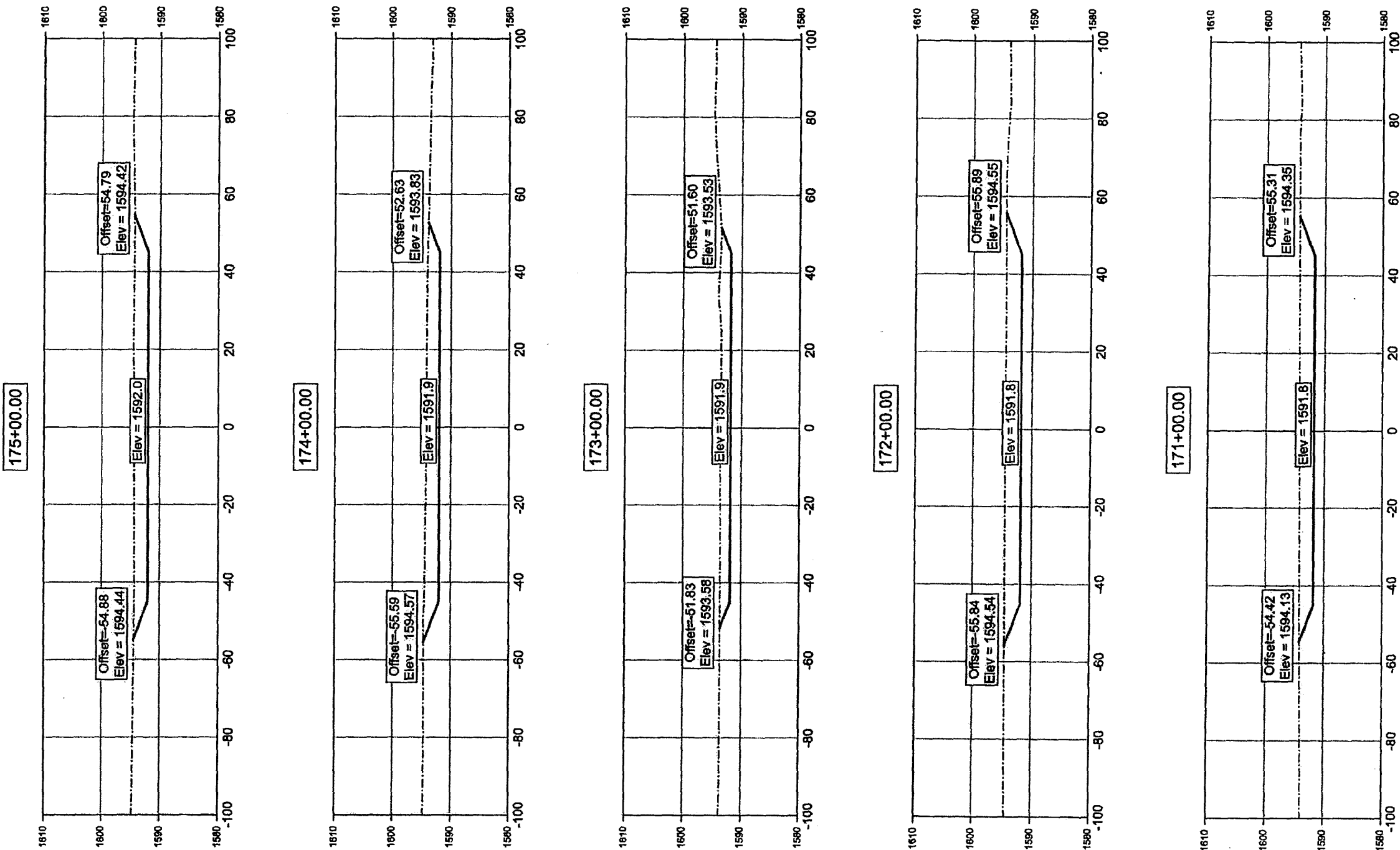


EXHIBIT 10



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Proposed Cross Sections

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609 Main Ave S
Brookings, SD
605-696-3200

Sheet No:

