HYDRAULIC REPORT

ELGIN O'HARE – WEST BYPASS
P-91-443-06

THORNDALE AVENUE
ELGIN O'HARE EXPRESSWAY
OVER SALT CREEK
DUPAGE COUNTY, ILLINOIS

Prepared For:

Illinois Department of Transportation
201 West Center Court
Schaumburg, IL 60196-1096

Prepared By:

Christopher B. Burke Engineering, Ltd.
9575 W. Higgins Road, Suite 600
Rosemont, IL 60018

CBBEL Project No. 07-0404

November 2012

CH2MHILL®

CHRISTOPHER B. BURKE ENGINEERING, LTD.

9575 West Higgins Road, Suite 600

Rosemont, Illinois 60018-4920 Tel (847) 823-0500 Fax (847) 823-0520

TABLE OF CONTENTS
ELGIN O'HARE EXPRESSWAY OVER SALT CREEK

8. Modeling:
   a. ☐ HEC RAS ☐ WSPRO ☒ Other FEQ Model
   b. N-values estimated according to Chapter 5 of Drainage Manual? ☒ Yes ☐ No
   c. Source of starting WSE Salt Creek
   d. Non-IDOT encroachments in survey? ☒ Yes ☐ No
      If yes, are they accounted for? ☒ Yes ☐ No
   e. Tail water controls(s)? ☐ Yes ☒ No
      If yes, list: _____
      Properly addressed? ☐ Yes ☐ No
   f. Expansion/Contraction cones addressed per Chapter 7 of Drainage Manual? ☒ Yes ☐ No
      If N/A, explain: _____

9. IDNR-OWR Permit: Drainage Area 71 sq. miles ☐ Rural; ☒ Urbanizing;
   Public Water or within Public Water boundaries ☐ Yes ☒ No
   Indicate Permit Type Required:
   a. Individual ☐
   b. Statewide #2 ☐
   c. Statewide #12 ☐
   d. Floodway ☒
   e. Other: _____
   f. None: ☐

10. Sensitive flood receptors ☐ Yes ☒ No
    Give type, elevations and locations: _____

    History of flooding or overtopping problems: Yes ☐ No ☒
    Sources of observed highwater: _____

11. Scour/migration problems: ☒ None/minimal ☐ Significant ☐ Severe
    Comments: _____

    Ice/Debris concerns: None/minimal ☒ Significant ☐ Severe ☐
    Comments: _____

    Countermeasures proposed: NA

12. Deviations from the general procedures presented above and in Chapters 6 and 7 of the Drainage Manual: Application of the FEQ modeling from the DuPage County floodplain study.
    (Attach supporting documents if necessary)

Prepared by: Michael D. Cothard Date: 4-24-12

Signed: (QA/QC) _____ Date: 11/15/12

Illinois Department of Transportation

HYDRAULIC REPORT OUTLINE (HRO)

In order to facilitate a more efficient and timely approval of Hydraulic Reports, a "Hydraulic Report Outline" shall be prepared and submitted with each hydraulic project. This Outline shall be submitted to the District Hydraulic Engineer along with the Hydraulic Report to aid in review of the report.

If any deviations from the procedural steps below are necessary, they must be documented in the outline. Hydraulic Reports prepared by a Qualified District Hydraulic Engineer or under his supervision, are exempt from the HRO requirement. To facilitate Pump Station Hydraulic Report reviews, the Checklist and Data Sheets from the IDOT Drainage Manual, 13-303 and 13-304, will be used. The Data Sheets must be signed by the consultant's QA/QC person or the District Hydraulic Engineer.

1. SN ___-___ (Existing); SN 1089+00 (Proposed)
   Route/Stream: Elgin O'Hare Expressway over Salt Creek
   County: DuPage

2. Prepared By: ☒ Consultant: Christopher B. Burke Engineering, Ltd.
   ☐ District ____

3. Chapter 2 of the IDOT Drainage ☒ Yes ☐ No
   If no, explain ____
   Completed checklist (2-701.02) must be attached.

4. Design Considerations:
   a. Backwater limitations due to:
      IDNR Individual or Floodway Permit ☒ Yes ☐ No
      Sensitive Flood Receptor(s) ☐ Yes ☒ No
   b. Does proposed average design velocity through the structure exceed natural channel velocities? ☒ Yes ☐ No
   c. Is the clearance policy met? ☒ Yes ☐ No
   d. Is the freeboard policy met? ☒ Yes ☐ No

5. Project scope (check all that apply):
   a. ☐ Complete replacement.
   b. ☐ Superstructure replacement.
   c. ☐ Superstructure replacement and/or widening; Length of pier extension in the water, upstream ____ft., downstream ____ft.
   d. ☒ Bridge ☐ Culvert
   e. ☒ New alignment
   f. Work planned below Q100 HWE: ☒ Yes ☐ No

6. Hydrology: ☐ USGS ☐ FIS ☒ Other Floodplain Mapping Study
   Gage data utilized? ☐ Yes ☒ No

7. WIT: Attached copy of all completed WIT(s) ☒ Yes ☐ No ____

Hydraulic Report Checklist

The District or Consultant should complete the following checklist before submitting the Hydraulic Report for approval.

1. ☒ Title Page
2. ☒ Table of Contents
3. ☒ Narrative - (as outlined in Section 2-601.01 Item #3)
4. ☒ Waterway Information Table (WIT) - (as outlined in Section 2-601.01 Item #4)
5. ☒ Hydraulic Report Data Sheets
6. ☒ Location Map - should show the subject structure along with nearby location defining landmarks (cities, roads, highways, etc.)
7. ☒ USGS Hydraulic Investigation Map (District 1 only)
8. ☒ Photographs - (Minimum: U/S & D/S Structure Faces, Up & Down Channel, Up & Down Roadway Across Structure)
9. ☒ Hydrology (map and calculations)
10. ☒ Streambed Profile
11. ☒ Roadway Profile (existing and proposed)
12. ☒ Cross Section Plots - with plan layout preferably overlayed upon an aerial photo with the contours
13. ☒ Bridge Opening Plots
14. ☒ Natural Condition Analysis
15. ☒ Existing Condition Analysis
16. ☒ Proposed Condition Analysis

When HEC-RAS modeling is being used, ALL Plans (Natural, Existing, & Proposed) shall be included in ONE Project File.

17. ☒ Scour Analysis – Existing and Proposed Conditions
18. ☒ Compensatory Storage Calculations (if required)
19. ☒ Survey Notes (if available, No Electronic Point Files)
20. ☒ Correspondence Notes
21. ☒ CD with Project Files (Include pdf copy of the Hydraulic Report)

N:\Idot\070404\Drain\Docs\Hydraulic Reports\Salt Creek\Report Forms\September 2011\HRD\SaltHRD.docx

Tab 1

SECTION 1

NARRATIVE
ELGIN O'HARE EXPRESSWAY OVER SALT CREEK

NARRATIVE

Project Description

The Elgin O'Hare-West Bypass (EOWB) study area encompasses nine (9) watersheds: West Branch DuPage River, Spring Brook, Meacham Creek, Salt Creek, Willow Creek, Higgins Creek, Bensenville Ditch, Silver Creek and Addison Creek. The length of the expressway and interchanges to be improved is approximately 50 miles, including Elgin O'Hare Expressway and Thorndale Avenue approximately from Gary Avenue to York Road, I-90 approximately from Arlington Heights Road to Wolf Road and I-294 approximately from North Avenue to Wolf Road. It is estimated that approximately 25 miles of arterials and frontage roads also will be included in the study. A general project location map is included in Section 3 of this report.

This hydraulic report is submitted for the impacted structures located within the Salt Creek watershed. Separate hydraulic reports for impacted structures within each of the other watersheds are concurrently being prepared.

This hydraulic report documents the hydraulic conditions of waterway structures over Salt Creek at eastbound and westbound Elgin O'Hare Expressway in the City of Wood Dale, DuPage County, Illinois. The USGS Hydrologic Investigations Atlas and Flood Insurance Rate Map included in Section 3 show the structure location.

Site Description

The existing Thorndale Avenue bridge carries two lanes of traffic in each direction. The overall bridge length is 134 feet from abutment face to abutment face including the bridge pier of 2.5 feet in width. The existing structure width parallel to the channel is 70 feet. The existing bridge crossing is perpendicular to the channel. The adjacent areas are open space, residential and commercial. The proposed Elgin O'Hare Expressway will be just south of Thorndale Avenue. The Thorndale Avenue bridge will remain in place as-is for an access road to local businesses.

Field Observations

A field visit to the project site was made on November 2, 2010. The visit was completed to photograph and observe surrounding structures within the modeling limits of the study. Photographs of all modeled structures are included in Sections 4.

Salt Creek is channelized in the vicinity of Thorndale Avenue. There is no evidence of scour at the structure. The channel extends upstream due north from Thorndale Avenue. The entire floodplain area upstream of Thorndale Avenue is grassed open area adjacent to commercial and residential structures. The Thorndale Avenue stream crossing is located approximately 4,160 feet downstream of the structure under Devon Avenue.

Downstream of Thorndale Avenue, the channel section is also channelized. The channel extends downstream of Thorndale Avenue for approximately 5490 feet prior to its confluence with Spring Brook. The area downstream of Thorndale Avenue is open space adjacent to a commercial parking lot, commercial structures and residential structures. The existing Thorndale Avenue bridge is the only structure on Salt Creek located between Devon Avenue and the confluence with Spring Brook. Salt Creek crosses Irving Park Road downstream of the confluence.

Stream Survey

A stream survey of Salt Creek was prepared by D. B. Sterlin Consultants, Inc. in accordance with the stream survey requirements in Section 2-600 of the IDOT Drainage Manual. Eight cross-section locations were surveyed, ranging from 1000 feet downstream to 2000 feet upstream of Thorndale Avenue. The stream survey was based on the IDOT datum, which is same as the NAVD 1988 datum.

Datum Correlation

A datum correlation is required because the Flood Insurance Study (FIS) datum of NGVD 1929 was used in the FEQ regulatory model and the IDOT datum of NAVD 1988 was used for the survey. The DuPage County FIS and model results are each based on the NGVD 1929 datum. The IDOT datum, the stream survey, all roadway plans, and tables included in this report are based on the NAVD 1988 datum. Modeling input and output are in the NGVD 1929 datum. The Waterway Information Tables (WIT's) and Hydraulic Report Data Sheets, included in Section 2, are presented in the NAVD 1988 datum.

DuPage County calculated the countywide vertical datum conversion factors for each watershed as provided in Section 14 of this report. The Salt Creek watershed elevations at the NAVD 1988 datum can be determined by subtracting 0.28 feet from the NGVD 1929 datum elevations.

Input and output of hydraulic modeling are based on the NGVD 1929 datum. Report Tables, Waterway Information Tables and all exhibits are developed based on the NAVD 1988 datum.

Historical Flooding Observations

As a part of DuPage County Floodplain Mapping project, a high water mark for the September 2008 storm event located to the east of Salt Creek Golf Course at power pole number 68355/FDR0116 (north of Thorndale Avenue) was surveyed, and the elevation was determined as 683.35 ft-NAVD88.

According to the USGS Hydrologic Investigations Atlas HA-68 (1964) Elmhurst Quadrangle, which is included in Section 3, the flood of record prior to 1964 for Salt

Creek occurred in October 1954. According to Figure 8 of HA-68, the flood stage at Thorndale Avenue was approximately elevation 680.0 feet.

Sensitive Flood Receptors

There are no sensitive flood receptors within the Salt Creek floodplain backwater influence. Upstream of the proposed crossing and between Thorndale Avenue and Devon Avenue, there is a large open space within the 100-year floodplain which borders a hotel and commercial property area.

Downstream of the crossing, between Thorndale Avenue and the Spring Brook confluence, there is also open space within the 100-year floodplain which border a commercial property. Salt Creek Floodplain Cross Section Location Exhibit (Drawing No. 9.2) in Section 9 shows low entry elevations of sensitive flood receptors.

Other Studies and Reports

The regulatory 100-year flood profile at Thorndale Avenue is at elevation of 681.2 feet-NAVD 1988, according to Sheet 130P of the Flood Insurance Study for DuPage County, Illinois and Incorporated Areas, dated March 2007. The flood profile elevation shown at Thorndale Avenue for the 10-year storm event is 679.6 feet-NAVD 1988. The Flood Insurance Rate Map (FIRM), Map Number 17043C0302H, dated December 16, 2004 is included in Section 3. The FIRM reports a floodplain flood zone AE designation upstream and downstream of the crossing.

The baseline conditions hydraulic model of Salt Creek used in this analysis was obtained from a floodplain mapping study prepared for DuPage County by Christopher B. Burke Engineering, Ltd. (CBBEL), dated May 10, 2011.

Waterway Modeling

A hydraulic analysis of Salt Creek was performed to develop the proposed, existing and natural conditions flood elevations for determining the effects, if any, of the structures on water surface profiles. The basis for the hydraulic analysis was the current FEQ unsteady flow hydraulic model of the Salt Creek and its tributaries.

Hydrologic Analysis

DuPage County employs a long-term continuous record of rainfall and potential evapotranspiration to simulate historical runoff to create a homogeneous record of flood flows. This simulation employs the HSPF software program which was released by the USEPA in 1980 and is currently in Version 12.2. The Salt Creek HSPF model calibration includes 31 flood events that occurred during the time period of 1995-2008. The results of this analysis are compared to USGS gages located throughout the Salt Creek watershed. Peak elevations, flows and volumes are computed for each of the 31 simulated storm events and then are compared at each of the gages.

Once the model results are judged to accurately simulate the calibration period, a series of historical storms is extracted from the continuous HSPF record and used in the hydraulic model simulation. The historical period of record used in the DuPage County simulation is from 1949-2008. There are 157 discrete storm events contained in the simulations.

Hydraulic Analysis

Hydraulic analysis in the DuPage County floodplain mapping procedure is performed using the FEQ modeling software developed by Dr. Delbert Franz and distributed by the USGS. It has been supported by USGS and is a FEMA approved model since 1997. The USGS approval process included an in depth validation and verification of the model's capabilities and accuracy. The FEQ model of Salt Creek was prepared and calibrated according to FEMA standards for the development of hydraulic model input data. The FEQ model uses input from the HSPF hydrologic model and also from the FEQUTL program. FEQUTL is used to generate tabular files that are used by FEQ to compute the elevation and flow at each location contained in the model.

Statistical Analysis

HSPF and FEQ are used to generate a series of simulated floods. Although the floods are based on historical rainfall input, the floods themselves are not historical. Instead, they are representative of the flood peaks that might have occurred if current watershed development had been in place during the past 60 years (1949-2008).

This simulated historical series consists of 157 floods that have been extracted from the long term continuous simulation. Multiple floods are extracted from many of the years because the largest flood in any given year might be produced by different rainfall events in different watersheds or different locations in the same watershed. The floods with the 60 largest peaks at each location are employed in the statistical analysis. The selected number of peaks is based on the 60 years of simulated data.

For each selected flood, the flood volume is determined using a baseflow separation program called BFILTER. The 60 flood volumes are then fitted to a statistical distribution which allows flood volume quantities to be determined, such as the 100-year volume. Next, a functional relationship between peak elevation and volume is developed. This relationship is derived from pairs of peak elevation and flood volumes obtained from the simulated data. Often the historical storm simulations do not contain data points at the high end of the peak elevation versus volume curve. Additional data is obtained to extend the curve by simulating a sequence of extreme Midwestern rain events. These extreme events are simply used to obtain stage and volume results beyond the envelope of locally recorded storms. The two steps involving the statistical fits and the derivation of the peak elevation versus volume curve are performed using the software known as PVSTATS.

Baseline Conditions Model

The existing conditions model prepared for DuPage County is used as the baseline conditions model. This model is an updated version of the watershed plan model originally prepared in 2005. An exhibit showing the baseline FEQ model schematic is included in Section 8. This model was recently updated to run a more current version of FEQ (version 10.61) and will be used as part of the overall floodplain mapping effort being completed by DuPage County. The summary of the baseline conditions elevations and flows at selected locations is included in Section 8.

Existing Conditions Model

The baseline Cross Sections 3214 through 3221 were replaced by surveyed Cross Sections E1 through E9. The surveyed cross sections were extended using the DuPage County 2-foot topography as shown on the Exhibit in Section 9. The surveyed cross sections were converted to the NGVD 1929 datum, and the associated FEQUTL file "xs_exist2.ftl", "xs_existP1.ftl, and xsexadd.ftl" are included in Section 9. The Thorndale Avenue bridge rating tables were revised to match the current surveyed data. These rating tables were created using the WSPRO hydraulic modeling methodology. The associated input files "WSPROQZ.FTL", "WSPRO01.DAT", and "WSPROT14.FTL" are included in Section 9. The roadway overflow was modeled using the FEQUTL EMBANKQ and CHANRAT commands, and the associated FEQUTL file "ovf_thdl.ftl" is included in Section 9. An FEQ Branch 800 was added between Branches 8 and 9 to create room for the proposed bridge as shown on the existing FEQ model schematic included in Section 9. Also, FEQ Branch 9 was extended downstream to match the as-built location of the Wooddale-Itasca Reservoir intake structure. The summary of the existing conditions elevations and flows at selected locations is included in Section 9.

The Existing Conditions water surface elevation (WSEL) is compared with the Baseline Conditions WSEL in Table 1. In general, the updated existing conditions model lowered water surfaces elevations between 0.1 and 0.8 feet at the cross-sections.

Table 1
Comparison of Existing Conditions and Baseline Conditions WSEL
Based on NAVD 1988 Datum

Model Section		100-Year Recurrence Interval			50-Year Recurrence Interval			10-Year Recurrence Interval		
IDOT Survey	FEQ (EX/Baseline)	EX. WSEL	Baseline WSEL	Diff.	EX. WSEL	Baseline WSEL	Diff.	EX. WSEL	Baseline WSEL	Diff.
	3222	683.6	683.9	-0.3	683.1	683.3	-0.2	682.0	681.9	0.0
E9	33221	683.0			682.4			681.2		
E8	23221	682.8			682.2			681.0		
E7	13221/3221	682.6	683.2	-0.6	682.0	682.5	-0.5	680.8	681.1	-0.3
E6	13220/3220	682.5	683.0	-0.5	681.8	682.4	-0.6	680.6	681.0	-0.4
USF Thorndale Avenue Bridge	13220/3219	682.4	682.9	-0.5	681.8	682.2	-0.5	680.5	680.9	-0.4
DSF Thorndale Avenue Bridge	13217/3218	682.0	682.7	-0.8	681.3	682.1	-0.8	680.1	680.7	-0.7
E4	13217/3217	681.9	682.7	-0.7	681.2	682.0	-0.8	680.0	680.7	-0.7
USF Elgin O'Hare (E3.3)	33217	681.9	682.7	-0.8	681.2	682.0	-0.8	680.0	680.7	-0.7
DSF Elgin O'Hare (E3.1)	33216	681.9	682.5	-0.7	681.2	681.9	-0.7	679.9	680.5	-0.5
P1	23216/3216	681.8	682.5	-0.7	681.1	681.9	-0.7	679.9	680.5	-0.6
E3	13216/3216	681.8	682.5	-0.8	681.1	681.9	-0.8	679.8	680.5	-0.6
E2	13215/3215	681.7	682.2	-0.5	680.9	681.5	-0.6	679.6	680.1	-0.5
E1	13214/3214	681.6	681.8	-0.2	680.9	681.1	-0.2	679.6	679.7	-0.2
	3213	681.4	681.6	-0.2	680.6	680.7	-0.1	679.2	679.2	0.0
	3212	681.4	681.5	-0.2	680.6	680.7	-0.1	679.2	679.2	0.0
	3211	681.4	681.5	-0.2	680.6	680.6	-0.1	679.1	679.1	0.0
	3210	681.3	681.5	-0.2	680.5	680.6	-0.1	679.1	679.1	0.0
	3209	681.2	681.3	-0.1	680.4	680.5	-0.1	678.9	678.9	0.0
	3208	681.1	681.3	-0.1	680.3	680.4	-0.1	678.8	678.8	0.0
	3207	681.1	681.2	-0.1	680.3	680.4	-0.1	678.7	678.7	0.0
	3206	681.1	681.2	-0.1	680.3	680.4	-0.1	678.7	678.7	0.0

The Flood Insurance Study (FIS) applied the SCS WSP-2 program in modeling Salt Creek. In the FIS modeling, discharges for the 10-year, 50-year, and 100-year floods for Salt Creek were computed using the log-Pearson Type III method. These discharges have been largely unchanged since 1979 and do not reflect current watershed conditions.

Application of the FEQ unsteady flow hydraulic model included updating the watershed characteristics to current land usage and applying the statistical analysis of the 60 largest storm peaks created by the recreation of 157 historic storms which were recorded between 1949 and 2008.

The Existing Conditions WSEL is compared with the FIS Regulatory WSEL in Table 2. The water surface elevations for the existing and FIS flood profiles reported in Table 2 illustrate the WSEL increases associated with the use of updated information.

Table 2
Comparison of Existing Conditions and FIS Regulatory WSEL
Based on NAVD 1988 Datum

Cross Section		100-Year Recurrence Interval			50-Year Recurrence Interval			10-Year Recurrence Interval		
FIS	FEQ	FIS WSEL	FEQ WSEL	Diff. (Ft.)	FIS WSEL	FEQ WSEL	Diff. (Ft.)	FIS WSEL	FEQ WSEL	Diff. (Ft.)
SCSC57	3222	681.7	683.6	+1.9	NA	683.1	NA	680.2	682.0	+1.8
	33221		683.0			682.4			681.2	
	23221		682.8			682.2			681.0	
SCSC56	13221	681.3	682.6	+1.3	NA	682.0	NA	679.8	680.8	+1.0
	13220		682.5			681.8			680.6	
USF Thorndale Ave Bridge	13220		682.4			681.8			680.5	
DSF Thorndale Ave Bridge	13217		682.0			681.3			680.1	
	13217		681.9			681.2			680.0	
USF Elgin O'Hare	33217		681.9			681.2			680.0	
DSF Elgin O'Hare	33216		681.9			681.2			679.9	
	23216		681.8			681.1			679.9	
SCSC55	13216	681.0	681.8	+0.8	NA	681.1	NA	679.4	679.8	+0.4
	13215		681.7			680.9			679.6	

Cross Section		100-Year Recurrence Interval			50-Year Recurrence Interval			10-Year Recurrence Interval		
FIS	FEQ	FIS WSEL	FEQ WSEL	Diff. (Ft.)	FIS WSEL	FEQ WSEL	Diff. (Ft.)	FIS WSEL	FEQ WSEL	Diff. (Ft.)
	13214		681.6			680.9			679.6	
	3213		681.4			680.6			679.2	
	3212		681.4			680.6			679.2	
	3211		681.4			680.6			679.1	
	3210		681.3			680.5			679.1	
	3209		681.2			680.4			678.9	
	3208		681.1			680.3			678.8	
	3207		681.1			680.3			678.7	
SCSC52	3206	680.0	681.1	+1.1	679.7	680.3	+0.6	677.4	678.7	+1.3

Natural Conditions Model

The natural conditions are the same as the existing conditions because there is no existing structure at the Elgin O'Hare Expressway, and Thorndale Avenue is to remain in place as-is.

Proposed Conditions Model

The purpose of the proposed conditions FEQ model is to determine impacts to the water surface elevations at the proposed Elgin O'Hare Expressway and existing Thorndale Avenue bridge crossings due to the proposed Elgin O'Hare Expressway crossing encroachments. The proposed conditions FEQ model was developed by adding the proposed Elgin O'Hare Expressway bridge between FEQ Branches 800 and 9 using two dummy branches F501/F502 and F503/F504, as shown on the proposed FEQ model schematic in Section 11.

The Elgin O'Hare Expressway crossing of the Salt Creek is sized to meet the following criteria:

1. Created head equal to or less than 0.1 foot above the natural conditions for all storm events up to and including the 100-year flood frequency. The proposed 100-year headwater elevation is 0.1 feet above the natural elevation.
2. 500-year created head at or below the roadway pavement. The proposed freeboard is 1.78 feet.
3. 50-year created head no less than 3 feet below the edge of pavement (3 feet freeboard minimum). The proposed freeboard is 4.28 feet.
4. 50-year natural elevation no less than 2 feet below the bottom of beam (2 feet clearance minimum). The proposed clearance is 3.3 feet.

The proposed Elgin O'Hare Expressway crossing is a 220 feet 2-span bridge from abutment face to abutment face with a low chord elevation of 684.5 feet. While the Elgin O'Hare Expressway is comprised of separate eastbound and westbound lane bridges over Salt Creek, only a small distance separates the bridges. Therefore, the structure was modeled as a single 180 feet wide bridge with a 40 foot open section located between the eastbound and westbound lanes. The proposed bridge crossing is located approximately 100 feet downstream (south) of the existing Thorndale Avenue crossing and generally perpendicular to the channel. Since the channel is skewed at the upstream face, the bridge was conservatively modeled with a 22 degree skew to the creek. The bridge abutments are sloped from the low chord to the creek channel banks at a 2:1 slope. The associated FEQUTL files "xs_pr.ftl", "wsproqz.ftl", "wspro01.dat", "wsprot14.ftl", and "ovf_ElginOHare.ftl" are included in Section 11.

The Thorndale Avenue crossing over Salt Creek is to remain unchanged, therefore the existing conditions model was used as the natural conditions model for the proposed Elgin O'Hare Expressway crossing comparison.

The Proposed Conditions WSEL is compared with the Existing Conditions WSEL in Table 4.

Table 4
Comparison of Existing and Proposed Conditions WSEL
Based on NAVD 1988 Datum

Cross Section		100-Year Recurrence Interval			50-Year Recurrence Interval			10-Year Recurrence Interval		
IDOT Survey	FEQ Model	EXIST. WSEL	PR. WSEL	Diff.	EXIST. WSEL	PR. WSEL	Diff.	EXIST. WSEL	PR. WSEL	Diff.
	3222	683.6	683.7	0.1	683.1	683.1	0.1	682.0	681.9	-0.1
E9	33221	683.0	683.1	0.1	682.4	682.5	0.1	681.2	681.2	0.0
E8	23221	682.8	682.9	0.1	682.2	682.3	0.1	681.0	681.1	0.0
E7	13221	682.6	682.7	0.1	682.0	682.1	0.1	680.8	680.8	0.0
E6	13220	682.5	682.6	0.1	681.8	681.9	0.1	680.6	680.6	0.0
USF Thorndale Avenue Bridge	13220	682.4	682.5	0.1	681.8	681.8	0.1	680.5	680.5	0.0
DSF Thorndale Avenue Bridge	13217	682.0	682.1	0.1	681.3	681.4	0.1	680.1	680.1	0.0
E4	13217	681.9	682.0	0.1	681.2	681.3	0.1	680.0	680.0	0.0
USF Elgin O'Hare (E3.3)	33217	681.9	682.0	0.1	681.2	681.3	0.1	680.0	680.0	0.0
DSF Elgin	33216	681.9	682.0	0.1	681.2	681.2	0.1	679.9	679.9	0.0

Cross Section		100-Year Recurrence Interval			50-Year Recurrence Interval			10-Year Recurrence Interval		
IDOT Survey	FEQ Model	EXIST. WSEL	PR. WSEL	Diff.	EXIST. WSEL	PR. WSEL	Diff.	EXIST. WSEL	PR. WSEL	Diff.
O'Hare (E3.1)										
P1	23216	681.8	681.9	0.1	681.1	681.2	0.1	679.9	679.9	0.0
E3	13216	681.8	681.9	0.1	681.1	681.2	0.1	679.8	679.8	0.0
E2	13215	681.7	681.8	0.1	680.9	681.0	0.1	679.6	679.6	0.0
E1	13214	681.6	681.7	0.1	680.9	681.0	0.1	679.6	679.6	0.0
	3213	681.4	681.5	0.1	680.6	680.7	0.1	679.2	679.2	0.0
	3212	681.4	681.4	0.1	680.6	680.7	0.1	679.2	679.2	0.0
	3211	681.4	681.4	0.1	680.6	680.7	0.1	679.1	679.1	0.0
	3210	681.3	681.4	0.1	680.5	680.6	0.1	679.1	679.1	0.0
	3209	681.2	681.3	0.1	680.4	680.5	0.1	678.9	678.9	0.0
	3208	681.1	681.2	0.1	680.3	680.4	0.1	678.8	678.8	0.0
	3207	681.1	681.2	0.1	680.3	680.4	0.1	678.7	678.8	0.0
	3206	681.1	681.1	0.1	680.3	680.3	0.0	678.7	678.7	0.0

The comparison of existing and proposed conditions PVSTAT water surface elevations shows that the proposed bridge will cause upstream and downstream water surface elevation increases of 0.1 feet for the 50- and 100-year storm events. There are no upstream increases for the 10-year storm event.

The proposed conditions model reflects the proposed Elgin O'Hare Expressway bridge structure, roadway profile, and road embankment. The model demonstrates that the proposed bridges are sized properly to meet WSEL requirements of IDOT, ISTHA, and IDNR-OWR. A summary of proposed conditions water surface elevations and flows is included in Section 11.

A comparison of existing and proposed conditions water surface elevations from the historical series (1949-2008) FEQ simulation shows that there are upstream water surface elevation increases of 0.11 feet for 4 historical storm events, including the storm of record (September 1987). The DuPage County Countywide Stormwater and Flood Plain Ordinance requires that the proposed structure does not cause upstream WSEL increases greater than 0.04 feet. The WSEL increases extend approximately 1,240 feet upstream of the Elgin O'Hare Expressway. A comparison of existing and proposed conditions water surface elevations from the historical series (1949-2008) FEQ simulations is provided in Section 11.

Compensatory Storage Requirement

Since the total area tributary to the Elgin O'Hare Expressway bridge is 71 square miles, a permit is required from the Illinois Department of Natural Resources – Office of Water Resources for construction in the floodway of Salt Creek. The existing and

proposed conditions portions of the "Permit Summary for Floodway Construction in Northeastern Illinois" are included in Section 12 of this report.

IDNR-OWR requires a floodway fill volume to compensatory storage volume ratio of 1:1 calculated incrementally from the normal water level (NWL) to the 10-year WSEL and from the 10-year to 100-year WSEL. The Fill and Compensatory Storage Summary Sheet and support calculations included in Section 12 demonstrate that the compensatory storage requirements are met.

Based on the old DuPage County Countywide Stormwater and Flood Plain Ordinance (Ordinance), the DuPage County Department of Economic Development and Planning (EDP) considers bridges and culverts an appropriate use of the floodway portion of the floodplain but must meet the same requirements associated with development in the regulatory floodplain. The Ordinance requires:

1. The development shall preserve effective floodway conveyance such that there is no increases in flood elevations, flows, or floodway velocity, unless any such increases are contained in a public flood easement and a watershed benefit is provided. The comparison of elevations and flows of the existing and proposed conditions from the historical series (1949-2008) FEQ simulation is included in Section 11. The comparison shows that there are upstream water surface elevation increases of 0.11 feet for 4 historical storm events, including the storm of record (September 1987). These increases extend approximately 1,240 feet upstream of the Elgin O'Hare Expressway.
2. Any fill proposed in the floodplain portion of Salt Creek requires the excavation of compensatory storage equal to at least 1.5 times the volume of flood plain storage displaced and be provided at the same incremental flood frequency elevation as the flood storage displaced. The Fill and Compensatory Storage Summary Sheet and support calculations included in Section 12 demonstrate that the compensatory storage requirements are met.

The new DuPage County Stormwater Ordinance (effective April 2012) has a less restrictive compensatory storage mitigation to fill in the floodplain ratio requirement of 1:1 for roadway projects. The DSE will recalculate the compensatory storage requirement based on the new ordinance. Table 5 summarizes the floodplain and floodway fill compensatory storage mitigation. Mitigation will be provided in two compensatory storage areas labeled CS5-NW and CS5-SE. CS5-NW is located northwest of Thorndale Avenue. CS5-SE is located southeast of the Elgin O'Hare Expressway and will function as a 10-year to 100-year level pool that will be accessed by a berm above the 10-year WSEL. A backflow prevention device in the outlet at the bottom of the basin would prevent creek floodwaters to enter the basin through the outlet, and would allow the compensatory storage basin to drain once the Salt Creek flood stage lowered.

Table 5
Salt Creek Compensatory Storage Mitigation

Salt Creek	NWL to 10-YR			10-YR to 100-YR			Excess Storage (AC-FT)
	Fill Volume (AC-FT)	Required Storage (AC-FT)	Available Storage (AC-FT)	Fill Volume (AC-FT)	Required Storage (AC-FT)	Available Storage (AC-FT)	
Floodplain	8.38	12.57	20.76	13.29	19.94	15.58	3.84
Floodway	2.51	2.51	20.76	1.36	1.36	6.48	23.37

Scour Analysis

Contraction scour, pier scour, and abutment scour were analyzed for the proposed bridge structure. Scour calculations are included in Section 16 for the 100-year and 500-year storm event. The total 500-year storm event scour (contraction, pier, and abutment) is approximately 27.5 feet deep, based mostly on abutment scour. The large abutment scour indicates that the abutments must be made erosion resistant. Materials such as concrete or large riprap may be acceptable to prevent abutment scour.

Conclusion and Design Recommendations

The proposed Elgin O'Hare Expressway bridge meets or exceeds all ISHTA, IDOT and IDNR-OWR requirements for construction in the Salt Creek floodplain and floodway.

The proposed Elgin O'Hare Expressway bridge has the following design parameters:

- The existing Thorndale structure will remain in place as a frontage road.
- The proposed Elgin O'Hare Expressway eastbound and westbound lane structures have:
  - 2 - 80 feet wide decks from railing to railing with 35 feet between the eastbound and westbound bridges (total width of 195 feet).
  - 220 feet long span from abutment face to abutment face at the low chord with a 3 feet pier. The main channel will pass through the west span.
  - The low chord is 684.5 feet. The proposed clearance (distance between the natural 50-year elevation and low chord) is 3.3 feet.
  - Side abutments are graded from the low chord to the creek banks at 2H:1V slopes.
- To compensate for fill within the floodplain and floodway, there are two compensatory storage areas. Compensatory storage area CS5-NW is located northwest of Thorndale Avenue, and CS5-SE is located southeast of the Elgin O'Hare Expressway. The Fill and Compensatory Storage Summary Sheet and support calculations included in Section 12 demonstrate that compensatory storage requirements are met.

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Tab 2

SECTION 2

WATERWAY INFORMATION TABLE
HYDRAULIC REPORT DATA SHEETS

Elgin O'Hare Expressway

Illinois Department of Transportation

WATERWAY INFORMATION TABLE
BASED ON NAVD 1988

Route: Elgin O'Hare-West Bypass

Section: Elgin O'Hare EXPY

County: DuPage

Date: 10/25/2012

Existing S.N. NA

Proposed S.N. NA

Waterway: Salt Creek

Prepared by: Muhammad Younus

Existing Low Grade Elev. = N/A at Sta. N/A

Drainage Area = 71 square miles

Proposed Low Grade = 685.58 at Sta. 1082+50

Flood	Freq. Yr.	Q Ft^3/s	Opening - ft^2		Natural H.W.E.	Head - ft.		Headwater Elevation	
			Existing	Proposed		Existing	Proposed	Existing	Proposed
	10	1614	N/A	1036	680.0		0.0	680.0	680.0
Design	50	2598	N/A	1294	681.2		0.1	681.2	681.3
Base	100	3160	N/A	1436	681.9		0.1	681.9	682.0
Overtop Existing	NA								
Overtop Proposed	NA								
Max. Calc.	500	5021	N/A	1789	683.9		0.1	683.7	683.8

10 YEAR VELOCITY THROUGH EXISTING BRIDGE = N/A 10 YEAR VELOCITY THROUGH PROPOSED BRIDGE 1.56 ft/s

ALL – TIME H.W.E. & DATE: 683.4 September 2008 (NAVD 1988)

Scope of Work:

EXISTING STRUCTURE

TYPE: N/A

LENGTH: N/A

SPANS: N/A

LOW BEAM: N/A

SKEW: N/A

PROPOSED STRUCTURE

TYPE: Bridge

LENGTH: 220 ft – 2 Span with 3.0' wide Pier

SPANS: 2

LOW BEAM: 684.50

SKEW: 0.0*

NAVD 1988 Datum Elevation = NGVD 1929 Datum Elevation – 0.28

* Skew modeled as 22 degrees to account for creek bend at north end of bridge to be conservative.

Flood Frequency Summary for Peak Discharge:

Sect	Return Period (years): 2.0	5.0	10.0	25.0	50.0	75.0
1	850.1	1272.8	1611.4	2133.6	2607.8	2931.3
2	854.2	1276.7	1615.2	2135.9	2604.5	2921.9
3	854.3	1276.8	1615.2	2135.6	2603.5	2920.4
4	854.5	1276.9	1615.1	2134.9	2601.8	2917.7
5	854.5	1276.9	1614.9	2134.2	2600.3	2915.6
6	854.6	1276.9	1614.9	2133.9	2599.7	2914.8
7	854.6	1276.9	1614.9	2133.9	2599.7	2914.8
8	854.5	1276.7	1614.6	2133.3	2598.6	2913.4
9	854.5	1276.6	1614.3	2132.8	2598.0	2912.5
10	854.5	1276.5	1614.0	2132.0	2596.3	2910.1
11	854.3	1275.8	1613.1	2130.5	2594.2	2907.6
12	854.1	1275.0	1611.8	2128.7	2591.8	2904.8
13	846.0	1262.6	1596.9	2112.0	2577.6	2894.7
14	845.9	1262.3	1596.4	2110.9	2576.0	2892.7
15	836.6	1251.5	1582.2	2086.3	2540.0	2849.0
16	834.5	1248.7	1578.1	2079.8	2531.0	2838.2
17	832.9	1246.0	1574.3	2073.9	2522.7	2828.2
18	831.6	1243.9	1571.1	2068.6	2515.0	2818.7
19	828.9	1239.8	1565.4	2059.7	2502.4	2803.0
20	823.5	1233.8	1558.2	2050.0	2489.4	2787.2
21	811.9	1229.2	1556.5	2046.5	2479.7	2771.3
22	810.7	1263.4	1619.8	2076.3	2468.2	2737.2

Elgin O'Hare Expy Flows

Sect	Return Period (years): 100.0	200.0	300.0	400.0	500.0
1	3187.0	3904.9	4400.7	4791.2	5118.5
2	3171.9	3872.8	4355.8	4735.7	5053.5
3	3170.0	3869.6	4351.6	4730.6	5047.8
4	3166.6	3863.9	4344.2	4721.8	5037.7
5	3163.9	3859.4	4338.4	4714.9	5029.8
6	3162.9	3857.7	4336.1	4712.2	5026.8
7	3162.9	3857.7	4336.1	4712.2	5026.7
8	3161.2	3855.2	4333.1	4708.7	5022.9
9	3160.1	3853.8	4331.3	4706.7	5020.7
10	3157.2	3849.0	4325.3	4699.5	5012.6
11	3154.4	3845.4	4321.1	4695.0	5007.7
12	3151.2	3841.5	4316.7	4690.2	5002.7
13	3145.2	3849.6	4336.6	4720.5	5042.3
14	3142.9	3846.4	4332.8	4716.2	5037.5
15	3092.7	3775.6	4246.1	4616.1	4925.8
16	3080.5	3759.0	4226.3	4593.6	4901.1
17	3069.2	3743.9	4208.5	4573.7	4879.3
18	3058.1	3728.2	4189.2	4551.6	4854.7
19	3039.9	3702.4	4157.9	4515.7	4814.9
20	3021.8	3677.6	4128.3	4482.1	4777.9
21	3000.0	3636.1	4070.7	4410.7	4694.2
22	2952.2	3558.4	3973.4	4297.6	4567.7

Elgin O'Hare Expy Flows

PVSTATS Statistical Analysis Results (Existing Conditions)
Flood Elevation Lower Salt Creek, Mainstem
FEQ Model Used: sL16OEX4.feq and sB16OEX4.feq
10/11/2012

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD)	PVS3O 10-Year (ft-NAVD)	PVS3O 50-Year (ft-NAVD)	PVS3O 100-Year (ft-NAVD)	PVS3O 500-Year (ft-NAVD)	
001SCSC3222	MACKIE CROSS SECTION 5 - 1700 FEET DOWNSTREAM OF DEVON,,,,,,	144361.48	673.13	681.95	683.07	683.61	685.00	
001SCSC33221	XS-E9	143001.00	671.48	681.22	682.38	682.96	684.46	
001SCSC23221	XS-E8	142780.00	671.92	681.04	682.21	682.81	684.34	
001SCSC13221	XS-E7	142335.72	672.44	680.79	681.99	682.61	684.18	
001SCSC13220	XS-E6	142020.00	669.75	680.58	681.82	682.49	684.15	
001SCSC13220	THORNDALE AVENUE (US FACE)	141931.00	669.75	680.49	681.76	682.42	684.09	
001SCSC13217	THORNDALE AVENUE (DS FACE)	141861.00	670.97	680.06	681.28	681.97	683.74	
001SCSC13217	XS-E4	141786.00	670.97	680.01	681.24	681.93	683.72	
001SCSC33217	**PROPOSED ELGIN O'HARE EXPY (US FACE) - E3.3**	**141761.00**	**670.97**	**679.99**	**681.22**	**681.92**	**683.71**	**Elgin O'Hare Expy Elevtions (Existing/Natural)**
001SCSC33216	PROPOSED ELGIN O'HARE EXPY (DS FACE) - E3.1	141566.00	671.10	679.92	681.16	681.87	683.68	
001SCSC23216	XS-P1	1414771.00	671.10	679.89	681.13	681.84	683.65	
001SCSC13216	XS-E3	141313.00	671.18	679.81	681.06	681.78	683.61	
001SCSC13215	XS-E2	141070.00	671.22	679.63	680.94	681.68	683.56	
001SCSC13214	XS-E1	140876.00	671.98	679.55	680.87	681.61	683.53	
001SCSC3213	TSL-ITWD7	139641.56	671.62	679.23	680.64	681.39	683.36	
001SCSC3212	TSL-ITWD7	139274.91	671.82	679.16	680.61	681.35	683.34	
001SCSC3211	TSL-ITWD7	138937.39	670.02	679.13	680.58	681.35	683.34	
001SCSC3210	TSL-ITWD7	138637.86	670.28	679.07	680.53	681.30	683.30	
001SCSC3209	TSL-ITWD8	138070.71	669.45	678.86	680.41	681.18	683.15	
001SCSC3208	TSL-ITWD9	137580.25	669.45	678.77	680.34	681.11	683.09	
001SCSC3207	TSL-ITWD12	137139.56	668.21	678.74	680.29	681.08	683.09	
001SCSC3206	TSL-ITWD10	136428.12	668.96	678.71	680.29	681.06	683.02	

PVSTATS Statistical Analysis Results (Proposed Conditions)
Flood Elevation Lower Salt Creek, Mainstem
FEQ Model Used: sL16OP1o.feq and sB16OP1o.feq
Date: October 25, 2012

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD)	PVS3O 10-Year (ft-NAVD)	PVS3O 50-Year (ft-NAVD)	PVS3O 100-Year (ft-NAVD)	PVS3O 500-Year (ft-NAVD)	
001SCSC3222	MACKIE CROSS SECTION 5 - 1700 FEET DOWNSTREAM OF DEVON,,,,,,	144361.48	673.13	681.88	683.13	683.70	685.17	
001SCSC33221	XS-E9	143001.00	671.48	681.23	682.45	683.05	684.58	
001SCSC23221	XS-E8	142780.00	671.92	681.05	682.28	682.89	684.47	
001SCSC13221	XS-E7	142335.72	672.44	680.81	682.06	682.70	684.32	
001SCSC13220	XS-E6	142020.00	669.75	680.61	681.91	682.56	684.19	
001SCSC13220	THORNDALE AVENUE (US FACE)	141931.00	669.75	680.52	681.84	682.50	684.15	
001SCSC13217	THORNDALE AVENUE (DS FACE)	141861.00	670.97	680.09	681.38	682.06	683.78	
001SCSC13217	XS-E4	141786.00	670.97	680.04	681.34	682.02	683.77	
001SCSC33217	**PROPOSED ELGIN O'HARE EXPY (US FACE) - E3.3**	**141761.00**	**670.97**	**680.02**	**681.32**	**682.01**	**683.76**	**Elgin-O'Hare Expy Elevations (Proposed)**
001SCSC33216	PROPOSED ELGIN O'HARE EXPY (DS FACE) - E3-1	141566.00	671.10	679.89	681.24	681.95	683.72	
001SCSC23216	XS-P1	1414771.00	671.10	679.87	681.20	681.90	683.72	
001SCSC13216	XS-E3	141313.00	671.18	679.83	681.15	681.86	683.72	
001SCSC13215	XS-E2	141070.00	671.22	679.63	681.03	681.79	683.72	
001SCSC13214	XS-E1	140876.00	671.98	679.57	680.96	681.70	683.63	
001SCSC3213	TSL-ITWD7	139641.56	671.62	679.24	680.71	681.48	683.47	
001SCSC3212	TSL-ITWD7	139274.91	671.82	679.18	680.66	681.43	683.44	
001SCSC3211	TSL-ITWD7	138937.39	670.02	679.14	680.65	681.43	683.44	
001SCSC3210	TSL-ITWD7	138637.86	670.28	679.09	680.60	681.39	683.41	
001SCSC3209	TSL-ITWD8	138070.71	669.45	678.89	680.47	681.26	683.30	
001SCSC3208	TSL-ITWD9	137580.25	669.45	678.80	680.40	681.19	683.25	
001SCSC3207	TSL-ITWD12	137139.56	668.21	678.77	680.38	681.17	683.24	
001SCSC3206	TSL-ITWD10	136428.12	668.96	678.72	680.31	681.13	683.24	

WSPRO Input for Bridge Data
(Based on NGVD 1929 Datum)

