

BOARD OF COUNTY COMMISSIONERS
SARPY COUNTY, NEBRASKA

RESOLUTION FLOOD PLAIN DEVELOPMENT
Nebraska Department of Roads, Highway 75 Platte River Bridge, Bellevue, NE
(AMENDED)

WHEREAS, pursuant to Neb. Rev. Stat. § 23-104 (Reissue 2007), the County has the power to do all acts in relation to the concerns of the County necessary to the exercise of its corporate powers; and,

WHEREAS, pursuant to Neb. Rev. Stat. § 23-103 (Reissue 2007), the powers of the County as a body are exercised by the County Board; and,

WHEREAS, the County Board of Commissioners has the authority to adopt a Zoning Regulation, which shall have the force and effect of law pursuant to Neb. Rev. Stat. § 23-114 (Reissue 2007); and,

WHEREAS, said Zoning Regulations require the County Board of Commissioners to approve applications for development permits within any Flood Plain District; and

WHEREAS, Mark Wayne, Sarpy County Administrator has reviewed the Nebraska Department of Roads' application for a Flood Plain Development Permit for compliance with the Zoning Regulations for bridge construction and rehabilitation along Highway 75 north of the Platte River; and,

WHEREAS, said application is in compliance with Section 30, Flood Plain District of Zoning Regulations and further, the Natural Resources District has provided their analysis regarding the development permit.

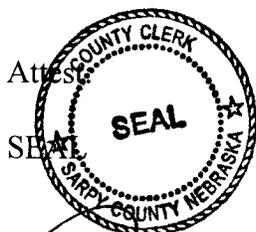
NOW, THEREFORE, BE IT RESOLVED BY THE SARPY COUNTY BOARD OF COMMISSIONERS THAT the Flood Plain Development Permit Application for Nebraska Department of Roads is hereby conditionally approved, wherein the County Board approval is

contingent upon approval of the Army Corp. of Engineers and the Papio-Missouri River Natural Resources District based on re-submitted hydraulic models and a revised No Rise Certificate.

The above Resolution was approved by a vote of the Sarpy County Board of Commissioners at a public meeting duly held in accordance with applicable law on the 30th day of August, 2011.

Thomas J. Richard

Sarpy County Board Chairman



Renee Lunsman

County Clerk

Deputy

ADDITIONAL INFORMATION

SARPY COUNTY BOARD OF COMMISSIONERS

AUGUST 30, 2011

FLOOD PLAIN DEVELOPMENT PERMIT

Nebraska Department of Roads

US 75 at the Platte River

Bridge Construction and Rehab

Sarpy County Board of Commissioners

1210 GOLDEN GATE DRIVE
PAPILLION, NE
593-4155
www.sarpy.com

ADMINISTRATOR Mark Wayne
DEPUTY ADMINISTRATOR Scott Bovick
FISCAL ADMIN./PURCHASING AGT. Brian Hanson



<u>COMMISSIONERS</u> Rusty Hike District 1 Jim Thompson District 2 Tom Richards District 3 Jim Nekuda District 4 Jim Warren District 5

To: Sarpy County Commissioners

From: Mark Wayne, County Administrator

RE: NDOR Flood Plain Permit

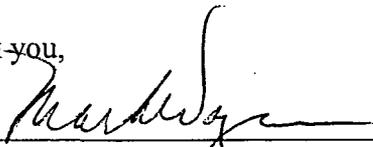
The NDOR has requested a Flood Plain Permit for the new bridge on Hwy 73-75. As of this time, the NRD has not provided a final determination on the permit because there is a slight rise along the Platte River. The analysis is being conducted by the Corp of Engineers for a recommendation to NRD which also has not been received. Tim Weander with NDOR has been notified that this is on the agenda, but can not be approved with a No-Rise Certificate and NRD recommendation for approval.

I hope to have this resolved by the agencies prior to Tuesday. If not, it could cause a delay in bidding the bridge project.

August 26, 2011

MW/lt

Thank you,



Mark Wayne, County Administrator

Sarpy County Board of Commissioners Report
 Staff Report Prepared: August 26, 2011
 County Board Meeting Date: August 30, 2011

Subject	Type	By
Floodplain Development Permit for bridge construction and bridge rehabilitation at mile markers 72+73 to 76+30 along Nebraska Highway 75 just north of the Platte River Bridge.	Resolution	Mark Wayne, County Administrator

- Request
 - This is a request from the Nebraska Department of Roads (NDOR) for a floodplain development permit for bridge construction and bridge rehabilitation in conjunction with improvements to Highway 75 just north of the Platte River Bridge.
- Comprehensive Development Plan
 - The Sarpy County Development Structure Plan indicates the area west of Highway 75 as Bellevue Future Growth and the area east of Highway 75 as Industrial.
- Zoning
 - The zoning is primarily residential to the west and industrial to the east of Highway 75.
 - The first ¼ mile north of the Platte River (to Allied Road) is classified as a Floodway, and the property north an additional ½ mile (to railroad tracks) is an AE zone which is the special flood hazard area and a regulated floodplain zone.
 - The NDOR applicant intends to construct new portions and rehabilitate portions of the Platte River Bridge as part of a large-scale roadway improvement project.
 - The NDOR has been working with their consultants for the past year to analyze the impacts to the floodplain. Their consultant's review, analysis and correspondence is attached.
- Natural Resources District
 - The Papio Missouri River Natural Resources District has provided a letter of review for the project which is attached.
- Recommendation
 - For the reasons stated above I recommend approval to the request to perform bridge construction and rehabilitation on portions of Highway 75 north of the Platte River Bridge.

Respectfully submitted by:

Mark Wayne
 County Administrator



SARPY COUNTY PLANNING

1210 GOLDEN GATE DRIVE PAPILLION, NE 68046
PHONE: 402-593-1555 FAX: 402-593-1558 E-MAIL: PLANNING@SARPY.COM

FLOOD PLAIN DEVELOPMENT PERMIT APPLICATION

In order for your application to be considered **COMPLETE**, please answer all applicable questions and provide the following:

1. Submit complete Flood Plain Development Permit Application
2. Submit Non-Refundable Fee of \$100.00 made payable to Sarpy County Treasurer
3. 2 full size site/construction plan drawing
4. 6 reduced size site/construction plan drawings (8.5 x 11)
5. A Construction Drawing Elevation Certificate (From registered professional engineer or architect.)

PLANNING STAFF USE ONLY:

APPLICATION NO.: FPD 11-0011
 DATE RECEIVED: 10-9-11
 CP DESIGNATION: _____
 ZONING DESIGNATION: _____
 FEE: \$100.00 RECEIPT NO. 734177
 RECEIVED BY: CG

NOTES: Bridge Construction / Bridge Rehab

PROPERTY OWNER INFORMATION: (If multiple owners, attach separate sheet)

Please check box if attaching separate sheet with owner information.

NAME: NDOR

E-MAIL: _____

ADDRESS: P.D. Box 94759

CITY/STATE/ZIP: Lincoln, NE 68509-4759

MAILING (IF DIFFERENT)
ADDRESS: _____

CITY/STATE/ZIP: _____

PHONE: _____

FAX: _____

ENGINEER INFORMATION:

NAME: _____

E-MAIL: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

MAILING (IF DIFFERENT)
ADDRESS: _____

CITY/STATE/ZIP: _____

PHONE: _____

FAX: _____

CONSTRUCTION INFORMATION: This individual/company is responsible for meeting construction standards.

NAME: _____

E-MAIL: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

PHONE: _____

FAX: _____

PROPOSED DEVELOPMENT INFORMATION: (Describe the project in detail, including physical features of the site, proposed improvements, proposed uses or business, operating hours, number of employees, anticipated customers, etc. – Attach additional sheets if necessary.) **PLEASE NOTE:** A detailed project description is essential to the reviewing process of this request.