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EXHIBIT 10

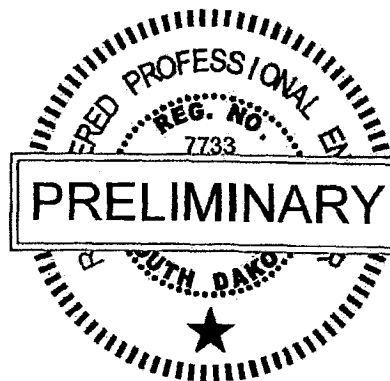
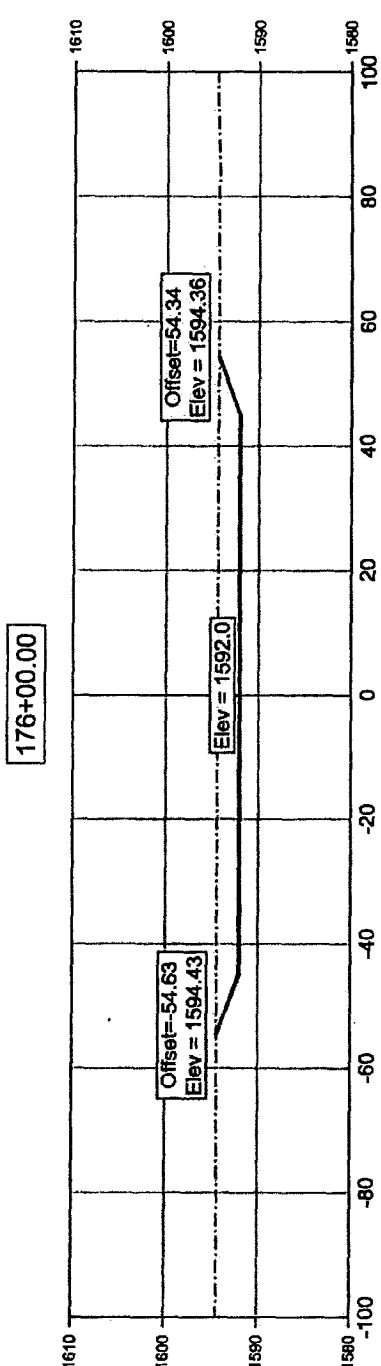
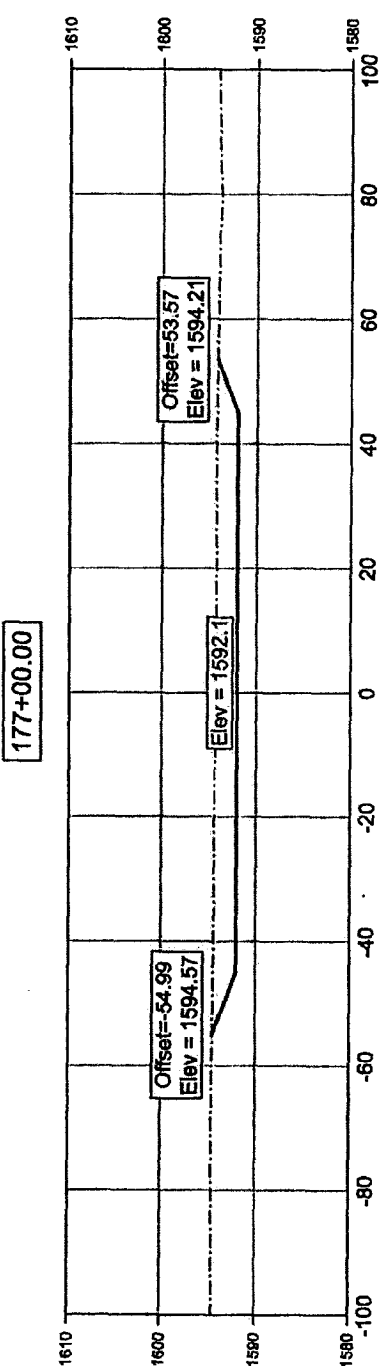
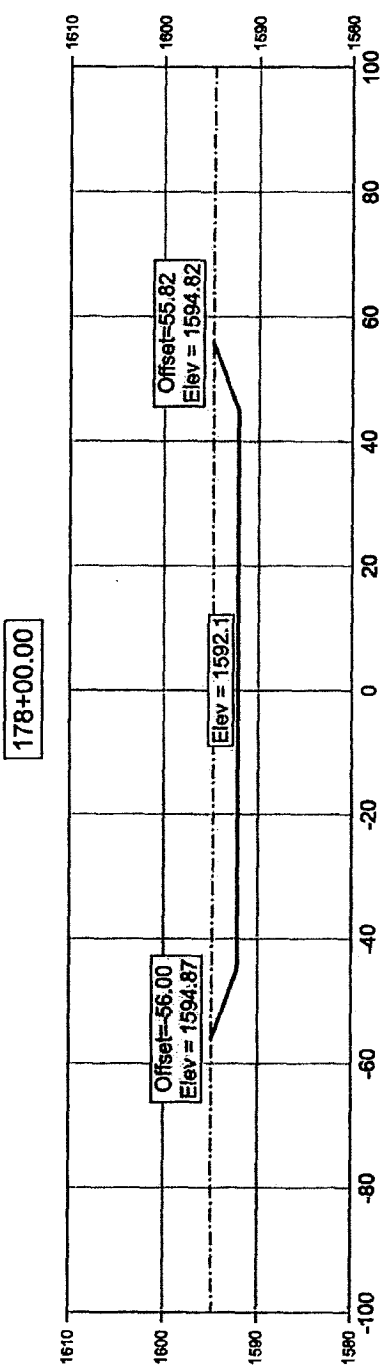
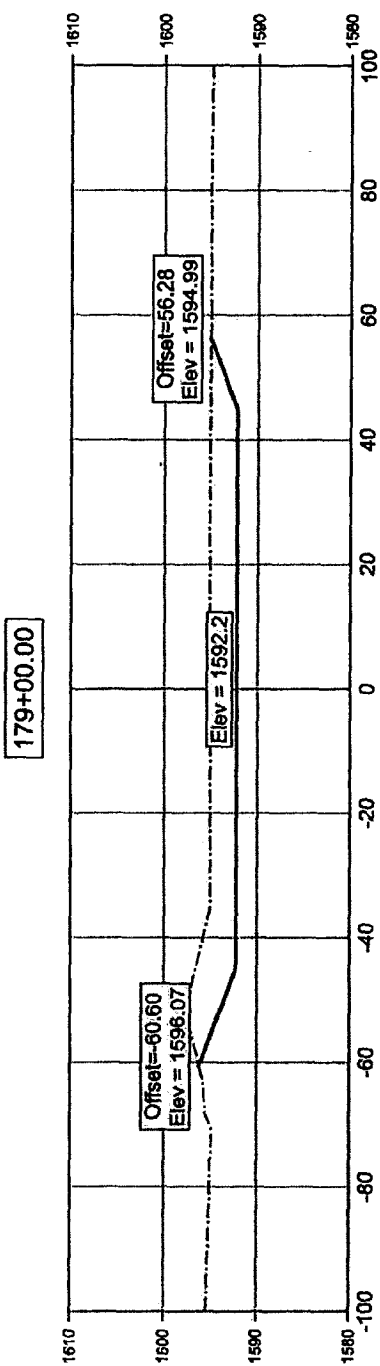