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T1                Proposed Elgin-OHare Bridge Pier Revised  w/22
T2
J1        0.01  0.01
*         WSPROZQ from FEQUTL. NFRAC=   20 NZD=   18 HDATUM=   671.380
*                Q FR#  WSEL
UT                7  27    5
Q                 5.25        5.76        6.28        6.79        7.30,
Q                 7.82        8.33        8.84        9.36        9.87,
Q                10.38       10.89       11.41       11.92       12.43,
Q                12.95       13.46       13.97       14.49       15.00,
Q                10.50       11.53       12.55       13.58       14.61,
Q                15.63       16.66       17.68       18.71       19.74,
Q                20.76       21.79       22.82       23.84       24.87,
Q                25.89       26.92       27.95       28.97       30.00,
Q                17.50       19.21       20.92       22.63       24.34,
Q                26.05       27.76       29.47       31.18       32.89,
Q                34.61       36.32       38.03       39.74       41.45,
Q                43.16       44.87       46.58       48.29       50.00,
Q                24.50       26.89       29.29       31.68       34.08,
Q                36.47       38.87       41.26       43.66       46.05,
Q                48.45       50.84       53.24       55.63       58.03,
Q                60.42       62.82       65.21       67.61       70.00,
Q                52.50       57.63       62.76       67.89       73.03,
Q                78.16       83.29       88.42       93.55       98.68,
Q               103.82      108.95      114.08      119.21      124.34,
Q               129.47      134.61      139.74      144.87      150.00,
Q                87.50       96.05      104.61      113.16      121.71,
Q               130.26      138.82      147.37      155.92      164.47,
Q               173.03      181.58      190.13      198.68      207.24,
Q               215.79      224.34      232.89      241.45      250.00,
Q               140.00      153.68      167.37      181.05      194.74,
Q               208.42      222.11      235.79      249.47      263.16,
Q               276.84      290.53      304.21      317.89      331.58,
Q               345.26      358.95      372.63      386.32      400.00,
Q               542.50      595.53      648.55      701.58      754.61,
Q               807.63      860.66      913.68      966.71     1019.74,
Q              1072.76     1125.79     1178.82     1231.84     1284.87,
Q              1337.89     1390.92     1443.95     1496.97     1550.00,
Q               945.00     1037.37     1129.74     1222.11     1314.47,
Q              1406.84     1499.21     1591.58     1683.95     1776.32,
Q              1868.68     1961.05     2053.42     2145.79     2238.16,
Q              2330.53     2422.89     2515.26     2607.63     2700.00,
Q              1050.00     1152.63     1255.26     1357.89     1460.53,
Q              1563.16     1665.79     1768.42     1871.05     1973.68,
Q              2076.32     2178.95     2281.58     2384.21     2486.84,
Q              2589.47     2692.11     2794.74     2897.37     3000.00,
Q              1400.00     1536.84     1673.68     1810.53     1947.37,
Q              2084.21     2221.05     2357.89     2494.74     2631.58,
Q              2768.42     2905.26     3042.11     3178.95     3315.79,
Q              3452.63     3589.47     3726.32     3863.16     4000.00,
Q              1750.00     1921.05     2092.11     2263.16     2434.21,
Q              2605.26     2776.32     2947.37     3118.42     3289.47,
Q              3460.53     3631.58     3802.63     3973.68     4144.74,
Q              4315.79     4486.84     4657.89     4828.95     5000.00,
Q              2100.00     2305.26     2510.53     2715.79     2921.05,
Q              3126.32     3331.58     3536.84     3742.11     3947.37,
Q              4152.63     4357.89     4563.16     4768.42     4973.68,
Q              5178.95     5384.21     5589.47     5794.74     6000.00,
Q              2450.00     2689.47     2928.95     3168.42     3407.89,
Q              3647.37     3886.84     4126.32     4365.79     4605.26,
Q              4844.74     5084.21     5323.68     5563.16     5802.63,
Q              6042.11     6281.58     6521.05     6760.53     7000.00,
Q              2800.00     3073.68     3347.37     3621.05     3894.74,
Q              4168.42     4442.10     4715.79     4989.47     5263.16,
Q              5536.84     5810.53     6084.21     6357.90     6631.58,
Q              6905.26     7178.95     7452.63     7726.32     8000.00,
Q              3150.00     3457.89     3765.79     4073.68     4381.58,
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Q          4689.47    4997.37    5305.26    5613.16    5921.05,
Q          6228.95    6536.84    6844.74    7152.63    7460.53,
Q          7768.42    8076.32    8384.21    8692.11    9000.00,
Q          3500.00    3842.11    4184.21    4526.32    4868.42,
Q          5210.53    5552.63    5894.74    6236.84    6578.95,
Q          6921.05    7263.16    7605.26    7947.37    8289.47,
Q          8631.58    8973.68    9315.79    9657.89   10000.00,
Q          3850.00    4226.32    4602.63    4978.95    5355.26,
Q          5731.58    6107.89    6484.21    6860.53    7236.84,
Q          7613.16    7989.47    8365.79    8742.11    9118.42,
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* ---------------------------------------------------------------------------
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GR             0.0  671.38    25.0  674.28    30.0  675.28    35.0  676.28
GR           380.0  677.28   530.0  678.28   590.0  679.28   615.0  680.28
GR           705.0  681.28   745.0  682.28   815.0  683.28   845.0  684.28
GR           915.0  685.28   975.0  686.28  1160.0  687.28
N            0.150   0.080   0.120
SA              -405.0    380.0
* ---------------------------------------------------------------------------
* Full Valley Cross Section
XS   FULLV   105.0     22.
GR          -947.0  690.28  -902.0  689.28  -824.0  688.28  -777.0  687.28
GR          -752.0  686.28  -717.0  685.28  -532.0  685.28  -464.0  684.28
GR          -407.0  683.28  -400.0  682.28  -377.0  677.28  -292.0  677.28
GR          -192.0  676.78  -187.1  677.22  -183.9  677.52  -182.2  677.85
GR          -180.3  678.23  -177.7  679.07  -164.4  681.03  -137.1  678.94
GR          -119.9  677.26   -92.6  676.34   -91.5  676.07   -88.4  676.14
GR           -86.5  676.19   -86.0  676.21   -81.9  676.34   -80.3  676.39
GR           -77.5  677.00   -74.4  677.66   -72.5  677.82   -67.8  678.21
GR           -65.2  678.10   -57.7  677.77   -53.0  677.15   -49.1  676.64
GR           -43.4  675.13   -43.4  675.10   -43.4  675.07   -43.3  674.92
GR           -42.3  674.42   -38.7  672.50   -37.8  672.23   -37.7  672.25
GR           -37.6  672.23   -34.2  671.95   -33.6  671.90   -31.3  672.11
GR           -29.5  672.02   -28.8  672.11   -28.0  672.06   -25.8  671.86
GR           -23.9  671.69   -20.8  671.29   -20.8  671.28   -20.8  671.28
GR           -18.0  671.13   -16.3  671.76   -16.3  671.75   -15.3  671.27
GR           -15.1  671.40   -13.0  671.27   -12.9  671.24   -12.2  671.08
GR            -9.5  670.59    -8.9  670.47    -8.8  670.48    -8.7  670.47
GR            -8.5  670.43    -8.1  670.40    -7.6  670.44     0.0  669.58
GR             3.4  670.16     9.7  677.23    26.6  677.07    94.7  676.43
GR           136.6  676.13   153.2  676.00   172.6  675.85   174.5  675.89
GR           200.1  676.49   219.3  677.56   234.0  678.28   389.0  678.28
GR           524.0  679.28   639.0  680.28   749.0  681.28   889.0  682.28
GR          1034.0  683.28  1121.0  684.28  1209.0  685.28
N            0.150   0.024   0.120
SA              -164.4   94.70
* ---------------------------------------------------------------------------
*   Bridge Opening Cross Section
BR   BRIDG   105.0  686.28     22.
GR          -177.9  687.78  -164.4  681.03  -161.8  679.75  -157.6  677.65
GR          -156.0  676.84  -155.0  676.35  -153.8  676.35  -151.0  676.35
GR          -137.1  676.35  -119.9  676.35   -92.6  676.34   -91.5  676.07
GR           -88.4  676.07   -86.5  676.07   -86.0  676.07   -81.9  676.07
GR           -80.3  676.07   -77.5  676.07   -74.4  676.07   -72.5  676.07
GR           -67.8  676.07   -65.2  676.07   -57.7  676.07   -53.0  676.07
GR           -49.1  676.07   -43.4  675.13   -43.4  675.10   -43.4  675.07
GR           -43.3  674.92   -42.3  674.42   -38.7  672.50   -37.8  672.23
GR           -37.7  672.25   -37.6  672.23   -34.2  671.95   -33.6  671.90
GR           -31.3  672.11   -29.5  672.02   -28.8  672.11   -28.0  672.06
GR           -25.8  671.86   -23.9  671.69   -20.8  671.29   -20.8  671.28
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GR          -20.8  671.28   -18.0  671.13   -16.3  671.76   -16.3  671.75
GR          -15.3  671.27   -15.1  671.40   -13.0  671.27   -12.9  671.24
GR          -12.2  671.08    -9.5  670.59    -8.9  670.47    -8.8  670.48
GR           -8.7  670.47    -8.5  670.43    -8.1  670.40    -7.6  670.44
GR            0.0  669.58     3.4  670.16     9.7  674.80    22.1  674.81
GR           42.0  684.78  -177.9  687.78
N           0.013   0.024   0.013
SA            -164.4     22.1
CD              3   180.0     2.0  693.30
PW        677.70,3
* ---------------------------------------------------------------------------
* XR    ROAD   105.0   180.0     1.0
* GR          -500.0  700.87  -450.0  699.63  -400.0  698.52  -350.0  697.54
* GR          -300.0  696.69  -250.0  695.96  -200.0  695.30  -150.0  694.64
* GR          -100.0  693.97   -50.0  693.31     0.0  692.65    50.0  691.98
* GR           100.0  691.32   150.0  690.66   200.0  689.99   250.0  689.33
* GR           300.0  688.67   350.0  688.00   400.0  687.34   450.0  686.75
* GR           500.0  686.31   550.0  686.01   600.0  685.86   650.0  685.86
* GR           700.0  686.01   750.0  686.30   800.0  686.74   850.0  687.32
* GR           900.0  688.05
* ---------------------------------------------------------------------------
*  Approach Cross Section
AS   APPRO   325.00    22.
GR          -954.0  690.28  -929.0  689.28  -899.0  688.28  -849.0  687.28
GR          -784.0  686.28  -737.0  685.28  -627.0  684.28  -594.0  683.28
GR          -464.0  682.28  -384.0  682.28  -347.0  682.28  -319.0  678.28
GR          -201.0  678.28  -198.5  677.56  -194.0  678.40  -187.1  679.63
GR          -171.3  682.61  -155.8  682.65  -139.7  680.00  -121.2  676.62
GR          -109.9  676.01   -95.5  675.89   -80.2  676.00   -69.1  676.07
GR           -58.5  676.20   -41.8  676.70   -29.4  676.50   -27.8  676.50
GR           -27.3  676.50   -26.4  675.87   -25.2  675.88   -24.2  672.44
GR           -22.0  672.75   -17.7  671.94   -15.5  671.60   -13.8  671.04
GR           -10.1  670.95    -7.5  671.06    -4.8  670.92     0.0  670.86
GR             5.6  671.05     8.7  671.06    14.6  671.28    18.6  670.93
GR            22.5  671.54    25.6  671.65    27.3  672.03    30.7  672.50
GR            31.8  672.83    35.4  672.47    36.0  672.88    37.9  673.35
GR            39.1  674.16    41.3  675.86    43.0  678.16    50.6  677.79
GR            66.9  676.78    77.5  676.58   108.2  675.22   130.3  676.03
GR           168.0  676.81   191.4  677.68   222.0  679.02   227.0  679.28
GR           460.0  679.28   554.0  680.28   812.0  681.28  1010.0  682.28
GR          1062.0  683.28  1117.0  684.28  1330.0  685.28  1470.0  686.28
GR          1600.0  687.28  1705.0  688.28
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GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=Proposed Elgin-OHare Bridge EMBANKMENT FLOW
    OFFSET      CREST      WIDTH  APPROACH SURFACE
  108000.0     688.05     180.0     671.25 PAVED
  108050.0     687.32
  108100.0     686.74
  108150.0     686.30
  108200.0     686.01
  108250.0     685.86
  108300.0     685.86
  108350.0     686.01
  108400.0     686.31
  108450.0     686.75
  108500.0     687.34
  108550.0     688.00
  108600.0     688.67
  108650.0     689.33
  108700.0     689.99
  108750.0     690.66
  108800.0     691.32
  108850.0     691.98
  108900.0     692.65
  108950.0     693.31
  109000.0     693.97
  109050.0     694.64
  109100.0     695.30
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  109350.0     699.63
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    13.000
    -1.000

FINISH
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Overtopping Elevation (Based on NGVD 1929 Datum)

Illinois Department of Transportation

Hydraulic Report Data Sheets

Route	Elgin O'Hare Expressway	P or D #	
Section		PTB #	141 Item 2
County	DuPage County		
Exist SN			
Prop SN			

General Information

1. Name of the Stream: Salt Creek

2. Location of the Structure: NW ¼ of the NW ¼ of Section 4 Township 40N, Range 11E of the 3rd P.M.

3. Hydraulic Report Prepared By: ☒ Consultant ☐ District — Christopher B. Burke Engineering, Ltd.

4. Hydraulic Report Approval Authority:
   ☐ District – Post PDF of HR to BBS Hydraulics SharePoint Server
   ☐ BBS Hydraulics - Submit 2 hard copies of HR to BBS Hydraulics

Site Design Data

5. Drainage Area (sq. mi.): +/- 71

6. Highway Classification:
   ☐ Rural ☒ Urban ☐ Other
   ☒ Principal Arterial ☐ Minor Arterial ☐ Collector ☐ Local

7. Design Frequency: ☐ 30 yr ☒ 50 Yr. ☐ Other

8. Number of Waterway Information Tables (WIT): 1
   If more than one, explain:
   Existing and proposed conditions at the new Elgin O'Hare Expressway crossing.

Hydrologic & Hydraulic Analysis

9. Hydrology Modeling (check all that apply): ☐ USGS/Stream Stats ☐ FIS ☐ Gage Data ☒ Other FEQ Model

10. Hydraulic Modeling (check all that apply):
    a. Method: ☐ HEC-RAS ☐ WSPRO ☒ Other FEQ Model
    b. Manning's "n" values determined as per IDOT DM CH.5? ☒ Yes ☐ No
       If no, explain:
    c. Source of Starting WSE: Salt Creek
    d. Non- IDOT encroachments in Survey? ☒ Yes ☐ No
       If yes, are they accounted for? ☒ Yes ☐ No
    e. Does the Tailwater Control? ☐ Yes ☒ No
       If yes, list:
    f. Were the Expansion/Contraction cones properly addressed? ☒ Yes ☐ No ☐ N/A
       If No or N/A, explain:

g. What Expansion and Contraction Rates were used? Expansion: 4 (X:1)
Contraction 1 (X:1)

IDNR – OWR Floodway Permit

11. Is area experiencing urbanization or expected to urbanize within 10 years? ☒ Yes ☐ No

12. Are there any sensitive flood receptors located upstream within possible backwater influence? ☐ Yes ☒ No
If yes, list and describe critical upstream flood damageable properties and their elevations.

13. Is there any History of Flooding or Overtopping problems? ☐ Yes ☒ No
Sources of Observed Highwater:
According to survey of a high water mark for the September 2008 storm event located to the east of Salt Creek Golf Course at power pole number 68355/FDR0116 (north of Thorndale Avenue), the HWL is 683.35 (NAVD88)

14. Is the structure hydraulically connected to or within the floodway of an IDNR-OWR designated Public Body of Water? ☐ Yes ☒ No

15. Required IDNR - OWR Permit type:
☐ Individual ☐ SWP #2 ☐ SWP #12 ☒ Floodway
☐ None ☐ Other

Proposed Structure Data (NAVD 1988 Datum)

16. Project Scope (check all that apply):
a. ☐ Complete Replacement
b. ☐ Superstructure Replacement
c: ☐ Superstructure Widening; Length of Pier Extension in the water:
U/S D/S
d. ☒ Bridge ☐ Culvert
e. ☒ New Alignment
f. Work Planned Below Q_{100} HWE? ☒ Yes ☐ No
g. ☐ Profile Raise

17. If a bridge is proposed, supply:
Flow line elevation (ft): 671.58
Preliminary low beam elevation (ft): 684.5
Width of deck (ft): 2-70 w 40 space
Total length from face to face of abutment (ft) 220.0
Abutment type: Concrete
Skew (degrees): 22
Number of spans: 2

18. If a culvert is proposed, supply:
Type and size:
Upstream invert elevation (ft):
Downstream invert elevation (ft):
Length (ft):
Entrance type:
Skew (degrees):
Note: Upstream and downstream elevations should reflect the elevations before the 3" drop is applied

19. If a three-sided structure is proposed, supply:
Flow line elevation (ft):
Span (ft):
Height (ft):
Skew (degrees):
Length (ft):
Number of spans:

20. a. Is the IDOT Clearance Policy Met? ☒ Yes ☐ No ☐ NA Value (ft): 3.3
b. Is the IDOT Freeboard Policy Met? ☒ Yes ☐ No ☐ NA Value (ft): 4.3

21. Type of streambed soil : ☐ Clay ☐ Silt ☐ Sand ☒ Loam ☐

22. Scour/ Migration Problems: ☒ None/Minimal ☐ Significant ☐ Severe
Comments:

Ice Concerns: ☒ None/Minimal ☐ Significant ☐ Severe
Comments:

Debris Concerns: ☒ None/Minimal ☐ Significant ☐ Severe
Comments:

Countermeasures Proposed:

Existing Structure Data (NAVD 1988 Datum)

	Structure U/S	Subject Structure	Structure D/S
23. Distance from proposed structure: (ft.)	±82 ft.	N/A	±4,160 ft.
24. Type of structure:	Thorndale Ave. Bridge	N/A, new struct.	Devon Ave Bridge
25. Low beam elevation:	682.7 ft.	N/A, new struct.	681.7 ft.
26. Flow line elevation:	669.6 ft.	N/A, new struct.	673.5 ft.
27. Maximum known high water elevation:	683.4 ft.	N/A, new struct.	684.9 ft
28. Date of maximum high water:	September 2008	September 2008	September 2008
29. Cause (backwater, headwater, etc.):			
30. Does structure carry entire design flood flow?	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
If not, state area of additional waterway opening: (ft^2)	---	---	---
31. Type and size of existing overflow structures:	---	---	---
32. Has adverse scour occurred under or adjacent to the structure?	No	No	No
33. Classify type of scour and/or aggradation / degradation:	---	---	---

Required Additional Data

34. Deviations from the General Procedures presented in IDOT DM CH. 2, CH.6, and CH.7:

35. Information regarding high water from other streams, reservoirs, flood control projects, proposed channel changes, or other controls affecting proposed waterway area:

36. Site Inspection made by: Michael D. Cothard Date: 11-2-10

Remarks:

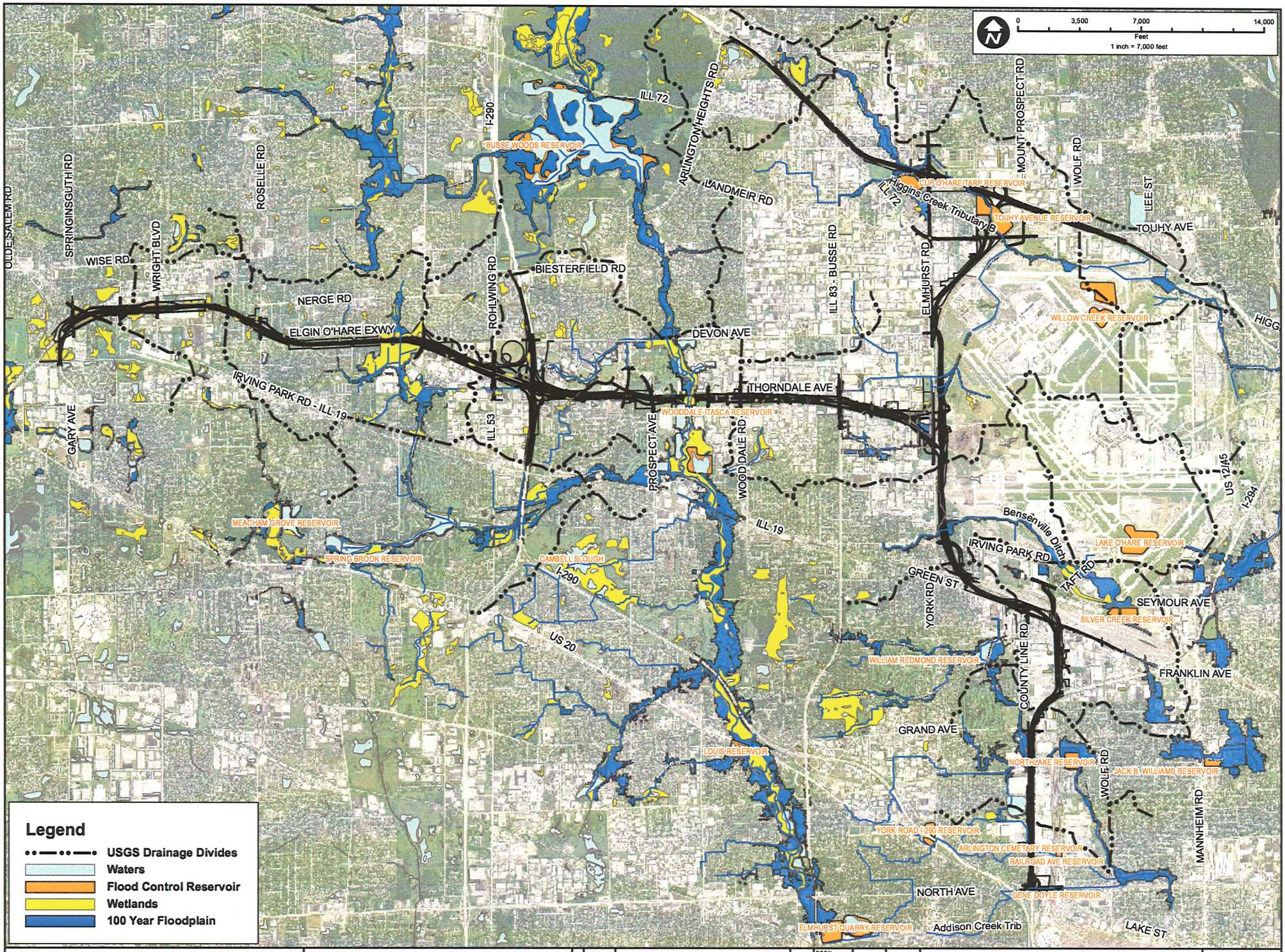
37. Prepared by: Michael D. Cothard Date 11-5-12

Signed (QA/QC): [signature] Date 11/15/12

Tab 3

SECTION 3

GENERAL PROJECT LOCATION MAP
USGS HYDROLOGIC INVESTIGATIONS ATLAS
FLOOD INSURANCE RATE MAP
USGS PROFILES OF FLOODS ON SALT CREEK
FLOOD INSURANCE STUDY INFORMATION



CHRISTOPHER B. BURKE ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

CLIENT: **ILLINOIS DEPARTMENT OF TRANSPORTAION**

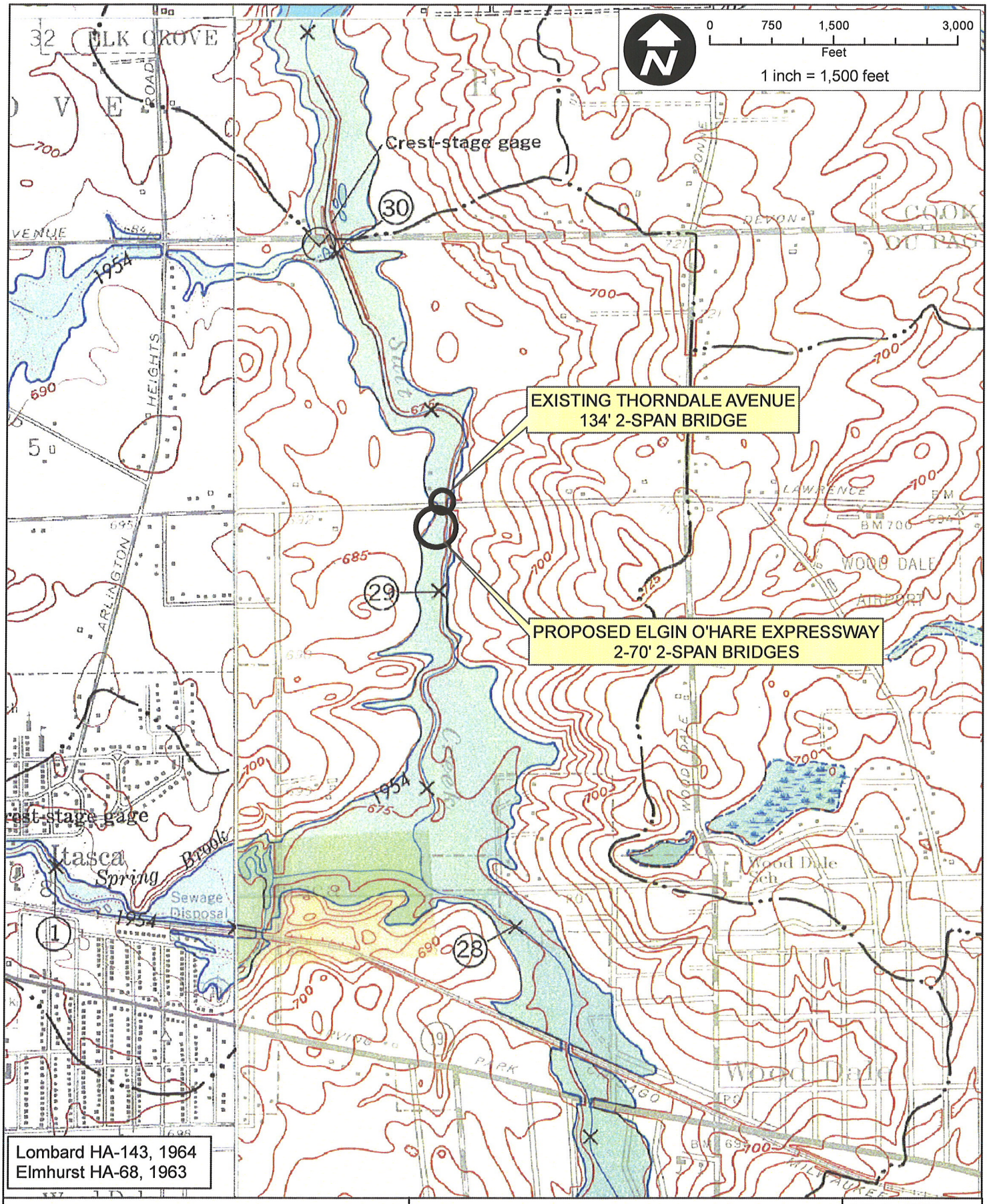
NO.	DATE	NATURE OF REVISION	CHKD.

FILE NAME: Drainage Exhibit Revised 8.5X11
PATH: N:\cbb\070404\GIS\Exhibits\Drainage Exhibit Revised 8.5X11.mxd

DSGN.	
DWN.	DWALTERS
CHKD.	
SCALE:	1:7,000'
MODEL:	ArcGIS 10
PLOT DATE	12/13/2011

TITLE: **ELGIN O'HARE - WEST BYPASS GENERAL PROJECT LOCATION MAP**

PROJ. NO. 070404
DATE:
SHEET 0 OF 0
DRAWING NO. **EXH 1**



CLIENT:

ILLINOIS DEPARTMENT OF TRANSPORTATION

TITLE:

ELGIN O'HARE - WEST BYPASS
SALT CREEK
USGS HYRDRAULIC INVESTIGATIONS ATLAS

PROJ. NO.	070404
DATE:	11-01-2010
SHEET	0 OF 0
DRAWING NO.	**EXH 2A**

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600 · Rosemont, Illinois 60018 · (847) 823-0500

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DWN.			GIS USER	MHAYES
CHKD.			PLOT DATE	
FILE:				

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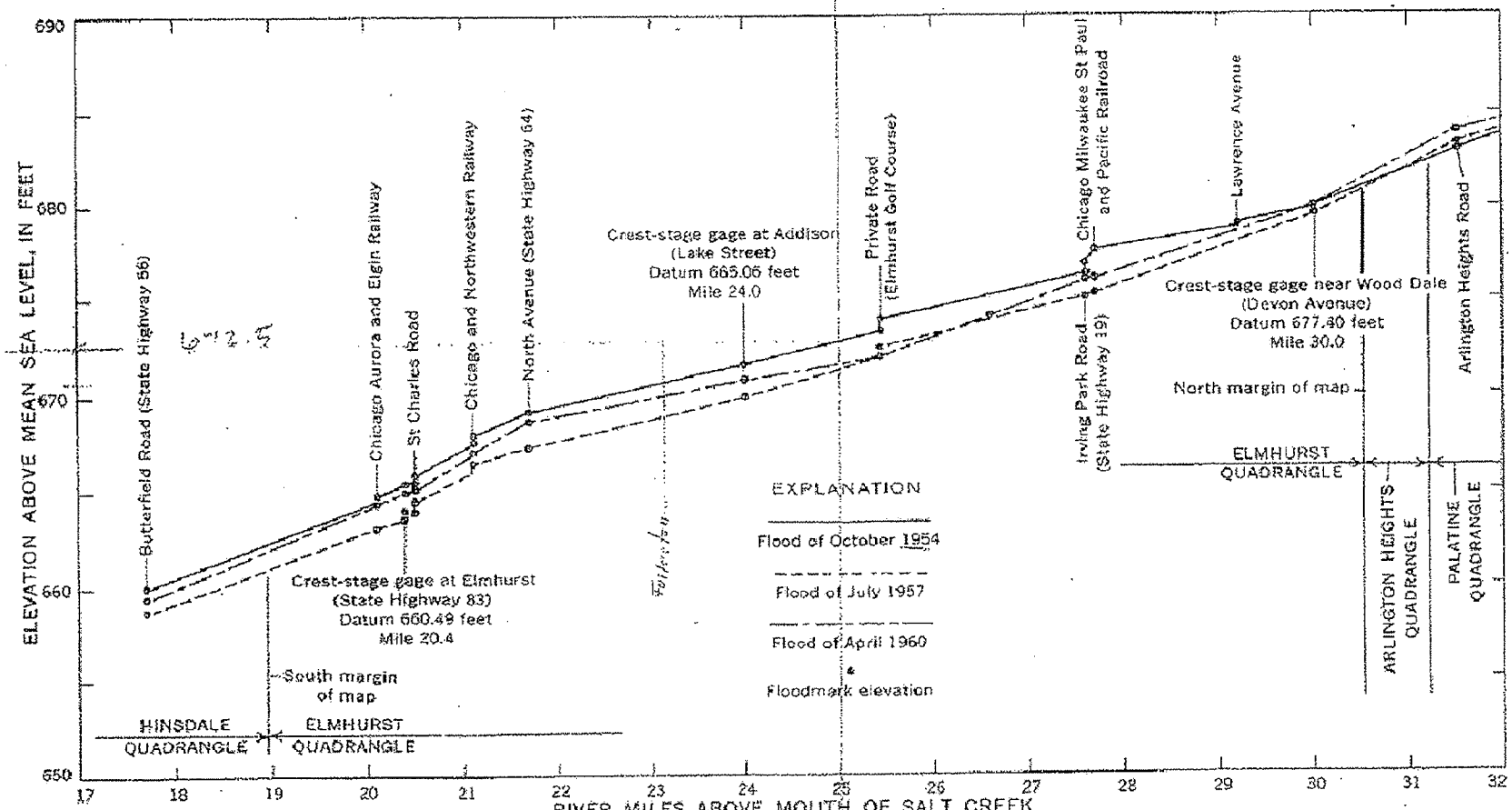
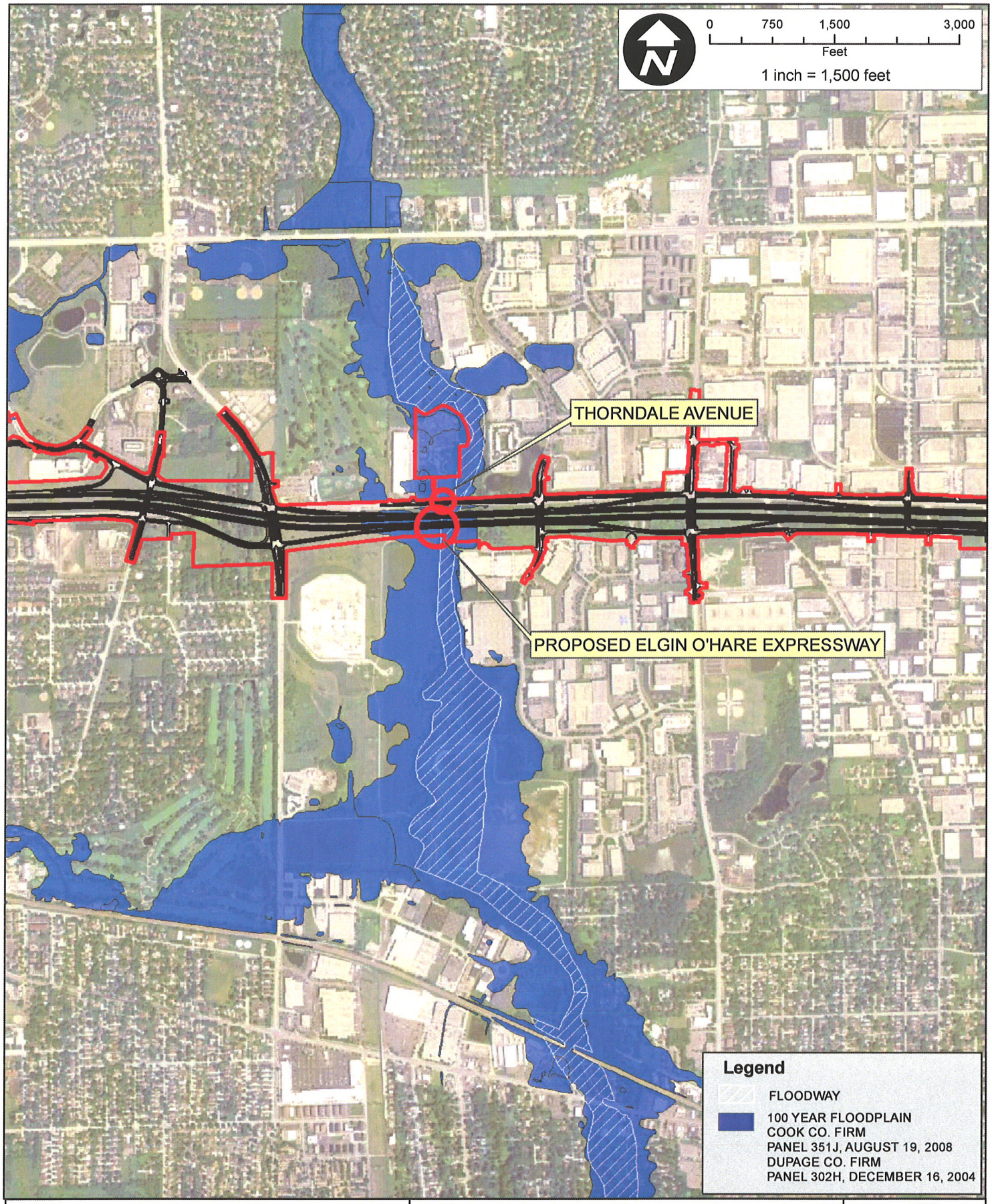


FIGURE 8.—*Profiles of floods on Salt Creek*



CLIENT:

ILLINOIS DEPARTMENT OF TRANSPORTATION

TITLE:

ELGIN O'HARE - WEST BYPASS
SALT CREEK
FLOOD INSURANCE RATE MAP

PROJ. NO.	070404
DATE:	11-01-2010
SHEET	0 OF 0
DRAWING NO.	EXH 3A

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600 · Rosemont, Illinois 60018 · (847) 823-0500

DSGN.			SCALE:	1"=1,500'
DWN.			GIS USER	MHAYES
CHKD.			PLOT DATE	
FILE:				

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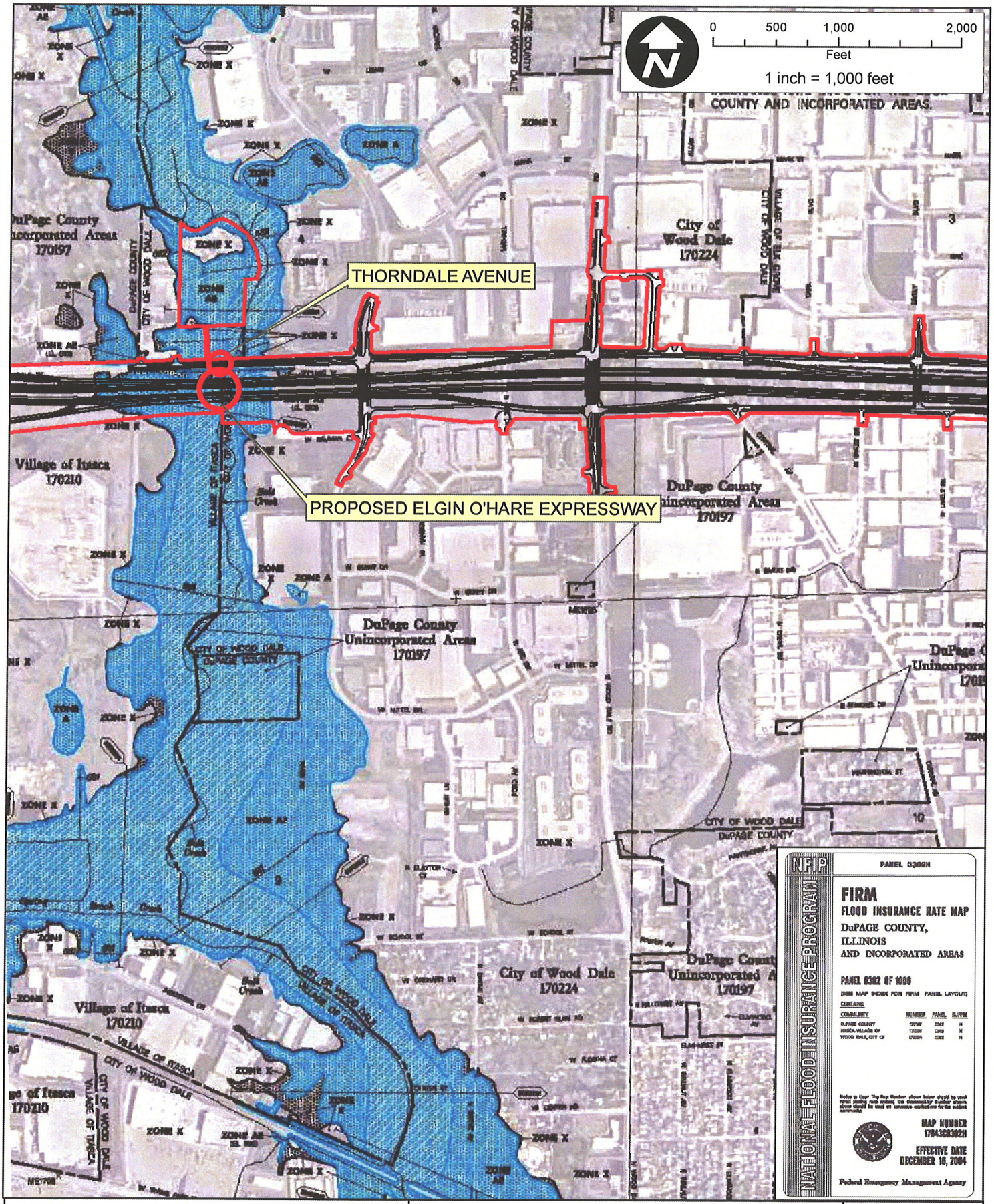


CLIENT:

ILLINOIS DEPARTMENT OF TRANSPORTATION

TITLE:

ELGIN O'HARE - WEST BYPASS
SALT CREEK
FLOOD INSURANCE RATE MAP

PROJ. NO.	070404
DATE:	11-01-2010
SHEET	0 OF 0
DRAWING NO.	EXH 3B

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600 · Rosemont, Illinois 60018 · (847) 823-0500

DSGN.			SCALE:	1"=1,500'
DWN.			GIS USER	MHAYES
CHKD.			PLOT DATE	
FILE:				

Map Document: (N:\ldot\070404\GIS\Exhibits\HA and FIRM Exhibits\FIRM Exhibits\Salt Creek.mxd)
11/1/2010 – 13:56:14

The Federal Emergency Management Agency
in Cooperation with
DuPage County, Illinois Presents:

FLOOD INSURANCE STUDY

A Report of Flood Hazards in:

DUPAGE COUNTY, ILLINOIS AND INCORPORATED AREAS

Prepared, in parts, by:

FEMA
Region V
536 South Clark Street
Chicago, Illinois 60605

and

Nika Engineering
421 Mill Street
Batavia, Illiois 60510

March 2007
1 7043CV000A

3.5 Salt Creek (SC)

3.5.1 Main Stem (SCSC)

3.5.1.1 Tributary Description

The Salt Creek Main Stem has a direct drainage area of 27.6 square miles. Communities that contribute watershed area to the Salt Creek Main Stem, within the bounds of DuPage County, are: Itasca, Wood Dale, Addison, Villa Park, Elmhurst, Lombard, Oakbrook Terrace, Oak Brook, Hinsdale and Unincorporated DuPage County.

Salt Creek is greatly regulated in flow by the Busse Lake, found in the Busse Woods Forest Preserve of Cook County. Upon leaving Busse Woods, Salt Creek flows to the south passing under such roads as Arlington Heights Road and Biesterfield Road in Cook County. Salt Creek crosses into DuPage County at Devon Avenue and continues south through the Salt Creek Country Club where the Main Stem confluences with the Devon Avenue Tributary. Salt Creek resumes flow to the south passing through Thorndale Avenue, the Salt Creek Marsh Forest Preserve at the southernmost tip of which where Spring Brook Creek Tributary confluences with the Main Stem. Continuing south, the Main Stem crosses through the Chicago Milwaukee St. Paul & Pacific Railroad embankment, Irving Park Road, the Salt Creek County Forest Preserve, Elizabeth Court, the Oak Meadows Golf Course, and the Eisenhower Expressway (1-290) the downstream side of which Westwood Creek joins the Salt Creek Main Stem. Still bearing south, the Main Stem passes through Addison Community Park, Lake Street, Cricket Creek Forest Preserve, Fullerton Avenue, North Avenue, the Chicago and Northwestern Railroad, St. Charles Road, Kingery Highway (I-83) and Eldridge Park, the upstream side of which is the confluence location of the Main Stem and Sugar Creek Tributary. The Main Stem crosses Butterfield Road, Roosevelt Road and joins Oakbrook Tributary at Oak Brook Mall. Persuing a more serpentine course, the Salt Creek Main Stem crosses Harger Road, the East-West Tollway (I-88), the Oak Brook Golf Club, and joins Ginger Creek at the Butler National Golf Course. The Main Stem continues south through 31st Street and joins Bronswood Tributary at the Fullersburg Forest Preserve. The Main Stem passes through York Road, and Indian Trail Road, just downstream of which Salt Creek exits DuPage County into Cook County. In Lyons, Salt Creek will confluence with the Des Plaines River.

3.5.1.2 Hydrologic Analysis

Hydrologic analyses were carried out to establish the peak discharge-frequency relationship for Salt Creek.

Discharges for the 10-year, 50-year, and 100-year floods for Salt Creek were computed using the log-Pearson Type III method (U.S. Department of Commerce, 1976) for gaged streams and regional equations for ungaged streams (U.S. Department of the Interior, 1973; State of Illinois, 1973). The 500-year flood discharges for streams studied in detail were estimated by straight-line extrapolation.

The USGS stream gages used for the hydrologic analyses of the Des Plaines River studied in detail in the Unincorporated Areas of DuPage County, Illinois, are presented in Table SCSC.1 below:

Table SCSC.1: USGS Stream Gages Used for Hydrologic Analysis of Salt Creek

	USGS Stream Gages		
Flooding Source and Location	USGS Gage #	Drainage Area (sq. miles)	Record (years)
Salt Creek at Elmhurst	05531300	90.6	15
Salt Creek at Oak Brook	05531380	100.0	15

Flood frequency curves for Salt Creek were prepared for this study and are based on discharges calculated by the SCS. The SCS has completed a comprehensive flood management study of the Salt Creek watershed as part of the Chicago Metropolitan Area River Basin Plan. That study included detailed watershed modeling utilizing the SCS watershed model TR-20 (U.S. Department of Agriculture, 1974). It is an advanced hydrologic model that accurately simulates the historical flood stage- and discharge-hydrographs. The model was used for a regional analysis of the entire watershed. The model included consideration of the Busse Woods and Kingery Detention Reservoirs. Elevation-capacity and outlet rating data were included in the model and were utilized in routing the hydrographs through the watershed. Estimates of flood discharge resulting from that study are the most current, and the 100-year discharges have been approved by the State of Illinois for use in the state's floodplain regulation program. Data are located in the Illinois State Water Survey Floodplain Repository. Harza prepared additional hydrologic analyses that provided an independent review of the suitability of the results in concurrence with FIA's guidelines. Discharges for the 100-, 50-, and 10-year floods were computed for Salt Creek by Harza using regional flood frequency equations for Illinois (Illinois Department of Transportation, 1979). The discharges determined for Salt Creek are higher than the historic discharges because they are based on conditions projected to exist

in the year 2000. The Salt Creek discharges decrease moving downstream as a result of overbank storage. The calculated unit flood discharges were compared to those for neighboring watersheds. This review by Harza established that the flood discharges computed by the SCS using their TR-20 program and certified by the State of Illinois are suitable for use in this FIS. The SCS discharges for the 10-, 25-, and 100-year floods for the two streams were plotted on log-normal probability paper. The 50- and 500-year flood discharges were estimated by straight-line interpolation and extrapolation, respectively.

A summary of the drainage area-peak discharge relationships for the portions of the streams studied by detailed methods is shown in Table SCSC.2.

Table SCSC.2: Salt Creek Summary of Discharges

Summary of Discharges

Flooding Source And Location	Drainage Area (mi^2)	Peak Discharges (cfs) 10-yr	50-yr	100-yr	500-yr
Salt Creek					
- at York Road	112	2,158	3,258	3,650	4,427
- at 31st Street	106	2,162	3,258	3,655	4,434
- at confluence with Ginger Creek	102	2,172	3,277	3,680	4,450
- at confluence with Oak Brook Tributary	99.2	2,186	3,290	3,696	4,480
- at confluence with Sugar Creek	95.0	2,187	3,301	3,698	4,495
- at St. Charles Road	90.7	1,911	2,724	3,171	4,520
- at Chicago and NW Railway	88.8	1,915	2,730	3,178	4,530
- at State Route 83	88.0	2,190	3,306	3,701	4,502
- approximately 0.67 mile d/s of I-90	85.7	2,263	3,341	3,846	5,224
- approximately 250 ft d/s of Fullerton Avenue	85.7	2,248	3,308	3,803	5,155
- at Fullerton Avenue	84.0	2,247	3,390	3,803	4,615
- approximately 4,800 ft u/s of Lake Street	82.7	2,267	3,350	3,857	5,240
- approximately 660 ft u/s of Elizabeth Drive	73.0	2,120	3,100	3,524	4,500
- approximately 527 ft d/s of Irving Park Road	71.4	2,110	3,090	3,502	4,490
- approximately 792 ft u/s of Chicago, Milwaukee, St. Paul & Pacific Railroad	70.86	2,110	3,070	3,484	4,470
- upper corporate limit					

for City of Wood Dale	54.4	1,650	2,310	2,590	3,260
- at Plum Grove Road	10.18	522	792	913	1,225

3.5.1.3 Hydraulic Analysis

Analysis of the hydraulic characteristics of flooding from the sources studied was carried out to provide estimates of the elevations of floods of the selected recurrence intervals.

Locations of selected cross-sections used in the hydraulic analysis are shown on the Flood Profiles and on the Flood Insurance Rate Map.

The water-surface elevations for the streams studied in detail and limited detail were computed using either the SCS WSP-2 backwater computer program or the USACE HEC-2 step-backwater computer program (U.S. Department of Agriculture, 1974; USACE, HEC-2 Water-Surface Profiles, Computer Program723-X6-L202A, 1973). The USACE HEC-2 model was used for all streams studied in detail and limited detail except for Meacham Creek, Sawmill Creek, Salt Creek, Spring Brook, and Westwood Creek, which were modeled utilizing the SCS WSP-2 program (U.S. Department of Agriculture, 1974).

Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Streams studied in detail have flood profiles drawn for the 500-year, 100-year, 50-year, and 10-year storm events, with the exception of Upper Salt Creek, Klein Creek Tributary No. 1, Klein Creek Tributary No. 2, Sawmill Creek, Sawmill Creek Tributary No. 1, Wards Creek, West Branch Tributary No. 5, West Branch Tributary No. 7, East Branch Tributary No. 1, and East Branch Tributary No. 2, which have only the 10-year and 100-year profiles.

Cross sections for the backwater analyses on Salt Creek were field surveyed by the SCS. Cross-section data for Salt Creek were obtained from Regulation of Construction Within the Floodplain of Lower Salt Creek and Tributaries (Illinois Department of Transportation, 1980). Sections were located at close intervals above and below bridges and culverts in order to compute the significant backwater effects of these structures.

Starting water-surface elevations for Salt Creek were developed by the slope/area method.

Channel roughness factors for Salt Creek were assigned on the basis of field inspection of floodplain areas and from previous studies by the SCS. Refer to Table SCSC.3 for further details.