Bridge Construction / Bridge Rehab

PROJECT SITE INFORMATION: Complete each section in its entirety. If a question is not applicable to your project, please indicate this to show that each question has been carefully considered.

PROPERTY ADDRESS: US Hwy 75 mile markers 72+73 + 76+30

ASSESSORS PARCEL NUMBER(S)

SUB DIVISION: LOT:

NAME OF WATERWAY:

PROPERTY LIES WITHIN: FLOODWAY: FLOOD FRINGE:

LOWEST FLOOR ELEVATION IS TO BE FEET ABOVE MEAN SEA LEVEL. (Including Basement)

LEGAL DESCRIPTION: (Describe property to wit:)

ADDITIONAL INFORMATION: Please use this space to provide any other information you feel is appropriate for the County to consider during review of your application. Attach extra sheets if necessary.

PLEASE NOTE THE FOLLOWING PROCEDURES:

1. County Board will hold a public hearing and make a final decision on the Flood Plain Development Permit.
2. After the Flood Plain Permit Approval please provide a signed resolution to the Building Department to begin the Building Permit Process. **PLEASE NOTE** prior to the final inspection a Finished Construction Elevation Certificate will be required by the Building Department.

I, the undersigned, understand a sign will be posted on my property and will remain until the public hearing process at the Planning Commission and County Board is complete. I further understand the Special Use Permit process as stated above and I authorize County Staff to enter the property for inspection related to the specific request during this process.

Owner Signature (or authorized agent)

Date

Owner Signature (or authorized agent)

Date

Floodplain/Floodway Development Permit/Application

Permit Application No.
Date: <div style="text-align: right; font-size: 1.2em;">6/1/11</div>

This form is used for any man-made change to improved or unimproved transportation facility, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, drilling operations, or storage of equipment or materials.

Nebraska Department of Roads will obtain all other necessary federal, state, or local permits (e.g., Corps of Engineers 404 Permit, Local Levee District, etc.)

1.	Name of Applicant: Nebraska Department of Roads PO Box 94759 Lincoln NE 68509-4759
2.	Type and Use of Development: <div style="text-align: center; font-size: 1.2em;">Bridge Construction/ Bridge Rehab</div>
3.	Specific Location of Development: <div style="text-align: center; font-size: 1.2em;">Hwy 75, M.M. 72+73 to 76+30</div>
4.	Complete this section if the proposed development involves the improvement of a structure (i.e., walled and roofed building). <div style="float: right; margin-top: 10px;"> Pre-improvement Value of Structure: \$ _____ Cost of Improvement: \$ _____ </div>

The following section is to be completed by the community official:

5.	Is the development Substantial Improvement? (see #4)	<input type="checkbox"/> Yes <input type="checkbox"/> No
6.	Is the development in an identified floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If Yes, complete the following:		
a.	Elevation of the Base (100-Year) Flood	_____ Ft. MSL/NGVD 29 or NAVD 88
b.	Elevation/Floodproofing Requirement (if applicable)	_____ Ft. MSL/NGVD 29 or NAVD 88
c.	Is the development in a designed Floodway?	
<input type="checkbox"/> Yes	New structures for human habitation are prohibited. For any other Floodway development, the NDOR must provide certification by a registered professional engineer that the development would result in no increase along the floodway water surface profile.	
<input type="checkbox"/> No	If a floodway has not been designated, the NDOR may be required to submit hydraulic data demonstrating that the proposed development will not increase flood heights more than one foot at any location.	

If the development is in a floodplain, the following shall apply:

This permit is issued with the condition that the lowest floor (including basement) of a new or substantially improved nonresidential building will be elevated or floodproofed at least one foot above the base flood elevation. NDOR will provide certification by a registered Engineer, Architect, or Land Surveyor that these provisions are met.

All provisions of the _____ Floodplain Management Resolution/Ordinance (Number _____) shall be complied with.
(County or City)

Local Authorizing Official (Name & Title)	Date
<div style="font-size: 1.5em; font-family: cursive;">Dale Vayts</div> NDOR Environmental Permits Manager	<div style="font-size: 1.5em; font-family: cursive;">6/2/2011</div> Date

Project Name: Plattsmouth-Bellevue, South of Platte River	
Project No.: NH-75-2(167)	
Control No.: 21849E	Structure No.: Multiple

Modeling Analysis Using USACE (Revised) Tailwater Conditions

As discussed in the 2009 Modeling Report, the USACE has created updated hydraulic modeling of the Missouri River. It is anticipated that this updated modeling will become the regulatory model in the near future. The updated USACE modeling provides tailwater elevations that are higher than those generated by Effective modeling (see 2009 Project report for discussion). Tables 7 and 8 show the effects of project conditions given the increase to 100-year and 100-year floodway tailwater conditions. The model naming convention is as follows (all files with an “-R” indicate revised USACE tailwater conditions):

<u>Model Name</u>	<u>Description</u>
CEM-R	Corrected Effective Model from 2009 Study
CEM-R_Mod	2009 CEM-R modified to include USACE right overbank floodway limits
PCM-R	Proposed Conditions Model from 2009 (Derived from CEM_R)
PCM-R_Mod	PCM modified to include USACE right overbank floodway limits and dual overbank bridges (Derived from CEM-R_Mod)

The 2009 study evaluated water surface elevations for 100-year flows. The 100-year Platte River flow of 250,000 cfs was used in the flow input file of the USACE Missouri River model to determine 100-year and 100-year floodway water surface elevations for use as tailwater conditions for the Platte River model. The 100-year tailwater elevations used in the 2009 study were used for this current effort.

Cross section 13581 indicates an increase in water surface elevation of 0.04 ft at the northbound US-75 downstream face cross section for the 100-year floodway condition. This mathematical increase is within a highly transitional area in the expansion zone immediately adjacent to the bridge. We believe this is a minor computational issue and that it does not constitute an actual rise in water surface elevations. A review of energy grade elevations shows that the proposed conditions energy grade at this location is below that of the existing condition.

Cross section 26692 indicates an increase in water surface elevation of 0.07 ft for the floodway condition. HEC-RAS failed to iterate to a solution at this section under existing and proposed conditions. As a result, HEC-RAS defaulted to reporting the critical depth elevation in the existing and proposed models. The steeper proposed conditions energy gradient downstream of this section results in HEC-RAS calculating different critical depth elevations for proposed and existing conditions. Increasing the number of calculations performed by HEC-RAS to the maximum allowed (40) did not result in a non-critical depth solution. Cross section interpolation was also used as a tool to attempt to eliminate the default to critical depth and resulting ‘rise’. It is not reasonable to infer a true rise in water surface elevations at this location when HEC-RAS

is defaulting to critical depth and water surface elevations downstream of this location are decreased under proposed conditions and the water surface profiles in the series of cross sections leading up to this location are converging to no change in elevation. This location is more than 12,000 feet upstream from the US-75 bridge crossing. There are two bridges and eight cross-sections between US-75 and section 26692. It was ultimately decided that the 'rise' being reported by HEC-RAS does not represent a real increase in water surface elevations.

Tables 8 shows that after incorporation of USACE requested modeling changes, and addition of right overbank bridges and right abutment grading, no-rise criteria are still met for the 100-year flows. The decrease in elevations upstream of US 75 is due to additional flow area through the main bridge and increased conveyance on the right overbank.