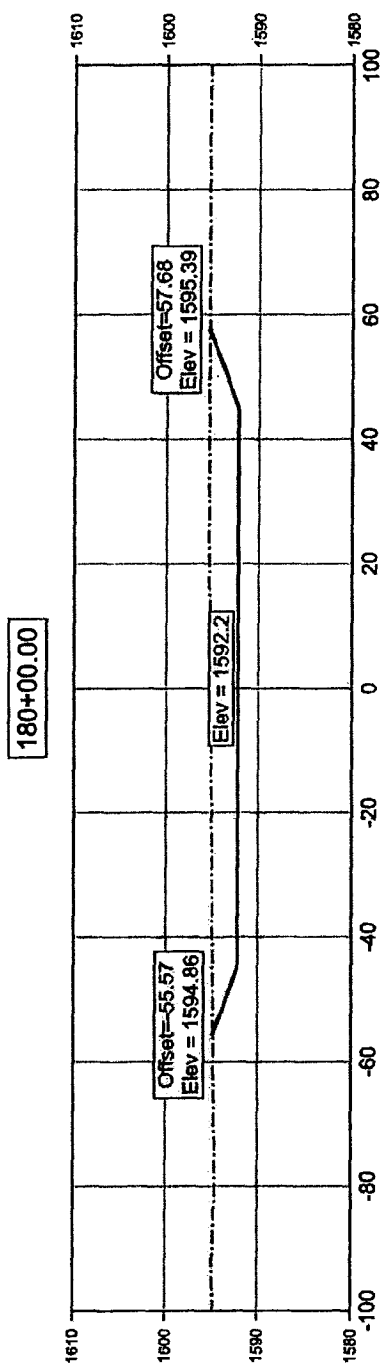
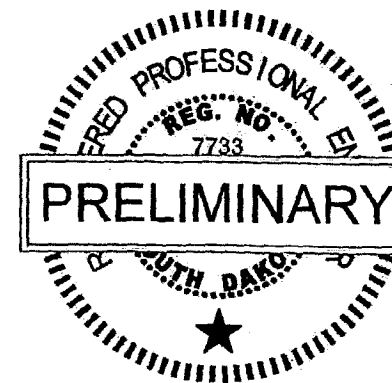
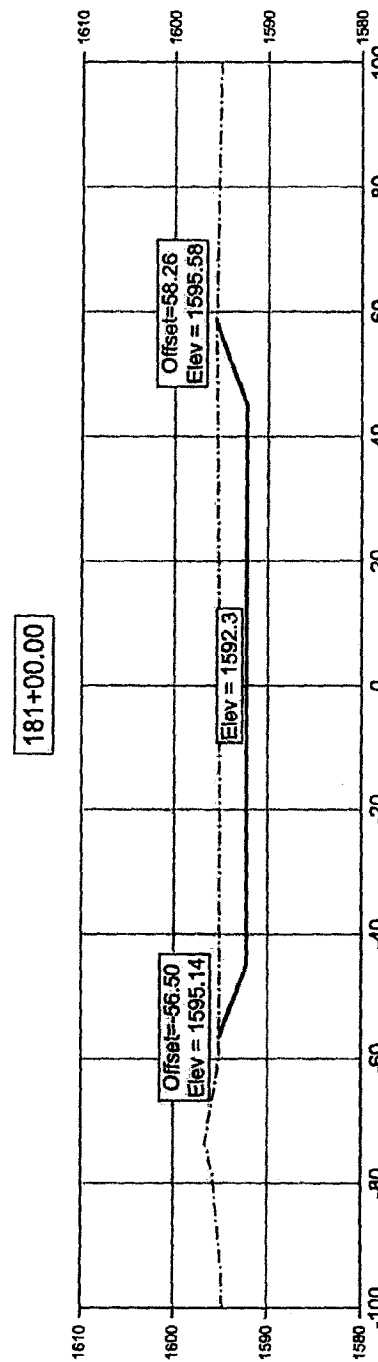
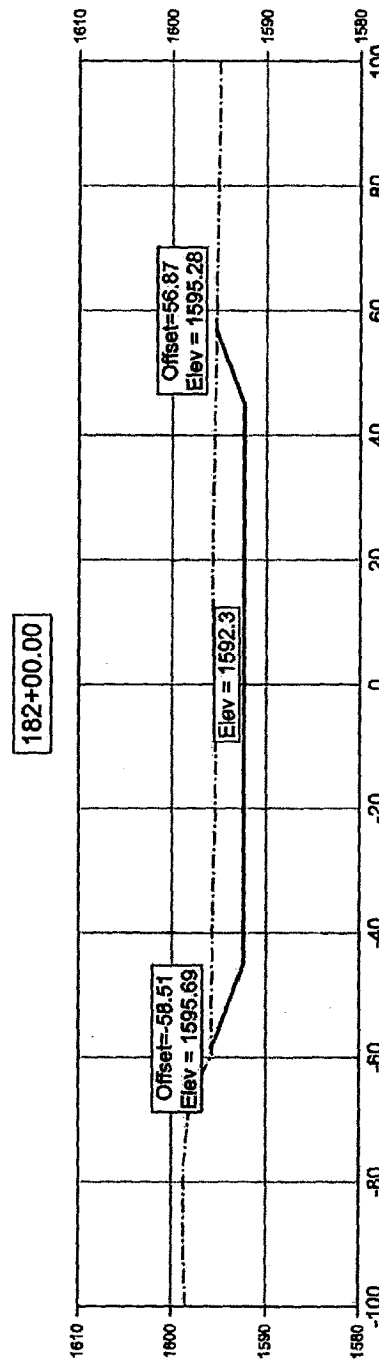
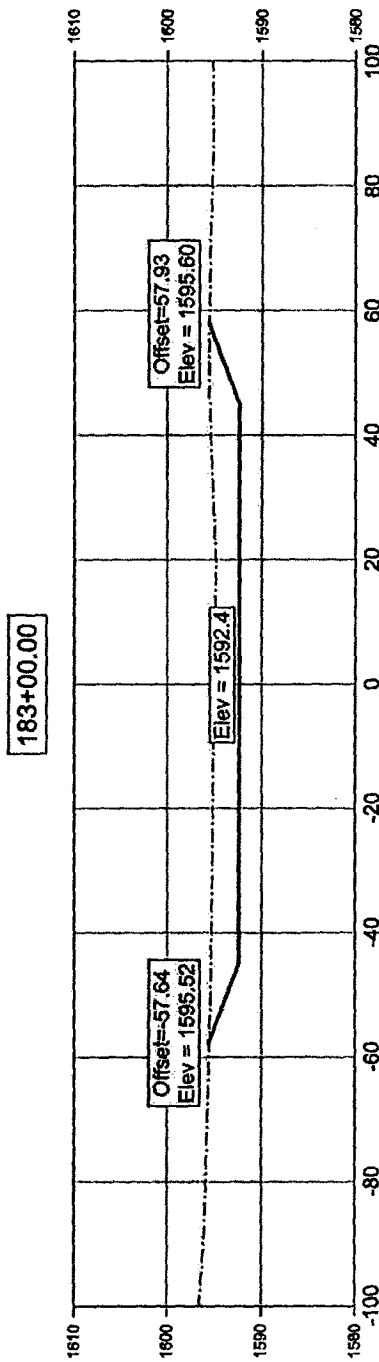
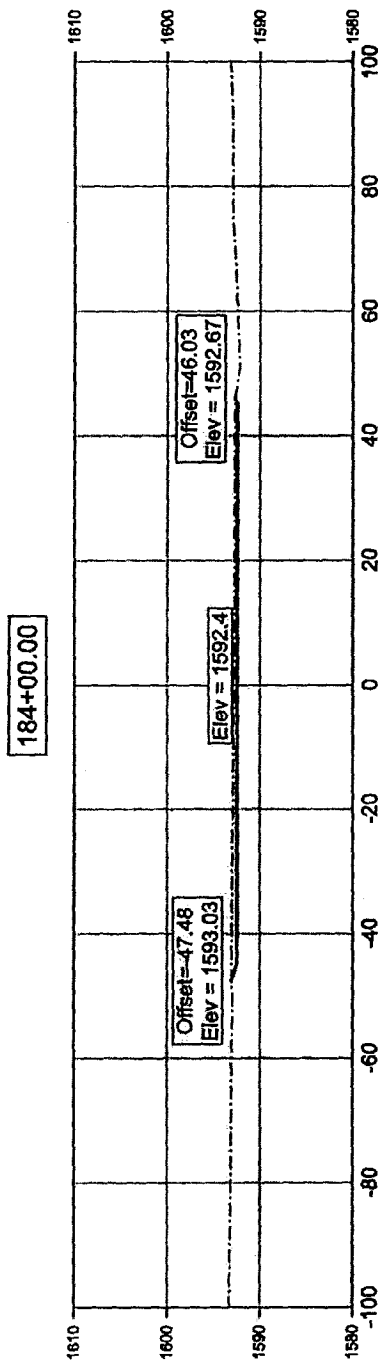
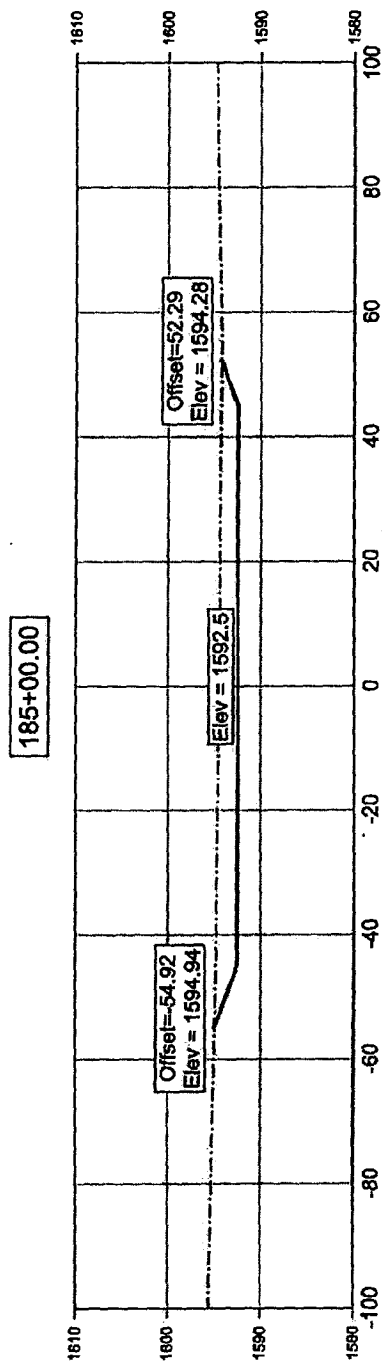