Table SCSC.3: Salt Creek Manning's "n" Values

	Manning's "n" Values	
Stream	Channel "n"	Overbank "n"
- Salt Creek	0.020 - 0.070	0.020 - 0.300

3.5.1.4 Flood Boundaries

To reference the flood boundaries for Salt Creek, see Map Panels: 0301, 0302, 0304, 0305, 0307, 0308, 0309, 0601, 0602, 0603, 0605, 0606, 0609 and 0903.

3.5.1.5 Floodways

Floodway widths for Salt Creek were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For Salt Creek, because the mapped floodway extends outside the mapped 100-year floodplain, the floodway was delineated within the 100-year floodplain using engineering judgment. The floodway for Salt Creek extends beyond the corporate limits for City of Elmhurst.

Please reference attached Floodway Data Tables for further information.

3.5.1.6 Flood Profiles

Please reference attached Flood Profile Sheets.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NGVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Salt Creek (SCSC)								
SCSC0034	99,666 [1]	270	3,178	2.1	672.3	672.3	672.4	0.1
SCSC0035	101,350 [1]	95	3,319	1.2	672.6	672.6	672.7	0.1
SCSC0036	102,501 [1]	387	1,537	2.3	673.1	673.1	673.2	0.1
SCSC0037	103,708 [1]	850	6,063	0.6	674.2	674.2	674.3	0.1
SCSC0038	106,683 [1]	860	3,568	1.1	674.7	674.7	674.8	0.1
SCSC0039	107,935 [1]	903	5,067	0.8	674.8	674.8	674.9	0.1
SCSC0040	111,935 [1]	397	8,431	0.4	675.1	675.1	675.2	0.1
SCSC0041	113,364 [1]	509	3,516	1.1	675.3	675.3	675.4	0.1
SCSC0042	114,787 [1]	494	3,931	1.0	675.5	675.5	675.6	0.1
SCSC0043	117,307 [1]	450	5,450	0.7	675.7	675.7	675.8	0.1
SCSC0044	117,986 [1]	490	5,738	0.6	675.8	675.8	675.8	0.0
SCSC0045	123,076 [1]	900	4,526	0.8	676.7	676.7	676.7	0.0
SCSC0046	125,430 [1]	789	4,351	0.8	677.0	677.0	677.1	0.1
SCSC0047	126,804 [1]	971	4,744	0.7	677.2	677.2	677.3	0.1
SCSC0048	130,335 [1]	429	2,685	1.3	678.2	678.2	678.3	0.1
SCSC0049	131,393 [1]	601	4,370	0.8	680.3	680.3	680.4	0.1
SCSC0050	132,433 [1]	671	4,503	0.8	680.3	680.3	680.4	0.1
SCSC0051	132,732 [1]	671	4,503	0.8	680.3	680.3	680.4	0.1

[1] In feet above mouth

[2] Actual floodway width cannot be shown on FIRM due to redelineation of floodplain

[3] Width includes floodway of Spring Brook Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

DUPAGE COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

SALT CREEK (SCSC)

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION (FEET NGVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Salt Creek (SCSC)								
SCSC0052	134,624[1]	608	4,621	0.8	680.6	680.6	680.7	0.1
SCSC0055	140,114[1]	357	1,806	1.4	681.6	681.6	681.7	0.1
SCSC0056	140,896[1]	300	2,909	0.9	681.9	681.9	681.9	0.0
SCSC0057	143,669[1]	650	3,676	0.7	682.3	682.3	682.3	0.0

[1] In feet above mouth

[2] Actual floodway width cannot be shown on FIRM due to redelineation of floodplain

[3] Width includes floodway of Spring Brook Creek

TABLE 5

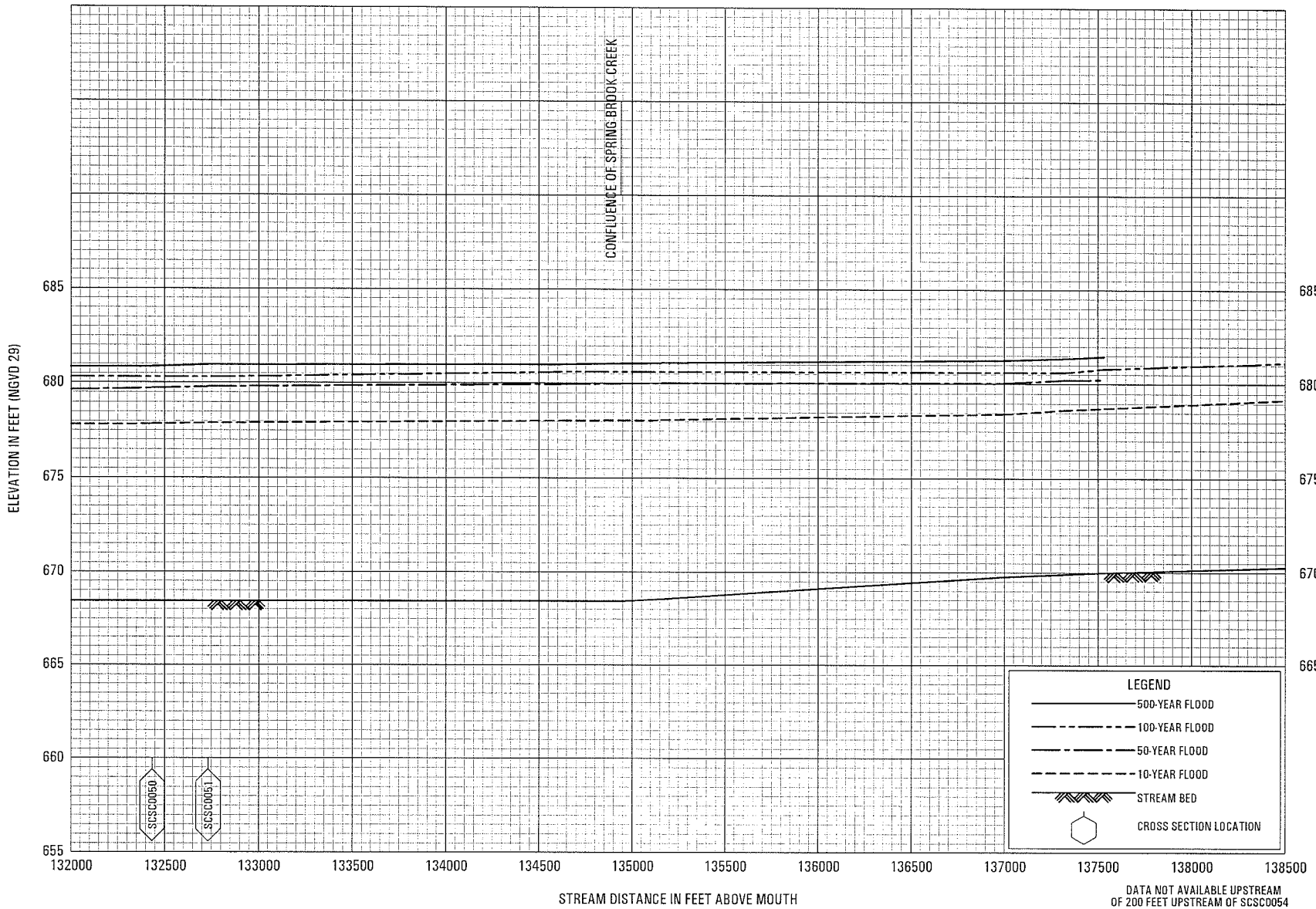
FEDERAL EMERGENCY MANAGEMENT AGENCY

DUPAGE COUNTY

AND INCORPORATED AREAS

FLOODWAY DATA

SALT CREEK (SCSC)



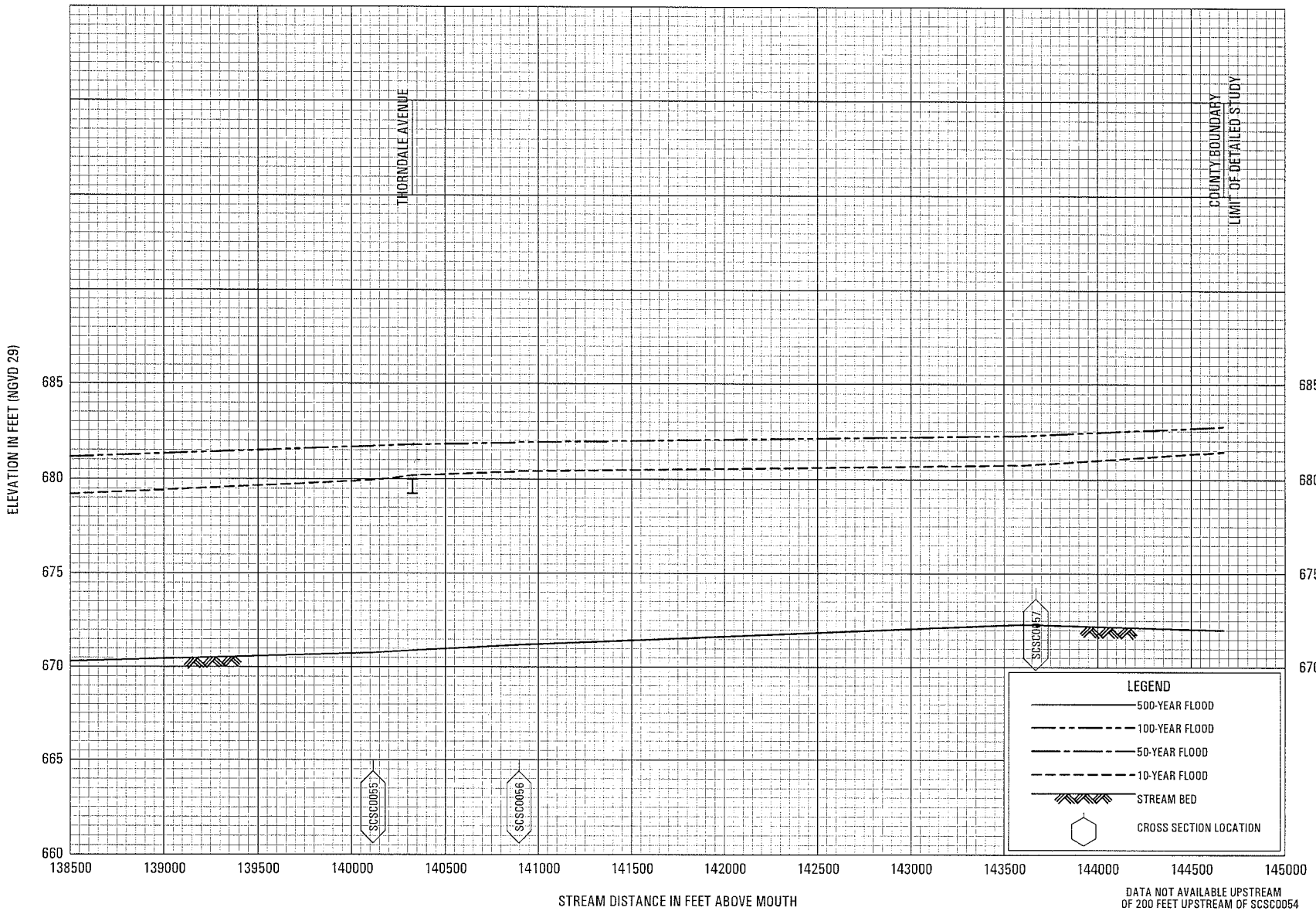
FLOOD PROFILES

SALT CREEK (SCSC)

FEDERAL EMERGENCY MANAGEMENT AGENCY

DUPAGE COUNTY, IL

AND INCORPORATED AREAS



FLOOD PROFILES

SALT CREEK (SCSC)

FEDERAL EMERGENCY MANAGEMENT AGENCY

DUPAGE COUNTY, IL

AND INCORPORATED AREAS

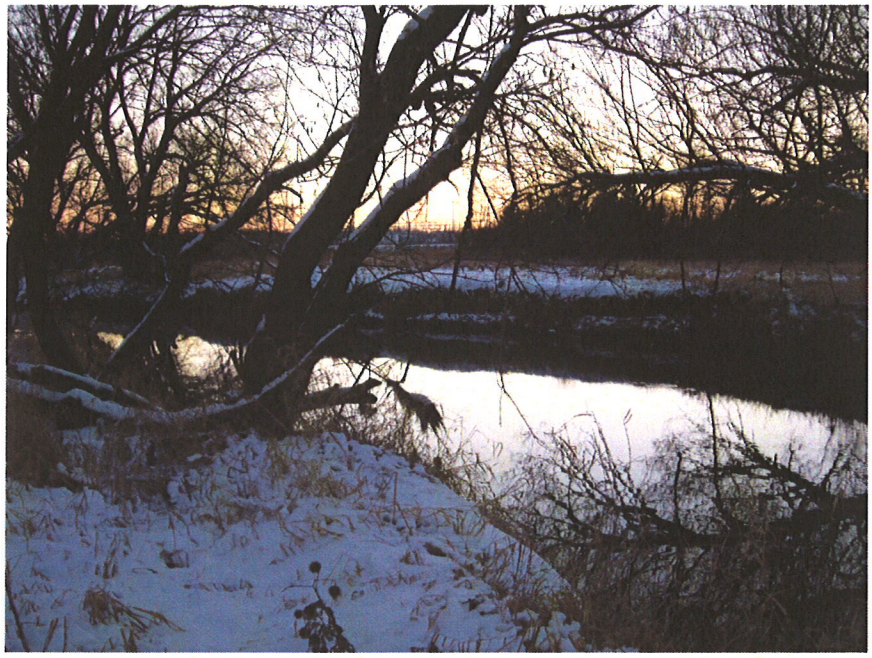
130P

Tab 4

SECTION 4

SITE PHOTOGRAPHS

Thorndale Avenue Downstream Channel



Thorndale Ave Upstream Face

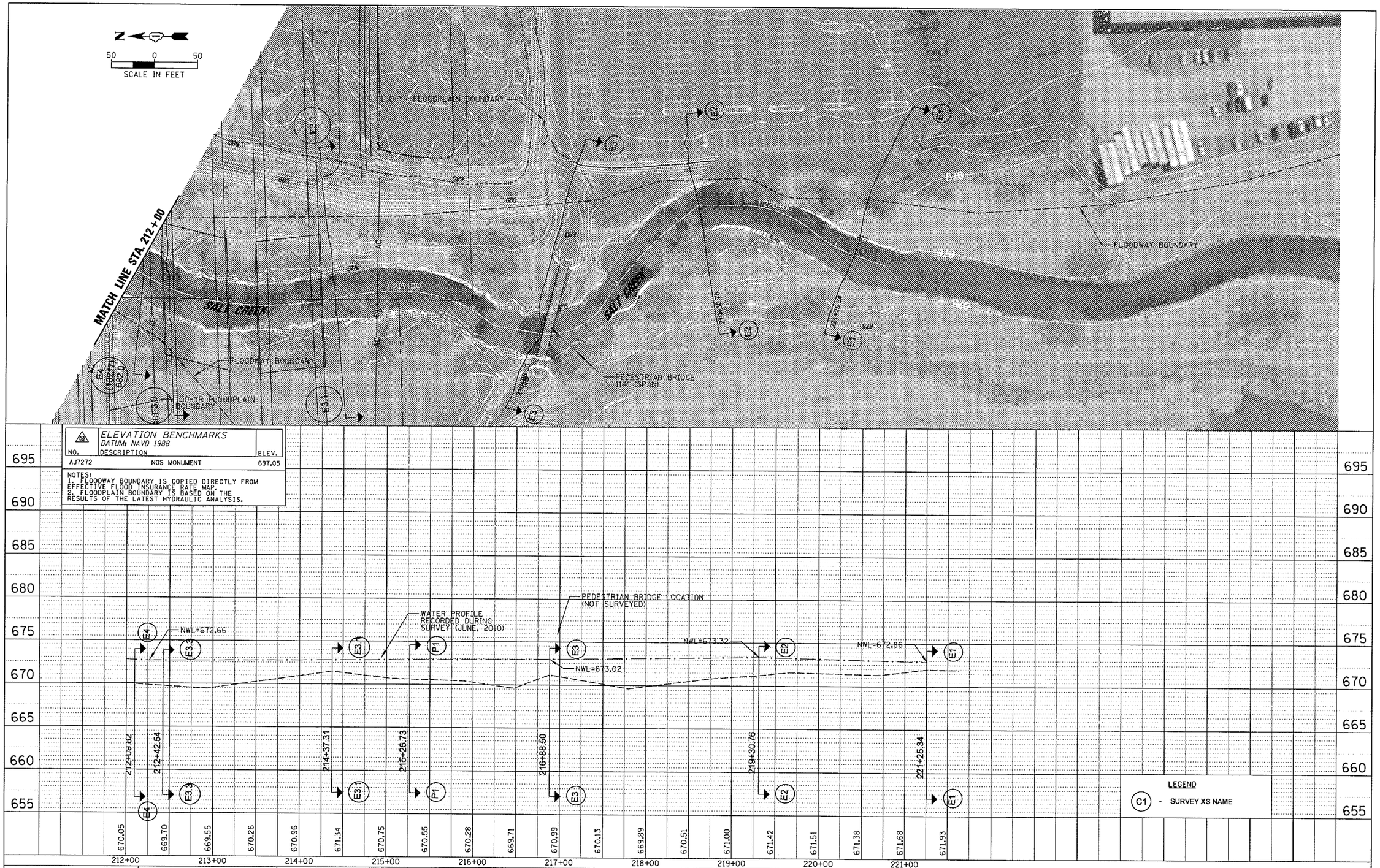
Thorndale Ave Upstream Channel

Thorndale Avenue Downstream Face

Tab 5

SECTION 5

STREAMBED PLAN AND PROFILE
ROADWAY PLAN AND PROFILE



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NO.	DESCRIPTION	ELEV.
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NOTES:
1. FLOODWAY BOUNDARY IS COPIED DIRECTLY FROM EFFECTIVE FLOOD INSURANCE RATE MAP.
2. FLOODPLAIN BOUNDARY IS BASED ON THE RESULTS OF THE LATEST HYDRAULIC ANALYSIS.

PLAN	BY	DATE
SURVEYED		
PLOTTED		
ALIGNMENT CHECKED		
NOTE BOOK	PLT. OF R.R. CHECKED	
NO.	CROSS SECTIONS	

PROFILE	BY	DATE
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NOTE BOOK	ENG. NOTES	
NO.	SURVEYING NOTATIONS CHKD	

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	PLOT DATE = 11/13/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

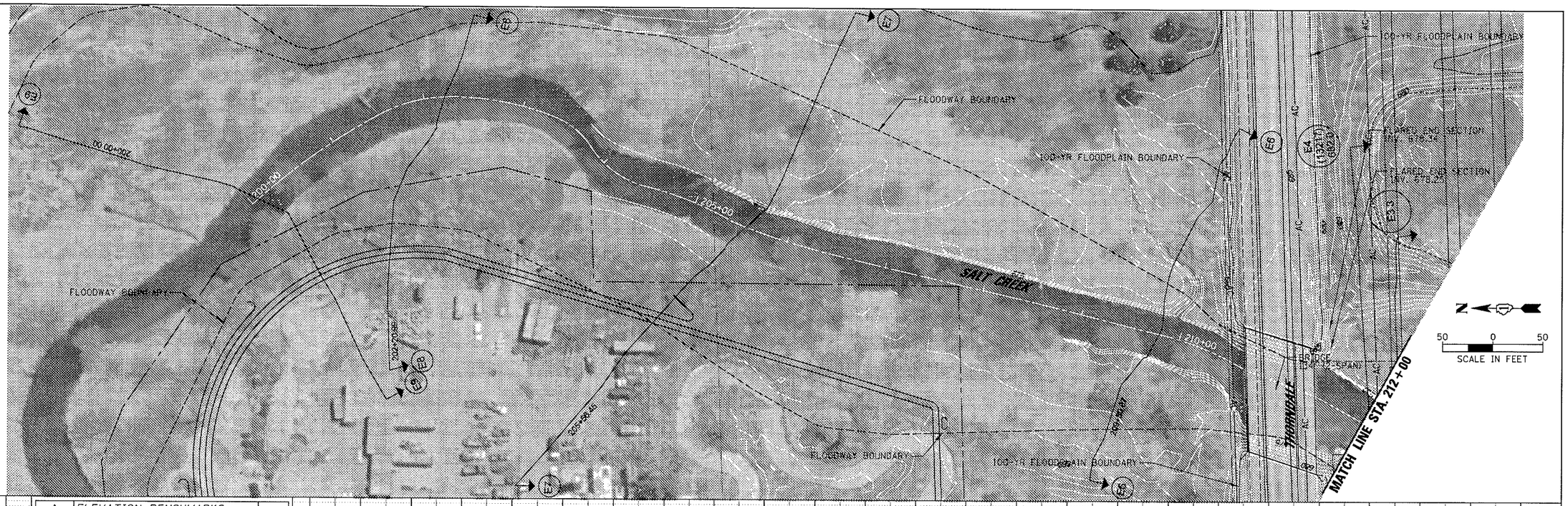
ELGIN O'HARE – WEST BYPASS
SALT CREEK
EXISTING CHANNEL PLAN AND PROFILE

SCALE: | SHEET NO. OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
				1

CONTRACT NO.

ILLINOIS FED. AID PROJECT



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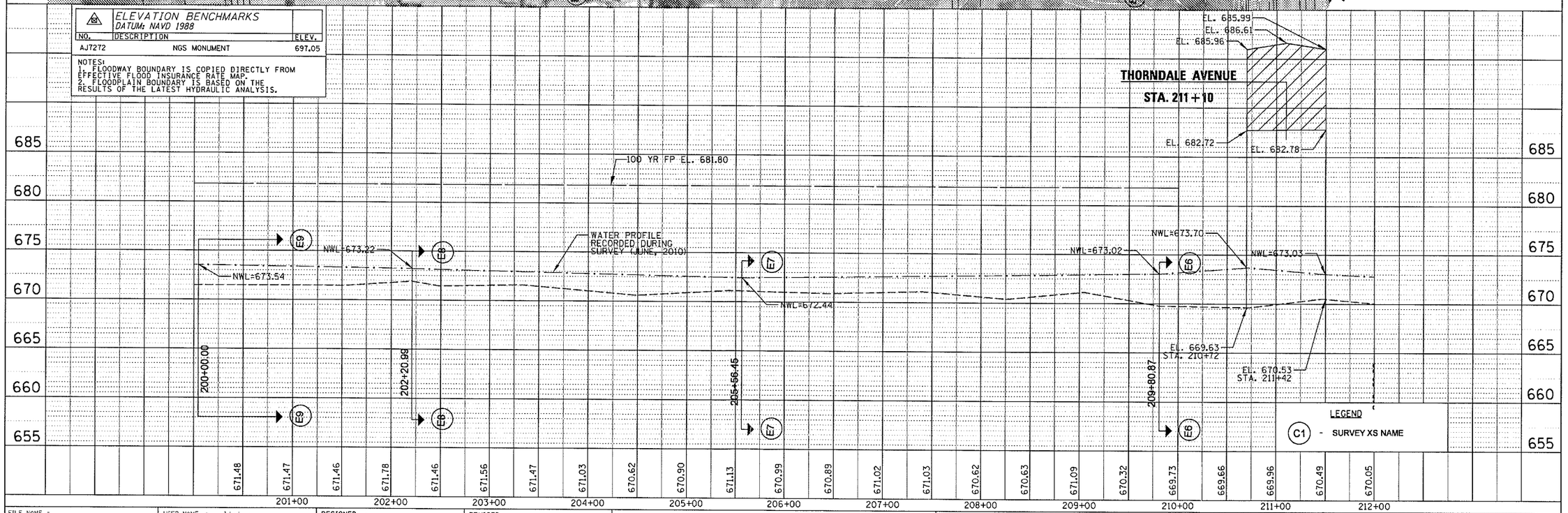
NOTES:
1. FLOODWAY BOUNDARY IS COPIED DIRECTLY FROM EFFECTIVE FLOOD INSURANCE RATE MAP.
2. FLOODPLAIN BOUNDARY IS BASED ON THE RESULTS OF THE LATEST HYDRAULIC ANALYSIS.



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELGIN O'HARE – WEST BYPASS
SALT CREEK
EXISTING CHANNEL PLAN AND PROFILE

SCALE: | SHEET NO. OF SHEETS | STA. TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

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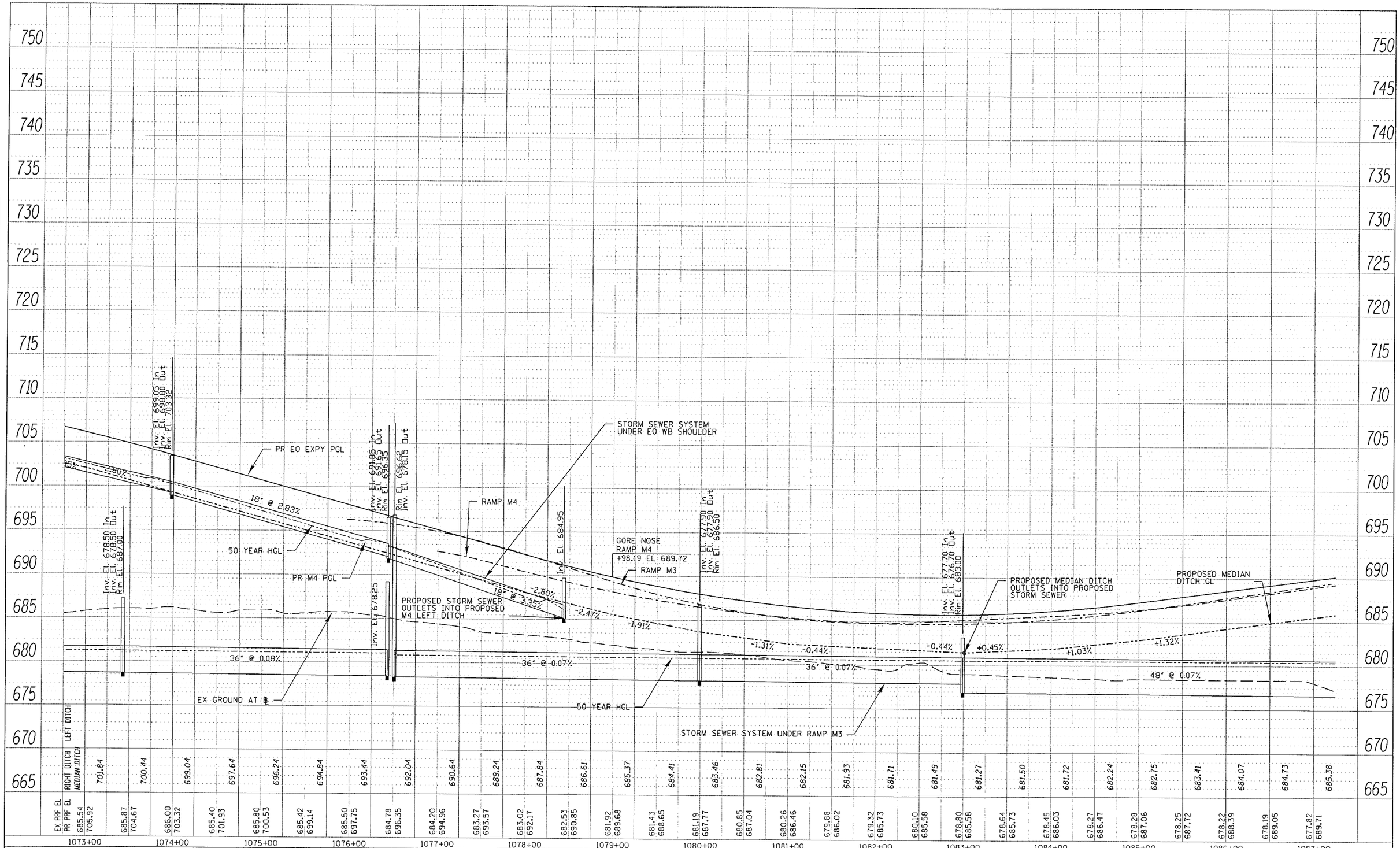

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CHRISTOPHER B. BURKE ENGINEERING, LTD
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

USER NAME = eanderson
PLOT SCALE = 100'
PLOT DATE = 11/16/2012

DESIGNED - MA
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REVISED -
REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

DRAINAGE PROFILES
ELGIN O'HARE EXPRESSWAY

SCALE:
SHEET NO. 18 OF 85 SHEETS
STA. 1073+00 TO STA. 1087+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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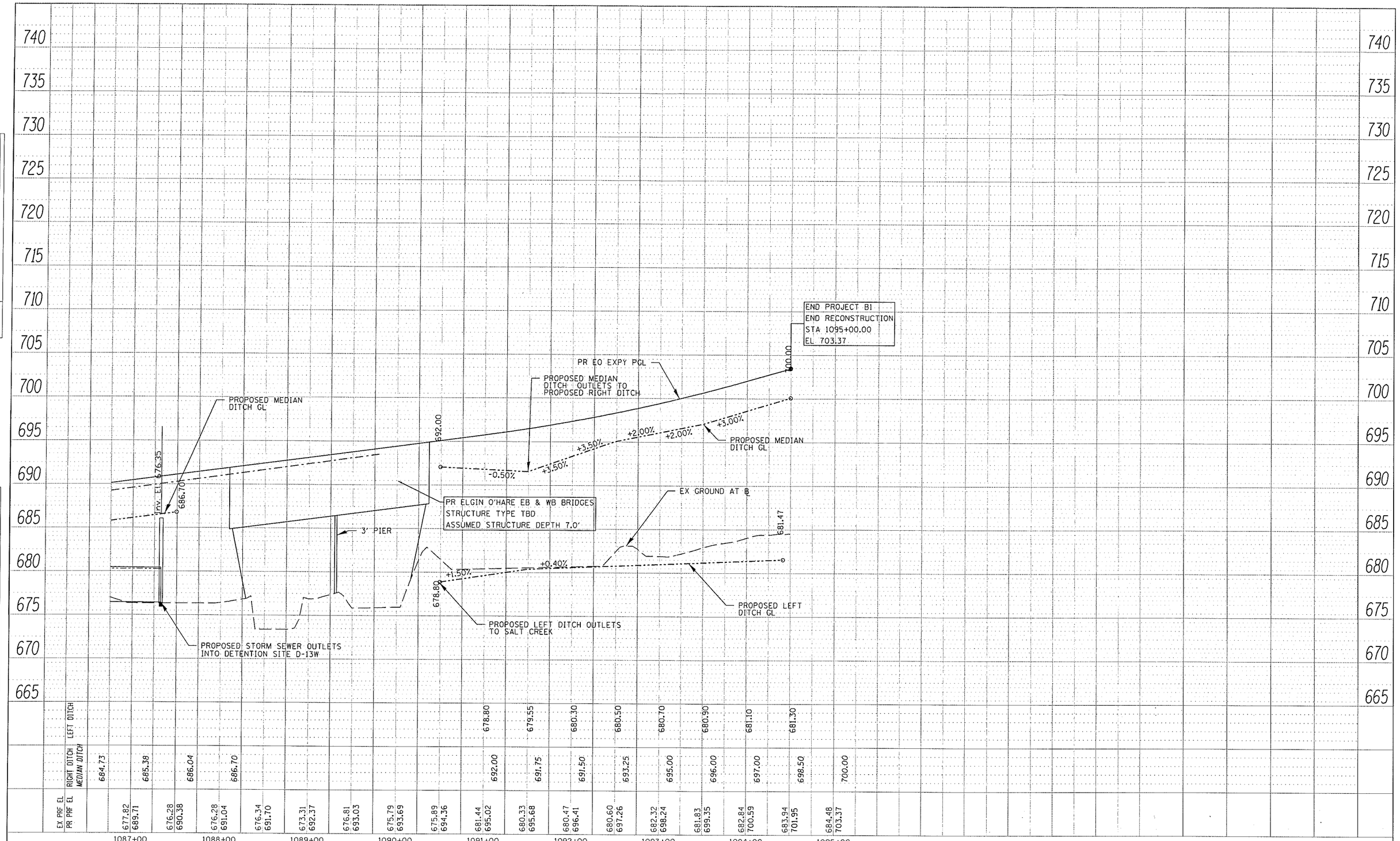

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CHRISTOPHER B. BURKE ENGINEERING, LTD. 9575 W. Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500		DRAWN - MYG	REVISED -
	PLOT SCALE = 100'	CHECKED - CW	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

DRAINAGE PROFILES
ELGIN O'HARE EXPRESSWAY

SCALE: | SHEET NO. 19 OF 85 SHEETS | STA. 1087+00 TO STA. 1095+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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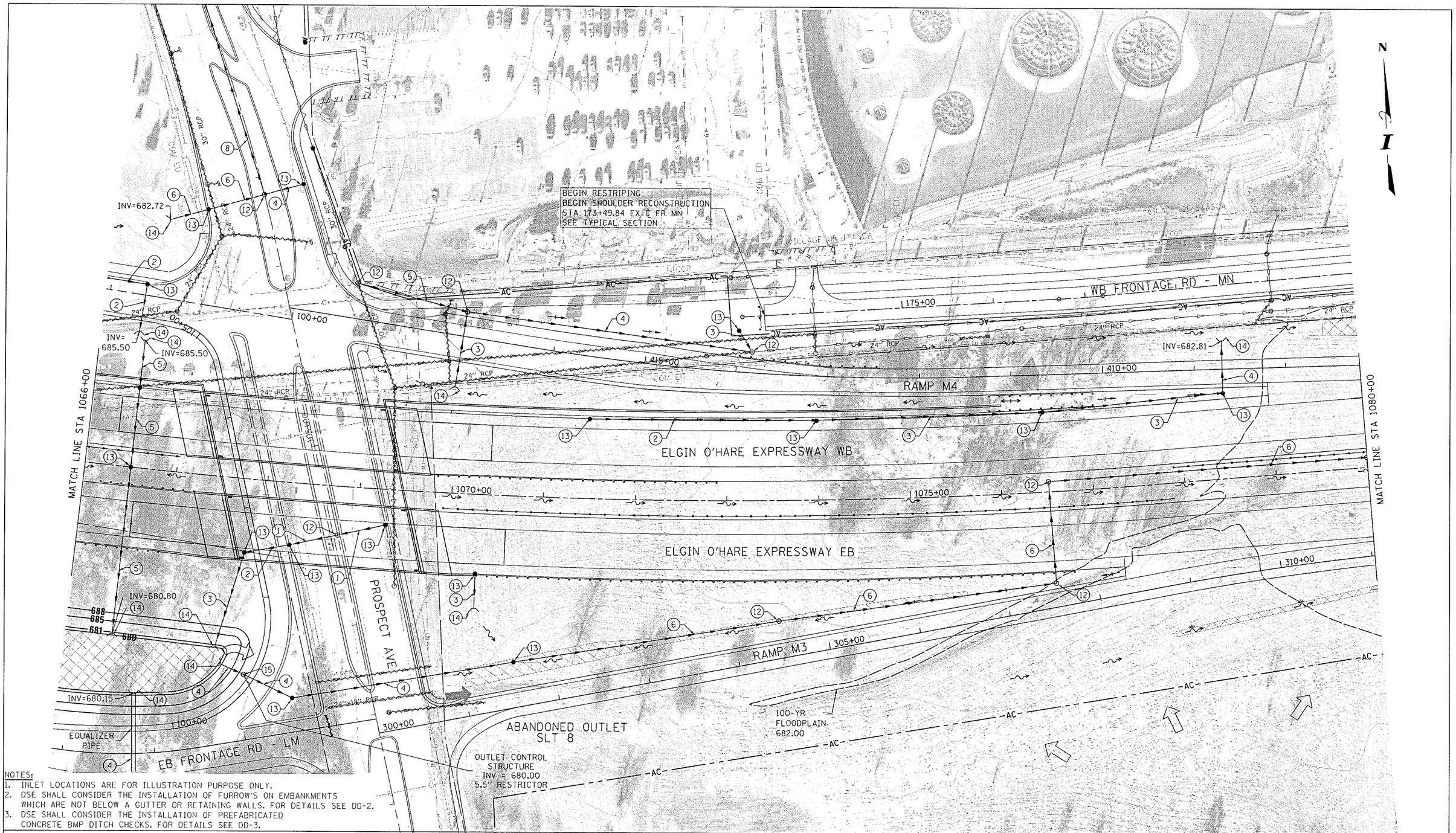
PROJECT B1	ILLINOIS	FED. AID PROJECT		



NOTES:

1. INLET LOCATIONS ARE FOR ILLUSTRATION PURPOSE ONLY.
2. DSE SHALL CONSIDER THE INSTALLATION OF FURROW'S ON EMBANKMENTS WHICH ARE NOT BELOW A GUTTER OR RETAINING WALLS. FOR DETAILS SEE DD-2.
3. DSE SHALL CONSIDER THE INSTALLATION OF PREFABRICATED CONCRETE BMP DITCH CHECKS. FOR DETAILS SEE DD-3.

LEGEND

	EXISTING	PROPOSED
REFERENCE LINE/CENTERLINE AND STATIONING	1930+00	1830+00
RIGHT OF WAY LINE		
DRAINAGE DIVIDE (HYDROLOGIC ATLAS)		

	PROPOSED
TEMPORARY EASEMENT	
PERMANENT EASEMENT	
STORM SEWER REMOVAL	

	EXISTING	PROPOSED
HEADWALL		
CATCH BASIN		
INLET/SCUPPER		
MANHOLE		
INVERT	(XXX.XX)	XXX.XX
STORM SEWER		

	EXISTING	PROPOSED
OVERFLOW		
OUTLET		
SHEET FLOW		

	EXISTING	PROPOSED
BIOSWALE		
GRASS SWALE		
SWALE		
DITCH SUMMIT		
BMP FEATURE		

CALLOUT

1. STORM SEWER 12"
2. STORM SEWER 15"
3. STORM SEWER 18"
4. STORM SEWER 24"
5. STORM SEWER 30"
6. STORM SEWER 36"
7. STORM SEWER 42"
8. STORM SEWER 48"
9. STORM SEWER 54"
10. STORM SEWER 60"
11. STORM SEWER 72"
12. MANHOLE
13. CATCH BASIN
14. HEADWALL
15. MANHOLE W/ RESTRICTOR

SCALE IN FEET
0 50 100

FILE NAME = DIEOWB-PB1-HY-sht-Pr-Plan-012	USER NAME = eanderson	DESIGNED -MA	REVISED -
CHRISTOPHER B. BURKE ENGINEERING, LTD. 9575 W. Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500		DRAWN -MYG	REVISED -
	PLOT SCALE = 100'	CHECKED -CW	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

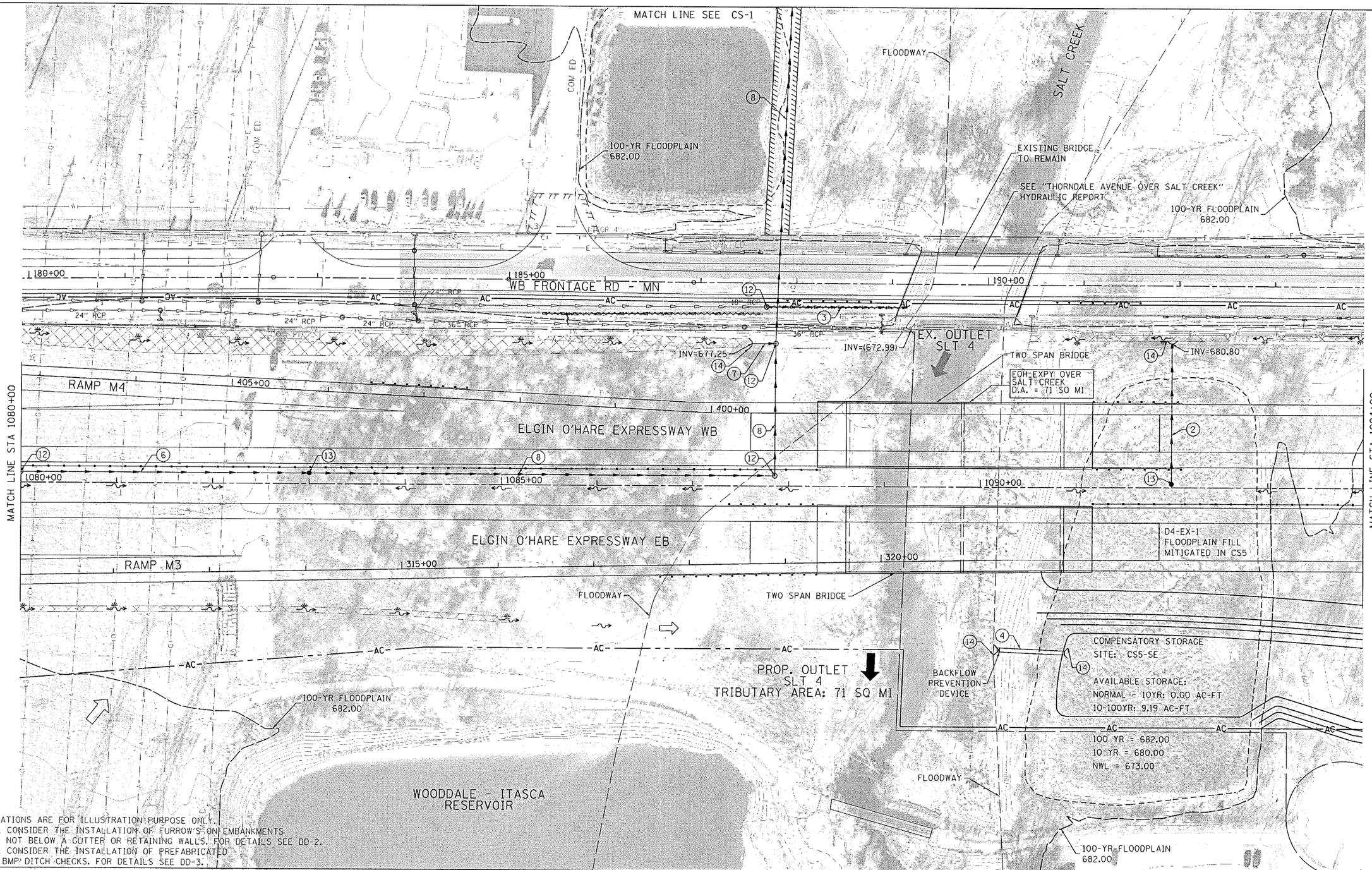
DRAINAGE PLANS
ELGIN O'HARE EXPRESSWAY

SCALE: | SHEET NO. 11 OF 32 SHEETS | STA. 1066+00 TO STA. 1080+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	757	273

DRAWING NO. DR-11 | CONTRACT NO.

PROJECT B1 | ILLINOIS FED. AID PROJECT



NOTES:
1. INLET LOCATIONS ARE FOR ILLUSTRATION PURPOSE ONLY.
2. DSE SHALL CONSIDER THE INSTALLATION OF FURROW'S ON EMBANKMENTS WHICH ARE NOT BELOW A GUTTER OR RETAINING WALLS. FOR DETAILS SEE DD-2.
3. DSE SHALL CONSIDER THE INSTALLATION OF PREFABRICATED CONCRETE BMP DITCH CHECKS. FOR DETAILS SEE DD-3.

LEGEND

	EXISTING	PROPOSED
REFERENCE LINE/CENTERLINE AND STATIONING	1930+00	1830+00
RIGHT OF WAY LINE		
DRAINAGE DIVIDE (HYDROLOGIC ATLAS)		

	PROPOSED
TEMPORARY EASEMENT	
PERMANENT EASEMENT	
STORM SEWER REMOVAL	

	EXISTING	PROPOSED
HEADWALL		
CATCH BASIN		
INLET/SCUPPER		
MANHOLE		
INVERT	(XXX.XX)	XXX.XX
STORM SEWER		

	EXISTING	PROPOSED
OVERFLOW		
OUTLET		
SHEET FLOW		

	EXISTING	PROPOSED
BIOSWALE		
GRASS SWALE		
SWALE		
DITCH SUMMIT < I >		
BMP FEATURE		

CALLOUT

(1) STORM SEWER 12"	(5) STORM SEWER 30"	(9) STORM SEWER 54"	(13) CATCH BASIN
(2) STORM SEWER 15"	(6) STORM SEWER 36"	(10) STORM SEWER 60"	(14) HEADWALL
(3) STORM SEWER 18"	(7) STORM SEWER 42"	(11) STORM SEWER 72"	(15) MANHOLE W/ RESTRICTOR
(4) STORM SEWER 24"	(8) STORM SEWER 48"	(12) MANHOLE	

SCALE IN FEET
0 50 100

FILE NAME = DIEOWB-PB1-HY-sht-Pr-Plan-013	USER NAME = eanderson	DESIGNED -MA	REVISED -
CHRISTOPHER B. BURKE ENGINEERING, LTD. 9575 W. Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500		DRAWN -MYG	REVISED -
	PLOT SCALE = 100'	CHECKED -CW	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

DRAINAGE PLANS
ELGIN O'HARE EXPRESSWAY

SCALE: | SHEET NO. 12 OF 32 SHEETS | STA. 1080+00 TO STA. 1094+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	757	274
DRAWING NO.	DR-12	CONTRACT NO.		
PROJECT B1	ILLINOIS FED. AID PROJECT			

ICP PROJECT B1 ICP PROJECT B2

WB FRONTAGE RD - MN

END PROJECT B1 RESTRIPING
STA 194+92.71 PR ℄ FR MN
SEE TYPICAL SECTION

MATCH LINE STA 1094+00

ELGIN O'HARE EXPRESSWAY WB

END CONSTRUCTION
STA 1095+00.00 PR ℄ EO EXPY

ELGIN O'HARE EXPRESSWAY EB

COMPENSATORY STORAGE
SITE: CS5-SE
100 YR = 682.00
10 YR = 680.00
NWL = 673.00
AVAILABLE STORAGE:
NORMAL - 10YR: 0.00 AC-FT
10-100YR: 9.19 AC-FT
(POND DESIGNED TO BE ACCESSED
ABOVE 10-YEAR ELEVATION)

675 678 680 682 690

ICP PROJECT B1 ICP PROJECT B2

LEVEL 3 COMMUNICATIONS

MITTEL BLVD

VILLAGE OF WOODDALE

3-1/2" RESTRICTOR
SHOWN IN RECORD
DRAWINGS

BAUMAN CT

N

NOTES:
1. INLET LOCATIONS ARE FOR ILLUSTRATION PURPOSE ONLY.
2. DSE SHALL CONSIDER THE INSTALLATION OF FURROW'S ON EMBANKMENTS WHICH ARE NOT BELOW A GUTTER OR RETAINING WALLS. FOR DETAILS SEE DD-2.
3. DSE SHALL CONSIDER THE INSTALLATION OF PREFABRICATED CONCRETE BMP DITCH CHECKS. FOR DETAILS SEE DD-3.