Since the beginning of this current evaluation, the Sarpy County FIS was updated and has an effective date of May 3, 2010. The Cass County FIS was also updated, and has an effective date of November 26, 2010. Review of the profiles in the updated FIS's shows that Sarpy County and Cass County tailwater conditions differ from each other, and differ from the increased tailwater conditions assumed at the time of scope development. Table 9 provides a comparison of the tailwater conditions used in the study compared to the updated Sarpy and Cass County FIS tailwater conditions. As shown in the table, the revised tailwater assumptions used in this current evaluation are higher than those used in the Effective Sarpy and Cass County FIS's. Sarpy County FIS Platte River starting water surface elevations are not consistent with updated USACE Missouri River modeling elevations. This study uses the USACE Missouri River modeling elevations as starting conditions as this is the best available information.

Mark Wayne

From: Graham, Randy [Randy.Graham@tetrattech.com]
Sent: Friday, July 01, 2011 11:58 AM
To: Laster, Lori
Cc: Sotak, Mike; Gregalunas, Bob
Subject: US-75 no-rise model review

Lori, here are some bullet points on my review of the US-75 improvements over the Platte River:

- I received various versions of HEC-RAS models in attempt to obtain the model HDR was relying on for the no-rise. These included a model describing all US-75 Platte River structures and a model describing only the main channel bridges along with a proposed structure to mitigate conveyance losses due to roadway improvement. The model describing each Platte River conveyance structure utilized the split flow option which isolated the main channel bridges (northbound and southbound) within the main reach from the right bank structures in the overflow reach. The left bank structure was considered ineffective for either reach.
- I came into contact with a Matt Reddington, HDR Minneapolis office, who has done the majority of the modeling efforts for both this no-rise request as well as the earlier request in 2009. I obtained the HEC-RAS version that HDR is proposing for the no-rise from Matt. I also had a detailed discussion with Matt that helped me understand some of the background in the no-rise model development.
- In review of the no-rise HEC-RAS, it actually does not provide a no-rise solution. There are three locations within this modeling plan in which the proposed condition is higher than existing. One location occurs for the floodplain condition and the other two occur for the floodway condition. The floodplain condition water surface rise is located several miles upstream and estimated to be a hundredth of a foot increase. The energy elevations actually show improvement for proposed conditions at several cross sections midway between the southbound (upstream) US-75 bridge and the location of the proposed condition water surface elevation rise. Therefore I would accept the explanation that the rise is due to numerical issues and does not represent a true rise. The other two locations are at the downstream face of the downstream (northbound) US-75 bridge and a section located many miles upstream of the NDOR bridges. The rise at the cross section many miles upstream is seven hundredth of a foot. However, similar to the floodplain rise, this increase occurs even though many of the cross sections downstream have improved water surface and energy elevations. The rise occurs when the energy grade converges. Therefore I do believe this is a numerical issue and not a true rise. The rise predicted at the downstream face occurs even though the energy elevation is lower for proposed conditions than for existing conditions. It is noted that for both floodplain and floodway conditions, the predicted energy elevations are either equal to or lower for proposed conditions than for existing conditions. As such, the freeboard for infrastructure within the study reach, including R-5613, would be improved.
- I asked Matt about the Corps comment on the floodway limits being modified by HDR and, thus, requiring a CLOMR. He said that HDR has reset the floodway limits to that adopted by FEMA so that this should not be an issue for this no-rise request.
- In checking the proposed northbound bridge description (only bridge being modified by NDOR) I noticed that the plan set provided to me by NDOR shows an approximate 35' pier extension (26.75' downstream and 8.25' upstream) while the model describes a 24.6' extension. Matt stated that he understood the road deck was being widened 24.6'. He didn't realize that the plan set showed a 35' overall pier lengthening. He is going to look into that.
- With regard to the split flow model that pertains to the study area, I asked Matt why the split

flow model was not utilized since it contained all conveyance structures within the study area. Matt stated that the no-rise model submitted was based on the Corps HEC-2 model that is the adopted FEMA model and the basis for the FEMA mapping and base flood elevations. I did obtain what I believe is this HEC-2 model (PLRV1.DAT) which was used in the 1996 Lower Platte Recon Study. This model was originally developed for the 1978 FIS. The Corps updated cross sections within this model based on NE DNR cross sections obtained in 2001 (unsure of use for Lower Platte Recon Study other than 1996 was initial or early phase of study and doesn't represent end year or that the Corps updated version is subsequent to the adopted FEMA model, but now serves as best available information). This HEC-2 model describes only the US-75 main channel Platte River bridges and does not include descriptions of conveyance structures within the right or left overbanks. Given the thorough nature the Corps used in developing the Platte River FIS HEC-2 model, it is assumed that the Corps felt these overbank structures were ineffective for a one-dimensional, steady state analysis. Since the river system is essentially the same today as it was in the early to mid-1970's, such an assumption could be considered valid today.

- With regard to the split flow modeling effort, I questioned Matt on need to use the split flow option in lieu of just describing all the conveyance structures within a single river reach. Matt did not have an explanation for why the split flow option was used. Since all the conveyance structures had been described, and all were hydraulically connected, I modified the split flow model by removing the overflow reach and having all structures described and effective within the Platte River reach. This effort resulted in a water surface elevation rise for the proposed condition at several locations. However, it was noted that the energy grade at all locations was the same or lower under proposed conditions. The rise was due to the velocity head difference. Given that the levee will be impacted by the energy elevation more-so than the river channel water surface elevation, the proposed conditions appears to improve the freeboard for R-613 based on engineering considerations, not necessarily FEMA considerations. It is also noted that this model version is not the adopted version and only serves, at best, as a 'sensitivity' analysis.

I will defer a formal report until the Corps has reviewed and commented on the HDR report and model. Also, HDR needs to provide justification on using a 24.6' pier extension instead of what appears to be a 35' pier extension. If I am right on the pier extension a new modeling effort and report would be required. Based on the modeling effort to date though, I do believe that improvements proposed by NDOR and described by HDR (contingent on pier length) will not substantially affect R-613 and may slightly improve it. It is noted that the floodplain below and above the US-75 corridor has changed due to sand pit lake developments and such. Since NDOR is not looking to or is responsible for providing new FEMA documentation and mapping but is only looking to improve a roadway under the constraints of not worsening the waterway - I do not believe they would necessarily need to provide the significant amount of funding required to obtain and incorporate new floodplain information. I believe they basically need to provide evidence of maintaining the equivalent or greater conveyance capacity at design flood stages within the left overbank, channel and right overbank areas. The modeling efforts provided appear to substantiate that NDOR is not increasing stage-frequencies by their proposed improvements.

Randall Graham, P.E., D.WRE, CFM - Program Manager

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 randy.graham@tetrattech.com

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Mark Wayne

From: Redington, Matthew K. [Matthew.Redington@hdrinc.com]
Sent: Thursday, June 30, 2011 9:21 AM
To: Wiest, Andy; Cambridge, John
Cc: Rutherford, Walter; randy.graham@tetrattech.com; Laster, Lori
Subject: US 75 Platte River bridge

As we have previously discussed, Cass and Sarpy County have different effective tailwater depths. I spoke with Walter this morning and we agreed that for the sake of reporting elevations on our bridge plans, it would be most conservative to report the water surface elevations associated with the USACE modeling tailwater condition. The USACE tailwater condition for the 100-yr event is slightly higher than both the Sarpy and Cass County effective tailwater elevations.

The no-rise modeling we have performed evaluates impacts due to the bridge using Sarpy County's 'low' tailwater condition, and the USACE's 'high' tailwater condition. Regardless of whether we use a low or high tailwater starting condition, we are showing a no-rise.

The downstream 100-yr elevation to use for the main bridge and right overbank bridge plans is 970.65 ft.

Matt Redington, P.E.