EXHIBIT 10



Brookings Airport - Exhibit 10

CAD Filename:
Proposed Cross Sections

CDI Project No.
2011-056

Drawn By:
DAF

Checked By:
SRS

Scale:
H: 1" = 30'
V: 1" = 20'

Date:
2/10/2012



609 Main Ave S
Brookings, SD
605-696-3200

Sheet No:

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EXHIBIT 10

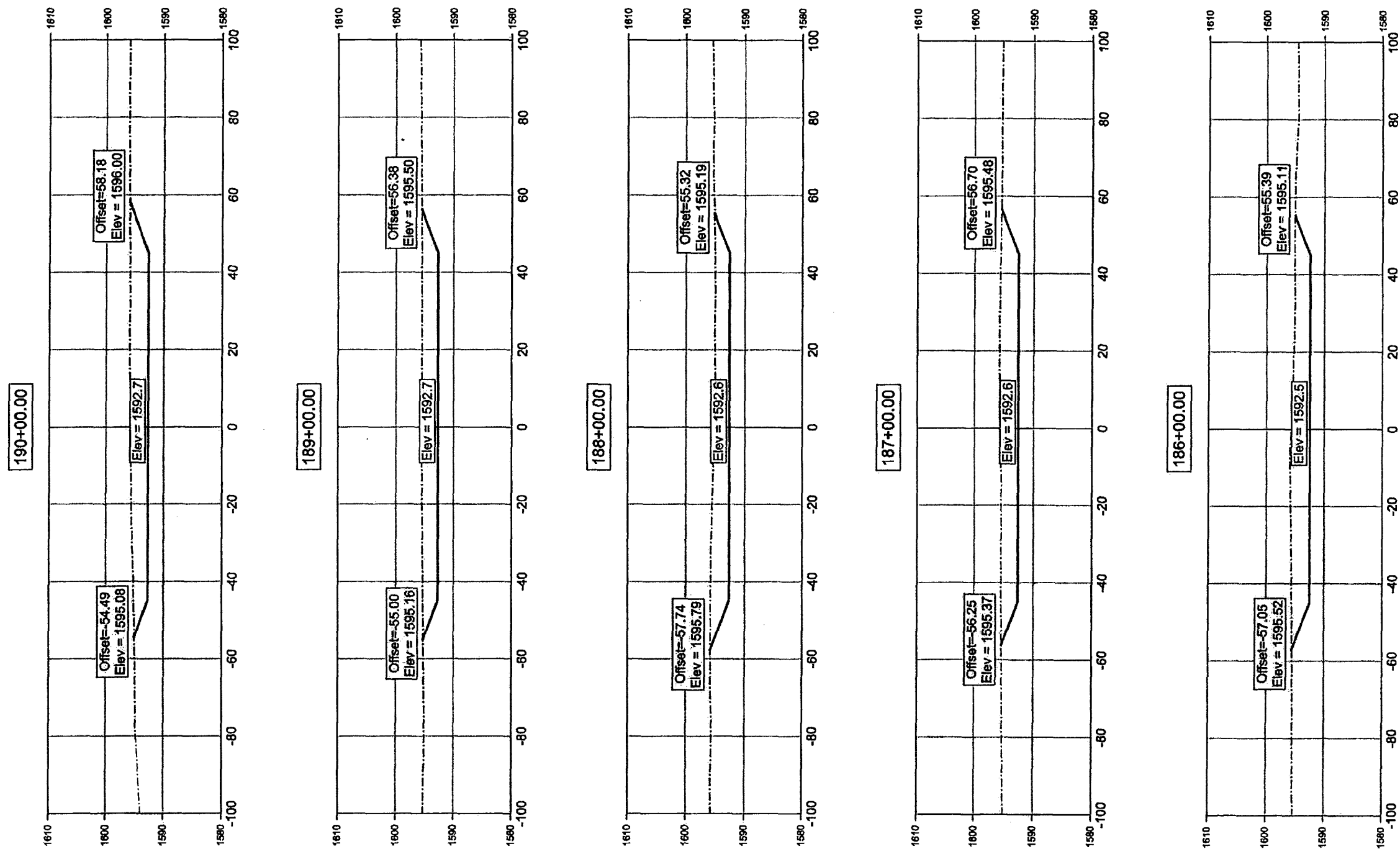
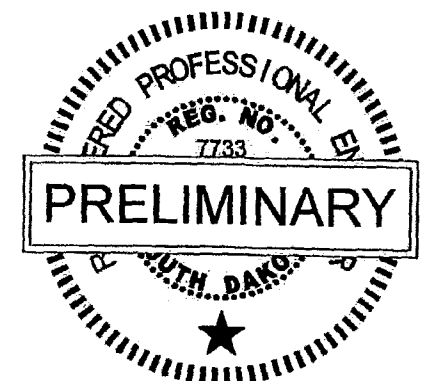
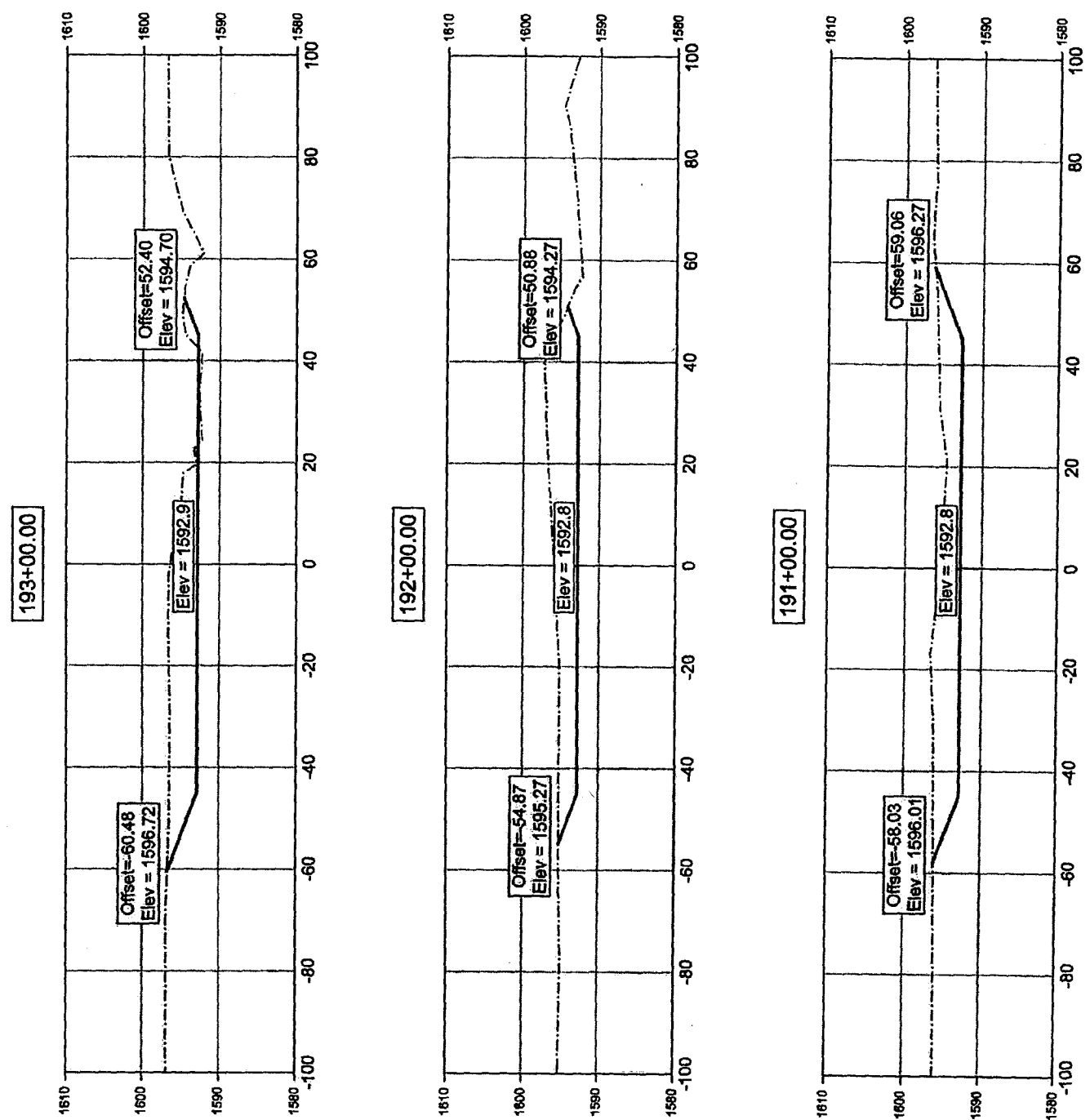


EXHIBIT 10



Brookings Airport - Exhibit 10

CAD Filename: Proposed Cross Sections	CDI Project No. 2011-056	Drawn By: DAF	Checked By: SRS	Scale: H: 1" = 30' V: 1" = 20'	Date: 2/10/2012		609 Main Ave S Brookings, SD 605-696-3200	Sheet No:	of No:
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All vertical reference use NAVD 88.



Sixmile Creek Reprofile Brookings, South Dakota



These documents have been prepared specifically for this project. They are not to be used for any other project or in any location without the informed participation of the architect.

Submittal	Date	Issued For:
A-100	Date	
A-200	Date	
B-100	Date	
B-200	Date	
B-100R	Date	
B-200R	Date	
REC. 2000	Date	

Scale: 1" = 200'