LEGEND

	EXISTING	PROPOSED
REFERENCE LINE/CENTERLINE AND STATIONING	1930+00	1830+00
RIGHT OF WAY LINE		
DRAINAGE DIVIDE (HYDROLOGIC ATLAS)		

	PROPOSED
TEMPORARY EASEMENT	
PERMANENT EASEMENT	
STORM SEWER REMOVAL	

	EXISTING	PROPOSED
HEADWALL		
CATCH BASIN		
INLET/SCUPPER		
MANHOLE		
INVERT	(XXX.XX)	XXX.XX
STORM SEWER		

	EXISTING	PROPOSED
OVERFLOW		
OUTLET		
SHEET FLOW		

	EXISTING	PROPOSED
BIOSWALE		
GRASS SWALE		
SWALE		
DITCH SUMMIT		
BMP FEATURE		

CALLOUT

1 STORM SEWER 12"	5 STORM SEWER 30"	9 STORM SEWER 54"	13 CATCH BASIN
2 STORM SEWER 15"	6 STORM SEWER 36"	10 STORM SEWER 60"	14 HEADWALL
3 STORM SEWER 18"	7 STORM SEWER 42"	11 STORM SEWER 72"	15 MANHOLE W/ RESTRICTOR
4 STORM SEWER 24"	8 STORM SEWER 48"	12 MANHOLE	

SCALE IN FEET
0 50 100

FILE NAME = DIEOWB-PB1-HY-sht-Pr-Plan-014	USER NAME = eanderson	DESIGNED -MA	REVISED -
CHRISTOPHER B. BURKE ENGINEERING, LTD. 9575 W. Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500		DRAWN -MYG	REVISED -
	PLOT SCALE = 100'	CHECKED -CW	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

DRAINAGE PLANS
ELGIN O'HARE EXPRESSWAY

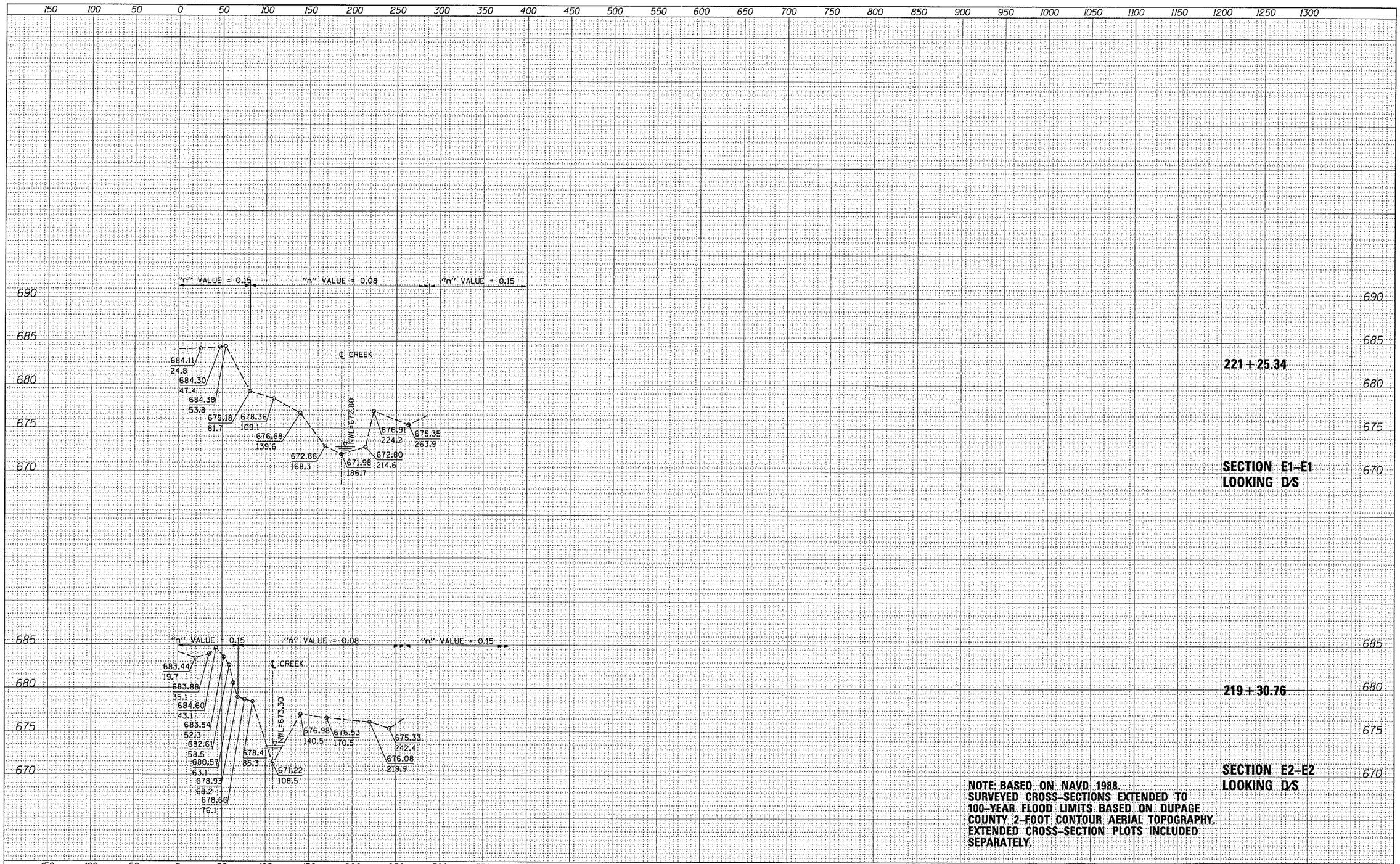
SCALE: | SHEET NO. 13 OF 32 SHEETS | STA. 1094+00 TO STA. 1095+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	757	275
DRAWING NO.	DR-13	CONTRACT NO.		
PROJECT B1	ILLINOIS FED. AID PROJECT			

Tab 6

SECTION 6

CROSS SECTION PLOTS
STRUCTURE OPENING PLOTS



FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		
NO.			

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		
NO.			

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USER NAME = mgoldenberg
PLOT SCALE = 100'
PLOT DATE = 11/13/2012

DESIGNED - PP
DRAWN - MYG
CHECKED - CW
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

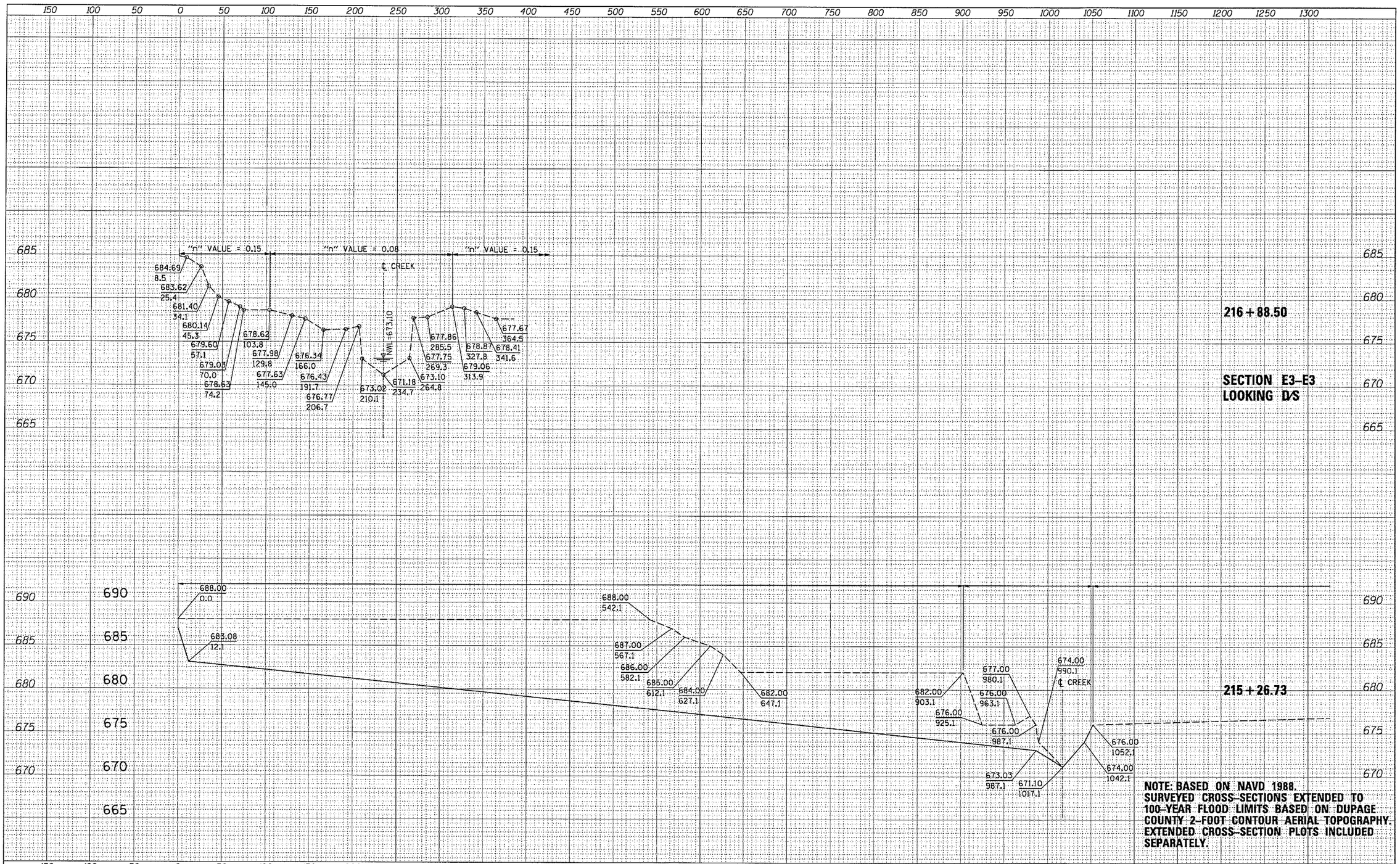
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE: 1
SHEET NO. OF SHEETS
STA. 219+30.76 TO STA. 221+25.34

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

CONTRACT NO.

ILLINOIS FED. AID PROJECT



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		DRAWN - MYG	REVISED -
	PLOT SCALE = 100'	CHECKED - CW	REVISED -
	PLOT DATE = 11/13/2012	DATE -	REVISED -

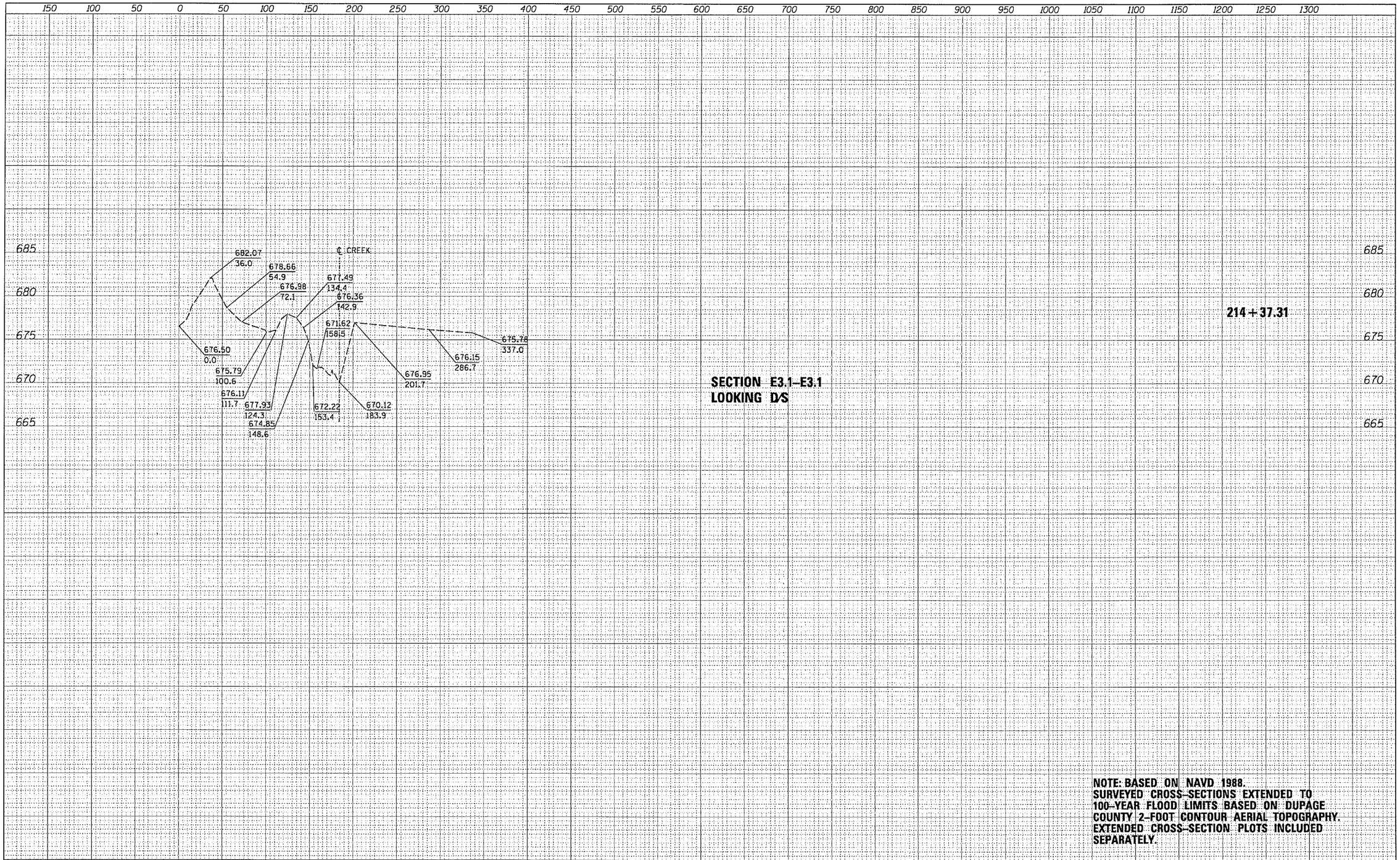
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE: | SHEET NO. OF SHEETS | STA. 215+26.73 TO STA. 216+88.50

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK NO.		



NOTE: BASED ON NAVD 1988.
SURVEYED CROSS-SECTIONS EXTENDED TO 100-YEAR FLOOD LIMITS BASED ON DUPAGE COUNTY 2-FOOT CONTOUR AERIAL TOPOGRAPHY. EXTENDED CROSS-SECTION PLOTS INCLUDED SEPARATELY.

FINAL SURVEY	BY	DATE
NOTE BOOK NO.	SURVEYED	
	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

ORIGINAL SURVEY	BY	DATE
NOTE BOOK NO.	SURVEYED	
	PLOTTED	
	TEMPLATE	
	AREAS	
	AREAS CHECKED	

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		DRAWN - MYG	REVISED -
	PLOT SCALE = 100'	CHECKED - CW	REVISED -
	PLOT DATE = 11/13/2012	DATE -	REVISED -

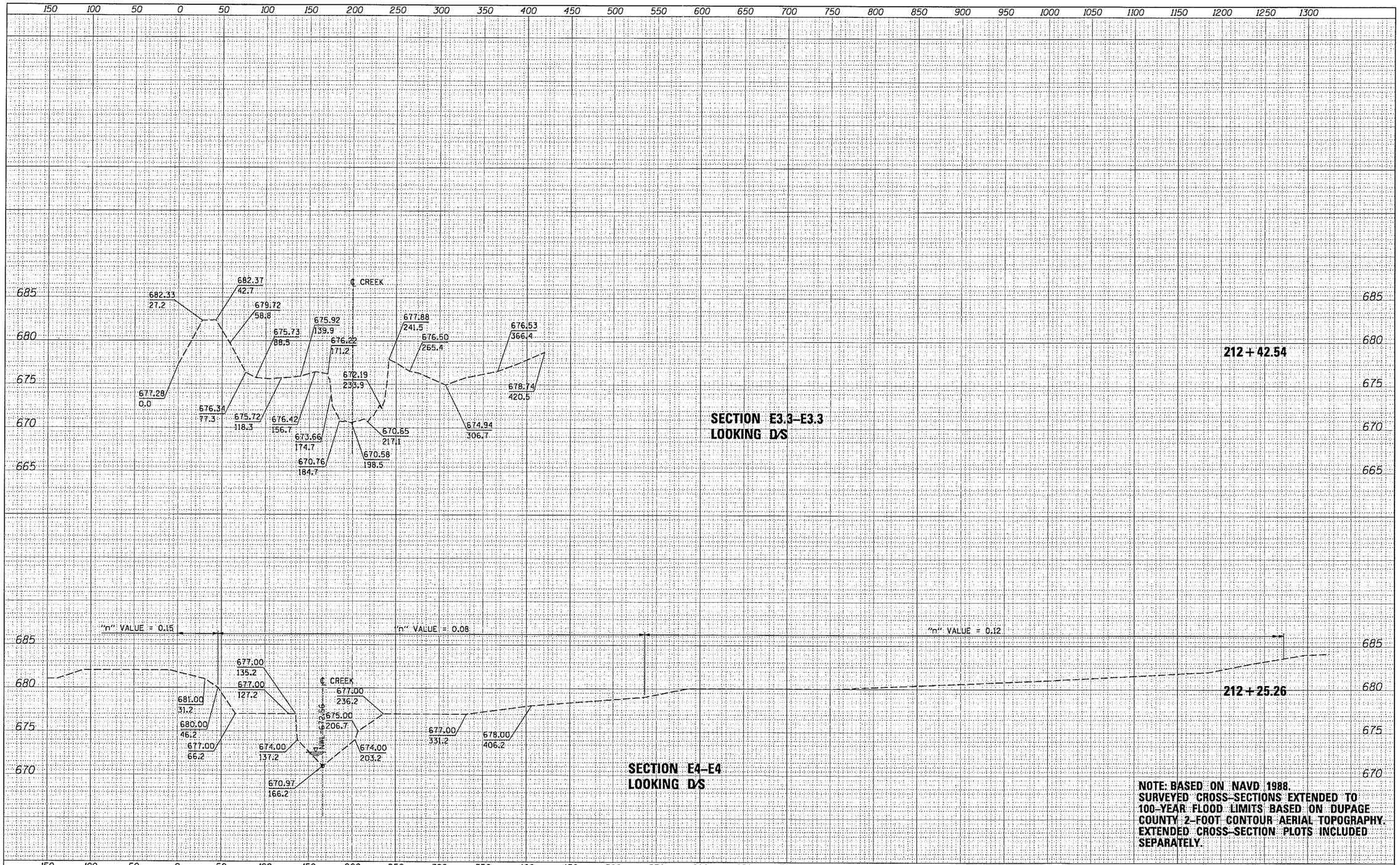
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCALE: | SHEET NO. OF SHEETS | STA. 213+43.38 TO STA. 214+37.31

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.

CONTRACT NO.

ILLINOIS FED. AID PROJECT



NOTE: BASED ON NAVD 1988.
SURVEYED CROSS-SECTIONS EXTENDED TO 100-YEAR FLOOD LIMITS BASED ON DUPAGE COUNTY 2-FOOT CONTOUR AERIAL TOPOGRAPHY. EXTENDED CROSS-SECTION PLOTS INCLUDED SEPARATELY.

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		DRAWN - MYG	REVISED -
	PLOT SCALE = 100'	CHECKED - CW	REVISED -
	PLOT DATE = 11/13/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

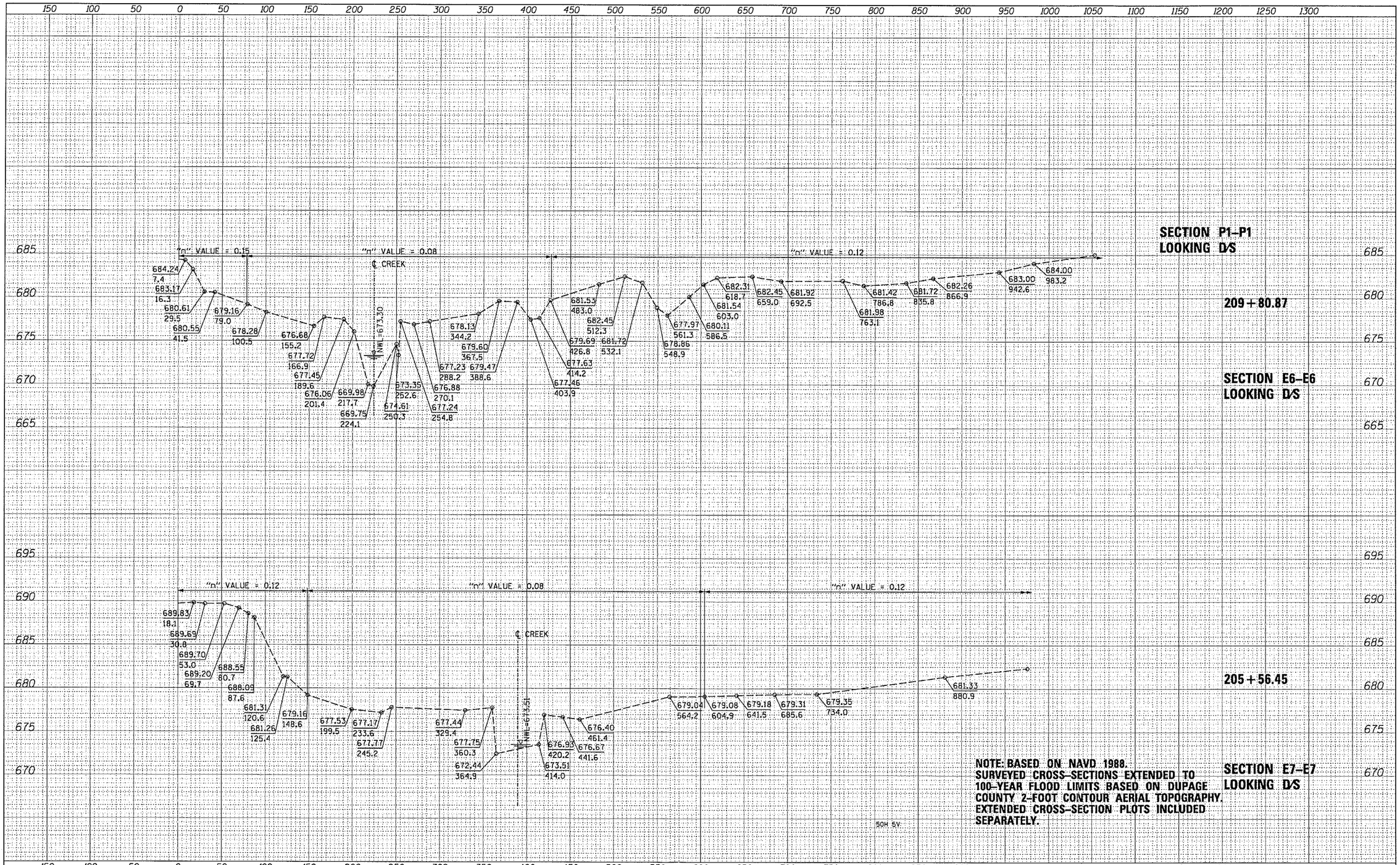
ELGIN OHARE WEST BYPASS
SALT CREEK

SCALE: 50H 5V | SHEET NO. OF SHEETS | STA. 212+25.26 TO STA. 212+42.54

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK NO.		



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	PLOT SCALE = 100'	CHECKED - CW	REVISED -
	PLOT DATE = 11/13/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

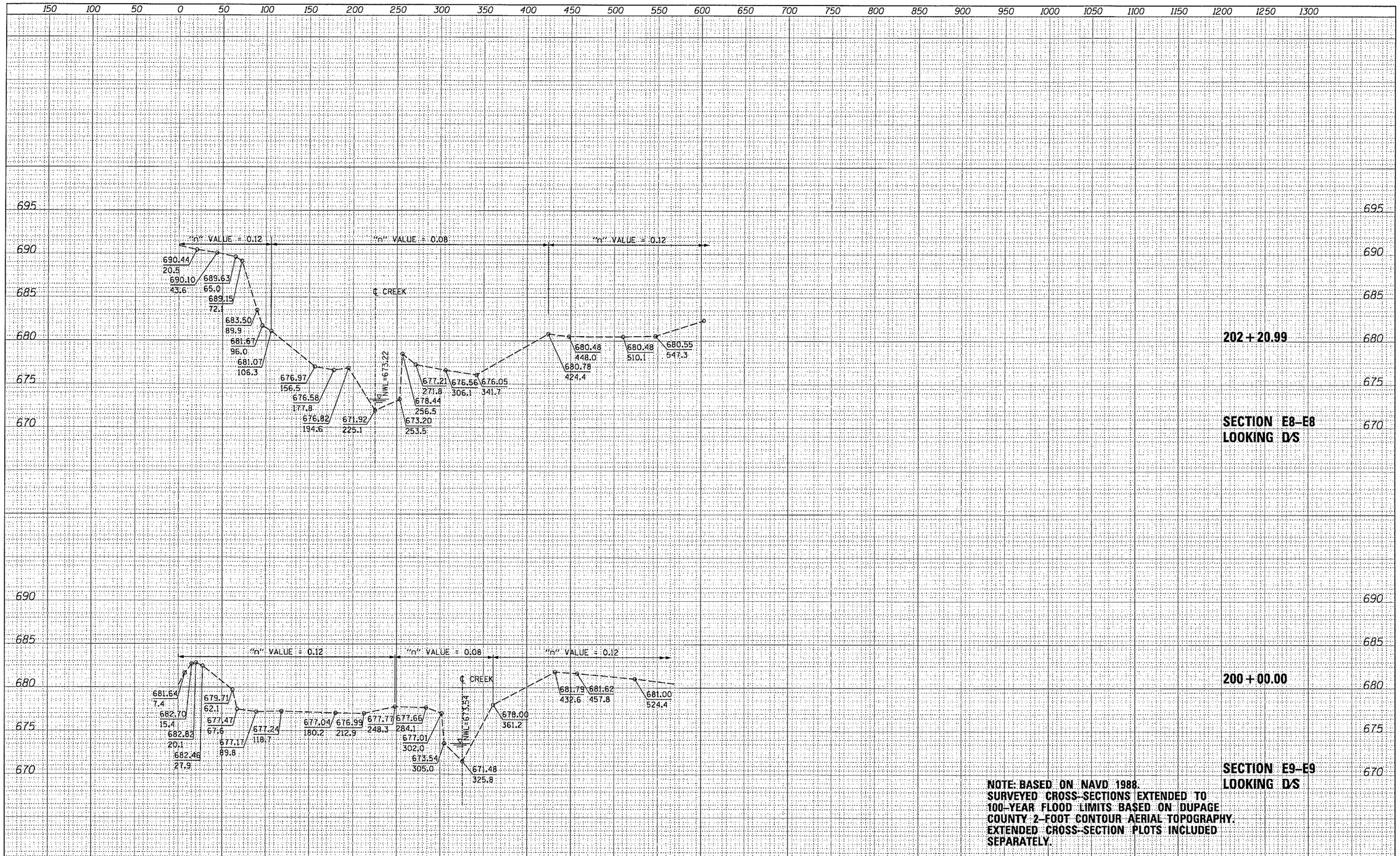
ELGIN OHARE WEST BYPASS
SALT CREEK

SCALE: | SHEET NO. OF SHEETS | STA. 205+56.45 TO STA. 209+80.87

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
	ILLINOIS FED. AID PROJECT			

FINAL SURVEY — NOTE BOOK NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED — BY — DATE



NOTE: BASED ON NAVD 1988.
SURVEYED CROSS-SECTIONS EXTENDED TO 100-YEAR FLOOD LIMITS BASED ON DUPAGE COUNTY 2-FOOT CONTOUR AERIAL TOPOGRAPHY. EXTENDED CROSS-SECTION PLOTS INCLUDED SEPARATELY.

FILE NAME = Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HYCAD\Sheets\DIE0XB-03-sht-xssht-01.dgn	USER NAME = mgoldenberg	DESIGNED - PP	REVISED -
		DRAWN - MYG	REVISED -
	PLOT SCALE = 100'	CHECKED - CW	REVISED -
	PLOT DATE = 11/13/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

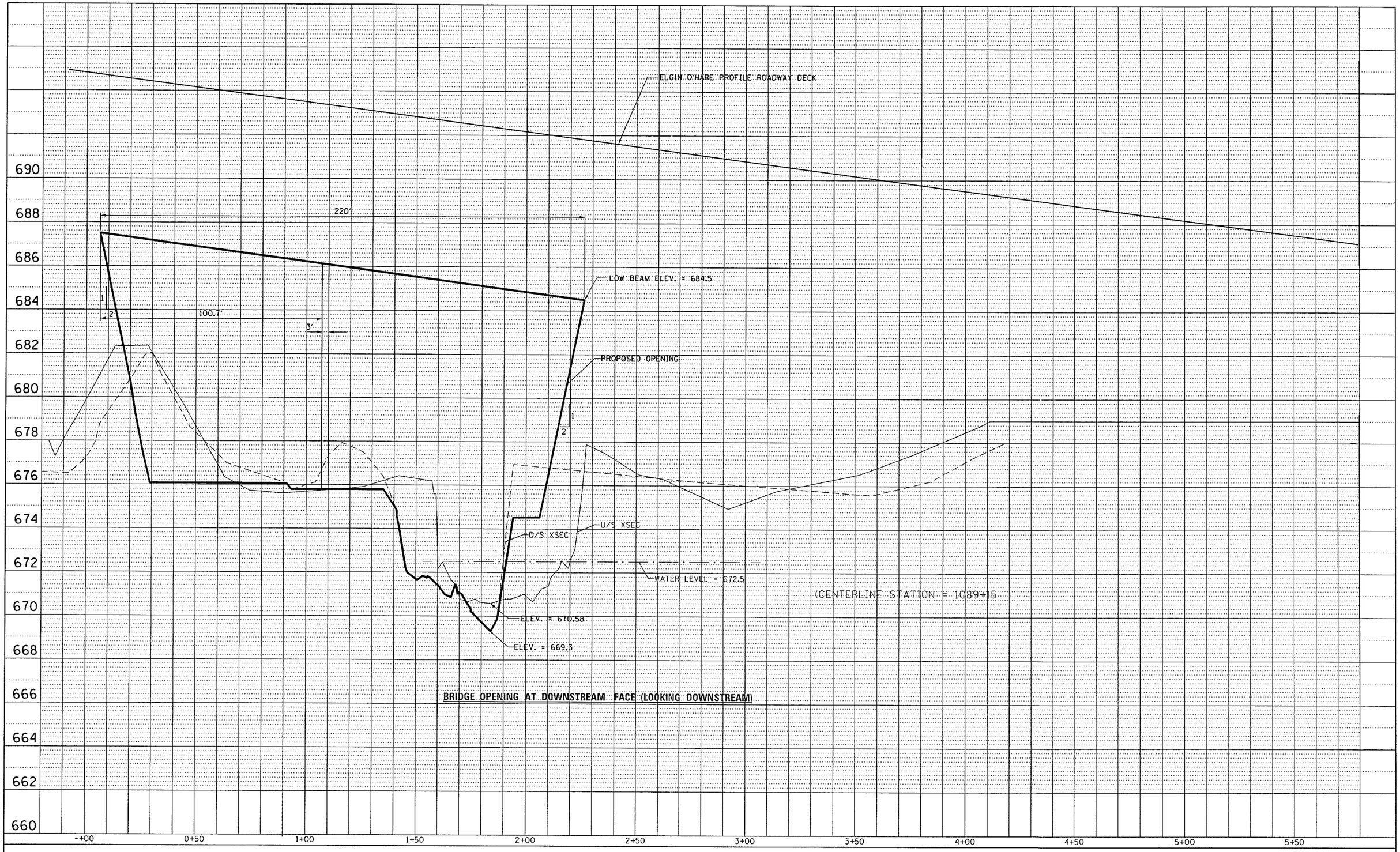
ELGIN OHARE WEST BYPASS
SALT CREEK

SCALE: 50H 5V | SHEET NO. OF SHEETS | STA. 200+00.00 TO STA. 202+20.99

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CONTRACT NO.		
		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		



PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
NOTE BOOK
RT OF WAY CHECKED
NO.
MOD FILE NAME
BY
DATE

PROFILE
SURVEYED
PLOTTED
GRADES CHECKED
NOTE BOOK
BRIDGE CHKD
NO.
STRUCTURE NOTATNS CHKD
BY
DATE

FILE NAME = Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HY\CAD\Exhibits\Salt Creek\SaltCreek01.dgn	USER NAME = mgoldenberg	DESIGNED -	REVISED -
		DRAWN -	REVISED -
	PLOT SCALE = 40'	CHECKED -	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

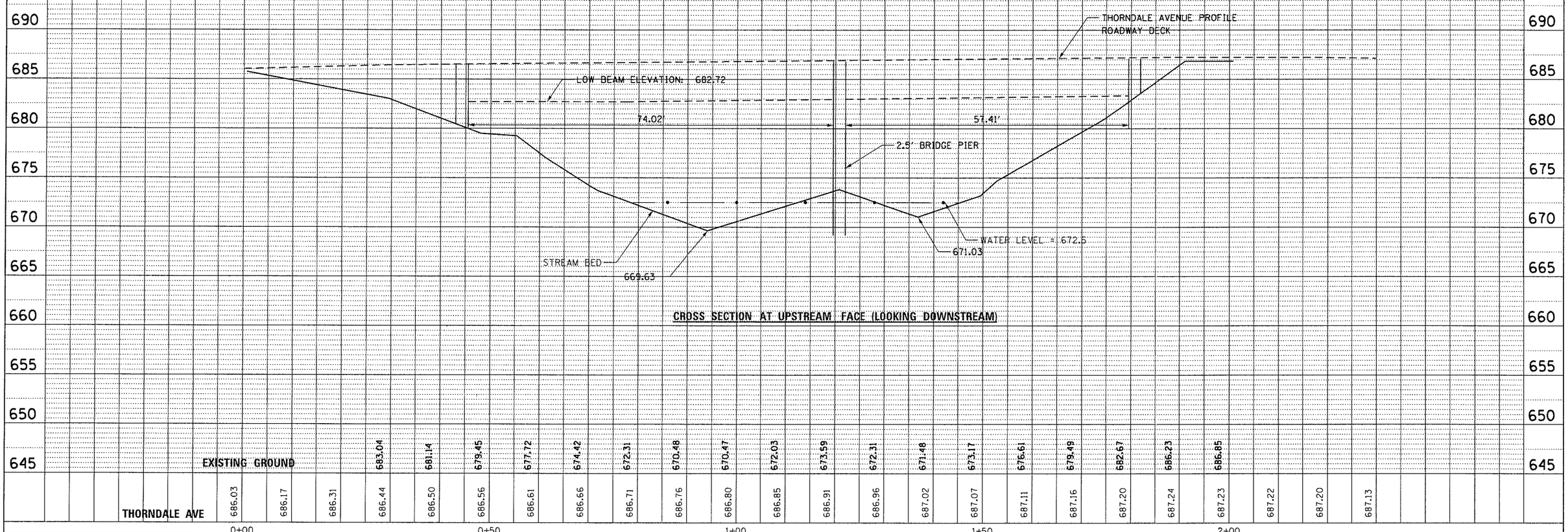
ELGIN O'HARE – WEST BYPASS
EASTBOUND ELGIN O'HARE OVER SALT CREEK

SCALE: $SCALE$ | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	1	1
		CONTRACT NO. 070404		
		ILLINOIS FED. AID PROJECT		

PLAN		BY	DATE
NOTE BOOK NO.	SURVEYED		
	PLOTTED		
	ALIGNMENT CHECKED		
	RT. OF WAY PLOTTED		
	CADD FILE NAME		

PROFILE		BY	DATE
NOTE BOOK NO.	SURVEYED		
	PLOTTED		
	GRADES CHECKED		
	B.M. ADDED		
	STRUCTURE NOTAT'NS CH'RKD		



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		DRAWN -	REVISED -
	PLOT SCALE = 20'	CHECKED -	REVISED -
	PLOT DATE = 4/13/2012	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ELGIN O'HARE – WEST BYPASS
THORNDALE AVENUE OVER SALT CREEK

SCALE: $SCALE$ | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	1	1
		CONTRACT NO. 070404		
		ILLINOIS FED. AID PROJECT		

Tab 7

SECTION 7

REGULATORY HYDROLOGIC AND HYDRAULIC MODELING

The regulatory water profile information was taken from the Flood Insurance Study information included in SECTION 3.

TAB 8

SECTION 8

BASELINE CONDITIONS ANALYSIS

```
Baseline Conditions
[Floder: \lsalt\feq1061\070404\Baseline]
                    FEQ Model Schematic              070404exh LSC Schematic Baseline Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OBL1.feq
                    FEQ Peak File for Long TSF:      sL16OBL1.pek
                    FEQ Output File for Long TSF:    sL16OBL1
                    FEQ Input File for BIG TSF:      sB16OBL1.feq
                    FEQ Peak File for BIG TSF:       sB16OBL1.pek
                    FEQ Output File for BIG TSF:     sB16OBL1
                    PVSTATS Analysis:                See Folder pvstats_BL1

Existing Conditions
[Floder: \lsalt\feq1061\070404\Existing]
                    FEQ Model Schematic              070404exh LSC Schematic Existing Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OEX4.feq
                    FEQ Peak File for Long TSF:      sL16OEX4.pek
                    FEQ Output File for Long TSF:    sL16OEX4
                    FEQ Input File for BIG TSF:      sB16OEX4.feq
                    FEQ Peak File for BIG TSF:       sB16OEX4.pek
                    FEQ Output File for BIG TSF:     sB16OEX4
                    PVSTATS Analysis:                See Folder pvstats_ex4


Natural Conditions - These conditions are the same as Existing Conditions

Proposed Conditions - Added Elgin O'Hare Expy Bridge in existing conditions
[Floder: \lsalt\feq1061\070404\Proposed]
                    FEQ Model Schematic              070404exh LSC Schematic Proposed Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OP1o.feq
                    FEQ Peak File for Long TSF:      sL16OP1o.pek
                    FEQ Output File for Long TSF:    sL16OP1o
                    FEQ Input File for BIG TSF:      sB16OP1o.feq
                    FEQ Peak File for BIG TSF:       sB16OP1o.pek
                    FEQ Output File for BIG TSF:     sB16OP1o
                    PVSTATS Analysis:                See Folder pvstats_p1o
```

Summary of Flood Elevations

PVSTATS Statistical Analysis Results (Baseline Conditions)
Flood Elevation Lower Salt Creek, Mainstem
FEQ Model Used: sL16OBL1.feq and sB16OBL1.feq
Date: Spetember 8, 2011

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD)	PVS3O 10-Year (ft-NAVD)	PVS3O 50-Year (ft-NAVD)	PVS3O 100-Year (ft-NAVD)	PVS3O 500-Year (ft-NAVD)
001SCSC3222	MACKIE CROSS SECTION 5 - 1700 FEET DOWNSTREAM OF DEVON,,,,,,	144361.48	673.13	681.92	683.26	683.88	685.47
001SCSC3221	MACKIE CROSS SECTION 6 - 400 FEET UPSTREAM OF THORNDALE,,,,,,	142335.72	670.76	681.14	682.52	683.16	684.79
001SCSC3220	MACKIE CROSS SECTION 7 - 200 FEET UPSTREAM OF THORNDALE,,,,,,	142139.58	671.04	681.00	682.38	683.02	684.66
001SCSC3219	USF OF THORNDALE AVENUE	141931.11	669.75	680.87	682.24	682.89	684.52
001SCSC3218	DSF OF THORNDALE AVENUE	141843.85	668.97	680.73	682.09	682.73	684.34
001SCSC3217	MACKIE CROSS SECTION 8 - 1 BBL LENGTHS DOWNSTREAM OF STRUCTURE,,	141744.96	670.98	680.67	682.03	682.67	684.33
001SCSC3216	TSL-ITWD1	141456.78	670.39	680.46	681.86	682.53	684.26
001SCSC3215	TSL-ITWD2	141085.58	671.51	680.12	681.52	682.21	684.01
001SCSC3214	TSL-ITWD3	140653.22	670.74	679.71	681.11	681.81	683.99
001SCSC3213	TSL-ITWD7	139641.56	671.62	679.22	680.71	681.60	683.99
001SCSC3212	TSL-ITWD7	139274.91	671.82	679.17	680.67	681.52	683.84
001SCSC3211	TSL-ITWD7	138937.39	670.02	679.13	680.64	681.52	683.84
001SCSC3210	TSL-ITWD7	138637.86	670.28	679.07	680.60	681.49	683.84
001SCSC3209	TSL-ITWD8	138070.71	669.45	678.86	680.48	681.29	683.44
001SCSC3208	TSL-ITWD9	137580.25	669.45	678.77	680.43	681.26	683.44
001SCSC3207	TSL-ITWD12	137139.56	668.21	678.74	680.40	681.23	683.39
001SCSC3206	TSL-ITWD10	136428.12	668.96	678.70	680.37	681.21	683.39

Summary of Flow Rates

PVSTATS Statistical Analysis Results (Baseline Conditions)
Flood Elevation Lower Salt Creek, Mainstem
FEQ Model Used: sL16OBL1.feq and sB16OBL1.feq
Date: Spetember 8, 2011

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NGVD)	PVS3O 10-Year 11L (cfs)	PVS3O 50-Year 11L (cfs)	PVS3O 100-Year 11L (cfs)	PVS3O 500-Year 11L (cfs)
001SCSC3222	MACKIE CROSS SECTION 5 - 1700 FEET DOWNSTREAM OF DEVON,,,,,,	144361	673.13	1622	2578	3112	4841
001SCSC3221	MACKIE CROSS SECTION 6 - 400 FEET UPSTREAM OF THORNDALE,,,,,,	142336	670.76	1619	2566	3092	4790
001SCSC3220	MACKIE CROSS SECTION 7 - 200 FEET UPSTREAM OF THORNDALE,,,,,,	142140	671.04	1619	2565	3090	4783
001SCSC3219	USF OF THORNDALE AVENUE	141931	669.75	1619	2563	3087	4776
001SCSC3218	DSF OF THORNDALE AVENUE	141844	668.97	1619	2563	3087	4776
001SCSC3217	MACKIE CROSS SECTION 8 - 1 BBL LENGTHS DOWNSTREAM OF STRUCTURE,,	141745	670.98	1619	2562	3086	4772
001SCSC3216	TSL-ITWD1	141457	670.39	1603	2549	3083	4822
001SCSC3215	TSL-ITWD2	141086	671.51	1602	2547	3080	4814
001SCSC3214	TSL-ITWD3	140653	670.74	1602	2545	3077	4806
001SCSC3213	TSL-ITWD7	139642	671.62	1596	2520	3038	4709
001SCSC3212	TSL-ITWD7	139275	671.82	1593	2513	3028	4689
001SCSC3211	TSL-ITWD7	138937	670.02	1590	2508	3021	4673
001SCSC3210	TSL-ITWD7	138638	670.28	1588	2503	3013	4656
001SCSC3209	TSL-ITWD8	138071	669.45	1583	2492	2997	4622
001SCSC3208	TSL-ITWD9	137580	669.45	1577	2478	2979	4588
001SCSC3207	TSL-ITWD12	137140	668.21	1575	2470	2963	4527
001SCSC3206	TSL-ITWD10	136428	668.96	1561	2462	2956	4530

An Excerpt from PSTATS Output File

Flood Frequency Summary for Peak Discharge:

Sect	Return Period (years): 2.0	5.0	10.0	25.0	50.0	75.0
1	847.4	1272.8	1621.5	2134.3	2578.1	2877.8
2	846.2	1271.5	1619.4	2128.0	2566.1	2861.5
3	846.2	1271.4	1619.1	2127.3	2564.7	2859.5
4	846.2	1271.3	1618.8	2126.5	2563.1	2857.3
5	846.2	1271.3	1618.8	2126.5	2563.1	2857.3
6	846.1	1271.1	1618.5	2125.8	2562.0	2855.8
7	836.8	1258.9	1602.8	2108.5	2548.9	2848.4
8	837.3	1258.7	1602.4	2107.5	2546.9	2845.6
9	837.3	1258.6	1602.1	2106.7	2545.3	2843.4
10	833.5	1255.3	1596.0	2091.4	2519.8	2810.5
11	831.4	1252.8	1593.0	2086.8	2513.1	2802.3
12	830.6	1250.9	1590.4	2083.2	2507.8	2795.6
13	830.3	1249.5	1588.3	2079.9	2503.0	2789.5
14	828.0	1245.8	1583.2	2071.9	2491.5	2775.2
15	823.1	1240.4	1576.5	2061.9	2478.2	2759.6
16	811.4	1235.7	1574.5	2058.6	2470.4	2747.1
17	797.5	1220.2	1560.9	2048.3	2461.6	2739.2

Sect	Return Period (years): 100.0	200.0	300.0	400.0	500.0
1	3112.3	3762.4	4205.6	4552.1	4840.9
2	3092.4	3731.7	4166.8	4506.7	4789.7
3	3089.9	3727.6	4161.5	4500.3	4782.5
4	3087.3	3723.5	4156.5	4494.4	4775.8
5	3087.3	3723.5	4156.4	4494.4	4775.8
6	3085.5	3720.9	4153.3	4490.7	4771.8
7	3083.2	3735.6	4181.6	4530.9	4822.4
8	3079.9	3730.5	4175.2	4523.4	4814.0
9	3077.0	3725.9	4169.3	4516.4	4806.0
10	3037.9	3667.1	4095.6	4430.3	4709.2
11	3028.4	3654.0	4079.7	4412.2	4689.1
12	3020.6	3643.1	4066.7	4397.5	4672.9
13	3013.4	3632.5	4053.7	4382.5	4656.2
14	2996.9	3609.5	4026.0	4351.0	4621.5
15	2979.3	3586.4	3998.9	4320.7	4588.4
16	2962.5	3555.2	3956.2	4268.2	4527.3
17	2955.5	3551.2	3954.8	4268.9	4529.9

Flood Frequency Summary for Peak Elevation:

Sect	Return Period (years): 2.0	5.0	10.0	25.0	50.0	75.0
1	680.61	681.58	682.20	682.96	683.54	683.90
2	679.84	680.80	681.42	682.20	682.80	683.17
3	679.73	680.67	681.28	682.05	682.66	683.03
4	679.63	680.56	681.15	681.92	682.52	682.90
5	679.51	680.43	681.01	681.76	682.37	682.74
6	679.46	680.37	680.95	681.70	682.31	682.68
7	679.29	680.17	680.74	681.50	682.14	682.53
8	679.00	679.85	680.40	681.16	681.80	682.20
9	678.62	679.44	679.99	680.74	681.39	681.80
10	678.09	678.97	679.50	680.25	680.99	681.50
11	678.00	678.88	679.45	680.25	680.95	681.39
12	677.97	678.86	679.41	680.19	680.92	681.43
13	677.90	678.80	679.35	680.14	680.88	681.39
14	677.54	678.51	679.14	680.00	680.76	681.23

15	677.37	678.40	679.05	679.94	680.71	681.19
16	677.30	678.36	679.02	679.92	680.68	681.16
17	677.26	678.32	678.98	679.88	680.65	681.14

Return Period (years):

Sect	100.0	200.0	300.0	400.0	500.0
1	684.16	684.82	685.22	685.52	685.75
2	683.44	684.11	684.52	684.83	685.07
3	683.30	683.98	684.40	684.70	684.94
4	683.17	683.85	684.26	684.56	684.80
5	683.01	683.68	684.09	684.39	684.62
6	682.95	683.64	684.06	684.36	684.61
7	682.81	683.53	683.96	684.28	684.54
8	682.49	683.23	683.69	684.02	684.29
9	682.09	682.83	683.29	683.63	683.90
10	681.88	682.87	683.49	683.93	684.27
11	681.71	682.54	683.05	683.43	683.74
12	681.80	682.77	683.36	683.79	684.12
13	681.77	682.74	683.35	683.78	684.12
14	681.57	682.44	682.98	683.38	683.70
15	681.54	682.43	682.99	683.40	683.72
16	681.51	682.39	682.94	683.34	683.65
17	681.49	682.38	682.94	683.35	683.67

N:\Idot\070404\Water\Salt Creek\Exhibits\070404exh LSC Schematic Baseline Conditions.dgn

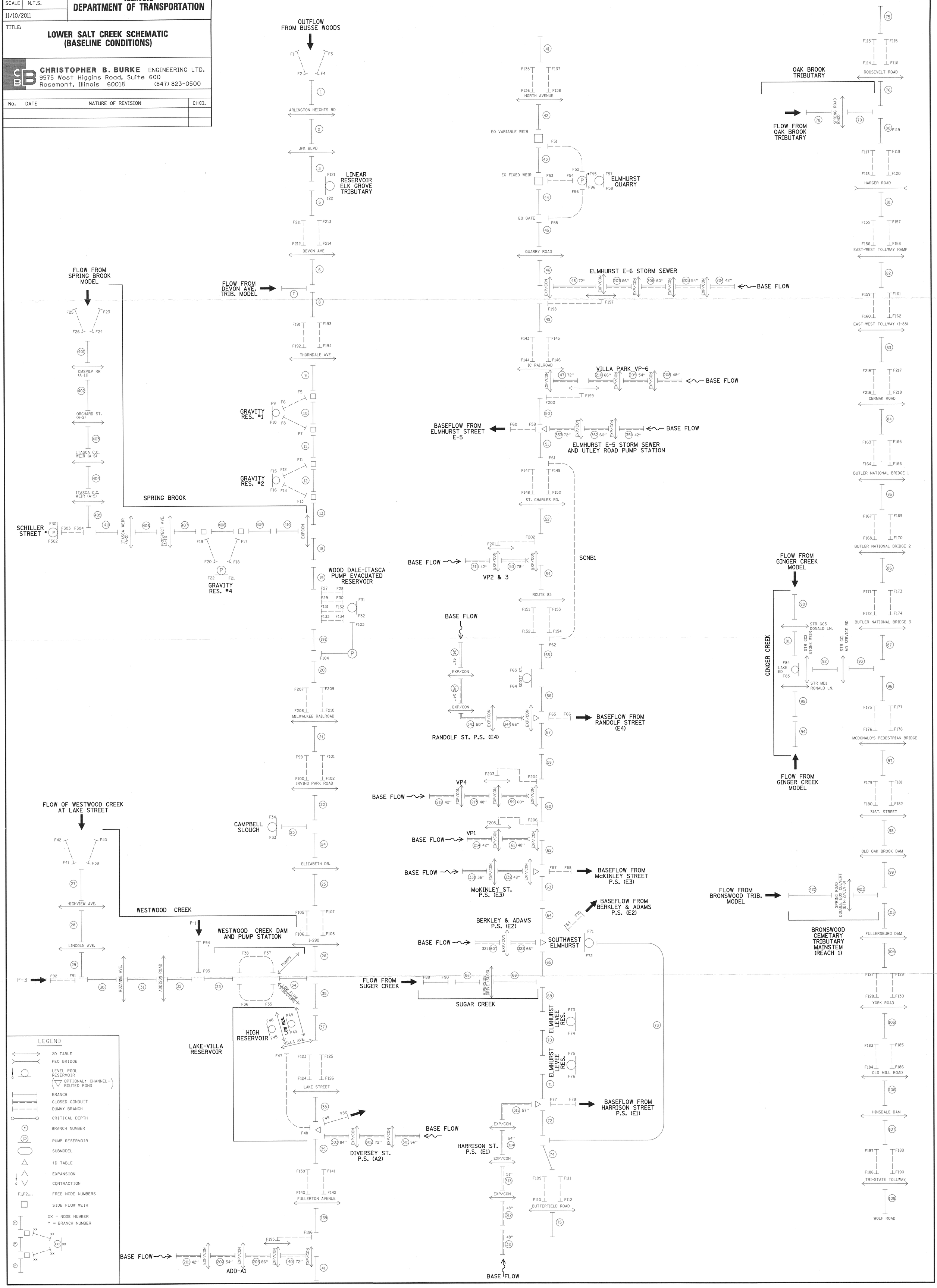
DSGN.	MY		PROJECT No. 07-0404
DWN.	EAT		
CHKD.			CLIENT: ILLINOIS DEPARTMENT OF TRANSPORTATION
SCALE	N.T.S.		
11/10/2011			

TITLE:

LOWER SALT CREEK SCHEMATIC (BASELINE CONDITIONS)

CHRISTOPHER B. BURKE ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018 (847) 823-0500

No.	DATE	NATURE OF REVISION	CHKD.