Project Manager

HDR ONE COMPANY | *Many Solutions*

701 Xenia Avenue South | Suite 600 | Minneapolis, MN | 55416
Phone: 763.591.5487 | Fax: 763.591.5413 |

www.hdrinc.com

To:	Nebraska Department of Roads		
From:	Matt Redington, P.E.	Project:	US-75 Platte River Crossing
cc:	Andy Wiest, P.E.		
Date:	07/18/2011	Job No:	Dept 134, PN 10205

Re: Updated Hydraulic Modeling Study at the US 75 -- Platte River Crossing

Background

This memorandum summarizes the results for updated HEC-RAS hydraulic modeling performed for the US Highway 75 (US-75) crossing of the Platte River near Bellevue, Nebraska. This project builds upon previously completed modeling analyses for this crossing. The 2009 study report titled 'Platte River US-75, Plattsmouth-Bellevue Bridge Replacement' should be consulted for project background and details on previous hydraulic modeling efforts.

The objective of the current study is to document compliance with Federal Emergency Management Agency (FEMA) no-rise requirements while incorporating modeling changes recommended by the United States Army Corps of Engineers (USACE).

Modeling Modifications

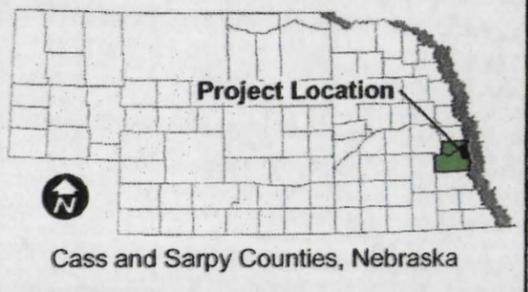
The USACE has modified the Effective Platte River model to incorporate floodway limit changes on the right overbank. It was anticipated that this modified model (PLATLOW2.DAT) would become the regulatory model in the near future. The USACE reviewed HDR's 2009 modeling no-rise analysis and requested that the modeling completed for the 2009 no-rise study be modified to incorporate floodway limits consistent with their updated model. Table 1 shows the 2009 modeling effort floodway limits and the updated right overbank floodway limits used in the current study (to be consistent with USACE modeling).

In addition to modifying floodway limits, HDR has modified proposed conditions modeling to incorporate the dual 3-span, 100-foot long US-75 bridges located on the right overbank. These bridges (one on northbound US-75 and one on southbound US-75) are located approximately 3000 feet to the south of the main channel crossing. The modeling geometry of these bridges was based on TS&L sheets dated October, 2009. The only geometric variation of the modeled bridge from the TS&L sheets was to increase the invert of the crossing from 960.5 to 964.0 feet.

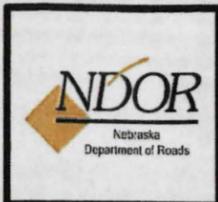
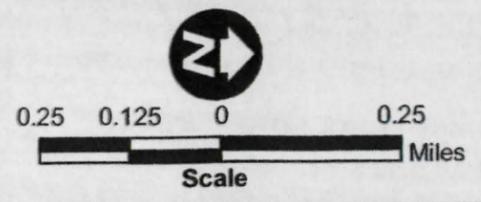
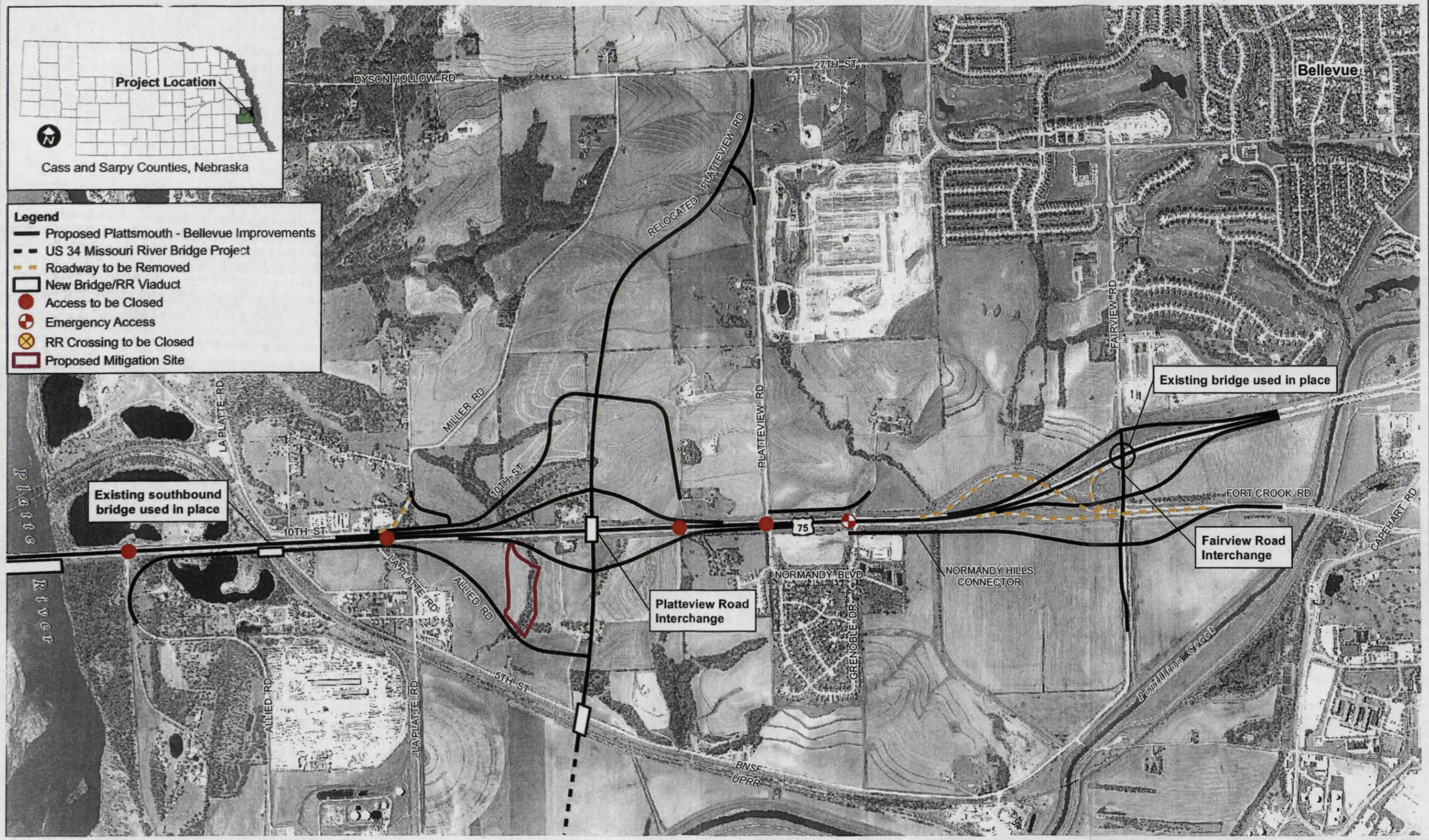
This increase to the invert elevation was made because ground elevations upstream and downstream of the crossing are at 964.0 feet. An invert elevation of 960.5 feet would create a sump condition at the crossing with no positive drainage. The TS&L sheets for the overflow bridge are included in Appendix A. Figure 1 shows a HEC-RAS cross section showing the location of the overbank bridge relative to the main channel crossing. Figure 2 shows a close-up view of the right overbank bridge. The views for Figures 1 and 2 are looking downstream (left overbank is to the north).

The proposed conditions models also include geometric refinements that have been incorporated into final project design. These updates include minor highway and bridge profile adjustments and grading adjacent to the right (south) bridge abutment. The grading adjacent to the abutment is being completed to allow compliance with no rise requirements.