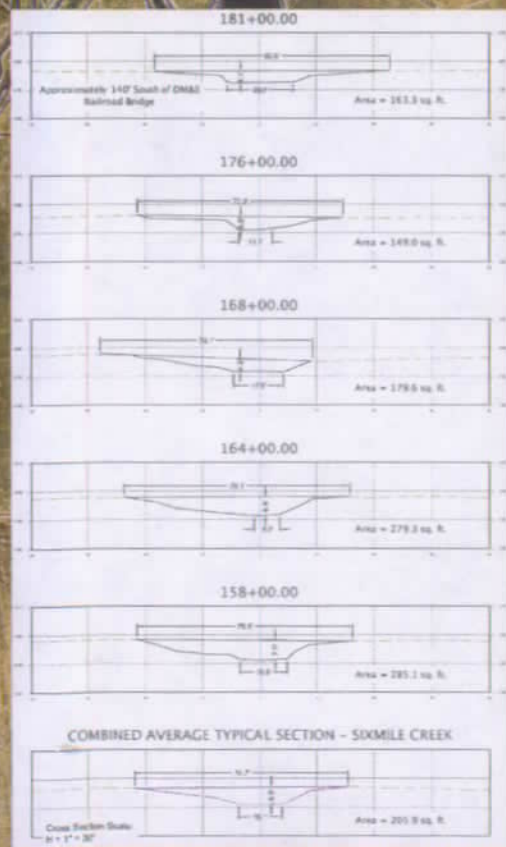
Date: 3/30/2012

A/E Project No: 2011-058

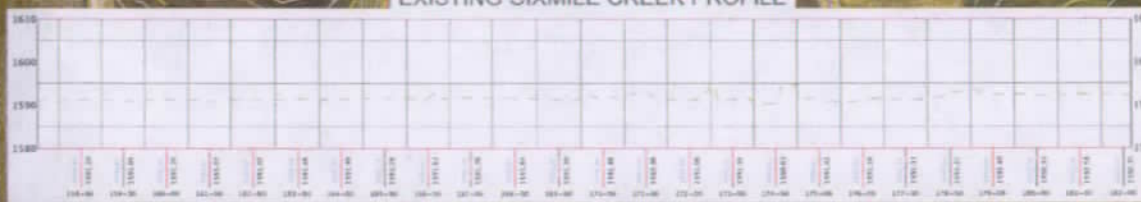
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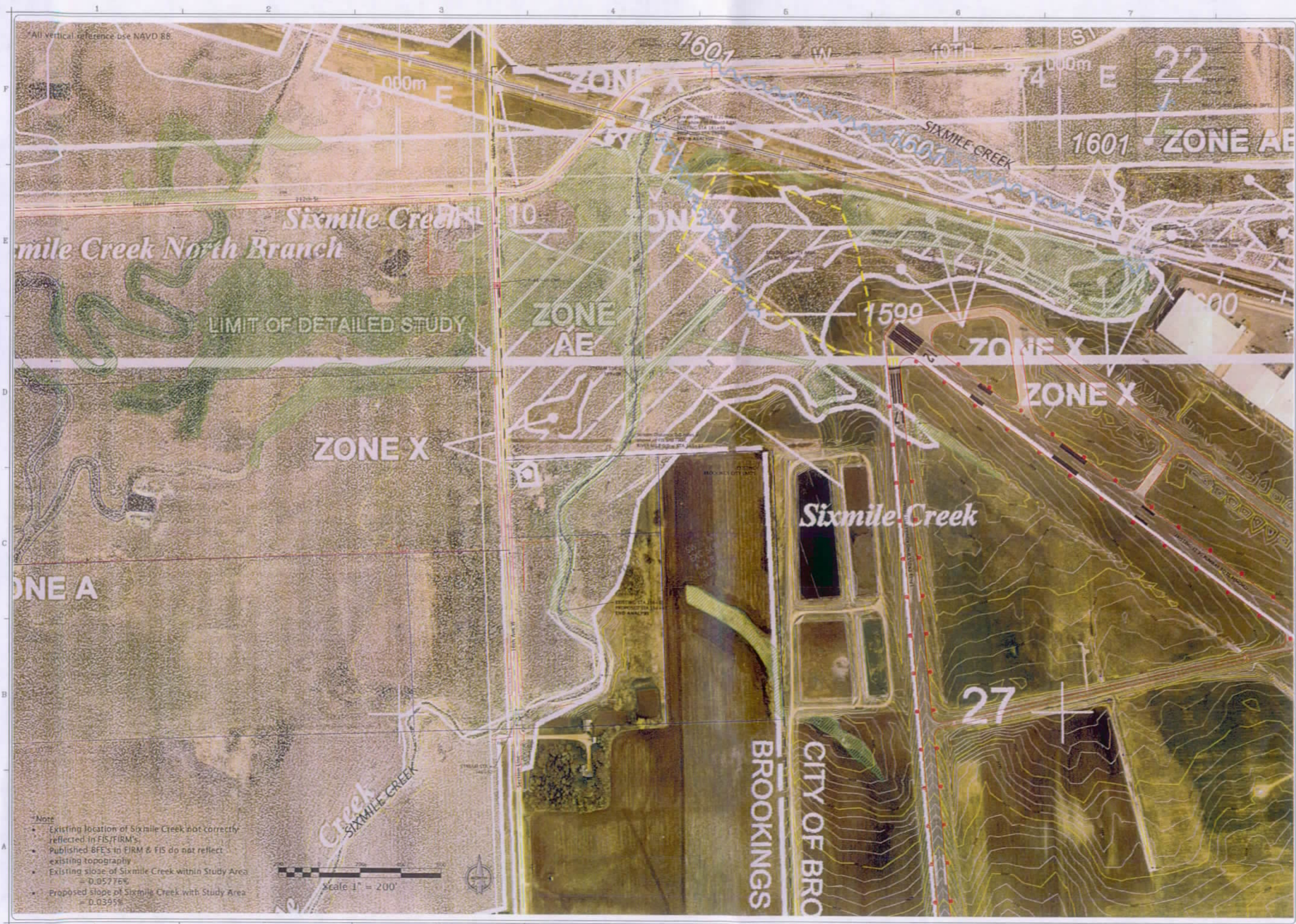
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Drawing Number: 1



- Note:
- Existing location of Sixmile Creek not correctly reflected in FIS/FIRM's.
 - Published BFE's in FIRM & FIS do not reflect existing topography.
 - Existing slope of Sixmile Creek within Study Area = 0.05776%.
 - Proposed slope of Sixmile Creek with Study Area = 0.0395%.





All vertical reference use NAVD 86

Sixmile Creek North Branch

LIMIT OF DETAILED STUDY

ZONE X

ZONE AE

ZONE X

Sixmile Creek

ZONE X

ZONE X

22

27

CITY OF BROOKINGS

- Note
- Existing location of Sixmile Creek not correctly reflected in FIS/FIRM's.
 - Published BFE's in FIRM & FIS do not reflect existing topography.
 - Existing slope of Sixmile Creek within Study Area = 0.05776%
 - Proposed slope of Sixmile Creek with Study Area = 0.0395%

Scale 1" = 200'

Sixmile Creek Reroute
Brookings, South Dakota



These documents have been prepared specifically for this project. They are not suitable for use on other projects or in other locations without the approval and participation of the author.

Submittal	Date	Issued For
A-108	Date	
A-208	Date	
B-408	Date	
B-508	Date	
B-108	Date	
B-208	Date	
REC. DWG.	Date	

Scale: 1" = 200'

Date: 3/30/2012

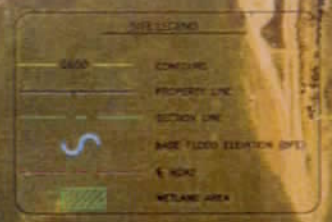
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CAD Filename: 2011-006 BROOKINGS AIRPORT

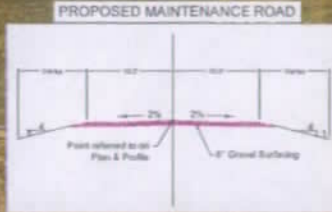
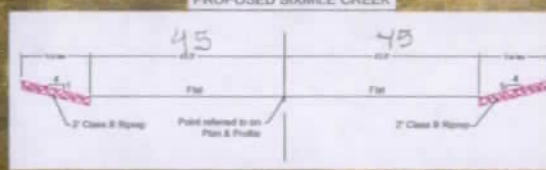
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Drawing Number: 2

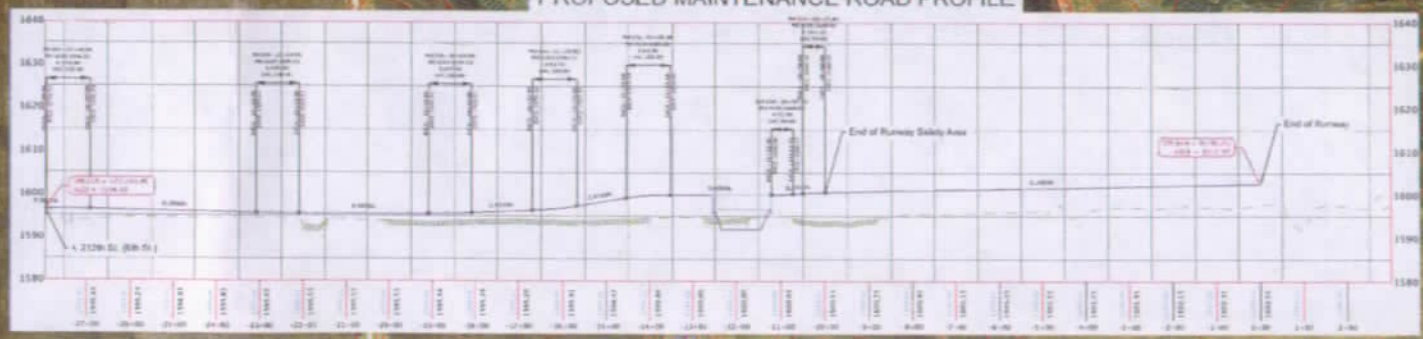
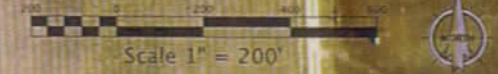
All vertical reference use NAVD 88.



TYPICAL SECTION



- *Note
- Existing location of Sixmile Creek not reflected in FIS/FIRM's.
 - Published BFE's in FIRM & FIS do not reflect existing topography.
 - Existing slope of Sixmile Creek within Study Area = 0.05776%.
 - Proposed slope of Sixmile Creek with Study Area = 0.0395%.



Sixmile Creek Reroute
Brookings, South Dakota



These documents have been prepared specifically for this project. They are not to be used for any other project or in any other location without the approval and participation of the engineer.

Submitted	Date	Issue For
A-100	Date	
A-200	Date	
B-100	Date	
B-200	Date	
B-300	Date	
B-400	Date	
B-500	Date	
B-600	Date	
B-700	Date	
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B-900	Date	
B-1000	Date	