TAB 9

SECTION 9

EXISTING CONDITIONS ANALYSIS

```
Baseline Conditions
[Floder: \lsalt\feq1061\070404\Baseline]
                    FEQ Model Schematic              070404exh LSC Schematic Baseline Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OBL1.feq
                    FEQ Peak File for Long TSF:      sL16OBL1.pek
                    FEQ Output File for Long TSF:    sL16OBL1
                    FEQ Input File for BIG TSF:      sB16OBL1.feq
                    FEQ Peak File for BIG TSF:       sB16OBL1.pek
                    FEQ Output File for BIG TSF:     sB16OBL1
                    PVSTATS Analysis:                See Folder pvstats_BL1

Existing Conditions
[Floder: \lsalt\feq1061\070404\Existing]
                    FEQ Model Schematic              070404exh LSC Schematic Existing Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OEX4.feq
                    FEQ Peak File for Long TSF:      sL16OEX4.pek
                    FEQ Output File for Long TSF:    sL16OEX4
                    FEQ Input File for BIG TSF:      sB16OEX4.feq
                    FEQ Peak File for BIG TSF:       sB16OEX4.pek
                    FEQ Output File for BIG TSF:     sB16OEX4
                    PVSTATS Analysis:                See Folder pvstats_ex4


Natural Conditions - These conditions are the same as Existing Conditions

Proposed Conditions - Added Elgin O'Hare Expy Bridge in existing conditions
[Floder: \lsalt\feq1061\070404\Proposed]
                    FEQ Model Schematic              070404exh LSC Schematic Proposed Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OP1o.feq
                    FEQ Peak File for Long TSF:      sL16OP1o.pek
                    FEQ Output File for Long TSF:    sL16OP1o
                    FEQ Input File for BIG TSF:      sB16OP1o.feq
                    FEQ Peak File for BIG TSF:       sB16OP1o.pek
                    FEQ Output File for BIG TSF:     sB16OP1o
                    PVSTATS Analysis:                See Folder pvstats_p1o
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Summary of Flood Elevations

PVSTATS Statistical Analysis Results (Existing Conditions)
Flood Elevation Lower Salt Creek, Mainstem
FEQ Model Used: sL16OEX4.feq and sB16OEX4.feq
10/11/2012

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD)	PVS3O 10-Year (ft-NAVD)	PVS3O 50-Year (ft-NAVD)	PVS3O 100-Year (ft-NAVD)	PVS3O 500-Year (ft-NAVD)
001SCSC3222	MACKIE CROSS SECTION 5 - 1700 FEET DOWNSTREAM OF DEVON,,,,,,	144361.48	673.13	681.95	683.07	683.61	685.00
001SCSC33221	XS-E9	143001.00	671.48	681.22	682.38	682.96	684.46
001SCSC23221	XS-E8	142780.00	671.92	681.04	682.21	682.81	684.34
001SCSC13221	XS-E7	142335.72	672.44	680.79	681.99	682.61	684.18
001SCSC13220	XS-E6	142020.00	669.75	680.58	681.82	682.49	684.15
001SCSC13220	THORNDALE AVENUE (US FACE)	141931.00	669.75	680.49	681.76	682.42	684.09
001SCSC13217	THORNDALE AVENUE (DS FACE)	141861.00	670.97	680.06	681.28	681.97	683.74
001SCSC13217	XS-E4	141786.00	670.97	680.01	681.24	681.93	683.72
001SCSC33217	PROPOSED ELGIN O'HARE EXPY (US FACE) - E3.3	141761.00	670.97	679.99	681.22	681.92	683.71
001SCSC33216	PROPOSED ELGIN O'HARE EXPY (DS FACE) - E3.1	141566.00	671.10	679.92	681.16	681.87	683.68
001SCSC23216	XS-P1	1414771.00	671.10	679.89	681.13	681.84	683.65
001SCSC13216	XS-E3	141313.00	671.18	679.81	681.06	681.78	683.61
001SCSC13215	XS-E2	141070.00	671.22	679.63	680.94	681.68	683.56
001SCSC13214	XS-E1	140876.00	671.98	679.55	680.87	681.61	683.53
001SCSC3213	TSL-ITWD7	139641.56	671.62	679.23	680.64	681.39	683.36
001SCSC3212	TSL-ITWD7	139274.91	671.82	679.16	680.61	681.35	683.34
001SCSC3211	TSL-ITWD7	138937.39	670.02	679.13	680.58	681.35	683.34
001SCSC3210	TSL-ITWD7	138637.86	670.28	679.07	680.53	681.30	683.30
001SCSC3209	TSL-ITWD8	138070.71	669.45	678.86	680.41	681.18	683.15
001SCSC3208	TSL-ITWD9	137580.25	669.45	678.77	680.34	681.11	683.09
001SCSC3207	TSL-ITWD12	137139.56	668.21	678.74	680.29	681.08	683.09
001SCSC3206	TSL-ITWD10	136428.12	668.96	678.71	680.29	681.06	683.02

Summary of Flow Rates

PVSTATS Statistical Analysis Results (Existing Conditions)
Flood Elevation Lower Salt Creek, Mainstem
FEQ Model Used: sL16OEX4.feq and sB16OEX4.feq
10/11/2012

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NGVD)	PVS3O 10-Year (cfs)	PVS3O 50-Year (cfs)	PVS3O 100-Year (cfs)	PVS3O 500-Year (cfs)
001SCSC3222	MACKIE CROSS SECTION 5 - 1700 FEET DOWNSTREAM OF DEVON,,,,,,	144361.48	673.13	1654	2562	3089	4853
001SCSC33221	XS-E9	143001.00	671.48	1655	2558	3080	4826
001SCSC23221	XS-E8	142780.00	671.92	1655	2558	3079	4820
001SCSC13221	XS-E7	142335.72	672.44	1655	2557	3076	4810
001SCSC13220	XS-E6	142020.00	669.75	1649	2556	3086	4883
001SCSC13220	THORNDALE AVENUE (US FACE)	141931.00	669.75	1649	2556	3085	4880
001SCSC13217	THORNDALE AVENUE (DS FACE)	141861.00	670.97	1649	2556	3085	4880
001SCSC13217	XS-E4	141786.00	670.97	1649	2555	3083	4876
001SCSC13217	PROPOSED ELGIN O'HARE EXPY (US FACE)	141761.00	670.97	1649	2554	3082	4874
001SCSC23216	PROPOSED ELGIN O'HARE EXPY (DS FACE)	141566.00	671.10	1648	2552	3079	4866
001SCSC23216	XS-P1	1414771.00	671.10	1647	2551	3077	4862
001SCSC13216	XS-E3	141313.00	671.18	1646	2548	3073	4856
001SCSC13215	XS-E2	141070.00	671.22	1592	2544	3090	4910
001SCSC13214	XS-E1	140876.00	671.98	1591	2542	3088	4906
001SCSC3213	TSL-ITWD7	139641.56	671.62	1580	2513	3047	4813
001SCSC3212	TSL-ITWD7	139274.91	671.82	1577	2506	3037	4792
001SCSC3211	TSL-ITWD7	138937.39	670.02	1573	2499	3027	4772
001SCSC3210	TSL-ITWD7	138637.86	670.28	1571	2493	3018	4753
001SCSC3209	TSL-ITWD8	138070.71	669.45	1565	2479	2999	4711
001SCSC3208	TSL-ITWD9	137580.25	669.45	1558	2466	2981	4674
001SCSC3207	TSL-ITWD12	137139.56	668.21	1617	2462	2939	4536
001SCSC3206	TSL-ITWD10	136428.12	668.96	1609	2443	2918	4511

An Excerpt from PSTATS Output File

Flood Frequency Summary for Peak Discharge:

Sect	Return Period (years): 2.0	5.0	10.0	25.0	50.0	75.0
1	856.6	1308.2	1654.0	2134.0	2561.5	2855.1
2	857.4	1307.6	1654.6	2134.1	2558.3	2848.9
3	857.6	1307.8	1654.9	2134.2	2557.7	2847.7
4	857.8	1307.7	1655.2	2134.2	2556.5	2845.4
5	863.7	1302.4	1648.9	2129.3	2556.3	2850.3
6	863.8	1302.3	1649.0	2129.3	2556.0	2849.8
7	863.8	1302.3	1649.0	2129.3	2556.0	2849.8
8	863.7	1302.3	1648.8	2128.7	2554.9	2848.3
9	863.7	1302.1	1648.7	2128.5	2554.4	2847.6
10	863.5	1301.6	1647.9	2127.1	2552.1	2844.5
11	863.4	1301.5	1647.3	2126.0	2550.6	2842.7
12	863.0	1301.5	1645.7	2122.9	2547.6	2839.8
13	852.0	1265.8	1591.8	2093.6	2543.5	2848.8
14	851.9	1265.5	1591.3	2092.8	2542.2	2847.2
15	845.6	1257.6	1579.9	2072.5	2513.0	2811.6
16	844.7	1255.3	1576.6	2067.3	2505.8	2802.9
17	843.4	1253.0	1573.3	2062.2	2498.7	2794.3
18	842.8	1251.2	1570.7	2057.9	2492.6	2786.7
19	840.0	1247.2	1564.9	2048.6	2479.2	2770.1
20	834.8	1241.4	1557.6	2038.2	2465.5	2753.8
21	823.9	1269.7	1617.1	2071.4	2461.5	2726.8
22	812.4	1266.0	1608.5	2056.0	2442.9	2706.7

Sect	Return Period (years): 100.0	200.0	300.0	400.0	500.0
1	3089.0	3748.5	4201.6	4556.8	4853.3
2	3080.4	3733.2	4181.5	4532.7	4825.8
3	3078.7	3730.3	4177.5	4527.9	4820.3
4	3075.5	3724.5	4170.0	4518.8	4809.9
5	3085.7	3753.9	4215.7	4578.9	4882.9
6	3084.9	3752.5	4213.9	4576.7	4880.4
7	3084.9	3752.5	4213.8	4576.7	4880.4
8	3083.0	3749.6	4210.3	4572.6	4875.7
9	3082.3	3748.5	4208.8	4570.8	4873.7
10	3078.5	3743.1	4202.3	4563.5	4865.6
11	3076.5	3740.5	4199.4	4560.2	4862.2
12	3073.3	3736.3	4194.3	4554.5	4855.8
13	3090.0	3767.6	4234.9	4602.6	4910.4
14	3088.1	3764.8	4231.5	4598.7	4906.0
15	3047.0	3706.2	4159.4	4515.3	4812.8
16	3037.0	3692.4	4142.8	4496.4	4792.0
17	3027.2	3678.9	4126.8	4478.3	4772.0
18	3018.4	3666.4	4111.4	4460.7	4752.5
19	2999.1	3639.2	4078.4	4422.9	4710.5
20	2980.7	3614.5	4049.1	4389.8	4674.3
21	2938.7	3538.0	3948.3	4268.9	4535.8
22	2917.7	3515.0	3924.4	4244.5	4511.1

Flood Frequency Summary for Peak Elevation:

Sect	Return Period (years): 2.0	5.0	10.0	25.0	50.0	75.0
1	680.76	681.67	682.23	682.86	683.35	683.66
2	680.17	680.99	681.50	682.13	682.66	683.00
3	680.04	680.82	681.32	681.95	682.49	682.84
4	679.82	680.58	681.07	681.71	682.27	682.63
5	679.63	680.39	680.86	681.51	682.10	682.49
6	679.55	680.29	680.77	681.44	682.04	682.43
7	679.17	679.88	680.34	680.96	681.56	681.96
8	679.12	679.83	680.29	680.92	681.52	681.92
9	679.10	679.80	680.27	680.89	681.50	681.90
10	679.04	679.74	680.20	680.84	681.44	681.85
11	679.01	679.71	680.17	680.80	681.41	681.82
12	678.92	679.63	680.09	680.73	681.34	681.75
13	678.69	679.42	679.91	680.58	681.22	681.64
14	678.59	679.34	679.83	680.52	681.15	681.58
15	678.13	678.98	679.51	680.25	680.92	681.36
16	678.04	678.89	679.44	680.21	680.89	681.32
17	678.00	678.87	679.41	680.17	680.86	681.30
18	677.93	678.81	679.35	680.12	680.81	681.26
19	677.57	678.54	679.14	679.97	680.69	681.13
20	677.41	678.43	679.05	679.90	680.62	681.07
21	677.35	678.41	679.02	679.85	680.57	681.03
22	677.31	678.35	678.99	679.85	680.57	681.01

Sect	Return Period (years): 100.0	200.0	300.0	400.0	500.0
1	683.89	684.46	684.81	685.07	685.28
2	683.24	683.87	684.25	684.52	684.74
3	683.09	683.73	684.12	684.40	684.62
4	682.89	683.54	683.94	684.23	684.46
5	682.77	683.46	683.88	684.19	684.43
6	682.70	683.40	683.82	684.12	684.37
7	682.25	682.99	683.43	683.76	684.02
8	682.21	682.95	683.40	683.74	684.00
9	682.20	682.94	683.39	683.73	683.99
10	682.15	682.89	683.35	683.69	683.96
11	682.12	682.87	683.33	683.66	683.93
12	682.06	682.81	683.28	683.62	683.89
13	681.96	682.73	683.21	683.56	683.84
14	681.89	682.67	683.16	683.52	683.81
15	681.67	682.48	682.98	683.34	683.64
16	681.63	682.43	682.92	683.29	683.58
17	681.63	682.45	682.95	683.32	683.62
18	681.58	682.40	682.91	683.28	683.58
19	681.46	682.27	682.77	683.14	683.43
20	681.39	682.21	682.71	683.08	683.37
21	681.36	682.19	682.70	683.08	683.37
22	681.34	682.15	682.64	683.01	683.30

Associated FEQUTL Files

```
FTABIN
FILE=  \utlheader\embweir.mtb
FILE=  \utlheader\type5.mtb
TABID= -1

FEQX
GISID=   001SCSC33221
TABID=  33221  OUT12
STATION= 143001.00
NAVM=    0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB     3   0.120   0.080   0.120
XSEC E9
   -430.00    689.28    1
   -315.00    684.28    1
   -290.00    683.28    1
   -275.00    681.28    1
      0.00    680.53    1
      7.43    681.92    1
     15.44    682.98    1
     20.09    683.10    1
     27.88    682.74    1
     62.07    679.99    1
     67.55    677.75    1
     89.80    677.45    1
    118.66    677.52    1
    180.22    677.32    1
    212.92    677.27    1
    248.30    678.05    2
    284.11    677.94    2
    301.97    677.29    2
    305.00    673.82    2
    325.85    671.76    2
    361.22    678.28    2
    432.57    682.07    3
    457.79    681.90    3
    498.00    688.28    3
    533.00    684.28    3
    558.00    682.28    3
    898.00    682.28    3
   1258.00    682.28    3
   1278.00    684.28    3
   1298.00    684.28    3
   1398.00    683.28    3
   1628.00    683.28    3
   1828.00    684.28    3
   1873.00    685.28    3
   1938.00    686.28    3
   1983.00    687.28   -1


FEQX
GISID=   001SCSC23221
TABID=  23221  OUT12
STATION= 142780.00
NAVM=    0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB     3   0.120   0.080   0.120
XSEC E8
      0.00    691.19    1
     20.49    690.72    1
     43.64    690.38    1
     64.96    689.91    1
     72.15    689.43    1
     89.89    683.78    1
     95.96    681.96    1
    106.32    681.35    2
    156.50    677.25    2
    177.83    676.86    2
```

```
    194.59    677.10    2
    225.05    672.20    2
    253.47    673.48    2
    256.47    678.72    2
    271.80    677.49    2
    306.10    676.84    2
    341.66    676.33    2
    424.43    681.06    3
    448.03    680.76    3
    510.09    680.76    3
    547.30    680.83    3
    603.19    682.62    3
    653.00    683.28    3
    673.00    683.28    3
    903.00    682.28    3
   1203.00    682.28    3
   1228.00    684.28    3
   1303.00    684.28    3
   1393.00    683.28    3
   1578.00    683.28    3
   1768.00    684.28    3
   1793.00    685.28    3
   1823.00    686.28    3
   1918.00    687.28   -1


FEQX
GISID=   001SCSC13221
TABID=  13221  OUT12
STATION= 142445.00
NAVM=    0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB     3   0.120   0.080   0.120
XSEC E7
      0.00    689.97    1
     18.13    690.11    1
     30.81    689.98    1
     53.00    689.98    1
     69.70    689.48    1
     80.67    688.83    1
     87.61    688.37    1
    120.59    681.59    1
    125.42    681.54    1
    148.61    679.44    2
    199.49    677.81    2
    233.57    677.45    2
    245.17    678.05    2
    329.37    677.72    2
    360.28    678.03    2
    364.90    672.72    2
    414.03    673.79    2
    420.21    677.21    2
    441.62    676.96    2
    461.39    676.68    2
    564.18    679.32    2
    604.86    679.36    3
    645.00    679.28    3
    685.00    680.28    3
    825.00    680.28    3
   1035.00    681.28    3
   1115.00    682.28    3
   1170.00    687.28    3
   1305.00    687.28    3
   1325.00    686.28    3
   1355.00    685.28    3
   1370.00    684.28    3
   1505.00    683.28    3
   1590.00    682.28    3
```

```
   1605.00    682.28    3
   1740.00    683.28    3
   1870.00    684.28    3
   1895.00    685.28    3
   1930.00    686.28    3
   2005.00    686.28    3
   2045.00    687.28   -1


FEQX
GISID=   001SCSC13220
TABID=  13220  OUT12
STATION= 142020.00
NAVM=    0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB     3   0.150   0.080   0.120
XSEC E6
   -520.00    687.28    1
   -450.00    686.28    1
   -375.00    685.28    1
   -270.00    684.28    1
   -195.00    683.28    1
    -20.00    682.28    1
     20.00    681.28    1
     41.54    680.83    1
     79.03    679.44    2
    100.47    678.56    2
    155.23    676.96    2
    166.94    678.00    2
    189.58    677.73    2
    201.43    676.34    2
    217.70    670.26    2
    224.05    670.03    2
    250.26    674.89    2
    252.61    673.63    2
    254.76    677.52    2
    270.10    677.16    2
    288.21    677.51    2
    344.19    678.41    2
    367.46    679.88    2
    388.61    679.75    2
    403.92    677.74    2
    414.21    677.91    2
    426.82    679.97    3
    483.01    681.81    3
    512.27    682.73    3
    532.06    682.00    3
    548.92    679.14    3
    561.26    678.25    3
    586.47    680.39    3
    602.96    681.82    3
    618.68    682.59    3
    659.01    682.73    3
    692.50    682.20    3
    763.14    682.26    3
    786.78    681.70    3
    835.83    682.00    3
    866.86    682.54    3
    942.63    683.28    3
    983.16    684.28    3
   1052.98    685.28    3
   1103.00    686.28    3
   1143.00    685.28    3
   1163.00    684.28    3
   1218.00    684.28    3
   1253.00    685.28    3
   1293.00    685.28    3
   1313.00    684.28    3
```

```
   1388.00    684.28    3
   1404.00    683.28    3
   1488.00    682.28    3
   1593.00    683.28    3
   1668.00    684.28    3
   1793.00    685.28    3
   1888.00    686.28    3
   1983.00    687.28   -1

FEQX
GISID=   001SCSC13217
TABID=  13217  OUT12
STATION= 141786.00
NAVM=    0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB     3   0.150   0.080   0.120
XSEC E4
   -850.00    689.28    1
   -790.00    688.28    1
   -750.00    687.28    1
   -710.00    686.28    1
   -670.00    685.28    1
   -630.00    684.28    1
   -590.00    683.28    1
   -500.00    682.28    1
   -420.00    681.28    1
   -305.00    681.28    1
   -275.00    682.28    1
   -175.00    682.28    1
   -135.00    681.28    1
   -120.00    680.28    2
   -100.00    677.28    2
    -39.00    677.28    2
    -31.00    677.28    2
    -30.00    675.28    2
    -29.00    674.28    2
      0.00    671.25    2
     37.00    674.28    2
     40.50    675.28    2
     70.00    677.28    2
    165.00    677.28    2
    240.00    678.28    2
    370.00    679.28    2
    420.00    680.28    3
    590.00    680.28    3
    830.00    681.28    3
   1020.00    682.28    3
   1070.00    683.28    3
   1130.00    684.28    3
   1358.00    685.28    3
   1463.00    686.28    3
   1550.00    687.28   -1

FEQX
GISID=   001SCSC13216
TABID=  13216  OUT12
STATION= 141313.00
NAVM=    0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB     3   0.150   0.080   0.150
XSEC E3
   -750.00    688.28    1
   -720.00    687.28    1
   -605.00    686.28    1
   -460.00    685.28    1
   -360.00    685.28    1
   -170.00    684.28    1
      0.00    685.11    1
      8.48    684.97    1
```

```
     25.36    683.90    1
     34.05    681.68    1
     45.34    680.42    1
     57.10    679.88    1
     69.99    679.31    1
     74.17    678.91    2
    103.77    678.90    2
    129.84    678.26    2
    144.97    677.91    2
    166.00    676.62    2
    191.72    676.71    2
    206.69    677.05    2
    210.15    673.30    2
    234.73    671.46    2
    264.80    673.38    2
    269.28    678.03    2
    285.47    678.14    2
    313.94    679.34    3
    327.76    679.15    3
    341.65    678.69    3
    364.48    677.95    3
    385.19    677.93    3
    930.00    677.28    3
    955.00    688.28    3
   1035.00    686.28    3
   1125.00    687.28   -1


FEQX
GISID=   001SCSC13215
TABID=  13215  OUT12
STATION= 141070.00
NAVM=     0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB      3   0.150   0.080   0.150
XSEC E2
   -560.00    688.28    1
   -497.00    687.28    1
   -410.00    687.28    1
   -360.00    686.28    1
   -300.00    685.28    1
   -110.00    684.28    1
      0.00    684.41    1
     19.68    683.72    1
     35.06    684.16    1
     43.14    684.88    1
     52.29    683.82    1
     58.48    682.89    1
     63.12    680.85    1
     68.18    679.21    2
     76.07    678.94    2
     85.26    678.69    2
    108.54    671.50    2
    140.53    677.26    2
    170.53    676.81    2
    219.95    676.36    2
    242.40    675.61    2
    260.67    676.87    2
    606.00    677.28    2
    931.00    684.28    3
    946.00    685.28    3
    981.00    685.28    3
   1021.00    686.28    3
   1081.00    687.28   -1

FEQX
GISID=   001SCSC13214
TABID=  13214  OUT12
```

```
STATION= 140876.00
NAVM=     0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB      3   0.150   0.080   0.150
XSEC E1
   -315.00    688.28    1
   -210.00    687.28    1
   -180.00    686.28    1
   -140.00    685.28    1
      0.00    684.33    1
     24.76    684.39    1
     47.44    684.58    1
     53.80    684.66    1
     81.69    679.46    2
    109.07    678.64    2
    139.59    676.96    2
    168.26    673.14    2
    186.67    672.26    2
    214.62    673.08    2
    224.17    677.19    2
    263.91    675.63    2
    284.59    676.68    2
    935.00    677.28    2
    965.00    684.28    3
    980.00    685.28    3
   1015.00    685.28    3
   1068.00    686.28    3
   1112.00    687.28   -1

FINISH
```

```
FTABIN
FILE=  \utlheader\embweir.mtb
FILE=  \utlheader\type5.mtb
TABID= -1

FEQX
GISID=   001SCSC23216
TABID=  23216  OUT12
STATION= 141471.00
NAVM=    0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB     3   0.150   0.080   0.120
XSEC P1
   -475.00    688.28    1
   -450.00    687.28    1
   -435.00    686.28    1
   -405.00    685.28    1
   -390.00    684.28    1
   -380.00    683.28    1
   -370.00    682.28    1
   -114.00    682.28    1
   -106.00    680.28    2
    -92.00    676.28    2
    -54.00    676.28    2
    -37.00    677.28    2
    -30.00    676.28    2
    -29.00    675.28    2
    -27.00    674.28    2
      0.00    671.38    2
     25.00    674.28    2
     30.00    675.28    2
     35.00    676.28    2
    380.00    677.28    3
    530.00    678.28    3
    590.00    679.28    3
    615.00    680.28    3
    705.00    681.28    3
    745.00    682.28    3
    815.00    683.28    3
    845.00    684.28    3
    915.00    685.28    3
    975.00    686.28    3
   1160.00    687.28    3
   1160.10    689.28   -1

FINISH
```

```
FTABIN
FILE=  \utlheader\embweir.mtb
FILE=  \utlheader\type5.mtb
TABID= -1

FEQX
GISID=   001SCSC33217
TABID=  33217  OUT12 EXTEND
STATION=      9.99
NAVM=    0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB     3   0.120   0.080   0.120
XSEC E3.3
    -954.0    690.28    1
    -929.0    689.28    1
    -899.0    688.28    1
    -849.0    687.28    1
    -784.0    686.28    1
    -737.0    685.28    1
    -627.0    684.28    1
    -594.0    683.28    1
    -464.0    682.28    1
    -384.0    682.28    1
    -347.0    682.28    1
    -319.0    678.28    1
    -201.0    678.28    1
    -198.5    677.56    1
    -194.0    678.40    1
    -187.1    679.63    1
    -171.3    682.61    1
    -155.8    682.65    1
    -139.7    680.00    2
    -121.2    676.62    2
    -109.9    676.01    2
     -95.5    675.89    2
     -80.2    676.00    2
     -69.1    676.07    2
     -58.5    676.20    2
     -41.8    676.70    2
     -29.4    676.50    2
     -27.8    676.50    2
     -27.3    676.50    2
     -26.4    675.87    2
     -25.2    675.88    2
     -24.2    672.44    2
     -22.0    672.75    2
     -17.7    671.94    2
     -15.5    671.60    2
     -13.8    671.04    2
     -10.1    670.95    2
      -7.5    671.06    2
      -4.8    670.92    2
       0.0    670.86    2
       5.6    671.05    2
       8.7    671.06    2
      14.6    671.28    2
      18.6    670.93    2
      22.5    671.54    2
      25.6    671.65    2
      27.3    672.03    2
      30.7    672.50    2
      31.8    672.83    2
      35.4    672.47    2
      36.0    672.88    2
      37.9    673.35    2
      39.1    674.16    2
      41.3    675.86    2
      43.0    678.16    2
```

```
      50.6    677.79    2
      66.9    676.78    2
      77.5    676.58    2
     108.2    675.22    3
     130.3    676.03    3
     168.0    676.81    3
     191.4    677.68    3
     222.0    679.02    3
     227.0    679.28    3
     460.0    679.28    3
     554.0    680.28    3
     812.0    681.28    3
    1010.0    682.28    3
    1062.0    683.28    3
    1117.0    684.28    3
    1330.0    685.28    3
    1470.0    686.28    3
    1600.0    687.28    3
    1705.0    688.28   -1


FEQX
GISID=   001SCSC33216
TABID=  33216  OUT12 EXTEND
STATION=       9.99
NAVM=     0 LEFT= 0.00 RIGHT= 0.00 SCALE= 1.00 SHIFT= 0.00
NSUB      3   0.120   0.080   0.120
XSEC E3.1
    -947.0    690.28    1
    -902.0    689.28    1
    -824.0    688.28    1
    -777.0    687.28    1
    -752.0    686.28    1
    -717.0    685.28    1
    -532.0    685.28    1
    -464.0    684.28    1
    -407.0    683.28    1
    -400.0    682.28    1
    -377.0    677.28    1
    -292.0    677.28    1
    -192.0    676.78    1
    -187.1    677.22    1
    -183.9    677.52    1
    -182.2    677.85    1
    -180.3    678.23    2
    -177.7    679.07    2
    -161.8    681.41    2
    -157.6    682.12    2
    -156.0    682.35    2
    -155.0    682.33    2
    -153.8    682.31    2
    -151.0    681.54    2
    -137.1    678.94    2
    -119.9    677.26    2
     -92.6    676.34    2
     -91.5    676.07    2
     -88.4    676.14    2
     -86.5    676.19    2
     -86.0    676.21    2
     -81.9    676.34    2
     -80.3    676.39    2
     -77.5    677.00    2
     -74.4    677.66    2
     -72.5    677.82    2
     -67.8    678.21    2
     -65.2    678.10    2
     -57.7    677.77    2
```

```
   -53.0    677.15    2
   -49.1    676.64    2
   -43.4    675.13    2
   -43.4    675.10    2
   -43.4    675.07    2
   -43.3    674.92    2
   -42.3    674.42    2
   -38.7    672.50    2
   -37.8    672.23    2
   -37.7    672.25    2
   -37.6    672.23    2
   -34.2    671.95    2
   -33.6    671.90    2
   -31.3    672.11    2
   -29.5    672.02    2
   -28.8    672.11    2
   -28.0    672.06    2
   -25.8    671.86    2
   -23.9    671.69    2
   -20.8    671.29    2
   -20.8    671.28    2
   -20.8    671.28    2
   -18.0    671.13    2
   -16.3    671.76    2
   -16.3    671.75    2
   -15.3    671.27    2
   -15.1    671.40    2
   -13.0    671.27    2
   -12.9    671.24    2
   -12.2    671.08    2
    -9.5    670.59    2
    -8.9    670.47    2
    -8.8    670.48    2
    -8.7    670.47    2
    -8.5    670.43    2
    -8.1    670.40    2
    -7.6    670.44    2
     0.0    669.58    2
     3.4    670.16    2
     9.7    677.23    2
    94.7    676.43    3
   136.6    676.13    3
   153.2    676.00    3
   172.6    675.85    3
   174.5    675.89    3
   200.1    676.49    3
   219.3    677.56    3
   234.0    678.28    3
   389.0    678.28    3
   524.0    679.28    3
   639.0    680.28    3
   749.0    681.28    3
   889.0    682.28    3
  1034.0    683.28    3
  1121.0    684.28    3
  1209.0    685.28   -1
FINISH
```

```
* Thorndale Avenue  Bridge
* TABLE 501 MATCHES WSPRO BRIDGE CROSS SECTION EXCEPT FOR BRIDGE STURCUTRE IS
* REPLACED BY VERTICAL WALLS

FEQX
TABLE#=  501 SAVE12 NOOUT EXTEND
STATION= 99.99
NAVM=   0
NSUB    1     0.024
Thorndale Avenue  Bridge Opening
   -48.7     700.00     1
   -48.6     683.00     1
   -48.6     680.28     1
   -46.0     679.78     1
   -38.7     679.52     1
   -35.8     678.44     1
   -32.9     677.35     1
   -28.6     675.95     1
   -24.2     674.54     1
   -22.2     673.98     1
   -11.1     671.94     1
     0.0     669.91     1
    13.4     672.00     1
    26.7     674.09     1
    42.7     671.31     1
    55.4     673.45     1
    58.6     674.95     1
    70.4     678.34     1
    80.7     681.29     1
    85.3     682.95     1
    85.3     683.78    -1


WSPROQZ
QNTAB= 501
QCTAB=
HDATUM= 671.25
PFQMIN= 0.35
NFRAC= 20
POWER= 1.0
MAXPRO= 400
    DnsWSE   MaxFlow     Slope    Offset
    674.00      15.0    0.0058
    674.50      30.0    0.0058
    675.00      50.0    0.0058
    675.50      70.0    0.0058
    676.00     150.0    0.0058
    676.50     250.0    0.0058
    677.00     400.0    0.0058
    677.50    1550.0    0.0058
    678.00    2700.0    0.0058
    679.00    3000.0    0.0058
    680.00    4000.0    0.0058
    681.00    5000.0    0.0058
    682.00    5500.0    0.0058
    683.00    6000.0    0.0058
    684.00    6500.0    0.0058
    685.00    7500.0    0.0058
    686.00    8050.0    0.0058
    687.00    8100.0    0.0058
    688.00    8160.0    0.0058

    -1
FINISH
```

```
T1              Thorndale Avenue  Bridge
T2
J1       0.01  0.01
*        WSPROZQ from FEQUTL. NFRAC=   20 NZD=   19 HDATUM=   671.250
*               Q FR#  WSEL
UT              7  27    5
Q               5.25        5.76        6.28        6.79        7.30,
Q               7.82        8.33        8.84        9.36        9.87,
Q              10.38       10.89       11.41       11.92       12.43,
Q              12.95       13.46       13.97       14.49       15.00,
Q              10.50       11.53       12.55       13.58       14.61,
Q              15.63       16.66       17.68       18.71       19.74,
Q              20.76       21.79       22.82       23.84       24.87,
Q              25.89       26.92       27.95       28.97       30.00,
Q              17.50       19.21       20.92       22.63       24.34,
Q              26.05       27.76       29.47       31.18       32.89,
Q              34.61       36.32       38.03       39.74       41.45,
Q              43.16       44.87       46.58       48.29       50.00,
Q              24.50       26.89       29.29       31.68       34.08,
Q              36.47       38.87       41.26       43.66       46.05,
Q              48.45       50.84       53.24       55.63       58.03,
Q              60.42       62.82       65.21       67.61       70.00,
Q              52.50       57.63       62.76       67.89       73.03,
Q              78.16       83.29       88.42       93.55       98.68,
Q             103.82      108.95      114.08      119.21      124.34,
Q             129.47      134.61      139.74      144.87      150.00,
Q              87.50       96.05      104.61      113.16      121.71,
Q             130.26      138.82      147.37      155.92      164.47,
Q             173.03      181.58      190.13      198.68      207.24,
Q             215.79      224.34      232.89      241.45      250.00,
Q             140.00      153.68      167.37      181.05      194.74,
Q             208.42      222.11      235.79      249.47      263.16,
Q             276.84      290.53      304.21      317.89      331.58,
Q             345.26      358.95      372.63      386.32      400.00,
Q             542.50      595.53      648.55      701.58      754.61,
Q             807.63      860.66      913.68      966.71     1019.74,
Q            1072.76     1125.79     1178.82     1231.84     1284.87,
Q            1337.89     1390.92     1443.95     1496.97     1550.00,
Q             945.00     1037.37     1129.74     1222.11     1314.47,
Q            1406.84     1499.21     1591.58     1683.95     1776.32,
Q            1868.68     1961.05     2053.42     2145.79     2238.16,
Q            2330.53     2422.89     2515.26     2607.63     2700.00,
Q            1050.00     1152.63     1255.26     1357.89     1460.53,
Q            1563.16     1665.79     1768.42     1871.05     1973.68,
Q            2076.32     2178.95     2281.58     2384.21     2486.84,
Q            2589.47     2692.11     2794.74     2897.37     3000.00,
Q            1400.00     1536.84     1673.68     1810.53     1947.37,
Q            2084.21     2221.05     2357.89     2494.74     2631.58,
Q            2768.42     2905.26     3042.11     3178.95     3315.79,
Q            3452.63     3589.47     3726.32     3863.16     4000.00,
Q            1750.00     1921.05     2092.11     2263.16     2434.21,
Q            2605.26     2776.32     2947.37     3118.42     3289.47,
Q            3460.53     3631.58     3802.63     3973.68     4144.74,
Q            4315.79     4486.84     4657.89     4828.95     5000.00,
Q            1925.00     2113.16     2301.32     2489.47     2677.63,
Q            2865.79     3053.95     3242.11     3430.26     3618.42,
Q            3806.58     3994.74     4182.89     4371.05     4559.21,
Q            4747.37     4935.53     5123.68     5311.84     5500.00,
Q            2100.00     2305.26     2510.53     2715.79     2921.05,
Q            3126.32     3331.58     3536.84     3742.11     3947.37,
Q            4152.63     4357.89     4563.16     4768.42     4973.68,
Q            5178.95     5384.21     5589.47     5794.74     6000.00,
Q            2275.00     2497.37     2719.74     2942.11     3164.47,
Q            3386.84     3609.21     3831.58     4053.95     4276.32,
Q            4498.68     4721.05     4943.42     5165.79     5388.16,
Q            5610.53     5832.89     6055.26     6277.63     6500.00,
Q            2625.00     2881.58     3138.16     3394.74     3651.32,
```

```
Q          3907.89    4164.47    4421.05    4677.63    4934.21,
Q          5190.79    5447.37    5703.95    5960.53    6217.10,
Q          6473.68    6730.26    6986.84    7243.42    7500.00,
Q          2817.50    3092.89    3368.29    3643.68    3919.08,
Q          4194.47    4469.87    4745.26    5020.66    5296.05,
Q          5571.45    5846.84    6122.24    6397.63    6673.03,
Q          6948.42    7223.82    7499.21    7774.61    8050.00,
Q          2835.00    3112.11    3389.21    3666.32    3943.42,
Q          4220.53    4497.63    4774.74    5051.84    5328.95,
Q          5606.05    5883.16    6160.26    6437.37    6714.47,
Q          6991.58    7268.68    7545.79    7822.90    8100.00,
Q          2856.00    3135.16    3414.32    3693.47    3972.63,
Q          4251.79    4530.95    4810.10    5089.26    5368.42,
Q          5647.58    5926.74    6205.89    6485.05    6764.21,
Q          7043.37    7322.53    7601.68    7880.84    8160.00
WS        674.0000   674.0000   674.0000   674.0000   674.0000,
WS        674.0000   674.0000   674.0000   674.0000   674.0000,
WS        674.0000   674.0000   674.0000   674.0000   674.0000,
WS        674.0000   674.0000   674.0000   674.0000   674.0000,
WS        674.5000   674.5000   674.5000   674.5000   674.5000,
WS        674.5000   674.5000   674.5000   674.5000   674.5000,
WS        674.5000   674.5000   674.5000   674.5000   674.5000,
WS        674.5000   674.5000   674.5000   674.5000   674.5000,
WS        675.0000   675.0000   675.0000   675.0000   675.0000,
WS        675.0000   675.0000   675.0000   675.0000   675.0000,
WS        675.0000   675.0000   675.0000   675.0000   675.0000,
WS        675.0000   675.0000   675.0000   675.0000   675.0000,
WS        675.5000   675.5000   675.5000   675.5000   675.5000,
WS        675.5000   675.5000   675.5000   675.5000   675.5000,
WS        675.5000   675.5000   675.5000   675.5000   675.5000,
WS        675.5000   675.5000   675.5000   675.5000   675.5000,
WS        676.0000   676.0000   676.0000   676.0000   676.0000,
WS        676.0000   676.0000   676.0000   676.0000   676.0000,
WS        676.0000   676.0000   676.0000   676.0000   676.0000,
WS        676.0000   676.0000   676.0000   676.0000   676.0000,
WS        676.5000   676.5000   676.5000   676.5000   676.5000,
WS        676.5000   676.5000   676.5000   676.5000   676.5000,
WS        676.5000   676.5000   676.5000   676.5000   676.5000,
WS        676.5000   676.5000   676.5000   676.5000   676.5000,
WS        677.0000   677.0000   677.0000   677.0000   677.0000,
WS        677.0000   677.0000   677.0000   677.0000   677.0000,
WS        677.0000   677.0000   677.0000   677.0000   677.0000,
WS        677.0000   677.0000   677.0000   677.0000   677.0000,
WS        677.5000   677.5000   677.5000   677.5000   677.5000,
WS        677.5000   677.5000   677.5000   677.5000   677.5000,
WS        677.5000   677.5000   677.5000   677.5000   677.5000,
WS        677.5000   677.5000   677.5000   677.5000   677.5000,
WS        678.0000   678.0000   678.0000   678.0000   678.0000,
WS        678.0000   678.0000   678.0000   678.0000   678.0000,
WS        678.0000   678.0000   678.0000   678.0000   678.0000,
WS        678.0000   678.0000   678.0000   678.0000   678.0000,
WS        679.0000   679.0000   679.0000   679.0000   679.0000,
WS        679.0000   679.0000   679.0000   679.0000   679.0000,
WS        679.0000   679.0000   679.0000   679.0000   679.0000,
WS        679.0000   679.0000   679.0000   679.0000   679.0000,
WS        680.0000   680.0000   680.0000   680.0000   680.0000,
WS        680.0000   680.0000   680.0000   680.0000   680.0000,
WS        680.0000   680.0000   680.0000   680.0000   680.0000,
WS        680.0000   680.0000   680.0000   680.0000   680.0000,
WS        681.0000   681.0000   681.0000   681.0000   681.0000,
WS        681.0000   681.0000   681.0000   681.0000   681.0000,
WS        681.0000   681.0000   681.0000   681.0000   681.0000,
WS        681.0000   681.0000   681.0000   681.0000   681.0000,
WS        682.0000   682.0000   682.0000   682.0000   682.0000,
WS        682.0000   682.0000   682.0000   682.0000   682.0000,
WS        682.0000   682.0000   682.0000   682.0000   682.0000,
WS        682.0000   682.0000   682.0000   682.0000   682.0000,
```

```
WS            683.0000    683.0000    683.0000    683.0000    683.0000,
WS            683.0000    683.0000    683.0000    683.0000    683.0000,
WS            683.0000    683.0000    683.0000    683.0000    683.0000,
WS            683.0000    683.0000    683.0000    683.0000    683.0000,
WS            684.0000    684.0000    684.0000    684.0000    684.0000,
WS            684.0000    684.0000    684.0000    684.0000    684.0000,
WS            684.0000    684.0000    684.0000    684.0000    684.0000,
WS            684.0000    684.0000    684.0000    684.0000    684.0000,
WS            685.0000    685.0000    685.0000    685.0000    685.0000,
WS            685.0000    685.0000    685.0000    685.0000    685.0000,
WS            685.0000    685.0000    685.0000    685.0000    685.0000,
WS            685.0000    685.0000    685.0000    685.0000    685.0000,
WS            686.0000    686.0000    686.0000    686.0000    686.0000,
WS            686.0000    686.0000    686.0000    686.0000    686.0000,
WS            686.0000    686.0000    686.0000    686.0000    686.0000,
WS            686.0000    686.0000    686.0000    686.0000    686.0000,
WS            687.0000    687.0000    687.0000    687.0000    687.0000,
WS            687.0000    687.0000    687.0000    687.0000    687.0000,
WS            687.0000    687.0000    687.0000    687.0000    687.0000,
WS            687.0000    687.0000    687.0000    687.0000    687.0000,
WS            688.0000    688.0000    688.0000    688.0000    688.0000,
WS            688.0000    688.0000    688.0000    688.0000    688.0000,
WS            688.0000    688.0000    688.0000    688.0000    688.0000,
WS            688.0000    688.0000    688.0000    688.0000    688.0000
* ---------------------------------------------------------------------------
XS   EXIT       0.0
GR          -850.0  689.28  -790.0  688.28  -750.0  687.28  -710.0  686.28
GR          -670.0  685.28  -630.0  684.28  -590.0  683.28  -500.0  682.28
GR          -420.0  681.28  -305.0  681.28  -275.0  682.28  -175.0  682.28
GR          -135.0  681.28  -120.0  680.28  -100.0  677.28   -39.0  677.28
GR           -31.0  677.28   -30.0  675.28   -29.0  674.28     0.0  671.25
GR            37.0  674.28    40.5  675.28    70.0  677.28   165.0  677.28
GR           240.0  678.28   370.0  679.28   420.0  680.28   590.0  680.28
GR           830.0  681.28  1020.0  682.28  1070.0  683.28  1130.0  684.28
GR          1358.0  685.28  1463.0  686.28  1550.0  687.28  1550.1  689.00
N            0.150   0.080   0.120
SA              -120.0    420.0
* ---------------------------------------------------------------------------
* Full Valley Cross Section
XS   FULLV   133.9
GR          -850.0  689.28  -790.0  688.28  -750.0  687.28  -710.0  686.28
GR          -670.0  685.28  -630.0  684.28  -590.0  683.28  -500.0  682.28
GR          -420.0  681.28  -305.0  681.28  -275.0  682.28  -175.0  682.28
GR          -135.0  681.28   -48.6  680.28   -46.0  679.78   -38.7  679.52
GR           -35.8  678.44   -32.9  677.35   -28.6  675.95   -24.2  674.54
GR           -22.2  673.98   -11.1  671.94     0.0  669.91    13.4  672.00
GR            26.7  674.09    42.7  671.31    55.4  673.45    58.6  674.95
GR           165.0  677.28   240.0  678.28   370.0  679.28   420.0  680.28
GR           590.0  680.28   830.0  681.28  1020.0  682.28  1070.0  683.28
GR          1130.0  684.28  1358.0  685.28  1463.0  686.28  1550.0  687.28
GR          1550.1  689.00
N            0.150   0.024   0.120
SA              -48.6    58.6
* ---------------------------------------------------------------------------
*   Bridge Opening Cross Section
BR   BRIDG   133.9  683.39
GR           -48.6  683.00   -48.6  680.28   -46.0  679.78   -38.7  679.52
GR           -35.8  678.44   -32.9  677.35   -28.6  675.95   -24.2  674.54
GR           -22.2  673.98   -11.1  671.94     0.0  669.91    13.4  672.00
GR            26.7  674.09    42.7  671.31    55.4  673.45    58.6  674.95
GR            70.4  678.34    80.7  681.29    85.3  682.95    85.3  683.78
GR           -48.6  683.00
CD               3    70.0     3.0  686.61
PW 0      674.09,2.5
* ---------------------------------------------------------------------------
* XR    ROAD   168.9    70.0     1.0
* GR          -650.0  688.28  -590.0  687.28  -525.0  686.28  -450.0  685.28
```