The Papio-Missouri River Natural Resources Department reviewed and provided comments on the June 2011 version of this memorandum. The modeling performed for the June 2011 memorandum incorporated a deck width consistent with the proposed deck width and did not account for pier extensions beyond the proposed deck which would allow for future bridge expansion. The NRD requested that the modeled width of bridge be increased so that it is consistent with the proposed pier lengths. This change request resulted in increasing the modeled bridge width to 65.3 feet.



- Legend**
- Proposed Plattsmouth - Bellevue Improvements
 - - - US 34 Missouri River Bridge Project
 - - - Roadway to be Removed
 - New Bridge/RR Viaduct
 - Access to be Closed
 - ⊕ Emergency Access
 - ⊗ RR Crossing to be Closed
 - ▭ Proposed Mitigation Site



Proposed Design - North of the Platte River		DATE May 2010
NEPA Reevaluation US 75 Plattsmouth - Bellevue Cass and Sarpy Counties, Nebraska		FIGURE 3b
Project No. NH-75-2(155) Control No. 21849		

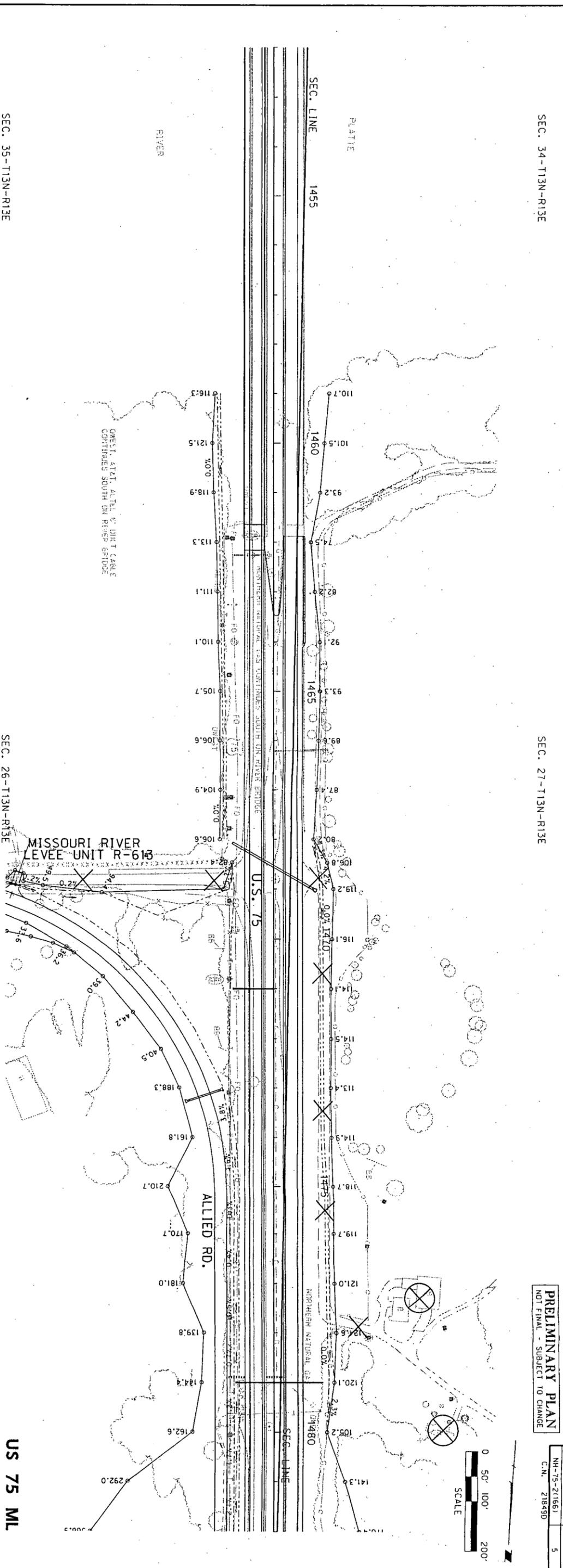
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PROFILE	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED		
	GRADES CHECKED		
	B.M.'S NOTED		
	STRUCTURE NOTATIONS CHECKED		

Plot Date: 11/19/2009 3:03:22 PM
 User: thn/vsl
 Filename: ...21849DCP08.DGN

PLAN	SURVEYED	BY	DATE
NOTE BOOK NO.	PLOTTED		
	ALIGNMENT CHECKED		
	RIGHT OF WAY CHECKED		

940	Datum Elev. = 940.00 ft. Above Level U.S.C. & G.S.	964.52	978.08	1455+00
950		964.57	978.12	
960		964.61	978.14	1460+00
970		964.65	978.13	
980		964.65	978.10	1465+00
990		964.65	978.05	
1000		964.65	977.97	1470+00
		964.69	977.87	
		964.73	977.75	1475+00
		964.78	977.61	
		967.23	977.44	
		966.04	977.24	1480+00
		974.46	977.03	
		974.64	976.79	
		974.87	976.52	
		974.62	976.24	
		973.91	975.96	
		973.02	975.68	
		972.89	975.40	
		972.89	975.12	
		972.89	974.84	
		972.89	974.56	
		972.89	974.28	
		972.89	974.00	
		972.89	973.72	
		972.89	973.46	
		972.89	973.21	
		972.89	973.00	
		972.89	972.81	
		972.89	972.65	
		972.89	972.52	
		972.89	972.41	
		972.89	972.32	
		972.89	972.27	
		972.89	972.24	
		972.89	972.24	
		972.89	972.26	
		972.89	972.31	
		972.89	972.38	
		972.89	972.49	
		972.89	972.61	
		972.89	972.77	
		972.89	972.95	
		972.89	973.16	
		972.89	973.39	
		972.89	973.64	
		972.89	973.89	
		972.89	974.13	
		972.89	974.38	
		972.89	974.63	
		972.89	974.87	
		972.89	975.18	
		972.89	975.09	
		972.89	976.14	
		972.89	976.76	
		972.89	977.59	
		972.89	978.45	