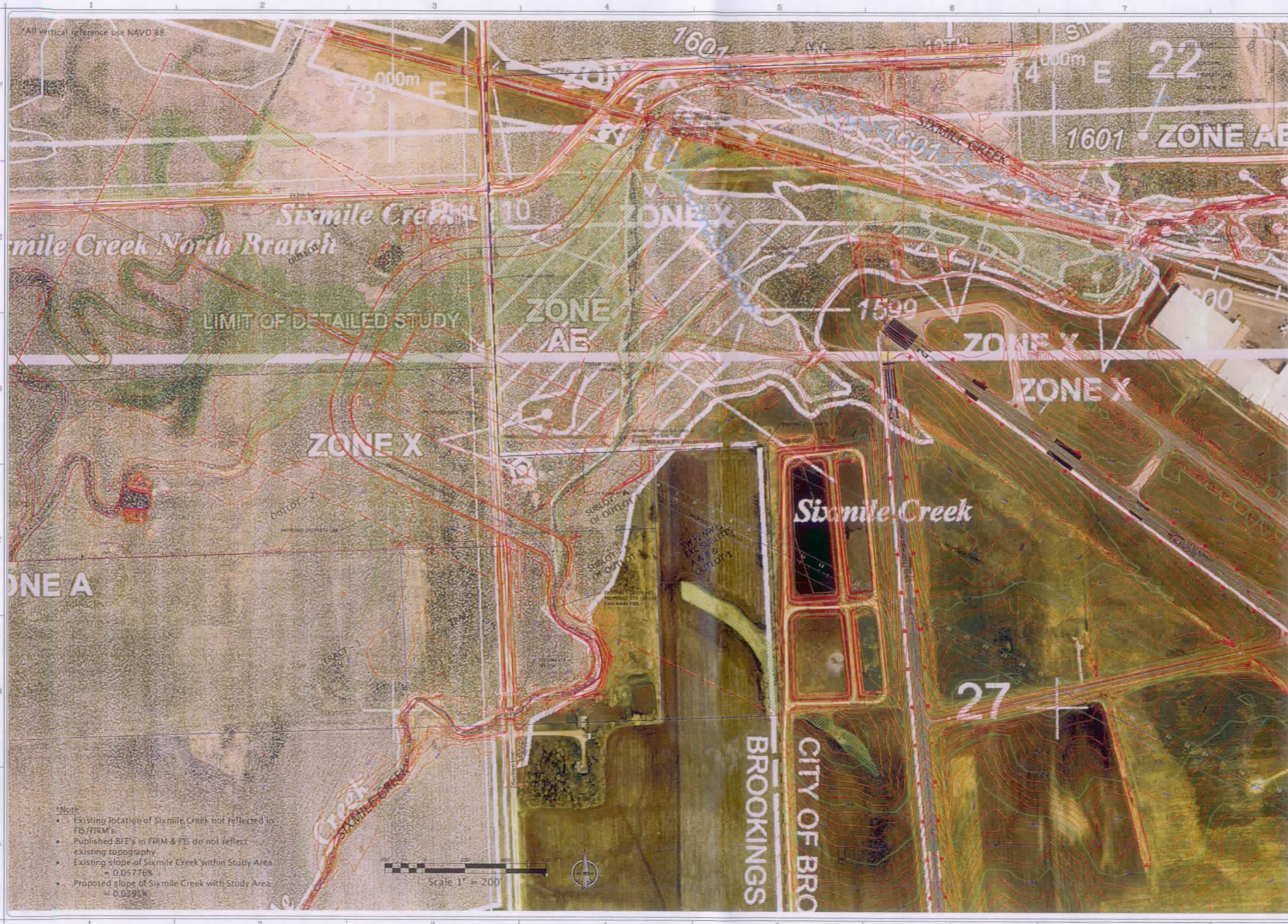
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Date: 4/05/2012
Drawn By: DAF
Approved By: SRS

A/C Project No: 2011-056

CAD Filename: 2011-056 BROOKINGS AIRPORT

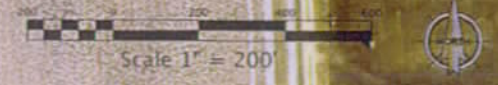
Drawing Title: PROPOSED CONDITIONS MAP

Drawing Number: 3



*All vertical reference use NAVD 88.

- *Note
- Existing location of Sixmile Creek not reflected in FIS/FIRM's.
 - Published BFE's in FIRM & FIS do not reflect existing topography.
 - Existing slope of Sixmile Creek within Study Area = 0.05776%
 - Proposed slope of Sixmile Creek with Study Area = 0.0295%



Sixmile Creek Reroute
Brookings, South Dakota



*These documents have been prepared specifically for this project. They are not to be used for any other project or in any other location without the approval and participation of the engineer.

Submittal	Date	Issued For
A-100	0/0/0	
A-200	0/0/0	
B-000	0/0/0	
B-000	0/0/0	
B-1000	0/0/0	
NO DOC.	0/0/0	
REV. 0000	0/0/0	

Scale: 1" = 200'

Date: 4/05/2012

A/E Project No: 2011-056

CAD Filename: 2011-056 BROOKINGS AIRPORT

Drawing Title: PROPOSED CONDITIONS MAP

Drawing Number: 4

Beck, Lynn

From: Tevis Holzer <tholzer@civildes.com>
Sent: Friday, May 25, 2012 10:20 AM
To: Beck, Lynn
Cc: Carey Bretsch
Subject: RE: Brookings Regional Airport expansion project.
Attachments: 2011-056 General Drawing General Drawing 134'.pdf; DENR Channel Relocation Project Description.pdf

Lynn,

The project description is attached and you can see my response to the other information you requested below:

1. Channel flow capacity:
 - a. 838 cfs
2. Bridge opening flow capacity:
 - a. 838 cfs (General Drawing showing the dimensions of the bridge opening is attached).
3. Design conveyance over the road:
 - a. 469th Ave will be obliterated from around Sta. 10 to Sta. 29, so the channel will look the same at those two locations.
4. Existing channel:
 - a. The existing channel will be filled with the cut from the proposed channel.

I already gave you some of this information, but I wanted to include it again for clarity. Let me know if you need anything else.

Thanks,

Tevis Holzer, E.I.T.

Civil Design, Inc.
609 Main Avenue South
Brookings, SD 57006
Office: (605) 696-3200
Cell: (605) 421-0693
tholzer@civildes.com

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From: Lynn.Beck@state.sd.us [mailto:Lynn.Beck@state.sd.us]

Sent: Thursday, May 24, 2012 2:07 PM

To: info

Subject: RE: Brookings Regional Airport expansion project.

Tevis,

Sorry, I forgot to attach the example project description. It does not need to be this detailed but you get the idea.

Lynn

From: Beck, Lynn

Sent: Thursday, May 24, 2012 1:45 PM

To: 'info@civildes.com'

Cc: Beck, Lynn

Subject: Brookings Regional Airport expansion project.

For Tevis Holzer:

Tevis,

I have been reviewing the application for relocation of a portion of Sixmile Creek for the expansion of the Brookings Regional Airport and have a few questions. This am we spoke about my getting the hydraulic analysis for the channel change but I also need some additional information.

Besides crossing the proposed maintenance road the re-alignment crosses 469th Ave in two places. What is the design for conveyance of the water through the road in these two locations?

What is the plan for the existing channel?

A detailed narrative of the project would be helpful. The current channel location is authorized by Flood Control Permit FC14-3. Though this application is for a Water Right Permit much of the same type of information is needed. I have included a copy of the project description for the last channel relocation as an example.

Please contact me if you have any questions.

Lynn Beck

Natural Resources Engineer III

DENR – Water Rights Program

605.773.3352

lynn.beck@state.sd.us



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

**RECOMMENDATION OF CHIEF ENGINEER FOR WATER PERMIT
APPLICATION NO. 7358-3, City of Brookings**

Pursuant to SDCL 46-2A-2, the following is the recommendation of the Chief Engineer, Water Rights Program, Department of Environment and Natural Resources concerning Water Permit Application No. 7358-3, City of Brookings, c/o Jeffrey W. Weldon, PO Box 270, Brookings SD 57006.

The Chief Engineer is recommending APPROVAL of Application No. 7358-3 because 1) the proposed project can be developed without unlawful impairment of existing rights, 3) the proposed use is a beneficial use and 4) it is in the public interest with the following qualification:

1. Water Permit No. 7358-3 is subject to securing easements and/or land acquisitions on any areas, other than city property, where construction activities will take place or creek channel relocated.

See report on application for additional information.

Garland Erbele, Chief Engineer
June 4, 2012

REPORT ON PERMIT APPLICATION NO. 7358-3

City of Brookings, SD

May 30, 2012

The City of Brookings has filed Water Permit Application No. 7358-3 to relocate a portion of Sixmile Creek to allow for the expansion and realignment of the Brookings Regional Airport runways.

PROPOSED PROJECT

Water Application No. 7358-3 is located on the west edge of the town of Brookings in Brookings County. The project proposes to relocate a portion of Sixmile Creek to allow for the expansion and realignment of the Brookings Regional Airport. The proposed activity will include relocation of a portion of Sixmile Creek, filling the existing channel with the cut material from the proposed channel, obliteration of a portion of 469th Avenue, construction of a maintenance road and bridge, and expansion/realignment of the airport runways. The work will take place in the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 22, W $\frac{1}{2}$ NW $\frac{1}{4}$ Section 27, and E $\frac{1}{2}$ NE $\frac{1}{4}$ Section 28, all in T110N-R50W.

DISCUSSION

The proposed project will involve the construction of a new channel approximately 4,000 feet in length and the filling of approximately 2,500 feet of the existing channel. The upstream end of the proposed channel starts on the south side of DM&E Railroad and runs in a southwesterly direction through the southwest corner of Section 22, across the northwest corner of Section 27, and into the northeast corner of Section 28. The channel then turns to the southeast and reconnects with Sixmile Creek in the northwest corner of Section 27, all in T110N-R50W. 73,000 cubic yards of the excavated material will be used to fill the existing channel. The current railroad crossing will remain intact.

The channel will be a grass lined trapezoidal section with a 90 foot bottom width and 4H:1V riprapped side slopes at an average depth of 4 feet. Channel capacity is 838 cubic feet of water per second (cfs) which represents a 10 year flood frequency event. The 100 year flood frequency event is 4,000 cfs. The current channel is also a relocation of Sixmile Creek constructed in 1991, and was designed to convey 750 cfs which represented the 5 year flood frequency event. The proposed channel relocation lies within the FEMA 100-year flood plain boundary.