```
* GR          -270.0  685.28  -150.0  686.28  -110.0  686.61   -80.0  686.72
* GR           -50.0  686.89     0.0  687.13    33.0  687.31    78.0  687.52
* GR           108.0  687.49   145.0  687.24   188.0  687.16   220.0  686.96
* GR           272.0  686.54   330.0  685.58   386.0  684.60   440.0  683.91
* GR           481.0  683.49   526.0  683.12   580.0  682.98   648.0  683.06
* GR           688.0  683.02   719.0  682.99   747.0  683.02   828.0  683.21
* GR           843.0  683.28  1048.0  684.28  1228.0  685.28  1393.0  686.28
* GR          1536.0  687.28  1746.0  688.28  687.28
* ---------------------------------------------------------------------------
*  Approach Cross Section
AS   APPRO   337.80
GR          -744.2  689.28  -744.1  687.28  -674.1  686.28  -599.1  685.28
GR          -494.1  684.28  -419.1  683.28  -244.1  682.28  -204.1  681.28
GR          -182.5  680.83  -145.0  679.44  -123.6  678.56   -68.8  676.96
GR           -57.1  678.00   -34.5  677.73   -22.6  676.34    -6.4  670.26
GR             0.0  670.03    26.2  674.89    28.6  673.63    30.7  677.52
GR            46.1  677.16    64.2  677.51   120.1  678.41   143.4  679.88
GR           164.6  679.75   179.9  677.74   190.2  677.91   202.8  679.97
GR           259.0  681.81   288.2  682.73   308.0  682.00   324.9  679.14
GR           337.2  678.25   362.4  680.39   378.9  681.82   394.6  682.59
GR           435.0  682.73   468.5  682.20   539.1  682.26   562.7  681.70
GR           611.8  682.00   642.8  682.54   718.6  683.28   759.1  684.28
GR           828.9  685.28   879.0  686.28   919.0  685.28   939.0  684.28
GR           994.0  684.28  1029.0  685.28  1069.0  685.28  1089.0  684.28
GR          1164.0  684.28  1180.0  683.28  1264.0  682.28  1369.0  683.28
GR          1444.0  684.28  1569.0  685.28  1664.0  686.28  1759.0  687.28
GR          1759.1  689.28
N            0.150  0.080    0.120
SA             -145.0    202.8
* ---------------------------------------------------------------------------
EX
ER
```

```
* Example of computing a table of type 14 from a WSPRO output.  The
* flows and downstream water-surface elevation were created by a
* previous run of FEQUTL using the WSPROQZ command.  WSPRO must then
* be run using these flows and downstream water-surface elevations
* and the request for user output as given by WSPROQZ.  The WSPRO14
* command then creates a table of type 14.

wsprot14
TABID= SCSC7106
LABEL= Thorndale Aavenue Bridge
File Names
wspro01.lst


FINISH
```

```
FTABIN
FILE=  \utlheader\embweir.mtb
FILE=  \utlheader\type5.mtb
TABID= -1

EMBANKQ
TABLE#= SCSC8106
PLCWTB= 9994
GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=Thorndale Bridge EMBANKMENT FLOW
    OFFSET     CREST     WIDTH  APPROACH SURFACE
     -80.0    686.72      70.0    669.91 PAVED
     -50.0    686.89
       0.0    687.13
      33.0    687.31
      78.0    687.52                     END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
NFRAC=40
POWER=2.0
LIPREC=0.02
MINPFD=0.01
     0.100
    13.000
    -1.000

FEQX
TABLE#=  106 NEWBETAM NOOUT EXTEND SAVE22
STATION=      0.00
NAVM=    0 SCALE=      1.00 SHIFT=      0.00
NSUB    1     0.035
Thorndale Bridge Left CHANRAT Overflow
    -650.1    750.       1
    -650.0    688.28     1
    -590.0    687.28     1
    -525.0    686.28     1
    -450.0    685.28     1
    -270.0    685.28     1
    -150.0    686.28     1
    -110.0    686.61     1
     -80.0    686.72    -1

CHANRAT
TABID= SCSC9106
TYPE=   13
LABEL= Thorndale Bridge Left CHANRAT Overflow
XSTAB#=  106
BOTSLP=  0.001
LENGTH= 70.0
HEAD SEQUENCE FOR TABLE
NFRA=   16
POWER= 2.5
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
```

```
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.2
2.5
2.7
3.0
3.2
3.5
3.7
4.0
4.5
5.0
5.5
6.0
6.2
6.4
6.6
6.8
7.0
8.0
-1.0

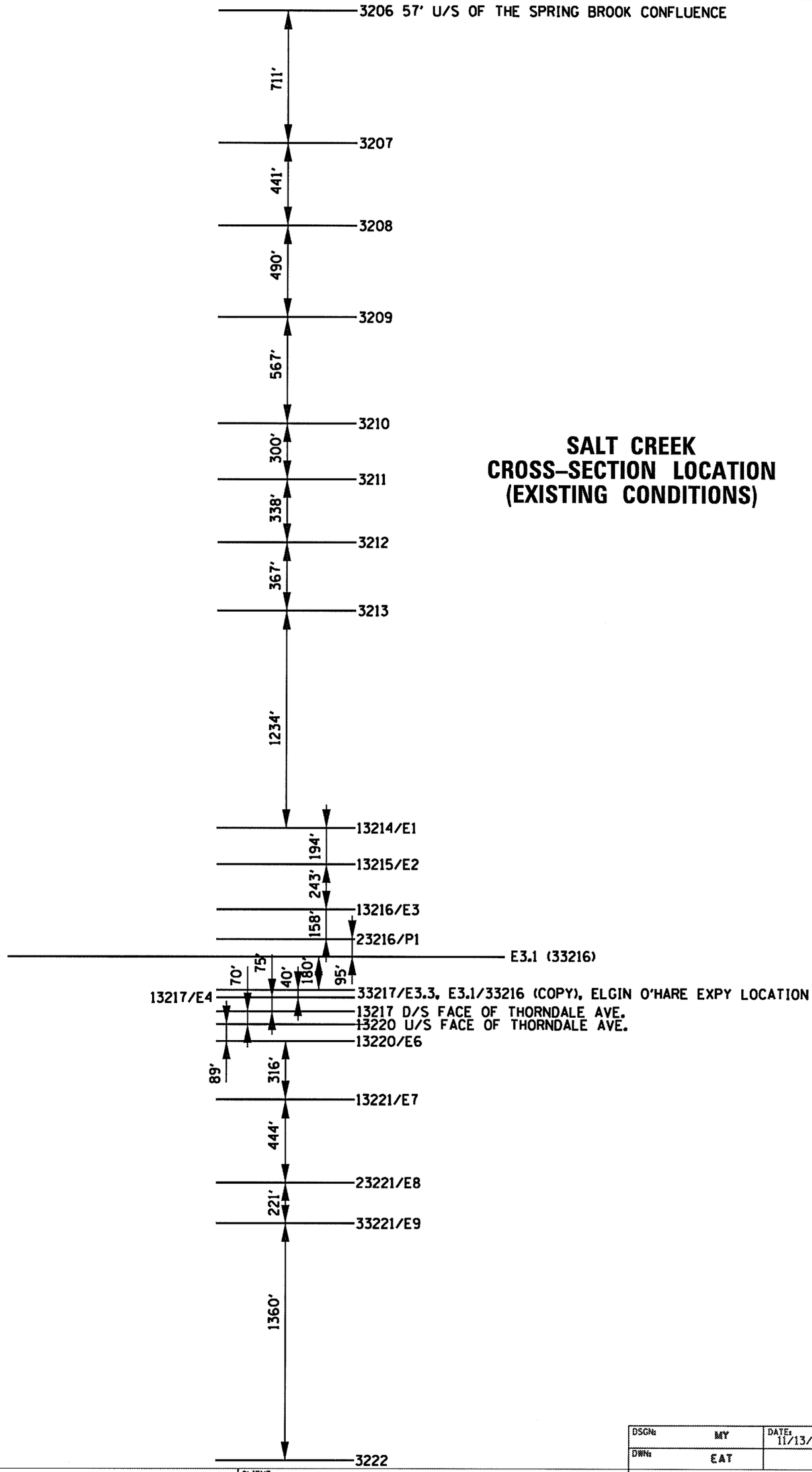
FEQX
TABLE#=  107 NEWBETAM NOOUT EXTEND SAVE22
STATION=      0.00
NAVM=    0 SCALE=      1.00 SHIFT=      0.00
NSUB    1     0.035
Thorndale Bridge Right CHANRAT Overflow
      78.0     687.52    1
     108.0     687.49    1
     145.0     687.24    1
     188.0     687.16    1
     220.0     686.96    1
     272.0     686.54    1
     330.0     685.58    1
     386.0     684.60    1
     440.0     683.91    1
     481.0     683.49    1
     526.0     683.12    1
     580.0     682.98    1
     648.0     683.06    1
     688.0     683.02    1
     719.0     682.99    1
     747.0     683.02    1
     828.0     683.21    1
     843.0     683.28    1
    1048.0     684.28    1
    1228.0     685.28    1
    1393.0     686.28    1
    1536.0     687.28    1
    1746.0     688.28    1
    1746.1     750.28   -1

CHANRAT
TABID= SCSC9107
TYPE=   13
LABEL= Thorndale Bridge Right CHANRAT Overflow
XSTAB#=  107
BOTSLP=  0.001
LENGTH= 70.0
HEAD SEQUENCE FOR TABLE
```

```
NFRA=   16
POWER= 2.5
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.2
2.5
2.7
3.0
3.2
3.5
3.7
4.0
4.5
5.0
5.5
6.0
6.2
6.4
6.6
6.8
7.0
8.0
9.0
10.0
-1.0

FINISH
```

SALT CREEK
CROSS-SECTION LOCATION
(EXISTING CONDITIONS)



DSGN: MY		DATE: 11/13/2012	
DWN: EAT			
CHRISTOPHER B. BURKE ENGINEERING LTD. 9575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500	CLIENT: ILLINOIS DEPARTMENT OF TRANSPORTATION	TITLE: SALT CREEK CROSS-SECTION LOCATION (EXISTING CONDITIONS)	
	PROJECT NO. 07-0404	SCALE: N.T.S.	

N:\idot\070404\Water\Salt Creek\Exhibits\070404exh XS Location Existing Conditions.dgn

N:\Idot\070404\Water\Salt Creek\Exhibits\070404exh LSC Schematic Existing Conditions.dgn

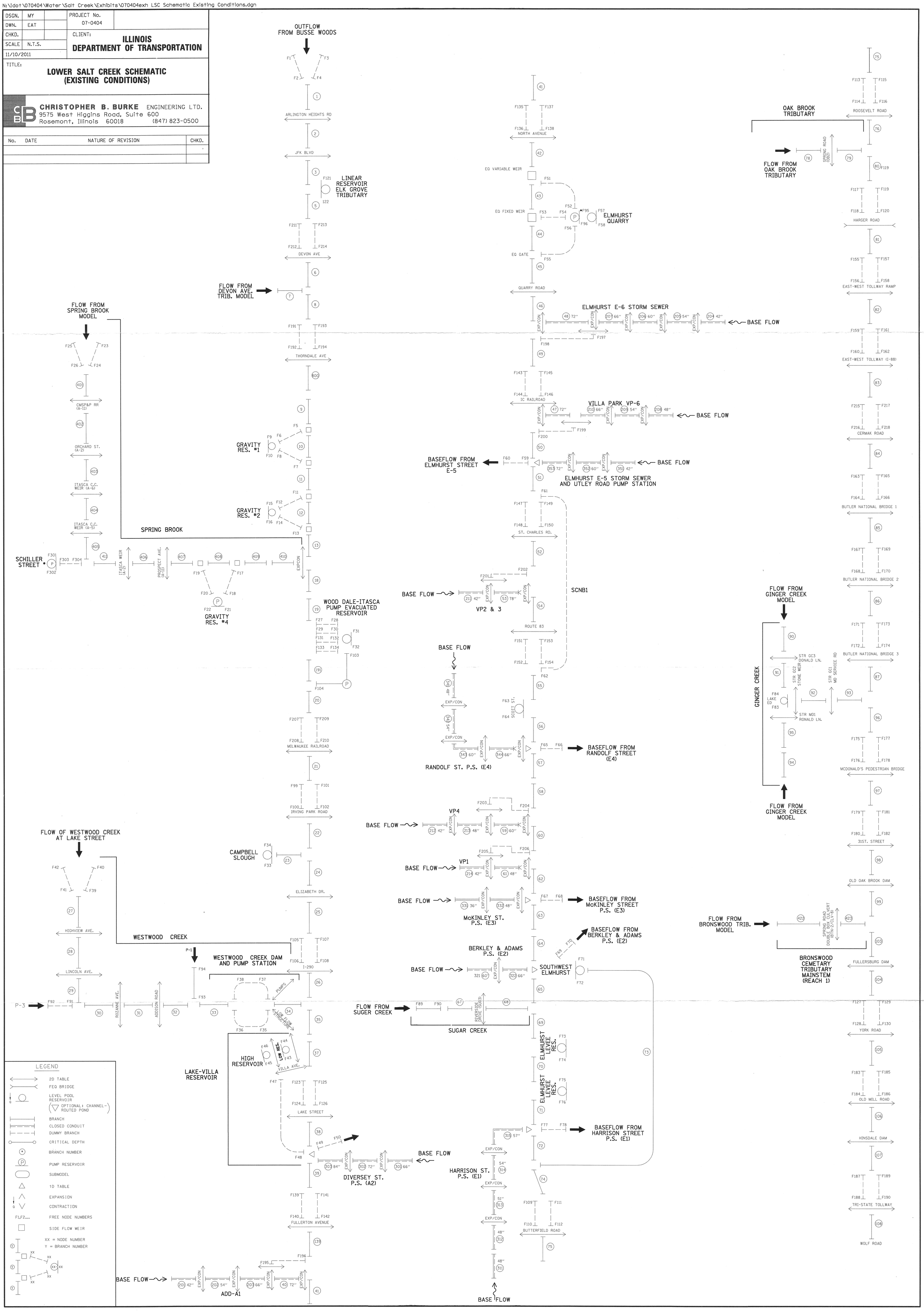
DSGN.	MY		PROJECT No. 07-0404
DWN.	EAT		
CHKD.			CLIENT: ILLINOIS DEPARTMENT OF TRANSPORTATION
SCALE	N.T.S.		
11/10/2011			

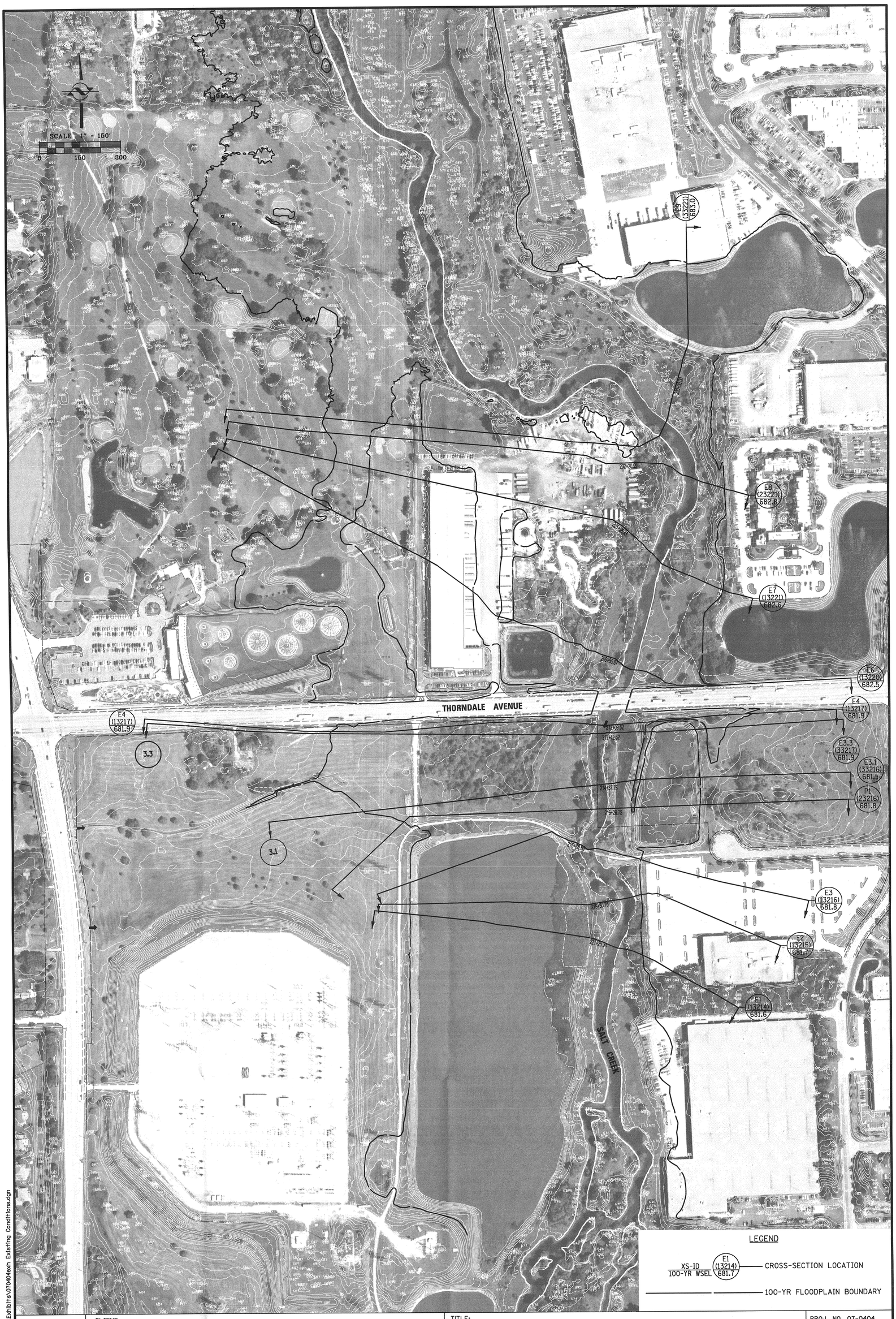
TITLE:

LOWER SALT CREEK SCHEMATIC (EXISTING CONDITIONS)

CHRISTOPHER B. BURKE ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018 (847) 823-0500

No.	DATE	NATURE OF REVISION	CHKD.





N:\dot\070404\Water\Salt Creek\Exhibits\070404exh Existing Conditions.dgn

CLIENT:

ILLINOIS DEPARTMENT OF TRANSPORTATION

TITLE:

SALT CREEK FLOODPLAIN
EXISTING CROSS-SECTION LOCATIONS

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500

DSGN.			SCALE:	150'
DWN.			PLOT DATE:	11/13/2012
CHKD.			CAD USER:	mgoldenberg
FILE:			MODEL:	Default

PROJ. NO. 07-0404
DATE:
SHEET 2 OF
DRAWING NO. **9.2**

TAB 10

SECTION 10

NATURAL CONDITIONS ANALYSIS

Natural Conditions are the same as Existing Conditions

TAB 11

SECTION 11

PROPOSED CONDITIONS ANALYSIS

```
Baseline Conditions
[Floder: \lsalt\feq1061\070404\Baseline]
                    FEQ Model Schematic              070404exh LSC Schematic Baseline Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OBL1.feq
                    FEQ Peak File for Long TSF:      sL16OBL1.pek
                    FEQ Output File for Long TSF:    sL16OBL1
                    FEQ Input File for BIG TSF:      sB16OBL1.feq
                    FEQ Peak File for BIG TSF:       sB16OBL1.pek
                    FEQ Output File for BIG TSF:     sB16OBL1
                    PVSTATS Analysis:                See Folder pvstats_BL1

Existing Conditions
[Floder: \lsalt\feq1061\070404\Existing]
                    FEQ Model Schematic              070404exh LSC Schematic Existing Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OEX4.feq
                    FEQ Peak File for Long TSF:      sL16OEX4.pek
                    FEQ Output File for Long TSF:    sL16OEX4
                    FEQ Input File for BIG TSF:      sB16OEX4.feq
                    FEQ Peak File for BIG TSF:       sB16OEX4.pek
                    FEQ Output File for BIG TSF:     sB16OEX4
                    PVSTATS Analysis:                See Folder pvstats_ex4


Natural Conditions - These conditions are the same as Existing Conditions

Proposed Conditions - Added Elgin O'Hare Expy Bridge in existing conditions
[Floder: \lsalt\feq1061\070404\Proposed]
                    FEQ Model Schematic              070404exh LSC Schematic Proposed Conditions.pdf
                    FEQ Input File for Long TSF:     sL16OP1o.feq
                    FEQ Peak File for Long TSF:      sL16OP1o.pek
                    FEQ Output File for Long TSF:    sL16OP1o
                    FEQ Input File for BIG TSF:      sB16OP1o.feq
                    FEQ Peak File for BIG TSF:       sB16OP1o.pek
                    FEQ Output File for BIG TSF:     sB16OP1o
                    PVSTATS Analysis:                See Folder pvstats_p1o
```

Summary of Flood Elevations

PVSTATS Statistical Analysis Results (Proposed Conditions)
Flood Elevation Lower Salt Creek, Mainstem
FEQ Model Used: sL16OP1o.feq and sB16OP1o.feq
Date: October 25, 2012

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD)	PVS3O 10-Year (ft-NAVD)	PVS3O 50-Year (ft-NAVD)	PVS3O 100-Year (ft-NAVD)	PVS3O 500-Year (ft-NAVD)
001SCSC3222	MACKIE CROSS SECTION 5 - 1700 FEET DOWNSTREAM OF DEVON,,,,,,	144361.48	673.13	681.88	683.13	683.70	685.17
001SCSC33221	XS-E9	143001.00	671.48	681.23	682.45	683.05	684.58
001SCSC23221	XS-E8	142780.00	671.92	681.05	682.28	682.89	684.47
001SCSC13221	XS-E7	142335.72	672.44	680.81	682.06	682.70	684.32
001SCSC13220	XS-E6	142020.00	669.75	680.61	681.91	682.56	684.19
001SCSC13220	THORNDALE AVENUE (US FACE)	141931.00	669.75	680.52	681.84	682.50	684.15
001SCSC13217	THORNDALE AVENUE (DS FACE)	141861.00	670.97	680.09	681.38	682.06	683.78
001SCSC13217	XS-E4	141786.00	670.97	680.04	681.34	682.02	683.77
001SCSC33217	PROPOSED ELGIN O'HARE EXPY (US FACE) - E3.3	141761.00	670.97	680.02	681.32	682.01	683.76
001SCSC33216	PROPOSED ELGIN O'HARE EXPY (DS FACE) - E3.1	141566.00	671.10	679.89	681.24	681.95	683.72
001SCSC23216	XS-P1	1414771.00	671.10	679.87	681.20	681.90	683.72
001SCSC13216	XS-E3	141313.00	671.18	679.83	681.15	681.86	683.72
001SCSC13215	XS-E2	141070.00	671.22	679.63	681.03	681.79	683.72
001SCSC13214	XS-E1	140876.00	671.98	679.57	680.96	681.70	683.63
001SCSC3213	TSL-ITWD7	139641.56	671.62	679.24	680.71	681.48	683.47
001SCSC3212	TSL-ITWD7	139274.91	671.82	679.18	680.66	681.43	683.44
001SCSC3211	TSL-ITWD7	138937.39	670.02	679.14	680.65	681.43	683.44
001SCSC3210	TSL-ITWD7	138637.86	670.28	679.09	680.60	681.39	683.41
001SCSC3209	TSL-ITWD8	138070.71	669.45	678.89	680.47	681.26	683.30
001SCSC3208	TSL-ITWD9	137580.25	669.45	678.80	680.40	681.19	683.25
001SCSC3207	TSL-ITWD12	137139.56	668.21	678.77	680.38	681.17	683.24
001SCSC3206	TSL-ITWD10	136428.12	668.96	678.72	680.31	681.13	683.24

Summary of Flow Rates

PVSTATS Statistical Analysis Results (Proposed Conditions)
Flood Elevation Lower Salt Creek, Mainstem
FEQ Model Used: sL16OP1o.feq and sB16OP1o.feq
Date: October 25, 2012

Cross Section ID	Description	Station (ft)	Invert Elevation (ft-NAVD)	PVS3O 10-Year (cfs)	PVS3O 50-Year (cfs)	PVS3O 100-Year (cfs)	PVS3O 500-Year (cfs)
001SCSC3222	MACKIE CROSS SECTION 5 - 1700 FEET DOWNSTREAM OF DEVON,,,,,,	144361.48	673.13	1611	2608	3187	5119
001SCSC33221	XS-E9	143001.00	671.48	1615	2605	3172	5054
001SCSC23221	XS-E8	142780.00	671.92	1615	2604	3170	5048
001SCSC13221	XS-E7	142335.72	672.44	1615	2602	3167	5038
001SCSC13220	XS-E6	142020.00	669.75	1615	2600	3164	5030
001SCSC13220	THORNDALE AVENUE (US FACE)	141931.00	669.75	1615	2600	3163	5027
001SCSC13217	THORNDALE AVENUE (DS FACE)	141861.00	670.97	1615	2600	3163	5027
001SCSC13217	XS-E4	141786.00	670.97	1615	2599	3161	5023
001SCSC13217	PROPOSED ELGIN O'HARE EXPY (US FACE)	141761.00	670.97	1614	2598	3160	5021
001SCSC23216	PROPOSED ELGIN O'HARE EXPY (DS FACE)	141566.00	671.10	1614	2596	3157	5013
001SCSC23216	XS-P1	1414771.00	671.10	1613	2594	3154	5008
001SCSC13216	XS-E3	141313.00	671.18	1612	2592	3151	5003
001SCSC13215	XS-E2	141070.00	671.22	1597	2578	3145	5042
001SCSC13214	XS-E1	140876.00	671.98	1596	2576	3143	5038
001SCSC3213	TSL-ITWD7	139641.56	671.62	1582	2540	3093	4926
001SCSC3212	TSL-ITWD7	139274.91	671.82	1578	2531	3081	4901
001SCSC3211	TSL-ITWD7	138937.39	670.02	1574	2523	3069	4879
001SCSC3210	TSL-ITWD7	138637.86	670.28	1571	2515	3058	4855
001SCSC3209	TSL-ITWD8	138070.71	669.45	1565	2502	3040	4815
001SCSC3208	TSL-ITWD9	137580.25	669.45	1558	2489	3022	4778
001SCSC3207	TSL-ITWD12	137139.56	668.21	1557	2480	3000	4694
001SCSC3206	TSL-ITWD10	136428.12	668.96	1620	2468	2952	4568

An Excerpt from PSTATS Output File

Flood Frequency Summary for Peak Discharge:

Sect	Return Period (years): 2.0	5.0	10.0	25.0	50.0	75.0
1	850.1	1272.8	1611.4	2133.6	2607.8	2931.3
2	854.2	1276.7	1615.2	2135.9	2604.5	2921.9
3	854.3	1276.8	1615.2	2135.6	2603.5	2920.4
4	854.5	1276.9	1615.1	2134.9	2601.8	2917.7
5	854.5	1276.9	1614.9	2134.2	2600.3	2915.6
6	854.6	1276.9	1614.9	2133.9	2599.7	2914.8
7	854.6	1276.9	1614.9	2133.9	2599.7	2914.8
8	854.5	1276.7	1614.6	2133.3	2598.6	2913.4
9	854.5	1276.6	1614.3	2132.8	2598.0	2912.5
10	854.5	1276.5	1614.0	2132.0	2596.3	2910.1
11	854.3	1275.8	1613.1	2130.5	2594.2	2907.6
12	854.1	1275.0	1611.8	2128.7	2591.8	2904.8
13	846.0	1262.6	1596.9	2112.0	2577.6	2894.7
14	845.9	1262.3	1596.4	2110.9	2576.0	2892.7
15	836.6	1251.5	1582.2	2086.3	2540.0	2849.0
16	834.5	1248.7	1578.1	2079.8	2531.0	2838.2
17	832.9	1246.0	1574.3	2073.9	2522.7	2828.2
18	831.6	1243.9	1571.1	2068.6	2515.0	2818.7
19	828.9	1239.8	1565.4	2059.7	2502.4	2803.0
20	823.5	1233.8	1558.2	2050.0	2489.4	2787.2
21	811.9	1229.2	1556.5	2046.5	2479.7	2771.3
22	810.7	1263.4	1619.8	2076.3	2468.2	2737.2

Sect	Return Period (years): 100.0	200.0	300.0	400.0	500.0
1	3187.0	3904.9	4400.7	4791.2	5118.5
2	3171.9	3872.8	4355.8	4735.7	5053.5
3	3170.0	3869.6	4351.6	4730.6	5047.8
4	3166.6	3863.9	4344.2	4721.8	5037.7
5	3163.9	3859.4	4338.4	4714.9	5029.8
6	3162.9	3857.7	4336.1	4712.2	5026.8
7	3162.9	3857.7	4336.1	4712.2	5026.7
8	3161.2	3855.2	4333.1	4708.7	5022.9
9	3160.1	3853.8	4331.3	4706.7	5020.7
10	3157.2	3849.0	4325.3	4699.5	5012.6
11	3154.4	3845.4	4321.1	4695.0	5007.7
12	3151.2	3841.5	4316.7	4690.2	5002.7
13	3145.2	3849.6	4336.6	4720.5	5042.3
14	3142.9	3846.4	4332.8	4716.2	5037.5
15	3092.7	3775.6	4246.1	4616.1	4925.8
16	3080.5	3759.0	4226.3	4593.6	4901.1
17	3069.2	3743.9	4208.5	4573.7	4879.3
18	3058.1	3728.2	4189.2	4551.6	4854.7
19	3039.9	3702.4	4157.9	4515.7	4814.9
20	3021.8	3677.6	4128.3	4482.1	4777.9
21	3000.0	3636.1	4070.7	4410.7	4694.2
22	2952.2	3558.4	3973.4	4297.6	4567.7

Flood Frequency Summary for Peak Elevation:

Sect	Return Period (years): 2.0	5.0	10.0	25.0	50.0	75.0
1	680.74	681.61	682.16	682.87	683.41	683.74
2	680.15	680.96	681.51	682.18	682.73	683.07
3	680.02	680.80	681.33	682.00	682.56	682.91
4	679.79	680.56	681.09	681.77	682.34	682.71
5	679.59	680.36	680.89	681.59	682.19	682.57
6	679.50	680.26	680.80	681.51	682.12	682.50
7	679.13	679.86	680.37	681.05	681.66	682.05
8	679.07	679.80	680.32	681.01	681.62	682.02
9	679.05	679.78	680.30	680.99	681.60	682.00
10	678.96	679.67	680.17	680.87	681.52	681.93
11	678.94	679.65	680.15	680.84	681.48	681.88
12	678.90	679.61	680.11	680.79	681.43	681.84
13	678.67	679.41	679.91	680.63	681.31	681.75
14	678.58	679.33	679.85	680.57	681.24	681.67
15	678.11	678.97	679.52	680.30	680.99	681.43
16	678.00	678.90	679.46	680.24	680.94	681.38
17	677.97	678.87	679.42	680.22	680.93	681.38
18	677.89	678.81	679.37	680.17	680.88	681.34
19	677.54	678.54	679.17	680.03	680.75	681.21
20	677.37	678.42	679.08	679.96	680.68	681.14
21	677.31	678.38	679.05	679.93	680.66	681.12
22	677.31	678.38	679.00	679.85	680.59	681.06

Sect	Return Period (years): 100.0	200.0	300.0	400.0	500.0
1	683.98	684.59	684.96	685.23	685.45
2	683.33	683.96	684.35	684.63	684.86
3	683.17	683.83	684.23	684.52	684.75
4	682.98	683.65	684.06	684.36	684.60
5	682.84	683.52	683.93	684.24	684.47
6	682.78	683.47	683.89	684.19	684.43
7	682.34	683.05	683.49	683.81	684.06
8	682.30	683.03	683.47	683.79	684.05
9	682.29	683.02	683.46	683.78	684.04
10	682.23	682.97	683.42	683.74	684.00
11	682.18	682.93	683.38	683.71	683.98
12	682.14	682.88	683.34	683.67	683.94
13	682.07	682.86	683.35	683.72	684.00
14	681.98	682.77	683.26	683.62	683.91
15	681.76	682.57	683.08	683.45	683.75
16	681.71	682.53	683.04	683.42	683.72
17	681.71	682.54	683.05	683.42	683.72
18	681.67	682.50	683.01	683.39	683.69
19	681.54	682.38	682.89	683.27	683.58
20	681.47	682.32	682.84	683.22	683.53
21	681.45	682.29	682.80	683.17	683.47
22	681.41	682.28	682.82	683.21	683.52

Associated FEQUTL Files

```
T1              Proposed Elgin-OHare Bridge Pier Revised  w/22
T2
J1        0.01  0.01
*         WSPROZQ from FEQUTL. NFRAC=   20 NZD=   18 HDATUM=   671.380
*               Q FR#  WSEL
UT              7  27    5
Q               5.25       5.76       6.28       6.79       7.30,
Q               7.82       8.33       8.84       9.36       9.87,
Q              10.38      10.89      11.41      11.92      12.43,
Q              12.95      13.46      13.97      14.49      15.00,
Q              10.50      11.53      12.55      13.58      14.61,
Q              15.63      16.66      17.68      18.71      19.74,
Q              20.76      21.79      22.82      23.84      24.87,
Q              25.89      26.92      27.95      28.97      30.00,
Q              17.50      19.21      20.92      22.63      24.34,
Q              26.05      27.76      29.47      31.18      32.89,
Q              34.61      36.32      38.03      39.74      41.45,
Q              43.16      44.87      46.58      48.29      50.00,
Q              24.50      26.89      29.29      31.68      34.08,
Q              36.47      38.87      41.26      43.66      46.05,
Q              48.45      50.84      53.24      55.63      58.03,
Q              60.42      62.82      65.21      67.61      70.00,
Q              52.50      57.63      62.76      67.89      73.03,
Q              78.16      83.29      88.42      93.55      98.68,
Q             103.82     108.95     114.08     119.21     124.34,
Q             129.47     134.61     139.74     144.87     150.00,
Q              87.50      96.05     104.61     113.16     121.71,
Q             130.26     138.82     147.37     155.92     164.47,
Q             173.03     181.58     190.13     198.68     207.24,
Q             215.79     224.34     232.89     241.45     250.00,
Q             140.00     153.68     167.37     181.05     194.74,
Q             208.42     222.11     235.79     249.47     263.16,
Q             276.84     290.53     304.21     317.89     331.58,
Q             345.26     358.95     372.63     386.32     400.00,
Q             542.50     595.53     648.55     701.58     754.61,
Q             807.63     860.66     913.68     966.71    1019.74,
Q            1072.76    1125.79    1178.82    1231.84    1284.87,
Q            1337.89    1390.92    1443.95    1496.97    1550.00,
Q             945.00    1037.37    1129.74    1222.11    1314.47,
Q            1406.84    1499.21    1591.58    1683.95    1776.32,
Q            1868.68    1961.05    2053.42    2145.79    2238.16,
Q            2330.53    2422.89    2515.26    2607.63    2700.00,
Q            1050.00    1152.63    1255.26    1357.89    1460.53,
Q            1563.16    1665.79    1768.42    1871.05    1973.68,
Q            2076.32    2178.95    2281.58    2384.21    2486.84,
Q            2589.47    2692.11    2794.74    2897.37    3000.00,
Q            1400.00    1536.84    1673.68    1810.53    1947.37,
Q            2084.21    2221.05    2357.89    2494.74    2631.58,
Q            2768.42    2905.26    3042.11    3178.95    3315.79,
Q            3452.63    3589.47    3726.32    3863.16    4000.00,
Q            1750.00    1921.05    2092.11    2263.16    2434.21,
Q            2605.26    2776.32    2947.37    3118.42    3289.47,
Q            3460.53    3631.58    3802.63    3973.68    4144.74,
Q            4315.79    4486.84    4657.89    4828.95    5000.00,
Q            2100.00    2305.26    2510.53    2715.79    2921.05,
Q            3126.32    3331.58    3536.84    3742.11    3947.37,
Q            4152.63    4357.89    4563.16    4768.42    4973.68,
Q            5178.95    5384.21    5589.47    5794.74    6000.00,
Q            2450.00    2689.47    2928.95    3168.42    3407.89,
Q            3647.37    3886.84    4126.32    4365.79    4605.26,
Q            4844.74    5084.21    5323.68    5563.16    5802.63,
Q            6042.11    6281.58    6521.05    6760.53    7000.00,
Q            2800.00    3073.68    3347.37    3621.05    3894.74,
Q            4168.42    4442.10    4715.79    4989.47    5263.16,
Q            5536.84    5810.53    6084.21    6357.90    6631.58,
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Q          4689.47    4997.37    5305.26    5613.16    5921.05,
Q          6228.95    6536.84    6844.74    7152.63    7460.53,
Q          7768.42    8076.32    8384.21    8692.11    9000.00,
Q          3500.00    3842.11    4184.21    4526.32    4868.42,
Q          5210.53    5552.63    5894.74    6236.84    6578.95,
Q          6921.05    7263.16    7605.26    7947.37    8289.47,
Q          8631.58    8973.68    9315.79    9657.89   10000.00,
Q          3850.00    4226.32    4602.63    4978.95    5355.26,
Q          5731.58    6107.89    6484.21    6860.53    7236.84,
Q          7613.16    7989.47    8365.79    8742.11    9118.42,
Q          9494.74    9871.05   10247.37   10623.68   11000.00
WS       674.0000   674.0000   674.0000   674.0000   674.0000,
WS       674.0000   674.0000   674.0000   674.0000   674.0000,
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XS   EXIT       0.0
GR         -1017.0  687.28 -1005.0  683.36  -405.0  677.28   -30.0  673.31
GR             0.0  671.38    25.0  674.28    30.0  675.28    35.0  676.28
GR           380.0  677.28   530.0  678.28   590.0  679.28   615.0  680.28
GR           705.0  681.28   745.0  682.28   815.0  683.28   845.0  684.28
GR           915.0  685.28   975.0  686.28  1160.0  687.28
N            0.150   0.080   0.120
SA              -405.0    380.0
* ---------------------------------------------------------------------------
* Full Valley Cross Section
XS   FULLV   105.0     22.
GR          -947.0  690.28  -902.0  689.28  -824.0  688.28  -777.0  687.28
GR          -752.0  686.28  -717.0  685.28  -532.0  685.28  -464.0  684.28
GR          -407.0  683.28  -400.0  682.28  -377.0  677.28  -292.0  677.28
GR          -192.0  676.78  -187.1  677.22  -183.9  677.52  -182.2  677.85
GR          -180.3  678.23  -177.7  679.07  -164.4  681.03  -137.1  678.94
GR          -119.9  677.26   -92.6  676.34   -91.5  676.07   -88.4  676.14
GR           -86.5  676.19   -86.0  676.21   -81.9  676.34   -80.3  676.39
GR           -77.5  677.00   -74.4  677.66   -72.5  677.82   -67.8  678.21
GR           -65.2  678.10   -57.7  677.77   -53.0  677.15   -49.1  676.64
GR           -43.4  675.13   -43.4  675.10   -43.4  675.07   -43.3  674.92
GR           -42.3  674.42   -38.7  672.50   -37.8  672.23   -37.7  672.25
GR           -37.6  672.23   -34.2  671.95   -33.6  671.90   -31.3  672.11
GR           -29.5  672.02   -28.8  672.11   -28.0  672.06   -25.8  671.86
GR           -23.9  671.69   -20.8  671.29   -20.8  671.28   -20.8  671.28
GR           -18.0  671.13   -16.3  671.76   -16.3  671.75   -15.3  671.27
GR           -15.1  671.40   -13.0  671.27   -12.9  671.24   -12.2  671.08
GR            -9.5  670.59    -8.9  670.47    -8.8  670.48    -8.7  670.47
GR            -8.5  670.43    -8.1  670.40    -7.6  670.44     0.0  669.58
GR             3.4  670.16     9.7  677.23    26.6  677.07    94.7  676.43
GR           136.6  676.13   153.2  676.00   172.6  675.85   174.5  675.89
GR           200.1  676.49   219.3  677.56   234.0  678.28   389.0  678.28
GR           524.0  679.28   639.0  680.28   749.0  681.28   889.0  682.28
GR          1034.0  683.28  1121.0  684.28  1209.0  685.28
N            0.150   0.024   0.120
SA              -164.4   94.70
* ---------------------------------------------------------------------------
*   Bridge Opening Cross Section
BR   BRIDG   105.0  686.28     22.
GR          -177.9  687.78  -164.4  681.03  -161.8  679.75  -157.6  677.65
GR          -156.0  676.84  -155.0  676.35  -153.8  676.35  -151.0  676.35
GR          -137.1  676.35  -119.9  676.35   -92.6  676.34   -91.5  676.07
GR           -88.4  676.07   -86.5  676.07   -86.0  676.07   -81.9  676.07
GR           -80.3  676.07   -77.5  676.07   -74.4  676.07   -72.5  676.07
GR           -67.8  676.07   -65.2  676.07   -57.7  676.07   -53.0  676.07
GR           -49.1  676.07   -43.4  675.13   -43.4  675.10   -43.4  675.07
GR           -43.3  674.92   -42.3  674.42   -38.7  672.50   -37.8  672.23
GR           -37.7  672.25   -37.6  672.23   -34.2  671.95   -33.6  671.90
GR           -31.3  672.11   -29.5  672.02   -28.8  672.11   -28.0  672.06
GR           -25.8  671.86   -23.9  671.69   -20.8  671.29   -20.8  671.28
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GR          -20.8  671.28   -18.0  671.13   -16.3  671.76   -16.3  671.75
GR          -15.3  671.27   -15.1  671.40   -13.0  671.27   -12.9  671.24
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GR           -8.7  670.47    -8.5  670.43    -8.1  670.40    -7.6  670.44
GR            0.0  669.58     3.4  670.16     9.7  674.80    22.1  674.81
GR           42.0  684.78  -177.9  687.78
N           0.013   0.024   0.013
SA            -164.4     22.1
CD               3   180.0     2.0  693.30
PW        677.70,3
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* XR    ROAD   105.0   180.0     1.0
* GR          -500.0  700.87  -450.0  699.63  -400.0  698.52  -350.0  697.54
* GR          -300.0  696.69  -250.0  695.96  -200.0  695.30  -150.0  694.64
* GR          -100.0  693.97   -50.0  693.31     0.0  692.65    50.0  691.98
* GR           100.0  691.32   150.0  690.66   200.0  689.99   250.0  689.33
* GR           300.0  688.67   350.0  688.00   400.0  687.34   450.0  686.75
* GR           500.0  686.31   550.0  686.01   600.0  685.86   650.0  685.86
* GR           700.0  686.01   750.0  686.30   800.0  686.74   850.0  687.32
* GR           900.0  688.05
* ---------------------------------------------------------------------------
*  Approach Cross Section
AS   APPRO   325.00    22.
GR          -954.0  690.28  -929.0  689.28  -899.0  688.28  -849.0  687.28
GR          -784.0  686.28  -737.0  685.28  -627.0  684.28  -594.0  683.28
GR          -464.0  682.28  -384.0  682.28  -347.0  682.28  -319.0  678.28
GR          -201.0  678.28  -198.5  677.56  -194.0  678.40  -187.1  679.63
GR          -171.3  682.61  -155.8  682.65  -139.7  680.00  -121.2  676.62
GR          -109.9  676.01   -95.5  675.89   -80.2  676.00   -69.1  676.07
GR           -58.5  676.20   -41.8  676.70   -29.4  676.50   -27.8  676.50
GR           -27.3  676.50   -26.4  675.87   -25.2  675.88   -24.2  672.44
GR           -22.0  672.75   -17.7  671.94   -15.5  671.60   -13.8  671.04
GR           -10.1  670.95    -7.5  671.06    -4.8  670.92     0.0  670.86
GR             5.6  671.05     8.7  671.06    14.6  671.28    18.6  670.93
GR            22.5  671.54    25.6  671.65    27.3  672.03    30.7  672.50
GR            31.8  672.83    35.4  672.47    36.0  672.88    37.9  673.35
GR            39.1  674.16    41.3  675.86    43.0  678.16    50.6  677.79
GR            66.9  676.78    77.5  676.58   108.2  675.22   130.3  676.03
GR           168.0  676.81   191.4  677.68   222.0  679.02   227.0  679.28
GR           460.0  679.28   554.0  680.28   812.0  681.28  1010.0  682.28
GR          1062.0  683.28  1117.0  684.28  1330.0  685.28  1470.0  686.28
GR          1600.0  687.28  1705.0  688.28
N           0.120  0.080    0.120
SA            -139.7    108.2
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EX
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TABID= -1

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GLCWTB= 9995
PHCWTB= 9996
GHCWTB= 9997
PSUBTB= 9998
GSUBTB= 9999
LABEL=Proposed Elgin-OHare Bridge EMBANKMENT FLOW
    OFFSET     CREST     WIDTH  APPROACH SURFACE
  108000.0    688.05     180.0    671.25 PAVED
  108050.0    687.32
  108100.0    686.74
  108150.0    686.30
  108200.0    686.01
  108250.0    685.86
  108300.0    685.86
  108350.0    686.01
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  108450.0    686.75
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  108750.0    690.66
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  108850.0    691.98
  108900.0    692.65
  108950.0    693.31
  109000.0    693.97
  109050.0    694.64
  109100.0    695.30
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  109200.0    696.69
  109250.0    697.54
  109300.0    698.52
  109350.0    699.63
  109400.0    700.87                      END
UPSTREAM HEADS TO USE IN COMPUTING THE TABLE
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LIPREC=0.02
MINPFD=0.01
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    13.000
    -1.000

FINISH
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Comparison of Elevations and Flow from the Existing and the Proposed Conditions FEQ Models

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
SCSC3222 144361.
1. Branch# 8; Node ID: ; Station: 144361.0000