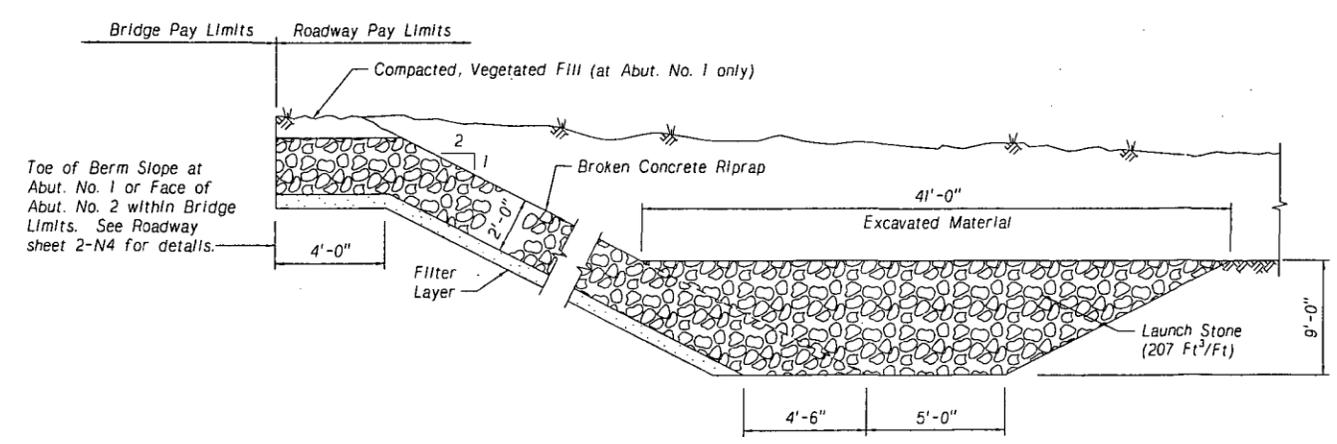
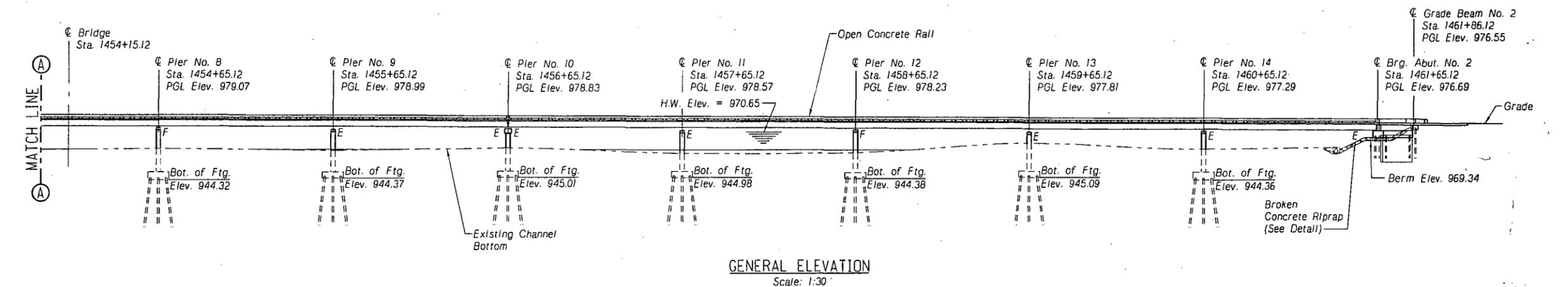
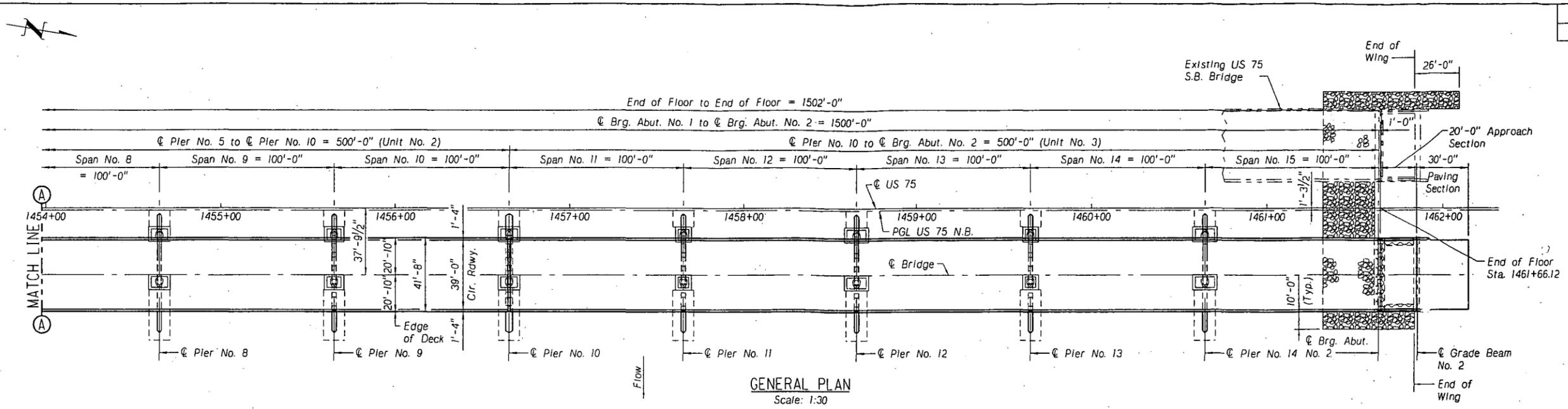
BRIDGE ENGINEER

1500'-0" 15-SPAN
STEEL WELDED PLATE GIRDER BRIDGE
WIDEN & REHAB
GENERAL PLAN & ELEVATION (2 OF 2)
DATE JULY, 2011
CHECKED BY DLS

LOCATION US75 Plattsmouth-Bellevue
SKW 0°
ROADWAY 39'-0"
DESIGN LIVE LOAD HL-93
DETAILED BY DEB
DESIGNED BY GCL



SPECIAL PLAN NO. 4
44



PRELIMINARY PLAN
NOT FINAL - SUBJECT TO CHANGE

Sheet D

September 13, 2011

Scott Bovick, Deputy County Administrator
Sarpy County Planning Department
1210 Golden Gate Drive
Papillion, NE 68046



RE: U.S. Highway 75 – NDOR Application for Floodplain Development Permit

Dear Mr. Bovick:

The District received information concerning a proposed bridge replacement on U.S. Highway 75 over Platte River in Sarpy County Nebraska. The project is located in the Zone AE floodway and flood fringe of the Platte River according to the effective Digital Flood Insurance Rate Map (DFIRM) for Sarpy County, panels 31553C 0210G and 31153C 0220G, effective December 2, 2005. The District provided comments on this application on August 29, 2011. Nebraska Department of Roads (NDOR) submitted revised hydraulic models for review on September 8, 2011.

The District offers the following comments:

- A no-rise certification prepared by Matthew Redington, P.E., dated September 9, 2011 was submitted along with the revised hydraulic models and a memorandum addressing comments previously provided.
- The District, the District's consulting firm, Tetra Tech, and USACE have reviewed the revised information submitted by NDOR and approve the resubmitted hydraulic models and the no-rise certification based on the hydraulic model geometry used in the analysis. Comments from USACE are attached.
- As of the date of this letter, comments have been provided by the Flood Risk and Floodplain Management Section of USACE. Other sections will also be providing comments on the project. This letter is not intended to be inclusive of all comments on the proposed project. Any potential comments should not affect the floodplain development permit.
- It appears that the model and plans call for floodway mitigation by excavating an area for a distance of approximately 400 feet both upstream and downstream of the proposed bridge in order to meet no-rise condition for the 1% annual chance floodplain as required by FEMA. Draft language for a maintenance agreement was provided to the District by NDOR for review. The District has no further comments on the agreement.

The District has no objection to the project as planned. If you have any questions or concerns, please don't hesitate to contact me at (402) 444-6222.

Sincerely,

Lori Ann Laster, CFM
Stormwater Management Engineer

Cc: Mike Owen, Nebraska Department of Roads
Marlin Petermann, Amanda Grint, P-MRNRD

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
1616 CAPITOL STREET
OMAHA, NE 68102-4901

CENWO-ED-HB

12 September 2011

MEMORANDUM FOR CENWO-OD-E (Horihan)

SUBJECT: Flood Risk and Floodplain Management Section Review of the Proposed U.S. Highway 75 Bridge and Roadway Approach Modifications in Relation to the Missouri River Federal Levee R613

1. The 100% design drawings for the Nebraska Department of Roads Project NH-75-2 (164) of 15 June 2011, were reviewed.

Recommend that the Papio-Missouri River Natural Resources District obtain new surveys of the floodplain and current data of all bridges, ramps, and other encroachments when evaluating Missouri River Levee R613 for levee certification. The new data should be incorporated into a hydraulic model that reflects the current floodplain conditions. A majority of the existing model geometry dates to 1975.