Approximately 1900 feet of 469th Avenue will be obliterated in the area encompassed by the proposed channel. In addition, a new maintenance road will be constructed and will cross the proposed channel at a location in the NW $\frac{1}{4}$ Section 28. The new road will contain a bridge over the proposed channel and a 500 foot overtopping section. The bridge capacity will match the channel capacity of 838 cfs.

REVIEW OF EXISTING WATER RIGHTS

The current channel alignment was authorized by Flood Control Permit FC14-3 held by the City of Brookings for expansion of the Brookings Regional Airport. This project will replace a portion of the relocated channel of Sixmile Creek that was authorized by FC14-3.

Sixmile Creek is a tributary to the Big Sioux River. The point where Sixmile Creek flows into the Big Sioux River is approximately 3 river miles downstream of the proposed project. There are no existing water rights or location notices in the immediate vicinity which will be affected by the proposed project.

The project will be constructed on property owned by the City of Brookings and other individuals. If this application is approved it does not negate the necessity to acquire any other permits and/or easements necessary for the construction of the project.

CONCLUSIONS

1. The application proposes to relocate a portion of Sixmile Creek to allow for the expansion and realignment of the Brookings Regional Airport. The proposed activity will include relocation of a portion of Sixmile Creek, filling the existing channel with the cut material from the proposed channel, obliteration of a portion of 469th Avenue, construction of a maintenance road and bridge, and expansion/realignment of the airport runways.
2. The proposed channel capacity is 838 cubic feet of water per second (cfs) which represents a 10 year flood frequency event and is greater than the portion of the existing channel to be replaced.
3. The proposed channel will be located within the boundary of the FEMA 100-year flood plain.
4. There are no existing water rights or location notices which will be affected by the proposed project.
5. If this application is approved it does not negate the necessity to acquire any other permits and/or easements necessary for the construction of the project.



Lynn Beck

Natural Resources Engineer III

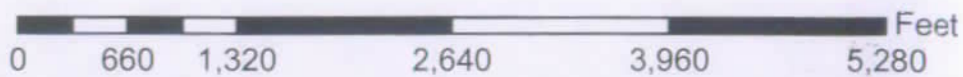
WATER PERMIT APPLICATION NO. 7358-3
City of Brookings, SD
May 30, 2012



Lynn Beck

Lynn Beck
Natural Resources Engineer III
DENR - Water Rights Program

SCALE



RECEIVED

JUN 22 2012

WATER RIGHTS
PROGRAM
State of South Dakota

Affidavit of Publication

ss

County of Brookings

Danielle Gilbertson of said county, first duly sworn, on oath, says: That she is the office clerk of THE BROOKINGS REGISTER, a daily newspaper, printed and published in the City of Brookings, in said County of Brookings, and State of South Dakota; that she has full and personal knowledge of the facts herein stated; that said newspaper is a legal newspaper and has a bona fide circulation of at least two hundred copies of each issue daily; that said newspaper has been published within the said County of Brookings and State of South Dakota, for more than one year prior to the first publication of Exhibit "A," hereto attached and herein mentioned, and was and is printed that the

Legal 421 Notice of Application

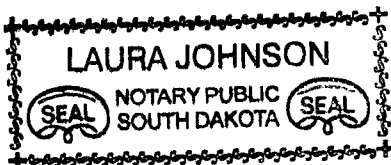
same was published, is hereto attached marked Exhibit said newspaper for 2 times, to-wit:

June 13, 2012

June 20, 2012

said Exhibit "A" inures to the sole benefit for the publishers of said newspaper; that no agreement or understanding for the division thereof has been made with any other person, and that no part thereof has been agreed to be paid to any person whomsoever; that the fees charged for the publication thereof are:

Forty dollars and eighty four cents \$40.84



21st day of

June

2012

Notary Public in and for the County of Brookings, South Dakota.
My Commission expires August 3, 2017.

Legal 421, 12, 6/13/20
NOTICE OF APPLICATION NO. 7358-3 to
Appropriate Water
Notice is given that the City of Brookings, PO Box 270, Brookings SD 57006 has filed an application for a water permit to relocate a portion of Six Mile Creek to allow for the expansion of the Brookings Regional Airport. The area involved in the relocation project includes portions of the SW 1/4 SW 1/4 Section 22, W 1/2 NW 1/4 Section 27 and the E 1/2 NE 1/4 Section 28; all in T110N-R50W.
Pursuant to SDCL 46-2A-2, the Chief Engineer recommends

APPROVAL of Application No. 7358-3 because 1) existing rights will not be unlawfully impaired, 2) it is a beneficial use of water, and 3) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition. Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by July 2, 2012. The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources. Published twice at the total approximate cost of \$40.84.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

June 5, 2012

Brookings Register
PO Box 177
Brookings SD 57006

ATTENTION: Legal Public Notice

Enclosed is a Notice on Application No. 7358-3 to Appropriate Water to be published twice. Please publish the first notice on June 13, 2012 with the second publication 7 days later. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352.

The applicant must verify to you that the notice is to be published, before you make the first publication. **Please BILL the APPLICANT for the cost of publication.** The APPLICANT is City of Brookings, c/o Jeffrey W Weldon, PO Box 270, Brookings SD 57006 (Ph # 605-692-6629).

Please send the Water Rights Program the first publication immediately. The publication is checked for accuracy so any corrections can be made in the second publication. You may use the form below or fax a copy of the first publication. Any fax should be sent to the attention of Karen Schlaak at (605) 773-4068. Publication errors can invalidate the public notice.

After the second publication, **please send us an affidavit or use the enclosed Proof of Publication form.** The applicant pays the cost of publication, but the Water Rights Program records require an affidavit or Proof of Publication. Delays in receiving the affidavit can be costly to the applicant.

Sincerely,

Eric Gronlund
Natural Resources Engineer
605 773-3352

enclosures

-----CUT HERE-----

No. 7358-3

TO: Eric Gronlund
Water Rights Program
Joe Foss Building
Pierre SD 57501-3181

Date _____

We are in receipt of your letter of June 5, 2012 enclosing Notice to Appropriate Water by Application No. 7358-3 which was first published in our issue of _____. **ENCLOSED IS A COPY OF THIS FIRST PUBLICATION.**

Name

Newspaper



**DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES**

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

NOTE: TO BE SURE OF PUBLICATION ON
THE CORRECT DATES, CONTACT
THE NEWSPAPER RIGHT AWAY.

June 5, 2012

City of Brookings
Jeffrey W Weldon
PO Box 270
Brookings SD 57006

Dear Mr. Weldon:

Water Permit Application No. 7358-3 for rerouting purposes has been examined and found to comply with the South Dakota Water Laws and applicable rules. A notice has been sent to the Publisher of the Brookings Register printed at Brookings SD (Ph # 605-692-6271). You will need to contact the newspaper and authorize publication of this notice. For your information, a copy of the notice, the recommendation of the Chief Engineer and report on the application are enclosed. Please review the notice prior to publication and notify this office, if you have any corrections or questions.

Be sure to contact the above newspaper to authorize publication of your Notice and to arrange for payment. Early contact with the paper can eliminate delays. Upon receiving authorization, the publisher has been instructed to publish your notice once each week for two consecutive weeks. The newspaper has also been instructed to send us the Proof of Publication. We must receive Proof of Publication before action can be taken on the applications.

Sincerely,

Eric Gronlund
Natural Resources Engineer
(605) 773-3352

enclosures

NOTE: If you plan to contest any part of the Chief Engineer's recommendation, you must file a petition pursuant to the procedures outlined in the attached notice of hearing. The Water Management Board will then consider your concerns during a hearing on the application.

Instruction to Newspaper - Publish first Notice on June 13, 2012 with the second publication 7 days later. The applicant is responsible for payment. The text of the notice can be e-mailed to your paper by contacting Karen Schlaak at (605) 773-3352 or email: Karen.schlaak@state.sd.us.

NOTICE OF APPLICATION NO. 7358-3 to Appropriate Water

Notice is given that the City of Brookings, PO Box 270, Brookings SD 57006 has filed an application for a water permit to relocate a portion of Six Mile Creek to allow for the expansion of the Brookings Regional Airport. The area involved in the relocation project includes portions of the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 22, W $\frac{1}{2}$ NW $\frac{1}{4}$ Section 27 and the E $\frac{1}{2}$ NE $\frac{1}{4}$ Section 28; all in T110N-R50W.