	(1) sL16OEX4.PEK		(2) sL16OP1o.PEK		2-1	2-1
Nodes ==>	824		824			
	(S)	(F)	(S)	(F)	(S)	(F)
1925/01/02	675.32	26.42	675.32	26.42	0.00	0.00
1949/04/08	680.68	807.61	680.68	807.63	-0.01	0.02
1949/06/21	681.30	1125.80	681.30	1125.50	-0.01	-0.30
1949/07/27	679.95	535.26	679.94	535.31	-0.01	0.05
1949/12/31	681.36	1137.50	681.35	1137.40	0.00	-0.10
1950/01/31	680.44	709.09	680.43	709.08	-0.01	-0.01
1950/05/03	681.60	1267.60	681.60	1267.10	0.00	-0.50
1950/06/11	681.19	1058.10	681.18	1057.40	-0.01	-0.70
1951/03/09	680.58	768.68	680.58	768.72	-0.01	0.04
1951/05/17	680.73	841.09	680.72	841.04	-0.01	-0.05
1951/07/29	680.02	557.84	680.01	557.96	-0.01	0.12
1952/01/25	680.62	800.29	680.62	800.32	-0.01	0.03
1952/03/28	680.27	640.64	680.27	640.61	-0.01	-0.03
1953/03/23	680.20	623.90	680.19	623.89	-0.01	-0.01
1953/06/16	679.59	419.42	679.59	419.25	0.00	-0.17
1953/07/28	681.02	987.56	681.01	987.65	-0.01	0.09
1954/04/05	682.16	1599.70	682.16	1598.80	0.00	-0.90
1954/05/08	681.39	1155.90	681.39	1155.80	0.00	-0.10
1954/08/29	680.39	691.54	680.39	691.32	-0.01	-0.22
1954/10/25	682.89	2162.60	682.91	2162.30	0.01	-0.30
1955/03/09	679.32	350.10	679.31	350.11	-0.01	0.01
1956/05/18	680.84	878.72	680.83	878.73	-0.01	0.01
1957/01/27	679.25	334.36	679.24	334.39	-0.01	0.03
1957/03/04	681.08	1018.90	681.07	1018.70	-0.01	-0.20
1957/07/28	683.03	2320.50	683.05	2319.80	0.01	-0.70
1958/04/30	680.04	567.51	680.04	567.45	-0.01	-0.06
1958/06/19	679.59	422.19	679.58	422.20	-0.01	0.01
1958/07/11	679.25	333.76	679.24	333.79	-0.01	0.03
1959/04/07	678.94	262.10	678.93	262.10	-0.01	0.00
1959/07/27	677.64	130.68	677.61	130.74	-0.03	0.06
1960/01/21	680.01	554.29	680.00	554.39	-0.01	0.10
1960/04/04	677.14	99.34	677.12	99.35	-0.02	0.01
1961/08/09	679.67	448.02	679.67	448.08	-0.01	0.06
1961/10/06	682.17	1594.90	682.17	1594.60	0.00	-0.30
1962/04/15	679.56	407.35	679.56	407.36	0.00	0.01
1962/07/08	679.97	544.39	679.97	544.47	-0.01	0.08
1963/05/07	679.60	427.77	679.60	427.78	-0.01	0.01
1964/04/12	679.83	483.77	679.82	483.78	-0.01	0.01
1964/07/25	679.54	409.55	679.53	409.55	-0.01	0.00
1965/03/22	680.11	581.73	680.11	581.70	-0.01	-0.03
1966/02/15	680.08	576.91	680.08	576.85	-0.01	-0.06
1966/05/18	681.08	993.71	681.07	993.60	-0.01	-0.11
1967/04/09	680.06	562.86	680.05	562.86	-0.01	0.00
1967/07/01	680.39	699.82	680.38	699.84	-0.01	0.02
1968/08/24	680.45	724.45	680.44	724.50	-0.01	0.05
1969/04/13	679.54	401.75	679.54	401.75	0.00	0.00
1969/06/15	680.46	717.23	680.45	717.25	-0.01	0.02
1969/08/01	678.41	191.83	678.37	192.26	-0.04	0.43
1969/10/25	681.33	1140.00	681.32	1139.90	-0.01	-0.10
1970/05/20	680.40	689.06	680.39	689.01	0.00	-0.05
1970/12/18	679.26	335.49	679.25	335.50	-0.01	0.01
1971/03/04	679.18	318.82	679.18	318.87	-0.01	0.05
1971/08/28	679.47	391.33	679.47	391.33	-0.01	0.00
1972/03/21	679.68	450.34	679.67	450.38	-0.01	0.04
1972/04/27	680.77	866.38	680.76	866.53	-0.01	0.15
1972/09/01	680.64	804.48	680.63	804.48	-0.01	0.00
1972/10/05	681.00	960.26	681.00	960.22	-0.01	-0.04
1973/01/08	681.49	1219.50	681.49	1219.00	-0.01	-0.50
1973/05/08	679.76	465.16	679.76	465.19	0.00	0.03
1974/02/28	680.50	738.04	680.50	737.89	-0.01	-0.15
1974/04/21	679.16	312.39	679.15	312.40	-0.01	0.01
1974/05/25	679.83	486.62	679.83	486.63	-0.01	0.01
1975/01/16	680.53	745.62	680.52	745.50	-0.01	-0.12
1975/05/05	680.06	562.96	680.05	563.10	-0.01	0.14
1975/09/08	680.95	943.65	680.94	943.60	-0.01	-0.05
1976/03/21	680.87	890.72	680.86	890.74	-0.01	0.02
1977/07/05	679.13	306.13	679.12	306.10	-0.01	-0.03
1977/08/13	678.97	274.27	678.97	274.24	-0.01	-0.03
1977/09/07	678.83	245.58	678.82	245.58	-0.01	0.00
1978/04/02	679.09	292.83	679.09	292.82	0.00	-0.01
1978/05/21	679.18	318.78	679.18	318.77	-0.01	-0.01
1978/07/09	680.46	719.69	680.46	719.56	-0.01	-0.13
1978/09/25	681.03	972.90	681.02	972.87	-0.01	-0.03
1979/04/18	682.03	1481.40	682.04	1481.10	0.00	-0.30
1979/09/05	680.02	550.50	680.02	550.57	0.00	0.07
1980/01/21	677.60	127.38	677.57	127.41	-0.03	0.03
1980/08/26	680.57	767.75	680.57	767.57	-0.01	-0.18
1980/09/26	679.49	390.31	679.49	390.22	0.00	-0.09
1981/05/03	680.26	637.75	680.26	637.69	-0.01	-0.06
1981/06/05	680.93	942.82	680.92	942.59	-0.01	-0.23
1981/06/21	679.31	346.76	679.30	346.77	-0.01	0.01

1981/08/23	680.16	599.23	680.15	599.22	-0.01	-0.01
1982/03/28	681.11	1012.10	681.11	1012.00	-0.01	-0.10
1982/07/31	680.42	710.88	680.41	711.02	-0.01	0.14
1982/08/14	680.11	592.37	680.11	592.43	-0.01	0.06
1982/12/12	682.49	1838.40	682.50	1837.80	0.00	-0.60
1983/01/04	680.68	824.64	680.67	824.64	-0.01	0.00
1983/04/22	681.43	1173.60	681.43	1173.40	0.00	-0.20
1983/06/04	679.82	491.90	679.81	491.94	-0.01	0.04
1983/07/09	680.24	627.43	680.23	627.37	-0.01	-0.06
1983/12/05	680.98	943.62	680.97	943.53	-0.01	-0.09
1984/02/25	680.95	934.58	680.94	934.39	-0.01	-0.19
1984/04/03	679.77	478.00	679.77	478.02	-0.01	0.02
1985/03/19	682.27	1660.80	682.27	1660.60	0.00	-0.20
1985/12/11	680.47	721.29	680.47	721.28	0.00	-0.01
1986/07/19	679.28	335.16	679.28	335.09	0.00	-0.07
1986/10/10	680.60	774.21	680.60	774.32	-0.01	0.11
1987/09/06	683.63	2919.00	683.66	2917.80	0.02	-1.20
1988/01/01	679.55	413.17	679.55	412.94	-0.01	-0.23
1988/02/07	679.43	372.36	679.42	372.33	0.00	-0.03
1988/04/13	679.08	294.00	679.08	293.99	-0.01	-0.01
1988/10/26	680.60	790.55	680.59	790.57	-0.01	0.02
1989/08/18	681.30	1108.60	681.30	1108.50	-0.01	-0.10
1989/09/18	680.27	651.97	680.27	652.03	-0.01	0.06
1990/03/16	680.54	751.88	680.53	751.89	-0.01	0.01
1990/05/19	681.04	977.20	681.03	977.25	-0.01	0.05
1990/08/28	680.77	851.51	680.77	851.57	-0.01	0.06
1990/12/10	680.63	797.82	680.62	797.83	-0.01	0.01
1991/04/23	680.11	579.62	680.10	579.67	-0.01	0.05
1991/06/02	679.43	380.07	679.43	380.06	-0.01	-0.01
1991/10/09	680.01	555.76	680.00	555.88	-0.01	0.12
1991/11/08	679.37	364.00	679.36	363.99	-0.01	-0.01
1991/12/18	679.07	292.46	679.06	292.43	-0.01	-0.03
1992/09/21	678.86	251.61	678.85	251.44	-0.01	-0.17
1993/01/11	680.24	627.86	680.23	627.82	-0.01	-0.04
1993/04/29	680.77	849.77	680.76	849.94	-0.01	0.17
1993/07/06	680.68	812.73	680.68	812.84	-0.01	0.11
1994/03/13	680.61	782.07	680.61	782.11	-0.01	0.04
1994/07/02	680.69	830.73	680.68	830.74	-0.01	0.01
1994/08/24	678.93	266.46	678.93	266.41	-0.01	-0.05
1995/01/25	680.01	554.94	680.00	555.04	-0.01	0.10
1995/05/06	680.14	590.85	680.13	590.78	-0.01	-0.07
1995/08/24	679.32	350.60	679.31	350.62	-0.01	0.02
1995/11/18	679.90	519.83	679.90	519.89	-0.01	0.06
1996/06/27	680.19	609.74	680.18	609.70	-0.01	-0.04
1996/08/05	679.76	473.32	679.75	473.34	-0.01	0.02
1997/03/06	682.28	1680.50	682.28	1679.80	0.00	-0.70
1998/03/25	680.01	545.63	680.01	545.60	0.00	-0.03
1998/05/15	679.85	501.01	679.84	501.01	-0.01	0.00
1998/08/15	680.04	565.52	680.03	565.54	-0.01	0.02
1998/09/14	677.64	130.09	677.61	130.14	-0.03	0.05
1998/10/25	680.10	588.85	680.10	588.87	-0.01	0.02
1999/02/09	681.30	1105.50	681.29	1105.40	0.00	-0.10
1999/05/06	680.90	907.22	680.89	907.44	-0.01	0.22
2000/04/28	680.99	952.06	680.98	951.94	-0.01	-0.12
2001/03/02	680.53	756.52	680.52	756.50	-0.01	-0.02
2001/09/06	682.06	1529.30	682.06	1529.30	0.00	0.00
2001/09/30	680.59	770.71	680.58	770.77	-0.01	0.06
2001/10/31	681.93	1448.80	681.93	1448.40	0.00	-0.40
2002/03/15	680.23	624.24	680.23	624.23	-0.01	-0.01
2002/05/22	679.85	501.37	679.84	501.37	-0.01	0.00
2002/07/13	679.31	349.09	679.30	349.09	-0.01	0.00
2002/08/29	681.58	1266.60	681.58	1266.30	0.00	-0.30
2003/05/19	680.32	670.11	680.31	670.16	-0.01	0.05
2003/08/13	678.65	216.67	678.63	216.20	-0.02	-0.47
2003/11/29	679.20	322.25	679.19	322.27	-0.01	0.02
2004/03/11	678.83	246.00	678.82	245.94	-0.01	-0.06
2004/06/18	679.97	531.35	679.96	531.36	-0.01	0.01
2005/01/18	680.66	813.78	680.66	813.91	-0.01	0.13
2006/03/18	679.68	449.91	679.67	449.95	-0.01	0.04
2006/07/03	678.74	232.80	678.73	232.66	-0.01	-0.14
2006/09/29	679.63	434.76	679.62	434.79	-0.01	0.03
2006/10/09	678.84	248.48	678.83	248.36	-0.01	-0.12
2007/03/15	680.51	738.86	680.51	738.85	-0.01	-0.01
2007/08/31	680.93	922.53	680.92	922.46	-0.01	-0.07
2008/03/09	680.68	824.46	680.67	824.48	-0.01	0.02
2008/05/18	677.92	151.98	677.89	152.12	-0.03	0.14
2008/09/23	683.21	2430.10	683.23	2429.40	0.02	-0.70
MaximumS&F	683.63	2919.00	683.66	2917.80		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
E9 143001.
2. Branch# 8; Node ID: XS-E9 ; Station: 143001.0000

Nodes ==>	(1) sL16OEX4.PEK 830 (S)	(F)	(2) sL16OP1o.PEK 830 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.98	26.24	674.97	26.24	0.00	0.00
1949/04/08	680.12	810.41	680.11	810.41	-0.01	0.00
1949/06/21	680.66	1124.60	680.65	1124.10	-0.01	-0.50
1949/07/27	679.42	535.40	679.41	535.45	-0.01	0.05
1949/12/31	680.72	1138.40	680.72	1138.30	-0.01	-0.10
1950/01/31	679.89	709.07	679.88	709.04	-0.01	-0.03
1950/05/03	680.92	1268.30	680.92	1267.90	-0.01	-0.40
1950/06/11	680.57	1057.90	680.56	1057.20	-0.01	-0.70
1951/03/09	680.02	769.39	680.01	769.36	-0.01	-0.03
1951/05/17	680.15	841.21	680.14	841.11	-0.01	-0.10
1951/07/29	679.49	557.97	679.47	558.10	-0.02	0.13
1952/01/25	680.03	800.83	680.02	800.86	-0.01	0.03
1952/03/28	679.74	641.19	679.73	641.17	-0.01	-0.02
1953/03/23	679.66	623.84	679.65	623.82	-0.01	-0.02
1953/06/16	679.11	418.07	679.10	417.94	-0.01	-0.13
1953/07/28	680.40	987.81	680.38	987.89	-0.01	0.08
1954/04/05	681.39	1597.10	681.39	1596.30	0.00	-0.80
1954/05/08	680.74	1156.90	680.74	1156.80	-0.01	-0.10
1954/08/29	679.85	691.56	679.84	691.29	-0.01	-0.27
1954/10/25	682.14	2163.80	682.17	2163.30	0.02	-0.50
1955/03/09	678.84	350.35	678.82	350.36	-0.02	0.01
1956/05/18	680.26	879.55	680.24	879.52	-0.01	-0.03
1957/01/27	678.78	334.00	678.76	334.03	-0.02	0.03
1957/03/04	680.47	1018.90	680.46	1018.70	-0.01	-0.20
1957/07/28	682.26	2319.00	682.29	2317.80	0.03	-1.20
1958/04/30	679.51	567.57	679.49	567.53	-0.02	-0.04
1958/06/19	679.08	422.09	679.07	422.09	-0.01	0.00
1958/07/11	678.77	333.83	678.76	333.87	-0.02	0.04
1959/04/07	678.52	262.09	678.52	262.08	-0.01	-0.01
1959/07/27	677.24	130.46	677.20	130.54	-0.04	0.08
1960/01/21	679.48	554.62	679.46	554.73	-0.02	0.11
1960/04/04	676.75	99.44	676.72	99.45	-0.03	0.01
1961/08/09	679.16	447.97	679.15	448.03	-0.01	0.06
1961/10/06	681.41	1595.70	681.41	1595.30	0.00	-0.40
1962/04/15	679.09	407.95	679.08	407.96	-0.01	0.01
1962/07/08	679.45	543.91	679.43	544.01	-0.01	0.10
1963/05/07	679.10	427.78	679.09	427.79	-0.01	0.01
1964/04/12	679.34	485.31	679.33	485.31	-0.01	0.00
1964/07/25	679.04	409.04	679.03	409.02	-0.01	-0.02
1965/03/22	679.60	581.70	679.59	581.65	-0.01	-0.05
1966/02/15	679.57	576.85	679.56	576.72	-0.01	-0.13
1966/05/18	680.48	994.57	680.47	994.39	-0.01	-0.18
1967/04/09	679.55	563.28	679.54	563.28	-0.01	0.00
1967/07/01	679.83	700.16	679.81	700.19	-0.01	0.03
1968/08/24	679.88	724.69	679.86	724.75	-0.01	0.06
1969/04/13	679.07	402.10	679.06	402.11	-0.01	0.01
1969/06/15	679.91	717.74	679.90	717.72	-0.01	-0.02
1969/08/01	678.03	190.84	677.97	191.26	-0.06	0.42
1969/10/25	680.68	1139.70	680.67	1139.60	-0.01	-0.10
1970/05/20	679.86	689.97	679.85	689.89	-0.01	-0.08
1970/12/18	678.78	335.84	678.77	335.85	-0.02	0.01
1971/03/04	678.72	318.90	678.70	318.95	-0.01	0.05
1971/08/28	678.98	391.10	678.97	391.10	-0.01	0.00
1972/03/21	679.17	450.53	679.16	450.59	-0.01	0.06
1972/04/27	680.17	866.95	680.16	866.90	-0.01	-0.05
1972/09/01	680.07	804.66	680.06	804.59	-0.01	-0.07
1972/10/05	680.40	961.01	680.39	960.95	-0.01	-0.06
1973/01/08	680.83	1217.20	680.82	1216.60	-0.01	-0.60
1973/05/08	679.28	465.64	679.27	465.74	-0.01	0.10
1974/02/28	679.95	737.71	679.94	737.43	-0.01	-0.28
1974/04/21	678.69	312.99	678.68	313.00	-0.01	0.01
1974/05/25	679.34	487.02	679.33	487.02	-0.01	0.00
1975/01/16	679.97	745.80	679.96	745.61	-0.01	-0.19
1975/05/05	679.55	563.48	679.54	563.60	-0.01	0.12
1975/09/08	680.35	943.39	680.34	943.24	-0.01	-0.15
1976/03/21	680.29	891.79	680.28	891.81	-0.01	0.02
1977/07/05	678.66	305.70	678.65	305.68	-0.02	-0.02
1977/08/13	678.53	273.89	678.52	273.86	-0.01	-0.03
1977/09/07	678.41	246.01	678.39	246.01	-0.02	0.00
1978/04/02	678.66	293.17	678.65	293.16	-0.01	-0.01
1978/05/21	678.72	318.82	678.70	318.88	-0.02	0.06
1978/07/09	679.91	719.79	679.90	719.64	-0.01	-0.15
1978/09/25	680.43	973.47	680.42	973.42	-0.01	-0.05
1979/04/18	681.32	1481.60	681.33	1481.30	0.01	-0.30
1979/09/05	679.52	550.80	679.51	550.82	-0.01	0.02
1980/01/21	677.20	127.33	677.16	127.37	-0.04	0.04
1980/08/26	680.01	767.63	680.00	767.39	-0.01	-0.24
1980/09/26	679.02	390.36	679.01	390.28	-0.01	-0.08
1981/05/03	679.73	638.14	679.72	638.15	-0.01	0.01
1981/06/05	680.32	943.24	680.30	942.90	-0.01	-0.34
1981/06/21	678.83	347.11	678.81	347.12	-0.02	0.01

1981/08/23	679.64	599.62	679.63	599.61	-0.01	-0.01
1982/03/28	680.51	1012.50	680.50	1012.40	-0.01	-0.10
1982/07/31	679.85	711.56	679.84	711.59	-0.01	0.03
1982/08/14	679.58	592.74	679.56	592.81	-0.01	0.07
1982/12/12	681.72	1839.20	681.73	1838.60	0.01	-0.60
1983/01/04	680.10	825.11	680.09	825.11	-0.01	0.00
1983/04/22	680.79	1175.00	680.78	1174.80	0.00	-0.20
1983/06/04	679.30	492.21	679.29	492.26	-0.01	0.05
1983/07/09	679.71	627.69	679.70	627.64	-0.01	-0.05
1983/12/05	680.39	946.62	680.38	946.61	-0.01	-0.01
1984/02/25	680.35	934.54	680.34	934.56	-0.01	0.02
1984/04/03	679.26	478.03	679.24	478.06	-0.01	0.03
1985/03/19	681.50	1662.70	681.51	1662.50	0.01	-0.20
1985/12/11	679.92	722.00	679.92	722.03	-0.01	0.03
1986/07/19	678.82	335.15	678.82	335.09	-0.01	-0.06
1986/10/10	680.04	776.90	680.03	777.00	-0.01	0.10
1987/09/06	682.91	2914.10	682.96	2912.10	0.05*	-2.00
1988/01/01	679.05	413.31	679.04	413.15	-0.01	-0.16
1988/02/07	678.96	372.30	678.95	372.26	-0.01	-0.04
1988/04/13	678.65	294.23	678.64	294.23	-0.01	0.00
1988/10/26	680.01	790.97	680.00	791.00	-0.01	0.03
1989/08/18	680.67	1112.00	680.67	1111.90	-0.01	-0.10
1989/09/18	679.72	652.31	679.71	652.34	-0.01	0.03
1990/03/16	679.98	751.75	679.97	751.75	-0.01	0.00
1990/05/19	680.44	977.96	680.43	977.95	-0.01	-0.01
1990/08/28	680.19	853.08	680.18	853.17	-0.01	0.09
1990/12/10	680.05	798.51	680.04	798.50	-0.01	-0.01
1991/04/23	679.59	580.27	679.59	580.19	-0.01	-0.08
1991/06/02	678.95	380.31	678.93	380.31	-0.01	0.00
1991/10/09	679.48	555.23	679.46	555.41	-0.02	0.18
1991/11/08	678.89	363.97	678.87	363.96	-0.01	-0.01
1991/12/18	678.61	292.55	678.59	292.53	-0.02	-0.02
1992/09/21	678.43	251.29	678.41	251.05	-0.02	-0.24
1993/01/11	679.71	628.13	679.70	628.07	-0.01	-0.06
1993/04/29	680.18	849.93	680.17	850.22	-0.01	0.29
1993/07/06	680.11	813.51	680.10	813.69	-0.01	0.18
1994/03/13	680.05	781.92	680.04	781.97	-0.01	0.05
1994/07/02	680.09	831.33	680.08	831.34	-0.01	0.01
1994/08/24	678.50	266.13	678.48	266.06	-0.01	-0.07
1995/01/25	679.48	555.03	679.46	555.13	-0.02	0.10
1995/05/06	679.62	591.47	679.61	591.38	-0.01	-0.09
1995/08/24	678.84	350.39	678.82	350.41	-0.01	0.02
1995/11/18	679.38	519.57	679.36	519.66	-0.01	0.09
1996/06/27	679.67	610.14	679.66	610.07	-0.01	-0.07
1996/08/05	679.24	473.23	679.23	473.25	-0.01	0.02
1997/03/06	681.51	1678.90	681.52	1678.10	0.01	-0.80
1998/03/25	679.51	546.41	679.50	546.36	-0.01	-0.05
1998/05/15	679.33	501.31	679.31	501.30	-0.01	-0.01
1998/08/15	679.51	565.04	679.49	565.06	-0.02	0.02
1998/09/14	677.24	129.90	677.20	129.96	-0.04	0.06
1998/10/25	679.57	588.98	679.55	589.00	-0.01	0.02
1999/02/09	680.67	1105.90	680.67	1105.80	-0.01	-0.10
1999/05/06	680.31	908.08	680.30	908.30	-0.01	0.22
2000/04/28	680.39	952.81	680.38	952.68	-0.01	-0.13
2001/03/02	679.95	757.14	679.94	757.10	-0.01	-0.04
2001/09/06	681.30	1529.00	681.30	1528.00	0.00	-1.00
2001/09/30	680.03	771.38	680.02	771.42	-0.01	0.04
2001/10/31	681.20	1450.70	681.20	1450.20	0.00	-0.50
2002/03/15	679.71	624.75	679.70	624.73	-0.01	-0.02
2002/05/22	679.33	501.67	679.31	501.67	-0.01	0.00
2002/07/13	678.83	348.78	678.82	348.79	-0.02	0.01
2002/08/29	680.90	1264.60	680.89	1264.30	-0.01	-0.30
2003/05/19	679.76	670.65	679.75	670.69	-0.01	0.04
2003/08/13	678.24	216.39	678.22	215.71	-0.02	-0.68
2003/11/29	678.73	321.85	678.72	321.84	-0.01	-0.01
2004/03/11	678.40	245.97	678.39	245.91	-0.02	-0.06
2004/06/18	679.47	531.83	679.46	531.84	-0.01	0.01
2005/01/18	680.09	813.44	680.08	813.42	-0.01	-0.02
2006/03/18	679.19	450.18	679.18	450.23	-0.01	0.05
2006/07/03	678.33	232.18	678.31	231.97	-0.02	-0.21
2006/09/29	679.12	434.94	679.11	434.96	-0.01	0.02
2006/10/09	678.42	248.49	678.40	248.32	-0.02	-0.17
2007/03/15	679.96	738.74	679.95	738.73	-0.01	-0.01
2007/08/31	680.34	922.97	680.33	922.87	-0.01	-0.10
2008/03/09	680.08	824.94	680.07	824.95	-0.01	0.01
2008/05/18	677.52	151.90	677.47	152.15	-0.05	0.25
2008/09/23	682.52	2432.20	682.55	2431.20	0.04	-1.00
MaximumS&F	682.91	2914.10	682.96	2912.10		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
E8 142780.
3. Branch# 8; Node ID: XS-E8 ; Station: 142780.0000

	(1) sL16OEX4.PEK		(2) sL16OP1o.PEK		2-1	2-1
Nodes ==>	836		836			
	(S)	(F)	(S)	(F)	(S)	(F)
1925/01/02	674.95	26.21	674.94	26.21	-0.01	0.00
1949/04/08	679.99	811.15	679.98	811.16	-0.01	0.01
1949/06/21	680.51	1124.50	680.50	1124.00	-0.01	-0.50
1949/07/27	679.31	535.46	679.30	535.51	-0.02	0.05
1949/12/31	680.57	1138.60	680.57	1138.50	-0.01	-0.10
1950/01/31	679.77	709.08	679.76	709.06	-0.01	-0.02
1950/05/03	680.76	1268.50	680.76	1268.10	-0.01	-0.40
1950/06/11	680.42	1058.00	680.41	1057.30	-0.01	-0.70
1951/03/09	679.90	769.53	679.89	769.51	-0.01	-0.02
1951/05/17	680.02	841.26	680.01	841.15	-0.01	-0.11
1951/07/29	679.37	558.02	679.35	558.15	-0.02	0.13
1952/01/25	679.90	800.93	679.88	800.95	-0.02	0.02
1952/03/28	679.63	641.32	679.62	641.30	-0.01	-0.02
1953/03/23	679.55	623.85	679.53	623.83	-0.01	-0.02
1953/06/16	679.01	418.00	679.00	417.87	-0.01	-0.13
1953/07/28	680.26	987.87	680.24	987.95	-0.01	0.08
1954/04/05	681.19	1597.00	681.20	1596.10	0.00	-0.90
1954/05/08	680.59	1157.10	680.59	1157.00	-0.01	-0.10
1954/08/29	679.73	691.59	679.72	691.32	-0.01	-0.27
1954/10/25	681.95	2164.00	681.98	2163.50	0.03	-0.50
1955/03/09	678.74	350.42	678.72	350.43	-0.02	0.01
1956/05/18	680.12	879.72	680.11	879.70	-0.01	-0.02
1957/01/27	678.68	334.01	678.66	334.04	-0.02	0.03
1957/03/04	680.32	1018.90	680.31	1018.70	-0.01	-0.20
1957/07/28	682.06	2318.90	682.09	2317.50	0.03	-1.40
1958/04/30	679.40	567.59	679.38	567.55	-0.02	-0.04
1958/06/19	678.98	422.12	678.97	422.13	-0.01	0.01
1958/07/11	678.68	333.85	678.66	333.89	-0.02	0.04
1959/04/07	678.44	262.12	678.43	262.11	-0.01	-0.01
1959/07/27	677.16	130.43	677.11	130.51	-0.05	0.08
1960/01/21	679.37	554.69	679.35	554.81	-0.02	0.12
1960/04/04	676.68	99.46	676.65	99.47	-0.03	0.01
1961/08/09	679.06	447.98	679.04	448.04	-0.01	0.06
1961/10/06	681.22	1595.90	681.23	1595.50	0.01	-0.40
1962/04/15	678.99	408.06	678.98	408.07	-0.01	0.01
1962/07/08	679.34	543.94	679.32	544.02	-0.02	0.08
1963/05/07	679.00	427.82	678.98	427.83	-0.01	0.01
1964/04/12	679.24	485.56	679.22	485.56	-0.01	0.00
1964/07/25	678.94	409.04	678.92	409.03	-0.01	-0.01
1965/03/22	679.49	581.77	679.48	581.72	-0.01	-0.05
1966/02/15	679.46	576.88	679.45	576.73	-0.01	-0.15
1966/05/18	680.34	994.74	680.33	994.54	-0.01	-0.20
1967/04/09	679.44	563.36	679.43	563.37	-0.01	0.01
1967/07/01	679.70	700.24	679.68	700.26	-0.02	0.02
1968/08/24	679.75	724.75	679.73	724.81	-0.02	0.06
1969/04/13	678.97	402.17	678.96	402.17	-0.01	0.00
1969/06/15	679.79	717.84	679.78	717.82	-0.01	-0.02
1969/08/01	677.96	190.77	677.89	191.21	-0.06	0.44
1969/10/25	680.53	1139.80	680.52	1139.60	-0.01	-0.20
1970/05/20	679.74	690.12	679.73	690.06	-0.01	-0.06
1970/12/18	678.69	335.91	678.67	335.92	-0.02	0.01
1971/03/04	678.62	318.94	678.61	318.98	-0.02	0.04
1971/08/28	678.88	391.07	678.86	391.07	-0.02	0.00
1972/03/21	679.07	450.57	679.05	450.62	-0.02	0.05
1972/04/27	680.04	867.06	680.02	867.03	-0.01	-0.03
1972/09/01	679.94	804.69	679.93	804.63	-0.01	-0.06
1972/10/05	680.26	961.16	680.25	961.09	-0.01	-0.07
1973/01/08	680.67	1217.10	680.66	1216.50	-0.01	-0.60
1973/05/08	679.18	465.73	679.17	465.84	-0.01	0.11
1974/02/28	679.82	737.68	679.81	737.42	-0.01	-0.26
1974/04/21	678.60	313.08	678.58	313.10	-0.02	0.02
1974/05/25	679.24	487.11	679.23	487.12	-0.01	0.01
1975/01/16	679.84	745.85	679.83	745.64	-0.01	-0.21
1975/05/05	679.44	563.57	679.43	563.69	-0.01	0.12
1975/09/08	680.21	943.39	680.20	943.22	-0.01	-0.17
1976/03/21	680.15	891.98	680.14	891.99	-0.01	0.01
1977/07/05	678.57	305.70	678.55	305.68	-0.02	-0.02
1977/08/13	678.44	273.84	678.42	273.81	-0.02	-0.03
1977/09/07	678.32	246.09	678.30	246.09	-0.02	0.00
1978/04/02	678.58	293.24	678.57	293.23	-0.01	-0.01
1978/05/21	678.62	318.86	678.61	318.91	-0.02	0.05
1978/07/09	679.79	719.86	679.78	719.69	-0.01	-0.17
1978/09/25	680.29	973.60	680.28	973.54	-0.01	-0.06
1979/04/18	681.15	1481.70	681.16	1481.40	0.01	-0.30
1979/09/05	679.41	550.85	679.40	550.87	-0.01	0.02
1980/01/21	677.12	127.33	677.07	127.38	-0.05	0.05
1980/08/26	679.88	767.64	679.87	767.39	-0.01	-0.25
1980/09/26	678.92	390.39	678.92	390.30	-0.01	-0.09
1981/05/03	679.62	638.23	679.61	638.24	-0.01	0.01
1981/06/05	680.18	943.33	680.16	942.99	-0.01	-0.34
1981/06/21	678.73	347.18	678.71	347.20	-0.02	0.02

1981/08/23	679.53	599.69	679.52	599.68	-0.01	-0.01
1982/03/28	680.37	1012.60	680.36	1012.50	-0.01	-0.10
1982/07/31	679.72	711.68	679.71	711.71	-0.02	0.03
1982/08/14	679.46	592.83	679.44	592.89	-0.02	0.06
1982/12/12	681.53	1839.40	681.54	1838.80	0.01	-0.60
1983/01/04	679.97	825.23	679.96	825.22	-0.01	-0.01
1983/04/22	680.64	1175.20	680.63	1175.10	-0.01	-0.10
1983/06/04	679.19	492.27	679.17	492.32	-0.02	0.05
1983/07/09	679.60	627.76	679.59	627.70	-0.01	-0.06
1983/12/05	680.25	947.10	680.24	947.14	-0.01	0.04
1984/02/25	680.21	934.62	680.20	934.62	-0.01	0.00
1984/04/03	679.15	478.04	679.13	478.07	-0.02	0.03
1985/03/19	681.31	1663.00	681.32	1662.70	0.01	-0.30
1985/12/11	679.80	722.13	679.79	722.17	-0.01	0.04
1986/07/19	678.73	335.16	678.72	335.10	-0.01	-0.06
1986/10/10	679.92	777.37	679.91	777.46	-0.01	0.09
1987/09/06	682.74	2913.10	682.80	2910.90	0.06*	-2.20
1988/01/01	678.95	413.36	678.94	413.19	-0.01	-0.17
1988/02/07	678.86	372.34	678.86	372.29	-0.01	-0.05
1988/04/13	678.56	294.27	678.55	294.27	-0.01	0.00
1988/10/26	679.88	791.07	679.86	791.09	-0.02	0.02
1989/08/18	680.52	1112.90	680.52	1112.80	-0.01	-0.10
1989/09/18	679.60	652.39	679.58	652.42	-0.02	0.03
1990/03/16	679.86	751.81	679.85	751.81	-0.01	0.00
1990/05/19	680.30	978.11	680.29	978.10	-0.01	-0.01
1990/08/28	680.06	853.11	680.05	853.21	-0.01	0.10
1990/12/10	679.93	798.64	679.91	798.62	-0.01	-0.02
1991/04/23	679.48	580.37	679.47	580.30	-0.01	-0.07
1991/06/02	678.85	380.36	678.83	380.35	-0.02	-0.01
1991/10/09	679.36	555.17	679.35	555.35	-0.02	0.18
1991/11/08	678.79	363.98	678.77	363.97	-0.02	-0.01
1991/12/18	678.52	292.58	678.50	292.56	-0.02	-0.02
1992/09/21	678.34	251.24	678.32	251.00	-0.02	-0.24
1993/01/11	679.60	628.18	679.59	628.12	-0.01	-0.06
1993/04/29	680.05	850.01	680.04	850.27	-0.01	0.26
1993/07/06	679.99	813.70	679.97	813.88	-0.01	0.18
1994/03/13	679.92	781.93	679.91	781.97	-0.01	0.04
1994/07/02	679.96	831.44	679.95	831.45	-0.01	0.01
1994/08/24	678.41	266.09	678.39	266.04	-0.02	-0.05
1995/01/25	679.36	555.08	679.35	555.19	-0.02	0.11
1995/05/06	679.51	591.58	679.50	591.49	-0.01	-0.09
1995/08/24	678.74	350.38	678.72	350.41	-0.02	0.03
1995/11/18	679.27	519.62	679.25	519.71	-0.02	0.09
1996/06/27	679.56	610.22	679.55	610.17	-0.01	-0.05
1996/08/05	679.14	473.24	679.13	473.26	-0.01	0.02
1997/03/06	681.32	1678.70	681.32	1677.90	0.01	-0.80
1998/03/25	679.40	546.57	679.39	546.55	-0.01	-0.02
1998/05/15	679.22	501.41	679.20	501.40	-0.02	-0.01
1998/08/15	679.39	565.06	679.38	565.09	-0.02	0.03
1998/09/14	677.16	129.89	677.12	129.96	-0.05	0.07
1998/10/25	679.45	589.04	679.43	589.06	-0.02	0.02
1999/02/09	680.53	1106.00	680.52	1105.90	-0.01	-0.10
1999/05/06	680.17	908.24	680.16	908.46	-0.01	0.22
2000/04/28	680.26	952.96	680.24	952.82	-0.01	-0.14
2001/03/02	679.83	757.25	679.82	757.22	-0.01	-0.03
2001/09/06	681.11	1528.90	681.11	1527.90	0.00	-1.00
2001/09/30	679.90	771.52	679.89	771.57	-0.01	0.05
2001/10/31	681.02	1451.10	681.02	1450.60	0.00	-0.50
2002/03/15	679.59	624.84	679.59	624.82	-0.01	-0.02
2002/05/22	679.22	501.75	679.20	501.75	-0.02	0.00
2002/07/13	678.73	348.75	678.72	348.76	-0.02	0.01
2002/08/29	680.73	1264.70	680.73	1264.40	-0.01	-0.30
2003/05/19	679.64	670.77	679.63	670.81	-0.01	0.04
2003/08/13	678.16	216.37	678.14	215.71	-0.03	-0.66
2003/11/29	678.65	321.84	678.64	321.83	-0.01	-0.01
2004/03/11	678.32	245.99	678.30	245.93	-0.02	-0.06
2004/06/18	679.36	531.92	679.35	531.93	-0.01	0.01
2005/01/18	679.96	813.43	679.95	813.38	-0.01	-0.05
2006/03/18	679.09	450.23	679.08	450.29	-0.01	0.06
2006/07/03	678.25	232.13	678.23	231.91	-0.02	-0.22
2006/09/29	679.02	435.00	679.01	435.01	-0.01	0.01
2006/10/09	678.33	248.50	678.31	248.32	-0.02	-0.18
2007/03/15	679.83	738.75	679.82	738.73	-0.01	-0.02
2007/08/31	680.20	923.07	680.19	922.97	-0.01	-0.10
2008/03/09	679.95	825.03	679.94	825.03	-0.01	0.00
2008/05/18	677.44	151.90	677.38	152.17	-0.05	0.27
2008/09/23	682.34	2432.50	682.38	2431.40	0.05*	-1.10
MaximumS&F	682.74	2913.10	682.80	2910.90		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
E7 142336.
4. Branch# 8; Node ID: XS-E7 ; Station: 142336.0000

Nodes ==>	(1) sL16OEX4.PEK 844		(2) sL16OP1o.PEK 844		2-1	2-1
	(S)	(F)	(S)	(F)	(S)	(F)
1925/01/02	674.88	26.15	674.88	26.15	0.00	0.00
1949/04/08	679.77	812.59	679.75	812.59	-0.02	0.00
1949/06/21	680.27	1123.80	680.26	1123.20	-0.01	-0.60
1949/07/27	679.09	535.57	679.07	535.62	-0.02	0.05
1949/12/31	680.34	1138.90	680.33	1138.70	-0.01	-0.20
1950/01/31	679.55	709.16	679.54	709.13	-0.01	-0.03
1950/05/03	680.52	1268.70	680.52	1268.30	-0.01	-0.40
1950/06/11	680.18	1057.90	680.17	1057.20	-0.01	-0.70
1951/03/09	679.67	769.76	679.66	769.76	-0.02	0.00
1951/05/17	679.79	841.19	679.78	841.06	-0.02	-0.13
1951/07/29	679.15	558.09	679.13	558.23	-0.02	0.14
1952/01/25	679.66	801.09	679.65	801.12	-0.01	0.03
1952/03/28	679.41	641.56	679.40	641.57	-0.01	0.01
1953/03/23	679.33	623.84	679.31	623.81	-0.01	-0.03
1953/06/16	678.81	417.79	678.80	417.65	-0.01	-0.14
1953/07/28	680.02	987.93	680.01	988.00	-0.02	0.07
1954/04/05	680.94	1596.40	680.95	1595.40	0.01	-1.00
1954/05/08	680.36	1157.40	680.35	1157.20	-0.01	-0.20
1954/08/29	679.51	691.56	679.50	691.29	-0.01	-0.27
1954/10/25	681.72	2164.10	681.76	2163.60	0.03	-0.50
1955/03/09	678.54	350.54	678.51	350.55	-0.02	0.01
1956/05/18	679.90	880.05	679.89	880.01	-0.02	-0.04
1957/01/27	678.47	334.01	678.45	334.05	-0.02	0.04
1957/03/04	680.09	1018.80	680.08	1018.60	-0.02	-0.20
1957/07/28	681.82	2318.10	681.86	2316.60	0.04	-1.50
1958/04/30	679.17	567.61	679.15	567.56	-0.02	-0.05
1958/06/19	678.77	422.18	678.75	422.19	-0.02	0.01
1958/07/11	678.47	333.88	678.45	333.91	-0.02	0.03
1959/04/07	678.26	262.17	678.24	262.16	-0.01	-0.01
1959/07/27	676.95	130.41	676.91	130.48	-0.05	0.07
1960/01/21	679.14	554.84	679.12	554.96	-0.02	0.12
1960/04/04	676.57	99.50	676.54	99.50	-0.03	0.01
1961/08/09	678.84	447.99	678.83	448.05	-0.02	0.06
1961/10/06	680.97	1596.30	680.98	1595.90	0.01	-0.40
1962/04/15	678.80	408.31	678.79	408.32	-0.01	0.01
1962/07/08	679.11	543.99	679.09	544.08	-0.02	0.09
1963/05/07	678.78	427.89	678.77	427.90	-0.02	0.01
1964/04/12	679.04	486.08	679.02	486.08	-0.01	0.00
1964/07/25	678.73	409.06	678.71	409.04	-0.02	-0.02
1965/03/22	679.28	581.90	679.26	581.84	-0.01	-0.06
1966/02/15	679.24	576.85	679.23	576.65	-0.01	-0.20
1966/05/18	680.11	994.97	680.10	994.73	-0.01	-0.24
1967/04/09	679.23	563.56	679.22	563.57	-0.01	0.01
1967/07/01	679.46	700.36	679.44	700.39	-0.02	0.03
1968/08/24	679.51	724.88	679.49	724.93	-0.02	0.05
1969/04/13	678.78	402.27	678.77	402.28	-0.01	0.01
1969/06/15	679.57	717.97	679.55	717.96	-0.01	-0.01
1969/08/01	677.73	190.66	677.65	191.06	-0.08	0.40
1969/10/25	680.29	1139.60	680.28	1139.30	-0.01	-0.30
1970/05/20	679.52	690.41	679.51	690.38	-0.01	-0.03
1970/12/18	678.48	336.04	678.46	336.05	-0.02	0.01
1971/03/04	678.42	319.00	678.39	319.04	-0.02	0.04
1971/08/28	678.67	390.99	678.65	390.99	-0.02	0.00
1972/03/21	678.85	450.62	678.83	450.68	-0.02	0.06
1972/04/27	679.81	867.24	679.79	867.26	-0.02	0.02
1972/09/01	679.72	804.69	679.70	804.59	-0.02	-0.10
1972/10/05	680.03	961.35	680.02	961.27	-0.01	-0.08
1973/01/08	680.42	1216.60	680.42	1216.10	-0.01	-0.50
1973/05/08	678.98	465.92	678.97	466.01	-0.01	0.09
1974/02/28	679.60	737.49	679.59	737.26	-0.01	-0.23
1974/04/21	678.40	313.27	678.37	313.29	-0.02	0.02
1974/05/25	679.04	487.30	679.03	487.30	-0.01	0.00
1975/01/16	679.62	745.87	679.61	745.67	-0.01	-0.20
1975/05/05	679.23	563.72	679.22	563.84	-0.01	0.12
1975/09/08	679.98	943.11	679.96	942.85	-0.02	-0.26
1976/03/21	679.93	892.30	679.92	892.31	-0.01	0.01
1977/07/05	678.36	305.69	678.34	305.67	-0.02	-0.02
1977/08/13	678.23	273.81	678.21	273.79	-0.02	-0.02
1977/09/07	678.11	246.26	678.09	246.26	-0.03	0.00
1978/04/02	678.39	293.36	678.38	293.35	-0.01	-0.01
1978/05/21	678.42	318.96	678.39	318.97	-0.02	0.01
1978/07/09	679.57	719.90	679.55	719.69	-0.01	-0.21
1978/09/25	680.06	973.82	680.05	973.73	-0.01	-0.09
1979/04/18	680.92	1484.60	680.93	1484.30	0.01	-0.30
1979/09/05	679.20	550.92	679.19	550.94	-0.01	0.02
1980/01/21	676.92	127.34	676.87	127.39	-0.05	0.05
1980/08/26	679.66	767.58	679.64	767.31	-0.01	-0.27
1980/09/26	678.73	390.43	678.72	390.33	-0.01	-0.10
1981/05/03	679.41	638.38	679.39	638.38	-0.01	0.00
1981/06/05	679.95	943.45	679.93	943.12	-0.02	-0.33
1981/06/21	678.52	347.32	678.50	347.34	-0.02	0.02

1981/08/23	679.32	599.79	679.30	599.79	-0.01	0.00
1982/03/28	680.14	1012.80	680.13	1012.60	-0.01	-0.20
1982/07/31	679.49	711.90	679.48	711.94	-0.01	0.04
1982/08/14	679.23	592.98	679.21	593.05	-0.02	0.07
1982/12/12	681.28	1839.60	681.29	1838.90	0.02	-0.70
1983/01/04	679.74	825.45	679.72	825.40	-0.02	-0.05
1983/04/22	680.41	1175.60	680.40	1175.40	-0.01	-0.20
1983/06/04	678.98	492.37	678.96	492.42	-0.01	0.05
1983/07/09	679.39	627.88	679.37	627.81	-0.01	-0.07
1983/12/05	680.02	948.08	680.01	948.13	-0.01	0.05
1984/02/25	679.98	934.68	679.97	934.62	-0.02	-0.06
1984/04/03	678.93	478.04	678.91	478.08	-0.02	0.04
1985/03/19	681.06	1663.40	681.07	1663.20	0.01	-0.20
1985/12/11	679.59	722.37	679.57	722.41	-0.01	0.04
1986/07/19	678.55	335.17	678.53	335.10	-0.01	-0.07
1986/10/10	679.70	778.29	679.68	778.37	-0.01	0.08
1987/09/06	682.53	2911.30	682.60	2909.00	0.07*	-2.30
1988/01/01	678.74	413.45	678.72	413.25	-0.02	-0.20
1988/02/07	678.67	372.41	678.66	372.35	-0.01	-0.06
1988/04/13	678.38	294.35	678.36	294.35	-0.01	0.00
1988/10/26	679.64	791.24	679.63	791.26	-0.01	0.02
1989/08/18	680.29	1114.60	680.28	1114.40	-0.01	-0.20
1989/09/18	679.36	652.55	679.34	652.57	-0.02	0.02
1990/03/16	679.63	751.90	679.62	751.90	-0.01	0.00
1990/05/19	680.07	978.32	680.06	978.30	-0.01	-0.02
1990/08/28	679.84	853.96	679.82	854.16	-0.02	0.20
1990/12/10	679.70	798.83	679.69	798.79	-0.02	-0.04
1991/04/23	679.27	580.55	679.26	580.48	-0.01	-0.07
1991/06/02	678.64	380.44	678.62	380.44	-0.02	0.00
1991/10/09	679.14	555.12	679.12	555.25	-0.02	0.13
1991/11/08	678.58	364.00	678.56	363.99	-0.02	-0.01
1991/12/18	678.31	292.65	678.29	292.62	-0.02	-0.03
1992/09/21	678.13	251.18	678.11	251.00	-0.03	-0.18
1993/01/11	679.39	628.25	679.37	628.19	-0.01	-0.06
1993/04/29	679.83	850.11	679.81	850.32	-0.02	0.21
1993/07/06	679.76	814.04	679.75	814.21	-0.02	0.17
1994/03/13	679.70	781.86	679.68	781.91	-0.01	0.05
1994/07/02	679.73	831.64	679.72	831.65	-0.02	0.01
1994/08/24	678.20	266.10	678.18	266.04	-0.02	-0.06
1995/01/25	679.14	555.16	679.12	555.28	-0.02	0.12
1995/05/06	679.30	591.76	679.29	591.66	-0.01	-0.10
1995/08/24	678.53	350.35	678.51	350.38	-0.02	0.03
1995/11/18	679.05	519.71	679.03	519.80	-0.02	0.09
1996/06/27	679.34	610.43	679.33	610.41	-0.01	-0.02
1996/08/05	678.92	473.25	678.90	473.26	-0.02	0.01
1997/03/06	681.07	1678.10	681.08	1677.30	0.01	-0.80
1998/03/25	679.20	546.93	679.18	546.91	-0.01	-0.02
1998/05/15	679.00	501.60	678.98	501.60	-0.02	0.00
1998/08/15	679.17	565.11	679.16	565.13	-0.02	0.02
1998/09/14	676.96	129.87	676.91	129.95	-0.05	0.08
1998/10/25	679.22	589.15	679.20	589.16	-0.02	0.01
1999/02/09	680.30	1106.20	680.29	1106.00	-0.01	-0.20
1999/05/06	679.95	908.52	679.93	908.69	-0.01	0.17
2000/04/28	680.03	953.18	680.02	953.03	-0.01	-0.15
2001/03/02	679.61	757.46	679.59	757.44	-0.01	-0.02
2001/09/06	680.86	1528.60	680.87	1527.60	0.00	-1.00
2001/09/30	679.68	771.78	679.67	771.83	-0.02	0.05
2001/10/31	680.77	1451.60	680.77	1451.00	0.00	-0.60
2002/03/15	679.38	624.99	679.37	624.97	-0.01	-0.02
2002/05/22	679.00	501.89	678.98	501.89	-0.02	0.00
2002/07/13	678.53	348.67	678.50	348.69	-0.02	0.02
2002/08/29	680.49	1264.60	680.48	1264.30	-0.01	-0.30
2003/05/19	679.42	670.99	679.41	671.04	-0.01	0.05
2003/08/13	677.95	216.31	677.91	215.69	-0.03	-0.62
2003/11/29	678.46	321.79	678.44	321.77	-0.02	-0.02
2004/03/11	678.11	246.03	678.08	245.96	-0.03	-0.07
2004/06/18	679.16	532.08	679.14	532.09	-0.01	0.01
2005/01/18	679.74	813.25	679.72	813.08	-0.02	-0.17
2006/03/18	678.89	450.33	678.88	450.38	-0.01	0.05
2006/07/03	678.04	232.01	678.01	231.77	-0.03	-0.24
2006/09/29	678.80	435.09	678.79	435.11	-0.02	0.02
2006/10/09	678.12	248.50	678.09	248.37	-0.03	-0.13
2007/03/15	679.61	738.70	679.60	738.68	-0.01	-0.02
2007/08/31	679.97	923.24	679.96	923.05	-0.01	-0.19
2008/03/09	679.72	825.17	679.71	825.17	-0.02	0.00
2008/05/18	677.20	151.91	677.13	152.21	-0.07	0.30
2008/09/23	682.13	2433.10	682.19	2431.90	0.05*	-1.20
MaximumS&F	682.53	2911.30	682.60	2909.00		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
E6 142020.
5. Branch# 8; Node ID: XS-E6 ; Station: 142020.0000