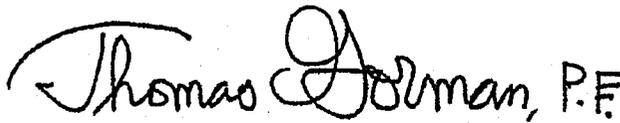
2. A Memo of 7 September 2011 from HDR titled, "Updated Hydraulic Modeling Study at the U.S. 75-Platte River Crossing" was reviewed and we offer the following observations:

a. The Memo indicates that a no-rise condition will exist for the 1% annual chance frequency flood profile with the proposed construction at Highway 75.

b. The Memo also states, "The analysis of the report is to be used solely for demonstrating compliance with floodplain no-rise criteria. No part of this evaluation should be used to draw conclusion on the structural integrity or performance of any nearby levee or infrastructure."

3. Based on the Memo submitted of 7 September 2011 from HDR titled, "Updated Hydraulic Modeling Study at the U.S. 75-Platte River Crossing," the U.S. Army Corps of Engineers approves the hydraulic models and the no-rise condition based on the hydraulic model geometry used in the analysis.

4. If you have any questions, please contact Ms. Colleen Horihan at (402) 995-2329 or myself at (402) 995-2322.

for  P.E.
RANDALL L. BEHM, P.E., CFM
Chief, Flood Risk and Floodplain
Management Section
Engineering Branch



Dave Heineman
Governor

STATE OF NEBRASKA

DEPARTMENT OF ROADS

Monty W. Fredrickson, P.E., Acting Director

1500 Highway 2 • PO Box 94759 • Lincoln NE 68509-4759

Phone (402) 471-4567 • FAX (402) 479-4325 • www.transportation.nebraska.gov

September 13, 2011

Sarpy County
Mark Wayne
County Administrator
1261 Golden Gate Drive, Suite 2E
Papillion NE 68046

RE: US-75 Plattsmouth to Bellevue
Project No. NH-75-2(167)
Control No. 21849E

Mr. Mark Wayne:

The Nebraska Department of Roads (NDOR) requests your concurrence that NDOR personnel will inspect and maintain an excavation area at the south abutment of the Platte River Bridge on US-75.

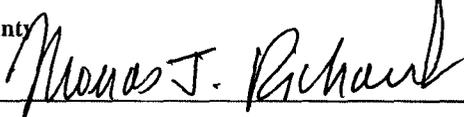
Sarpy County has approved the NDOR Floodplain Development Permit Application, dated 6/1/2011, with the condition that both the United States Army Corps of Engineers (USACE) and the Papio- Missouri River Natural Resources District (NRD) approve stated conditions. Contingent approval is as follows: "The USACE and NRD approve of the re-submitted hydraulic models and a revised No Rise Certificate." This maintenance concurrence, as described below, with Cass County and Sarpy County is also necessary before the contingencies are satisfied.

The attached plan sheet will be included in the plans for the Plattsmouth to Bellevue project referenced above. The grading adjacent to the abutment is being completed to allow compliance with no-rise requirements. The graded area is coded in the hydraulic model to extend from the upstream face of the southbound Platte River Bridge to the downstream face of the northbound Platte River Bridge. This graded area will be protected from scour with Type C Riprap. This excavation area increases the conveyance area underneath the Platte River Bridge and is needed to prevent increases to water surface elevations in the post-construction condition. The graded area is partially on State right-of-way and partially on permanent easements.

Periodic removal of sediment may be required from the graded area in order to maintain the conveyance capacity of the Platte River Bridge crossing. The Nebraska Department of Roads agrees to inspect the excavation area at the south abutment of the Platte River Bridge on US-75 annually and after each high-water event on the Platte River. A high-water event shall mean flood stage at the United States Geological Survey (USGS) stream gage for the Platte River near Louisville or a stage of 9 feet or a river flow of 62,000 cfs. Any maintenance required to ensure the area remains open as shown on the plan sheet will be performed as soon as possible.

Please indicate your concurrence that NDOR will inspect and maintain the excavation area at the south abutment of the Platte River Bridge on US-75

Sarpy County

Signature: 

Date: 9-13-11

Respectfully Submitted,
NEBRASKA DEPARTMENT OF ROADS



Mike Owen
Division Head, Planning & Project Development

Attachments
MO/dd
US-75 South Abutment Grading Plan

Cross Section	100-year			100-year Floodway		
	Water Surface Elevation		Difference in Elevation	Water Surface Elevation		Difference in Elevation
	CEM R Mod	PCM R Mod		CEM-R Mod	PCM R Mod	
3900	969.60	969.60	0.00	970.30	970.30	0.00
7880	969.98	969.98	0.00	970.77	970.77	0.00
11120	970.34	970.34	0.00	971.07	971.07	0.00
12320	970.54	970.54	0.00	971.27	971.27	0.00
12920	970.65	970.65	0.00	971.38	971.38	0.00
13581	969.53	969.33	-0.20	970.52	970.34	-0.18
US 75 Northbound						
13664	973.20	971.70	-1.50	972.77	971.67	-1.10
13690	973.22	971.74	-1.48	972.90	971.70	-1.20
US 75 Southbound						
13760	974.86	972.34	-2.52	974.62	972.32	-2.30
14380	974.78	973.65	-1.13	974.58	973.62	-0.96
Railroad Bridge						
14395	975.74	974.56	-1.18	975.66	974.64	-1.02
14490	975.81	974.64	-1.17	975.68	974.66	-1.02
Railroad Bridge						
14505	976.70	975.58	-1.12	976.84	975.82	-1.02
16060	977.48	976.53	-0.95	977.30	976.39	-0.91
17900	977.70	976.81	-0.89	977.60	976.77	-0.83
20220	977.97	977.13	-0.84	978.01	977.27	-0.74
22930	979.38	978.84	-0.54	979.68	979.17	-0.51
26692	982.82	982.82	0.00	982.53	982.53	0.00

Certification and Compliance

Floodplain and Floodway Regulations

Structure No.: S075 07630 L&R
County: Cass/Sarpy, NE
Project Name: US-75 Plattsmth-Bellevue
Stream: Platte River
Project No.: NH-75-2(167)
Control No.: 21849E
Section: 35 T 13N R 13E

F.E.M.A. County/Community: CASS COUNTY SARPY COUNTY
Panel No.: 31025C D1200 31153C 02206
Effective Date: NOV 26, 2010 DEC 2, 2005

TYPE OF STRUCTURE

Bridge Concrete Box Culvert Roadway

TYPE OF IMPROVEMENT

Modify Existing Replace Existing

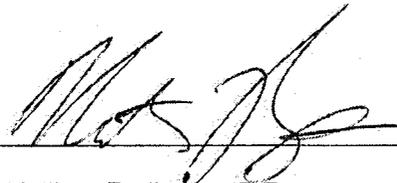
Grade Change: Yes No N/A

Other:

THE FOLLOWING IS HEREBY CERTIFIED

- Floodplain** (without Designated Floodway) or Flood Fringe
Proposed construction will not increase the base (100 year) flood heights more than one foot at any location.
- Designated Floodway**
Proposed construction will result in no rise along the base (100 year) floodway water surface profile.

Signature

 9/9/11
Matthew Redington, P.E.