Pursuant to SDCL 46-2A-2, the Chief Engineer recommends APPROVAL of Application No. 7358-3 because 1) existing rights will not be unlawfully impaired, 2) it is a beneficial use of water, and 3) it is in the public interest. In accordance with SDCL 46-2A-23, the Chief Engineer will act on this application, as recommended, unless a petition is filed opposing the application or the applicant files a petition contesting the Chief Engineer's recommendation. If a petition opposing the application or contesting the recommendation is filed, then a hearing will be scheduled and the Water Management Board will consider this application. Notice of the hearing will be given to the applicant and any person filing a petition.

Any person interested in opposing or supporting this application or recommendation must file a written petition with BOTH the applicant and Chief Engineer. The applicant must file a petition if contesting the Chief Engineer's recommendation. The Chief Engineer's address is "Water Rights Program, Foss Building, 523 E Capitol, Pierre SD 57501 (605 773-3352)" and the applicant's mailing address is given above. A petition filed by either an interested person or the applicant must be filed by July 2, 2012

The petition may be informal, but must include a statement describing the petitioner's interest in the application, the petitioner's reasons for opposing or supporting the application, and the signature and mailing address of the petitioner or the petitioner's legal counsel, if legal counsel is obtained. Contact Eric Gronlund at the above Water Rights Program address to request copies of information pertaining to this application. Steven M. Pirner, Secretary, Department of Environment and Natural Resources.

Published twice at the total approximate cost of_____.



DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

PMB 2020
JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182
denr.sd.gov

SEP 07 2012

City of Brookings
c/o Jeffrey W Weldon
PO Box 270
Brookings SD 57006

Dear Mr. Weldon:

Enclosed is Water Permit No. 7358-3 authorizing construction of your water diversion system and beneficial use of the water, not exceeding the limits as specified in the Water Permit. Form 10, *Notice of Completion of Works and Application of Water to Beneficial Use*, is enclosed. Please return this completed form after you have finished the system and have put the water to beneficial use. An investigation can then be scheduled so the water license may be issued, thus completing the acquisition of a water right.

An informational sheet *?Common Water Right Questions?* is also enclosed. This sheet is intended to answer some of the questions associated with obtaining and keeping a water right.

Sincerely,

Garland Erbele, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

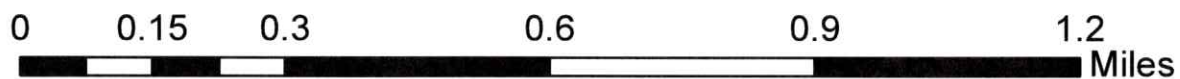
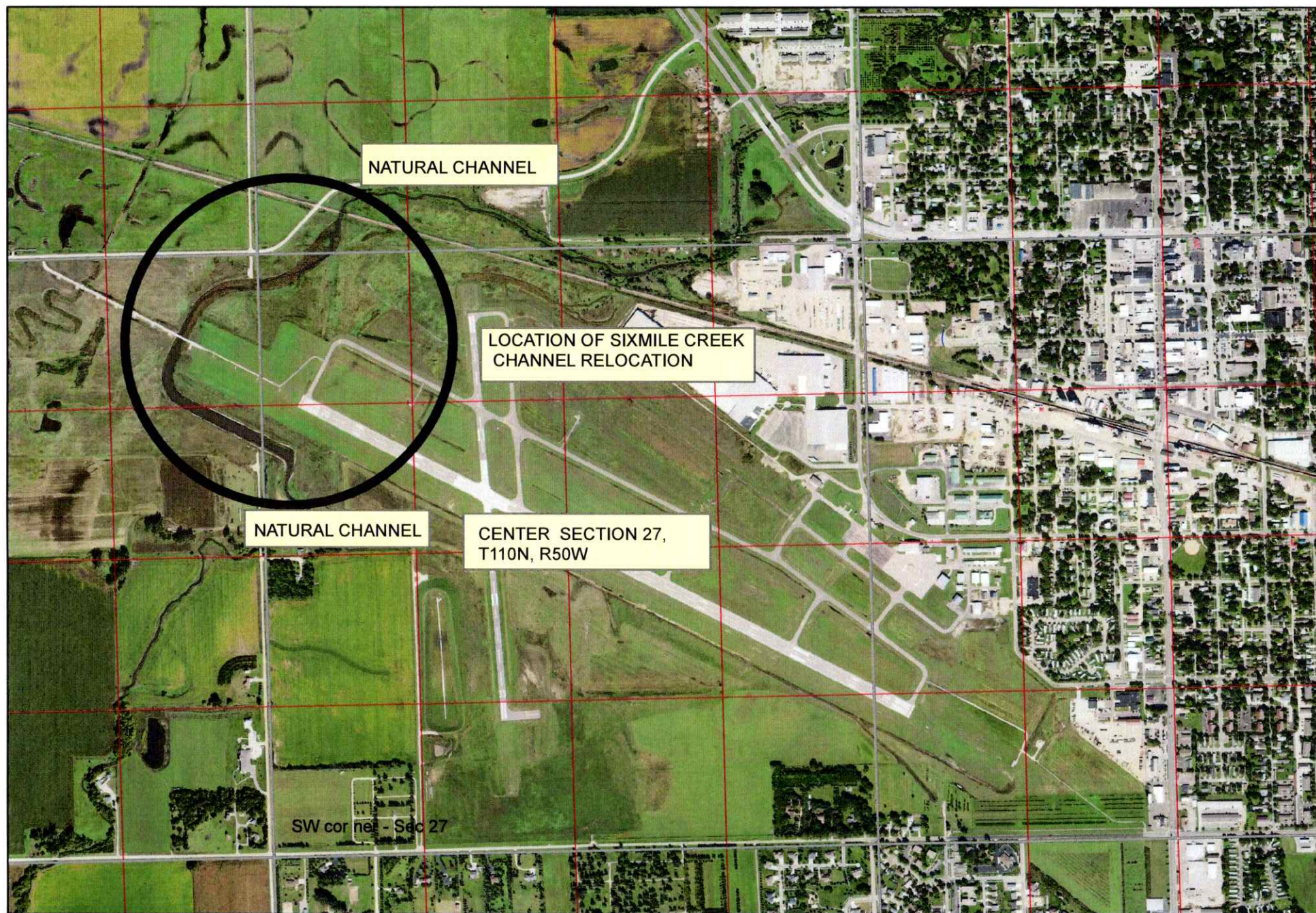
**Report of Examination of Works and/or Application of Water to Beneficial Use
For Permit No. 7358-3**

I made a field site visit on May 12, 2021 to the area where the City of Brookings moved the location of the Sixmile Creek channel to accommodate an extension of the Airport runway. It appears the new location is approximately where it was proposed to be positioned. See an accompanying map which shows actual relocation details.



Darrell W DeBoer
Water Rights Inspector
DANR, Water Rights Program

Date report completed: May 12, 2021





**DEPARTMENT of AGRICULTURE
and NATURAL RESOURCES**
JOE FOSS BUILDING
523 E. CAPITOL AVE
PIERRE SD 57501-3182
danr.sd.gov

MAY 27 2021

7358-3

Paul M Briseno, City Manager
City of Brookings
520 3rd St, Suite 230
Brookings SD 57006

Dear Mr. Briseno:

Enclosed is Water License No. 7358-3. This is the final water right document completing your process of obtaining a Water Right.

Included with the water license is a map prepared by the staff engineer who conducted the field investigation.

If you have any questions, please let us know.

Sincerely,

Eric Gronlund, Chief Engineer
Water Rights Program
(605) 773-3352

enclosures

STATE OF SOUTH DAKOTA

WATER LICENSE NO. 7358-3

(1) The City of Brookings, 520 3rd St, Suite 230, Brookings SD 57006 made Application No. 7358-3, May 21, 2012 for a water permit to relocate a portion of Six Mile Creek located in Brookings County, South Dakota to allow for expansion of the Brookings Regional Airport. Permit No. 7358-3, with a priority date of May 21, 2012 was approved July 2, 2012 and issued to the applicant for relocation of the stream channel with construction to be completed on or before July 2, 2017 and for the application to beneficial use of water on or before July 2, 2021.

(2) It is certified that the permit holder has complied with the provisions of South Dakota State Law relating to completion of the project. The area involved in the relocation of Six Mile Creek included portions of the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 22, W $\frac{1}{2}$ NW $\frac{1}{4}$ Section 27 and the E $\frac{1}{2}$ NE $\frac{1}{4}$ Section 28, T110N, R50W.

(3) Pursuant to South Dakota Water Law 46-5-30.1 the City of Brookings, 520 3rd St, Suite 230, Brookings SD 57006 the holder and/or owner of Water Right No. 7358-3 is issued a license based on the completion of the project of relocating a portion of Six Mile Creek to allow for the expansion and realignment of the Brookings Regional Airport.

This license is subject to South Dakota Water Law, any limitations or conditions listed in Water Right No. 7358-3.



Eric Gronlund, Chief Engineer
Water Rights Program
Department of Agriculture and Natural Resources

MAY 27 2021

date