Registration Number: E-9883
Date: 12/31/2012

seal (optional)

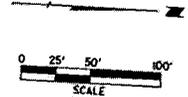
Cross Section	100-year			100-year Floodway		
	Water Surface Elevation		Difference in Elevation	Water Surface Elevation		Difference in Elevation
	CEM R Mod	PCM R Mod		CEM-R Mod	PCM R Mod	
3900	969.60	969.60	0.00	970.30	970.30	0.00
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22930	979.38	978.84	-0.54	979.68	979.17	-0.51
26692	982.82	982.82	0.00	982.53	982.53	0.00

GENERAL INFORMATION

PROJECT NO. 75-2(167)
SHEET NO. 2-N4
C.N. 21849E

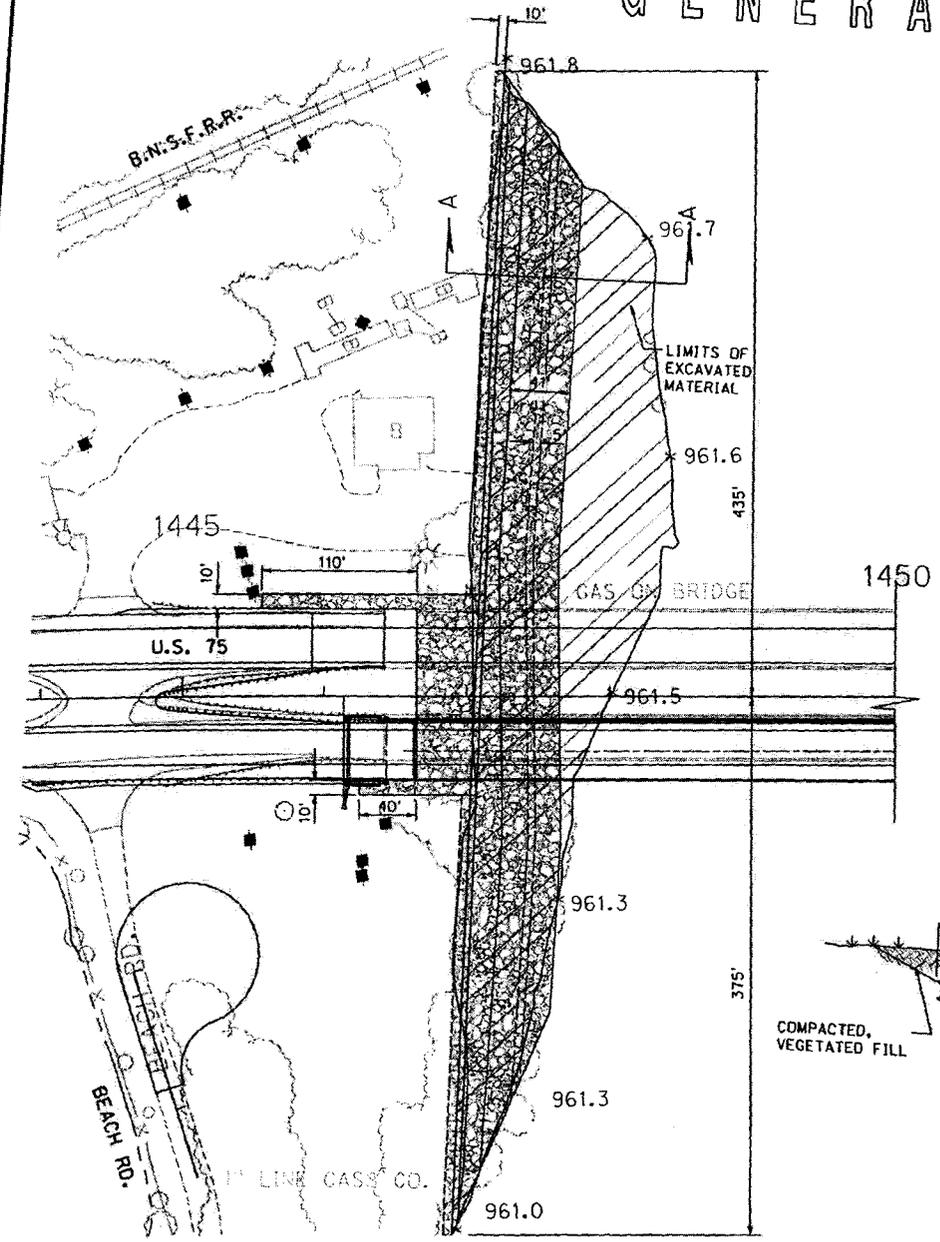
QUANTITIES:

ROCK RIPRAP, TYPE C 14,590 TONS
GRANULAR MATERIAL 1,130 CU. YDS.
FILTER FABRIC 2,873 SQ. YDS.

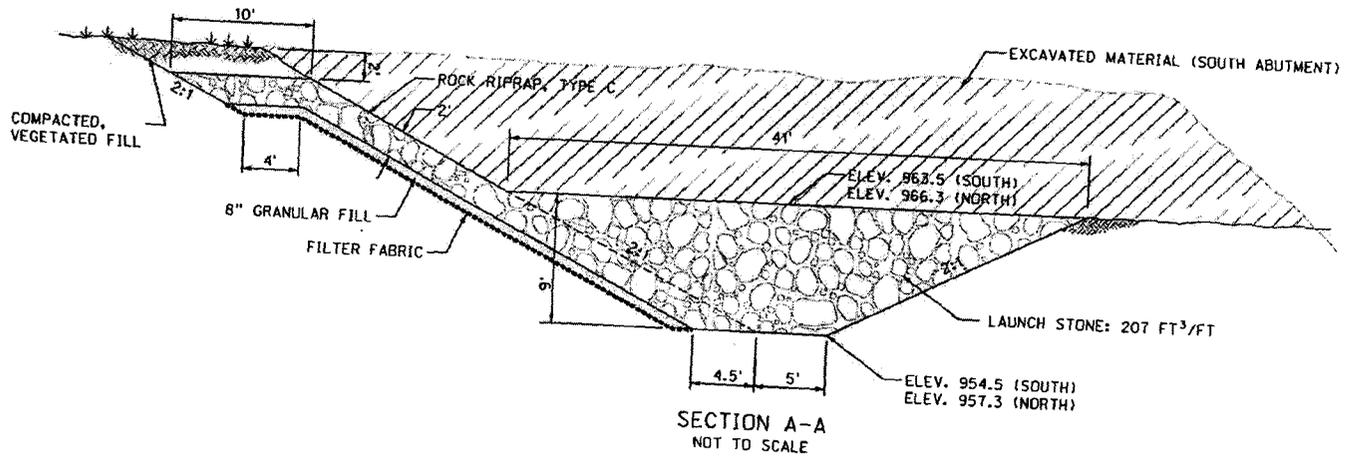
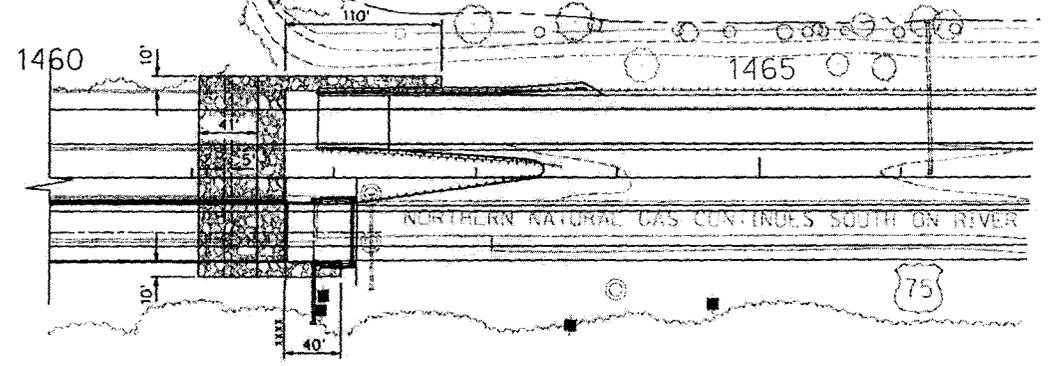


NOTES:

SEE EARTHWORK SUMMARY TABLE FOR EXCAVATED MATERIAL QUANTITIES



FLOW DIRECTION
PLATE RIVER



SECTION A-A
NOT TO SCALE

RIPRAP DETAILS

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 User: j...
 Filepath: ...