Nodes ==>	(1) sL16OEX4.PEK 849 (S)	(F)	(2) sL16OP1o.PEK 849 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.86	26.11	674.86	26.11	-0.01	0.00
1949/04/08	679.58	813.57	679.56	813.57	-0.02	0.00
1949/06/21	680.07	1123.10	680.05	1122.40	-0.02	-0.70
1949/07/27	678.91	535.63	678.88	535.69	-0.03	0.06
1949/12/31	680.15	1139.10	680.14	1138.80	-0.01	-0.30
1950/01/31	679.36	709.18	679.35	709.15	-0.02	-0.03
1950/05/03	680.32	1268.80	680.32	1268.30	-0.01	-0.50
1950/06/11	679.99	1057.80	679.97	1057.00	-0.02	-0.80
1951/03/09	679.49	769.90	679.47	769.90	-0.02	0.00
1951/05/17	679.60	840.95	679.58	840.80	-0.02	-0.15
1951/07/29	678.96	558.14	678.94	558.28	-0.03	0.14
1952/01/25	679.47	801.20	679.45	801.22	-0.02	0.02
1952/03/28	679.24	641.71	679.22	641.78	-0.02	0.07
1953/03/23	679.15	623.82	679.14	623.79	-0.02	-0.03
1953/06/16	678.67	417.58	678.65	417.44	-0.02	-0.14
1953/07/28	679.82	987.90	679.80	987.97	-0.02	0.07
1954/04/05	680.74	1595.90	680.74	1594.90	0.01	-1.00
1954/05/08	680.16	1157.50	680.15	1157.30	-0.01	-0.20
1954/08/29	679.33	691.53	679.31	691.19	-0.02	-0.34
1954/10/25	681.54	2164.00	681.58	2163.40	0.04	-0.60
1955/03/09	678.39	350.63	678.37	350.64	-0.03	0.01
1956/05/18	679.71	880.25	679.69	880.20	-0.02	-0.05
1957/01/27	678.34	334.01	678.31	334.06	-0.03	0.05
1957/03/04	679.89	1018.50	679.87	1018.30	-0.02	-0.20
1957/07/28	681.62	2317.30	681.66	2315.60	0.05*	-1.70
1958/04/30	678.99	567.61	678.96	567.56	-0.03	-0.05
1958/06/19	678.61	422.22	678.59	422.23	-0.02	0.01
1958/07/11	678.34	333.89	678.31	333.93	-0.02	0.04
1959/04/07	678.15	262.20	678.14	262.19	-0.02	-0.01
1959/07/27	676.87	130.39	676.82	130.47	-0.05	0.08
1960/01/21	678.96	554.94	678.93	555.07	-0.03	0.13
1960/04/04	676.50	99.52	676.47	99.53	-0.03	0.01
1961/08/09	678.69	447.99	678.68	448.05	-0.01	0.06
1961/10/06	680.77	1596.40	680.78	1596.00	0.01	-0.40
1962/04/15	678.66	408.48	678.64	408.49	-0.01	0.01
1962/07/08	678.93	544.02	678.90	544.11	-0.03	0.09
1963/05/07	678.62	427.93	678.60	427.94	-0.02	0.01
1964/04/12	678.88	486.43	678.86	486.43	-0.02	0.00
1964/07/25	678.57	409.07	678.55	409.05	-0.02	-0.02
1965/03/22	679.11	581.96	679.09	581.90	-0.02	-0.06
1966/02/15	679.08	576.77	679.06	576.51	-0.02	-0.26
1966/05/18	679.92	995.03	679.91	994.76	-0.01	-0.27
1967/04/09	679.07	563.71	679.05	563.72	-0.02	0.01
1967/07/01	679.26	700.43	679.24	700.46	-0.02	0.03
1968/08/24	679.31	724.98	679.28	725.01	-0.03	0.03
1969/04/13	678.64	402.34	678.62	402.35	-0.01	0.01
1969/06/15	679.38	718.01	679.36	718.00	-0.02	-0.01
1969/08/01	677.64	190.64	677.55	190.95	-0.09	0.31
1969/10/25	680.09	1139.20	680.08	1138.80	-0.01	-0.40
1970/05/20	679.34	690.60	679.33	690.59	-0.02	-0.01
1970/12/18	678.34	336.13	678.32	336.15	-0.03	0.02
1971/03/04	678.28	319.03	678.26	319.08	-0.03	0.05
1971/08/28	678.52	390.93	678.49	390.93	-0.02	0.00
1972/03/21	678.69	450.66	678.66	450.72	-0.02	0.06
1972/04/27	679.61	867.34	679.59	867.40	-0.02	0.06
1972/09/01	679.53	804.61	679.51	804.47	-0.02	-0.14
1972/10/05	679.84	961.44	679.82	961.35	-0.02	-0.09
1973/01/08	680.22	1216.20	680.21	1215.70	-0.01	-0.50
1973/05/08	678.83	466.05	678.81	466.13	-0.02	0.08
1974/02/28	679.41	737.33	679.40	737.04	-0.02	-0.29
1974/04/21	678.26	313.40	678.24	313.42	-0.03	0.02
1974/05/25	678.89	487.42	678.87	487.42	-0.02	0.00
1975/01/16	679.43	745.83	679.42	745.70	-0.02	-0.13
1975/05/05	679.07	563.83	679.05	563.93	-0.02	0.10
1975/09/08	679.78	942.62	679.76	942.47	-0.02	-0.15
1976/03/21	679.75	892.48	679.73	892.48	-0.02	0.00
1977/07/05	678.23	305.67	678.21	305.66	-0.03	-0.01
1977/08/13	678.11	273.81	678.09	273.79	-0.03	-0.02
1977/09/07	678.00	246.38	677.97	246.39	-0.03	0.01
1978/04/02	678.28	293.45	678.26	293.44	-0.02	-0.01
1978/05/21	678.28	319.02	678.26	319.01	-0.03	-0.01
1978/07/09	679.38	719.85	679.37	719.68	-0.02	-0.17
1978/09/25	679.87	973.96	679.85	973.85	-0.02	-0.11
1979/04/18	680.74	1486.90	680.75	1486.50	0.01	-0.40
1979/09/05	679.04	550.95	679.02	550.98	-0.02	0.03
1980/01/21	676.84	127.35	676.78	127.40	-0.05	0.05
1980/08/26	679.47	767.46	679.45	767.19	-0.02	-0.27
1980/09/26	678.59	390.43	678.58	390.34	-0.01	-0.09
1981/05/03	679.23	638.46	679.21	638.45	-0.02	-0.01
1981/06/05	679.75	943.50	679.73	943.16	-0.02	-0.34
1981/06/21	678.38	347.42	678.35	347.44	-0.03	0.02

1981/08/23	679.15	599.85	679.13	599.84	-0.02	-0.01
1982/03/28	679.95	1012.80	679.93	1012.70	-0.01	-0.10
1982/07/31	679.31	712.04	679.29	712.09	-0.02	0.05
1982/08/14	679.04	593.09	679.02	593.16	-0.03	0.07
1982/12/12	681.07	1839.60	681.09	1838.80	0.02	-0.80
1983/01/04	679.55	825.56	679.53	825.49	-0.02	-0.07
1983/04/22	680.21	1175.80	680.21	1175.60	-0.01	-0.20
1983/06/04	678.82	492.43	678.80	492.49	-0.02	0.06
1983/07/09	679.21	627.94	679.20	627.87	-0.02	-0.07
1983/12/05	679.83	948.71	679.81	948.76	-0.02	0.05
1984/02/25	679.79	934.65	679.77	934.53	-0.02	-0.12
1984/04/03	678.76	478.04	678.73	478.07	-0.02	0.03
1985/03/19	680.86	1663.80	680.87	1663.50	0.01	-0.30
1985/12/11	679.40	722.52	679.39	722.58	-0.02	0.06
1986/07/19	678.42	335.17	678.40	335.10	-0.02	-0.07
1986/10/10	679.51	778.92	679.49	778.98	-0.02	0.06
1987/09/06	682.36	2910.00	682.44	2907.50	0.08*	-2.50
1988/01/01	678.58	413.51	678.56	413.29	-0.02	-0.22
1988/02/07	678.54	372.44	678.52	372.38	-0.01	-0.06
1988/04/13	678.27	294.40	678.25	294.40	-0.02	0.00
1988/10/26	679.45	791.34	679.43	791.37	-0.02	0.03
1989/08/18	680.09	1115.70	680.08	1115.50	-0.01	-0.20
1989/09/18	679.17	652.64	679.14	652.67	-0.02	0.03
1990/03/16	679.45	751.93	679.43	751.93	-0.02	0.00
1990/05/19	679.88	978.43	679.86	978.36	-0.02	-0.07
1990/08/28	679.64	856.30	679.62	856.57	-0.02	0.27
1990/12/10	679.51	798.91	679.49	798.84	-0.02	-0.07
1991/04/23	679.11	580.68	679.09	580.61	-0.02	-0.07
1991/06/02	678.49	380.51	678.46	380.52	-0.02	0.01
1991/10/09	678.96	555.13	678.93	555.27	-0.03	0.14
1991/11/08	678.44	364.01	678.41	363.99	-0.03	-0.02
1991/12/18	678.19	292.69	678.16	292.67	-0.03	-0.02
1992/09/21	678.02	251.19	677.99	250.99	-0.03	-0.20
1993/01/11	679.21	628.27	679.20	628.21	-0.02	-0.06
1993/04/29	679.64	850.12	679.62	850.29	-0.02	0.17
1993/07/06	679.57	814.24	679.55	814.40	-0.02	0.16
1994/03/13	679.51	781.77	679.49	781.82	-0.02	0.05
1994/07/02	679.54	831.77	679.52	831.78	-0.02	0.01
1994/08/24	678.08	266.10	678.06	266.04	-0.03	-0.06
1995/01/25	678.96	555.21	678.93	555.33	-0.03	0.12
1995/05/06	679.13	591.87	679.11	591.77	-0.02	-0.10
1995/08/24	678.39	350.32	678.36	350.35	-0.03	0.03
1995/11/18	678.87	519.76	678.84	519.86	-0.02	0.10
1996/06/27	679.17	610.58	679.16	610.54	-0.01	-0.04
1996/08/05	678.75	473.25	678.73	473.26	-0.02	0.01
1997/03/06	680.86	1677.50	680.87	1676.70	0.01	-0.80
1998/03/25	679.03	547.17	679.02	547.14	-0.02	-0.03
1998/05/15	678.82	501.74	678.80	501.73	-0.02	-0.01
1998/08/15	679.01	565.13	678.99	565.16	-0.02	0.03
1998/09/14	676.87	129.86	676.82	129.94	-0.05	0.08
1998/10/25	679.03	589.21	679.01	589.22	-0.03	0.01
1999/02/09	680.10	1106.20	680.09	1106.00	-0.01	-0.20
1999/05/06	679.76	908.66	679.74	908.79	-0.02	0.13
2000/04/28	679.84	953.28	679.82	953.12	-0.02	-0.16
2001/03/02	679.42	757.59	679.40	757.57	-0.02	-0.02
2001/09/06	680.66	1528.20	680.66	1527.30	0.00	-0.90
2001/09/30	679.49	771.94	679.48	772.00	-0.02	0.06
2001/10/31	680.57	1451.80	680.57	1451.20	0.00	-0.60
2002/03/15	679.21	625.08	679.19	625.06	-0.02	-0.02
2002/05/22	678.82	501.98	678.80	501.98	-0.02	0.00
2002/07/13	678.39	348.61	678.36	348.63	-0.03	0.02
2002/08/29	680.29	1264.40	680.28	1264.10	-0.01	-0.30
2003/05/19	679.24	671.14	679.22	671.19	-0.02	0.05
2003/08/13	677.85	216.33	677.81	215.67	-0.04	-0.66
2003/11/29	678.34	321.74	678.32	321.70	-0.02	-0.04
2004/03/11	678.00	246.05	677.97	245.98	-0.03	-0.07
2004/06/18	678.99	532.21	678.98	532.22	-0.02	0.01
2005/01/18	679.54	812.98	679.52	812.72	-0.02	-0.26
2006/03/18	678.74	450.38	678.72	450.44	-0.02	0.06
2006/07/03	677.93	231.92	677.90	231.73	-0.03	-0.19
2006/09/29	678.64	435.15	678.62	435.17	-0.02	0.02
2006/10/09	678.01	248.55	677.98	248.42	-0.03	-0.13
2007/03/15	679.42	738.68	679.41	738.66	-0.02	-0.02
2007/08/31	679.78	923.31	679.77	923.06	-0.02	-0.25
2008/03/09	679.53	825.26	679.51	825.26	-0.02	0.00
2008/05/18	677.10	151.93	677.03	152.24	-0.07	0.31
2008/09/23	681.97	2433.30	682.03	2432.10	0.06*	-1.20
MaximumS&F	682.36	2910.00	682.44	2907.50		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
USTD 141931. USF of Thorndale Avenue
6. Branch# 8; Node ID: THORNDL ; Station: 141931.0000

Nodes ==>	(1) sL16OEX4.PEK 853		(2) sL16OP1o.PEK 853		2-1	2-1
	(S)	(F)	(S)	(F)	(S)	(F)
1925/01/02	674.86	26.09	674.85	26.10	-0.01	0.00
1949/04/08	679.49	813.87	679.47	813.87	-0.02	0.00
1949/06/21	679.97	1122.90	679.96	1122.30	-0.02	-0.60
1949/07/27	678.82	535.65	678.79	535.71	-0.03	0.06
1949/12/31	680.05	1139.10	680.04	1138.80	-0.01	-0.30
1950/01/31	679.28	709.18	679.26	709.16	-0.02	-0.02
1950/05/03	680.23	1268.80	680.22	1268.30	-0.01	-0.50
1950/06/11	679.89	1057.80	679.87	1057.00	-0.02	-0.80
1951/03/09	679.40	769.94	679.38	769.95	-0.02	0.01
1951/05/17	679.51	840.94	679.49	840.74	-0.02	-0.20
1951/07/29	678.87	558.16	678.84	558.30	-0.03	0.14
1952/01/25	679.38	801.23	679.36	801.25	-0.02	0.02
1952/03/28	679.16	641.78	679.14	641.84	-0.02	0.06
1953/03/23	679.07	623.82	679.05	623.79	-0.02	-0.03
1953/06/16	678.59	417.53	678.58	417.42	-0.02	-0.11
1953/07/28	679.73	987.90	679.71	987.97	-0.02	0.07
1954/04/05	680.65	1595.80	680.65	1594.80	0.01	-1.00
1954/05/08	680.07	1157.50	680.06	1157.30	-0.01	-0.20
1954/08/29	679.24	691.52	679.22	691.18	-0.02	-0.34
1954/10/25	681.46	2164.10	681.50	2163.40	0.04	-0.70
1955/03/09	678.31	350.66	678.28	350.67	-0.03	0.01
1956/05/18	679.63	880.31	679.61	880.26	-0.02	-0.05
1957/01/27	678.26	334.01	678.23	334.06	-0.03	0.05
1957/03/04	679.80	1018.50	679.78	1018.30	-0.02	-0.20
1957/07/28	681.53	2317.20	681.58	2315.50	0.05*	-1.70
1958/04/30	678.90	567.62	678.86	567.57	-0.03	-0.05
1958/06/19	678.52	422.23	678.49	422.24	-0.03	0.01
1958/07/11	678.26	333.90	678.24	333.94	-0.02	0.04
1959/04/07	678.09	262.21	678.07	262.19	-0.02	-0.02
1959/07/27	676.85	130.39	676.80	130.47	-0.05	0.08
1960/01/21	678.87	554.97	678.84	555.10	-0.03	0.13
1960/04/04	676.49	99.53	676.46	99.54	-0.03	0.01
1961/08/09	678.61	447.99	678.60	448.06	-0.02	0.07
1961/10/06	680.68	1596.50	680.69	1596.10	0.01	-0.40
1962/04/15	678.58	408.53	678.57	408.54	-0.01	0.01
1962/07/08	678.84	544.03	678.81	544.12	-0.03	0.09
1963/05/07	678.54	427.94	678.51	427.95	-0.03	0.01
1964/04/12	678.81	486.53	678.79	486.52	-0.02	-0.01
1964/07/25	678.48	409.07	678.46	409.05	-0.03	-0.02
1965/03/22	679.03	581.98	679.01	581.92	-0.02	-0.06
1966/02/15	679.00	576.76	678.98	576.47	-0.02	-0.29
1966/05/18	679.83	995.07	679.82	994.78	-0.01	-0.29
1967/04/09	678.99	563.75	678.97	563.76	-0.02	0.01
1967/07/01	679.17	700.45	679.15	700.49	-0.02	0.04
1968/08/24	679.21	725.01	679.19	725.04	-0.02	0.03
1969/04/13	678.56	402.36	678.55	402.37	-0.01	0.01
1969/06/15	679.29	718.03	679.28	718.03	-0.02	0.00
1969/08/01	677.60	190.63	677.50	190.95	-0.09	0.32
1969/10/25	679.99	1139.10	679.98	1138.70	-0.01	-0.40
1970/05/20	679.26	690.66	679.24	690.65	-0.02	-0.01
1970/12/18	678.26	336.16	678.23	336.17	-0.03	0.01
1971/03/04	678.21	319.05	678.17	319.10	-0.03	0.05
1971/08/28	678.43	390.92	678.41	390.92	-0.03	0.00
1972/03/21	678.60	450.67	678.58	450.74	-0.02	0.07
1972/04/27	679.52	867.37	679.50	867.44	-0.02	0.07
1972/09/01	679.44	804.61	679.42	804.46	-0.02	-0.15
1972/10/05	679.75	961.49	679.73	961.40	-0.02	-0.09
1973/01/08	680.13	1216.20	680.11	1215.60	-0.01	-0.60
1973/05/08	678.75	466.09	678.73	466.16	-0.02	0.07
1974/02/28	679.33	737.31	679.31	737.00	-0.02	-0.31
1974/04/21	678.19	313.44	678.16	313.45	-0.03	0.01
1974/05/25	678.81	487.45	678.79	487.46	-0.02	0.01
1975/01/16	679.35	745.83	679.33	745.71	-0.02	-0.12
1975/05/05	678.99	563.86	678.97	563.96	-0.02	0.10
1975/09/08	679.69	942.56	679.67	942.41	-0.02	-0.15
1976/03/21	679.66	892.54	679.65	892.54	-0.02	0.00
1977/07/05	678.16	305.67	678.13	305.65	-0.03	-0.02
1977/08/13	678.04	273.81	678.01	273.79	-0.03	-0.02
1977/09/07	677.93	246.42	677.90	246.46	-0.03	0.04
1978/04/02	678.21	293.47	678.19	293.46	-0.02	-0.01
1978/05/21	678.21	319.03	678.17	319.02	-0.03	-0.01
1978/07/09	679.30	719.84	679.28	719.70	-0.02	-0.14
1978/09/25	679.78	974.01	679.76	973.90	-0.02	-0.11
1979/04/18	680.66	1487.70	680.67	1487.30	0.01	-0.40
1979/09/05	678.96	550.97	678.94	550.99	-0.02	0.02
1980/01/21	676.82	127.35	676.77	127.41	-0.05	0.06
1980/08/26	679.38	767.44	679.36	767.17	-0.02	-0.27
1980/09/26	678.52	390.43	678.50	390.34	-0.01	-0.09
1981/05/03	679.15	638.48	679.13	638.47	-0.02	-0.01
1981/06/05	679.66	943.52	679.64	943.18	-0.02	-0.34
1981/06/21	678.30	347.44	678.27	347.46	-0.03	0.02

1981/08/23	679.06	599.87	679.05	599.86	-0.02	-0.01
1982/03/28	679.85	1012.80	679.84	1012.70	-0.01	-0.10
1982/07/31	679.22	712.09	679.21	712.13	-0.02	0.04
1982/08/14	678.95	593.12	678.93	593.19	-0.02	0.07
1982/12/12	680.98	1839.60	681.01	1838.90	0.02	-0.70
1983/01/04	679.46	825.59	679.44	825.52	-0.02	-0.07
1983/04/22	680.12	1175.90	680.11	1175.70	-0.01	-0.20
1983/06/04	678.74	492.45	678.72	492.51	-0.02	0.06
1983/07/09	679.13	627.97	679.11	627.88	-0.02	-0.09
1983/12/05	679.74	948.90	679.72	948.96	-0.02	0.06
1984/02/25	679.70	934.65	679.68	934.52	-0.02	-0.13
1984/04/03	678.67	478.04	678.64	478.07	-0.03	0.03
1985/03/19	680.77	1663.80	680.78	1663.60	0.01	-0.20
1985/12/11	679.32	722.57	679.30	722.63	-0.02	0.06
1986/07/19	678.35	335.17	678.33	335.10	-0.02	-0.07
1986/10/10	679.42	779.09	679.40	779.15	-0.02	0.06
1987/09/06	682.29	2909.70	682.37	2907.10	0.08*	-2.60
1988/01/01	678.50	413.53	678.47	413.30	-0.03	-0.23
1988/02/07	678.46	372.45	678.45	372.39	-0.02	-0.06
1988/04/13	678.20	294.42	678.18	294.42	-0.02	0.00
1988/10/26	679.36	791.37	679.34	791.40	-0.02	0.03
1989/08/18	680.00	1116.00	679.99	1115.80	-0.01	-0.20
1989/09/18	679.08	652.67	679.06	652.70	-0.02	0.03
1990/03/16	679.36	751.94	679.34	751.94	-0.02	0.00
1990/05/19	679.78	978.47	679.77	978.39	-0.02	-0.08
1990/08/28	679.55	857.28	679.53	857.55	-0.02	0.27
1990/12/10	679.42	798.94	679.40	798.87	-0.02	-0.07
1991/04/23	679.03	580.72	679.01	580.65	-0.02	-0.07
1991/06/02	678.40	380.54	678.38	380.55	-0.03	0.01
1991/10/09	678.87	555.14	678.84	555.28	-0.03	0.14
1991/11/08	678.35	364.01	678.32	364.00	-0.03	-0.01
1991/12/18	678.11	292.70	678.09	292.68	-0.03	-0.02
1992/09/21	677.95	251.19	677.92	250.99	-0.03	-0.20
1993/01/11	679.13	628.28	679.11	628.22	-0.02	-0.06
1993/04/29	679.55	850.13	679.53	850.29	-0.02	0.16
1993/07/06	679.49	814.30	679.46	814.45	-0.02	0.15
1994/03/13	679.42	781.79	679.40	781.81	-0.02	0.02
1994/07/02	679.45	831.80	679.43	831.82	-0.02	0.02
1994/08/24	678.01	266.10	677.98	266.04	-0.03	-0.06
1995/01/25	678.87	555.23	678.85	555.35	-0.02	0.12
1995/05/06	679.05	591.90	679.03	591.80	-0.02	-0.10
1995/08/24	678.31	350.32	678.28	350.35	-0.03	0.03
1995/11/18	678.78	519.78	678.75	519.87	-0.03	0.09
1996/06/27	679.09	610.62	679.07	610.58	-0.02	-0.04
1996/08/05	678.67	473.25	678.64	473.27	-0.03	0.02
1997/03/06	680.77	1677.40	680.78	1676.50	0.01	-0.90
1998/03/25	678.95	547.24	678.93	547.21	-0.02	-0.03
1998/05/15	678.73	501.78	678.71	501.77	-0.03	-0.01
1998/08/15	678.93	565.13	678.91	565.16	-0.02	0.03
1998/09/14	676.86	129.86	676.80	129.94	-0.05	0.08
1998/10/25	678.94	589.23	678.91	589.24	-0.03	0.01
1999/02/09	680.01	1106.20	680.00	1106.10	-0.01	-0.10
1999/05/06	679.67	908.71	679.65	908.84	-0.02	0.13
2000/04/28	679.75	953.31	679.73	953.15	-0.02	-0.16
2001/03/02	679.33	757.64	679.31	757.61	-0.02	-0.03
2001/09/06	680.57	1528.20	680.57	1527.30	0.00	-0.90
2001/09/30	679.41	771.99	679.39	772.04	-0.02	0.05
2001/10/31	680.48	1451.90	680.48	1451.30	0.00	-0.60
2002/03/15	679.13	625.11	679.11	625.09	-0.02	-0.02
2002/05/22	678.73	502.01	678.71	502.01	-0.03	0.00
2002/07/13	678.30	348.60	678.27	348.61	-0.03	0.01
2002/08/29	680.19	1264.40	680.18	1264.10	-0.01	-0.30
2003/05/19	679.16	671.19	679.14	671.24	-0.02	0.05
2003/08/13	677.80	216.34	677.76	215.67	-0.04	-0.67
2003/11/29	678.27	321.73	678.25	321.68	-0.02	-0.05
2004/03/11	677.93	246.06	677.90	245.99	-0.03	-0.07
2004/06/18	678.92	532.25	678.90	532.26	-0.02	0.01
2005/01/18	679.46	812.93	679.43	812.65	-0.02	-0.28
2006/03/18	678.66	450.40	678.64	450.46	-0.02	0.06
2006/07/03	677.87	231.90	677.84	231.72	-0.03	-0.18
2006/09/29	678.56	435.17	678.54	435.19	-0.02	0.02
2006/10/09	677.94	248.57	677.91	248.43	-0.03	-0.14
2007/03/15	679.34	738.70	679.32	738.68	-0.02	-0.02
2007/08/31	679.70	923.34	679.68	923.10	-0.02	-0.24
2008/03/09	679.44	825.29	679.42	825.28	-0.02	-0.01
2008/05/18	677.08	151.94	677.01	152.25	-0.07	0.31
2008/09/23	681.90	2433.40	681.96	2432.30	0.06*	-1.10
MaximumS&F	682.29	2909.70	682.37	2907.10		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
DSTD 141861. DSF of Thorndale Avenue
7. Branch# 800; Node ID: THORNDL ; Station: 141861.0000

	(1)		(2)			
	sL16OEX4.PEK		sL16OP1o.PEK		2-1	2-1
Nodes ==>	900		900			
	(S)	(F)	(S)	(F)	(S)	(F)
1925/01/02	674.85	26.09	674.84	26.09	-0.01	0.00
1949/04/08	679.13	813.87	679.10	813.87	-0.03	0.00
1949/06/21	679.58	1122.90	679.55	1122.30	-0.02	-0.60
1949/07/27	678.43	535.65	678.39	535.71	-0.04	0.06
1949/12/31	679.67	1139.10	679.65	1138.80	-0.01	-0.30
1950/01/31	678.91	709.18	678.89	709.16	-0.03	-0.02
1950/05/03	679.83	1268.80	679.83	1268.30	-0.01	-0.50
1950/06/11	679.50	1057.80	679.47	1057.00	-0.02	-0.80
1951/03/09	679.03	769.94	679.01	769.94	-0.03	0.00
1951/05/17	679.14	840.94	679.11	840.74	-0.03	-0.20
1951/07/29	678.48	558.16	678.44	558.30	-0.04	0.14
1952/01/25	679.01	801.23	678.98	801.25	-0.03	0.02
1952/03/28	678.79	641.78	678.77	641.84	-0.02	0.06
1953/03/23	678.70	623.82	678.68	623.79	-0.03	-0.03
1953/06/16	678.26	417.53	678.24	417.42	-0.02	-0.11
1953/07/28	679.34	987.90	679.32	987.97	-0.03	0.07
1954/04/05	680.22	1595.80	680.23	1594.80	0.01	-1.00
1954/05/08	679.67	1157.50	679.66	1157.30	-0.01	-0.20
1954/08/29	678.87	691.52	678.85	691.18	-0.03	-0.34
1954/10/25	681.01	2164.10	681.07	2163.40	0.05*	-0.70
1955/03/09	677.98	350.66	677.95	350.67	-0.03	0.01
1956/05/18	679.25	880.31	679.23	880.25	-0.03	-0.06
1957/01/27	677.94	334.01	677.91	334.06	-0.03	0.05
1957/03/04	679.41	1018.50	679.38	1018.30	-0.02	-0.20
1957/07/28	681.03	2317.20	681.09	2315.50	0.06*	-1.70
1958/04/30	678.50	567.62	678.46	567.57	-0.04	-0.05
1958/06/19	678.16	422.23	678.13	422.24	-0.03	0.01
1958/07/11	677.97	333.90	677.95	333.94	-0.02	0.04
1959/04/07	677.83	262.21	677.81	262.19	-0.02	-0.02
1959/07/27	676.81	130.39	676.76	130.47	-0.05	0.08
1960/01/21	678.50	554.97	678.48	555.10	-0.03	0.13
1960/04/04	676.46	99.53	676.43	99.54	-0.03	0.01
1961/08/09	678.28	447.99	678.26	448.06	-0.02	0.07
1961/10/06	680.25	1596.50	680.26	1596.10	0.01	-0.40
1962/04/15	678.25	408.53	678.24	408.54	-0.02	0.01
1962/07/08	678.45	544.03	678.41	544.12	-0.04	0.09
1963/05/07	678.18	427.94	678.14	427.95	-0.03	0.01
1964/04/12	678.46	486.53	678.44	486.52	-0.02	-0.01
1964/07/25	678.13	409.07	678.10	409.05	-0.03	-0.02
1965/03/22	678.66	581.98	678.64	581.92	-0.02	-0.06
1966/02/15	678.63	576.76	678.61	576.47	-0.02	-0.29
1966/05/18	679.45	995.07	679.44	994.78	-0.02	-0.29
1967/04/09	678.63	563.75	678.61	563.76	-0.02	0.01
1967/07/01	678.80	700.45	678.77	700.49	-0.02	0.04
1968/08/24	678.84	725.01	678.82	725.04	-0.03	0.03
1969/04/13	678.24	402.36	678.22	402.37	-0.02	0.01
1969/06/15	678.93	718.03	678.90	718.02	-0.02	-0.01
1969/08/01	677.38	190.63	677.30	190.94	-0.08	0.31
1969/10/25	679.59	1139.10	679.58	1138.70	-0.02	-0.40
1970/05/20	678.90	690.66	678.87	690.65	-0.02	-0.01
1970/12/18	677.95	336.16	677.91	336.17	-0.03	0.01
1971/03/04	677.90	319.05	677.86	319.09	-0.03	0.04
1971/08/28	678.09	390.92	678.05	390.92	-0.03	0.00
1972/03/21	678.26	450.67	678.24	450.74	-0.02	0.07
1972/04/27	679.15	867.37	679.12	867.44	-0.03	0.07
1972/09/01	679.07	804.61	679.04	804.46	-0.03	-0.15
1972/10/05	679.36	961.49	679.34	961.40	-0.02	-0.09
1973/01/08	679.73	1216.20	679.71	1215.60	-0.01	-0.60
1973/05/08	678.41	466.09	678.39	466.16	-0.02	0.07
1974/02/28	678.96	737.31	678.93	736.99	-0.03	-0.32
1974/04/21	677.88	313.44	677.85	313.45	-0.03	0.01
1974/05/25	678.46	487.45	678.44	487.45	-0.02	0.00
1975/01/16	678.99	745.83	678.96	745.71	-0.03	-0.12
1975/05/05	678.63	563.86	678.61	563.96	-0.02	0.10
1975/09/08	679.31	942.56	679.28	942.41	-0.03	-0.15
1976/03/21	679.29	892.54	679.27	892.54	-0.02	0.00
1977/07/05	677.86	305.67	677.83	305.65	-0.03	-0.02
1977/08/13	677.76	273.81	677.73	273.79	-0.03	-0.02
1977/09/07	677.67	246.42	677.64	246.45	-0.04	0.03
1978/04/02	677.93	293.47	677.91	293.46	-0.02	-0.01
1978/05/21	677.90	319.03	677.86	319.02	-0.03	-0.01
1978/07/09	678.93	719.84	678.90	719.70	-0.02	-0.14
1978/09/25	679.39	974.01	679.37	973.90	-0.02	-0.11
1979/04/18	680.28	1487.70	680.30	1487.30	0.01	-0.40
1979/09/05	678.60	550.97	678.58	550.99	-0.02	0.02
1980/01/21	676.78	127.35	676.72	127.41	-0.05	0.06
1980/08/26	679.01	767.44	678.98	767.17	-0.03	-0.27
1980/09/26	678.19	390.43	678.18	390.34	-0.02	-0.09
1981/05/03	678.78	638.48	678.76	638.47	-0.03	-0.01
1981/06/05	679.28	943.52	679.25	943.18	-0.03	-0.34
1981/06/21	677.98	347.44	677.94	347.46	-0.04	0.02

1981/08/23	678.70	599.87	678.67	599.86	-0.02	-0.01
1982/03/28	679.47	1012.80	679.46	1012.70	-0.02	-0.10
1982/07/31	678.85	712.09	678.83	712.13	-0.03	0.04
1982/08/14	678.59	593.12	678.57	593.19	-0.02	0.07
1982/12/12	680.52	1839.60	680.55	1838.90	0.03	-0.70
1983/01/04	679.09	825.59	679.06	825.52	-0.03	-0.07
1983/04/22	679.74	1175.90	679.73	1175.70	-0.01	-0.20
1983/06/04	678.39	492.45	678.37	492.51	-0.02	0.06
1983/07/09	678.77	627.97	678.74	627.88	-0.02	-0.09
1983/12/05	679.36	948.90	679.34	948.96	-0.02	0.06
1984/02/25	679.32	934.65	679.29	934.52	-0.03	-0.13
1984/04/03	678.29	478.04	678.26	478.07	-0.03	0.03
1985/03/19	680.33	1663.80	680.35	1663.60	0.02	-0.20
1985/12/11	678.95	722.57	678.93	722.63	-0.02	0.06
1986/07/19	678.04	335.17	678.03	335.10	-0.02	-0.07
1986/10/10	679.05	779.09	679.03	779.15	-0.03	0.06
1987/09/06	681.79	2909.70	681.89	2907.10	0.10*	-2.60
1988/01/01	678.14	413.53	678.11	413.30	-0.03	-0.23
1988/02/07	678.14	372.45	678.13	372.39	-0.02	-0.06
1988/04/13	677.92	294.42	677.90	294.42	-0.02	0.00
1988/10/26	678.99	791.37	678.97	791.40	-0.03	0.03
1989/08/18	679.61	1116.00	679.59	1115.80	-0.01	-0.20
1989/09/18	678.71	652.67	678.68	652.70	-0.02	0.03
1990/03/16	678.99	751.94	678.97	751.94	-0.03	0.00
1990/05/19	679.40	978.47	679.38	978.39	-0.02	-0.08
1990/08/28	679.18	857.27	679.15	857.55	-0.03	0.28
1990/12/10	679.05	798.94	679.02	798.87	-0.03	-0.07
1991/04/23	678.66	580.72	678.64	580.65	-0.02	-0.07
1991/06/02	678.06	380.54	678.03	380.55	-0.04	0.01
1991/10/09	678.48	555.14	678.43	555.28	-0.04	0.14
1991/11/08	678.02	364.01	678.00	364.00	-0.02	-0.01
1991/12/18	677.84	292.70	677.82	292.68	-0.02	-0.02
1992/09/21	677.69	251.19	677.65	250.99	-0.04	-0.20
1993/01/11	678.77	628.28	678.74	628.22	-0.02	-0.06
1993/04/29	679.17	850.13	679.15	850.29	-0.03	0.16
1993/07/06	679.12	814.30	679.09	814.45	-0.03	0.15
1994/03/13	679.05	781.78	679.03	781.81	-0.03	0.03
1994/07/02	679.08	831.80	679.05	831.82	-0.03	0.02
1994/08/24	677.74	266.10	677.70	266.04	-0.04	-0.06
1995/01/25	678.52	555.23	678.49	555.35	-0.03	0.12
1995/05/06	678.69	591.90	678.66	591.80	-0.02	-0.10
1995/08/24	677.98	350.32	677.95	350.34	-0.03	0.02
1995/11/18	678.39	519.78	678.36	519.87	-0.04	0.09
1996/06/27	678.72	610.62	678.70	610.58	-0.02	-0.04
1996/08/05	678.29	473.25	678.26	473.27	-0.03	0.02
1997/03/06	680.33	1677.40	680.35	1676.50	0.02	-0.90
1998/03/25	678.60	547.24	678.57	547.21	-0.02	-0.03
1998/05/15	678.37	501.78	678.34	501.77	-0.02	-0.01
1998/08/15	678.57	565.13	678.54	565.16	-0.03	0.03
1998/09/14	676.81	129.86	676.76	129.94	-0.05	0.08
1998/10/25	678.55	589.23	678.52	589.24	-0.03	0.01
1999/02/09	679.63	1106.20	679.61	1106.10	-0.01	-0.10
1999/05/06	679.29	908.71	679.27	908.84	-0.02	0.13
2000/04/28	679.37	953.31	679.35	953.15	-0.02	-0.16
2001/03/02	678.96	757.64	678.93	757.61	-0.03	-0.03
2001/09/06	680.15	1528.10	680.16	1527.30	0.01	-0.80
2001/09/30	679.04	771.99	679.02	772.04	-0.02	0.05
2001/10/31	680.07	1451.90	680.07	1451.30	0.00	-0.60
2002/03/15	678.77	625.11	678.74	625.09	-0.02	-0.02
2002/05/22	678.35	502.01	678.32	502.01	-0.03	0.00
2002/07/13	677.98	348.60	677.94	348.61	-0.04	0.01
2002/08/29	679.79	1264.40	679.78	1264.10	-0.01	-0.30
2003/05/19	678.79	671.19	678.76	671.24	-0.03	0.05
2003/08/13	677.54	216.34	677.50	215.67	-0.04	-0.67
2003/11/29	677.97	321.73	677.95	321.68	-0.02	-0.05
2004/03/11	677.67	246.06	677.63	245.99	-0.04	-0.07
2004/06/18	678.56	532.25	678.54	532.26	-0.02	0.01
2005/01/18	679.08	812.93	679.06	812.65	-0.03	-0.28
2006/03/18	678.32	450.40	678.30	450.46	-0.02	0.06
2006/07/03	677.61	231.90	677.58	231.72	-0.04	-0.18
2006/09/29	678.22	435.17	678.20	435.19	-0.02	0.02
2006/10/09	677.68	248.57	677.64	248.43	-0.04	-0.14
2007/03/15	678.97	738.70	678.95	738.68	-0.03	-0.02
2007/08/31	679.32	923.34	679.29	923.10	-0.02	-0.24
2008/03/09	679.07	825.29	679.04	825.28	-0.03	-0.01
2008/05/18	677.02	151.94	676.95	152.25	-0.06	0.31
2008/09/23	681.45	2433.40	681.52	2432.30	0.08*	-1.10
MaximumS&F	681.79	2909.70	681.89	2907.10		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
E4 141786.
8. Branch# 800; Node ID: XS-E4 ; Station: 141786.0000

Nodes ==>	(1) sL16OEX4.PEK 905 (S)	(F)	(2) sL16OP1o.PEK 905 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.85	26.08	674.84	26.08	-0.01	0.00
1949/04/08	679.07	813.82	679.04	813.82	-0.03	0.00
1949/06/21	679.51	1122.60	679.49	1121.90	-0.02	-0.70
1949/07/27	678.38	535.64	678.34	535.70	-0.03	0.06
1949/12/31	679.61	1139.10	679.60	1138.80	-0.01	-0.30
1950/01/31	678.86	709.14	678.83	709.11	-0.03	-0.03
1950/05/03	679.78	1268.70	679.77	1268.20	-0.01	-0.50
1950/06/11	679.44	1057.60	679.41	1056.90	-0.02	-0.70
1951/03/09	678.98	769.90	678.95	769.91	-0.03	0.01
1951/05/17	679.08	840.81	679.05	840.57	-0.03	-0.24
1951/07/29	678.42	558.14	678.38	558.28	-0.04	0.14
1952/01/25	678.95	801.21	678.92	801.23	-0.03	0.02
1952/03/28	678.74	641.76	678.71	641.82	-0.03	0.06
1953/03/23	678.65	623.79	678.63	623.76	-0.03	-0.03
1953/06/16	678.21	417.45	678.19	417.37	-0.02	-0.08
1953/07/28	679.28	987.84	679.26	987.90	-0.03	0.06
1954/04/05	680.16	1595.50	680.17	1594.40	0.01	-1.10
1954/05/08	679.62	1157.40	679.60	1157.20	-0.01	-0.20
1954/08/29	678.82	691.45	678.79	691.10	-0.03	-0.35
1954/10/25	680.97	2163.60	681.03	2163.00	0.06*	-0.60
1955/03/09	677.94	350.65	677.90	350.66	-0.04	0.01
1956/05/18	679.20	880.27	679.17	880.21	-0.03	-0.06
1957/01/27	677.89	334.01	677.86	334.05	-0.04	0.04
1957/03/04	679.35	1018.30	679.32	1018.10	-0.03	-0.20
1957/07/28	680.98	2316.60	681.04	2314.90	0.06*	-1.70
1958/04/30	678.44	567.60	678.40	567.55	-0.05	-0.05
1958/06/19	678.11	422.22	678.08	422.23	-0.04	0.01
1958/07/11	677.93	333.89	677.91	333.93	-0.02	0.04
1959/04/07	677.80	262.20	677.78	262.18	-0.02	-0.02
1959/07/27	676.80	130.39	676.74	130.47	-0.05	0.08
1960/01/21	678.46	554.96	678.43	555.09	-0.03	0.13
1960/04/04	676.46	99.53	676.42	99.54	-0.03	0.01
1961/08/09	678.23	447.98	678.21	448.04	-0.02	0.06
1961/10/06	680.19	1596.40	680.20	1596.00	0.01	-0.40
1962/04/15	678.21	408.51	678.19	408.51	-0.02	0.00
1962/07/08	678.39	544.02	678.35	544.11	-0.05	0.09
1963/05/07	678.13	427.93	678.09	427.94	-0.04	0.01
1964/04/12	678.41	486.52	678.39	486.51	-0.03	-0.01
1964/07/25	678.08	409.06	678.04	409.04	-0.04	-0.02
1965/03/22	678.62	581.96	678.59	581.90	-0.03	-0.06
1966/02/15	678.59	576.66	678.56	576.34	-0.03	-0.32
1966/05/18	679.40	994.96	679.38	994.67	-0.02	-0.29
1967/04/09	678.58	563.73	678.56	563.74	-0.02	0.01
1967/07/01	678.74	700.44	678.72	700.47	-0.03	0.03
1968/08/24	678.79	724.99	678.76	725.03	-0.03	0.04
1969/04/13	678.19	402.34	678.17	402.35	-0.02	0.01
1969/06/15	678.87	717.96	678.85	717.96	-0.03	0.00
1969/08/01	677.34	190.62	677.28	190.94	-0.05	0.32
1969/10/25	679.54	1138.90	679.52	1138.40	-0.02	-0.50
1970/05/20	678.84	690.64	678.82	690.63	-0.02	-0.01
1970/12/18	677.90	336.16	677.86	336.17	-0.04	0.01
1971/03/04	677.85	319.04	677.83	319.09	-0.03	0.05
1971/08/28	678.04	390.90	678.00	390.90	-0.04	0.00
1972/03/21	678.22	450.66	678.20	450.73	-0.02	0.07
1972/04/27	679.09	867.34	679.06	867.40	-0.03	0.06
1972/09/01	679.01	804.51	678.99	804.36	-0.03	-0.15
1972/10/05	679.31	961.44	679.28	961.35	-0.03	-0.09
1973/01/08	679.67	1216.00	679.65	1215.40	-0.02	-0.60
1973/05/08	678.36	466.08	678.34	466.15	-0.02	0.07
1974/02/28	678.90	737.21	678.87	736.89	-0.03	-0.32
1974/04/21	677.84	313.44	677.80	313.45	-0.04	0.01
1974/05/25	678.42	487.44	678.39	487.44	-0.03	0.00
1975/01/16	678.93	745.76	678.91	745.66	-0.03	-0.10
1975/05/05	678.58	563.83	678.56	563.93	-0.02	0.10
1975/09/08	679.25	942.36	679.22	942.19	-0.03	-0.17
1976/03/21	679.24	892.49	679.21	892.49	-0.02	0.00
1977/07/05	677.82	305.66	677.78	305.65	-0.04	-0.01
1977/08/13	677.72	273.80	677.68	273.78	-0.04	-0.02
1977/09/07	677.63	246.41	677.59	246.42	-0.04	0.01
1978/04/02	677.89	293.47	677.87	293.46	-0.02	-0.01
1978/05/21	677.85	319.03	677.82	319.01	-0.04	-0.02
1978/07/09	678.87	719.74	678.85	719.61	-0.03	-0.13
1978/09/25	679.34	973.95	679.31	973.83	-0.02	-0.12
1979/04/18	680.23	1487.40	680.25	1487.00	0.02	-0.40
1979/09/05	678.55	550.93	678.53	550.96	-0.03	0.03
1980/01/21	676.77	127.35	676.72	127.40	-0.05	0.05
1980/08/26	678.95	767.33	678.92	767.06	-0.03	-0.27
1980/09/26	678.15	390.41	678.13	390.31	-0.02	-0.10
1981/05/03	678.73	638.45	678.70	638.44	-0.03	-0.01
1981/06/05	679.21	943.48	679.18	943.12	-0.03	-0.36
1981/06/21	677.93	347.44	677.89	347.46	-0.04	0.02

1981/08/23	678.65	599.84	678.62	599.83	-0.03	-0.01
1982/03/28	679.42	1012.80	679.40	1012.70	-0.02	-0.10
1982/07/31	678.80	712.07	678.77	712.12	-0.03	0.05
1982/08/14	678.54	593.11	678.52	593.18	-0.03	0.07
1982/12/12	680.47	1839.40	680.50	1838.60	0.03	-0.80
1983/01/04	679.03	825.53	679.00	825.48	-0.03	-0.05
1983/04/22	679.68	1175.80	679.67	1175.50	-0.01	-0.30
1983/06/04	678.34	492.44	678.32	492.50	-0.02	0.06
1983/07/09	678.72	627.93	678.69	627.85	-0.02	-0.08
1983/12/05	679.30	948.84	679.28	948.89	-0.02	0.05
1984/02/25	679.26	934.57	679.23	934.43	-0.03	-0.14
1984/04/03	678.24	478.02	678.20	478.05	-0.04	0.03
1985/03/19	680.27	1663.80	680.29	1663.50	0.02	-0.30
1985/12/11	678.90	722.54	678.88	722.61	-0.03	0.07
1986/07/19	678.01	335.15	677.98	335.08	-0.02	-0.07
1986/10/10	679.00	779.05	678.97	779.11	-0.03	0.06
1987/09/06	681.76	2908.60	681.86	2905.90	0.10*	-2.70
1988/01/01	678.09	413.52	678.05	413.29	-0.04	-0.23
1988/02/07	678.10	372.44	678.08	372.37	-0.02	-0.07
1988/04/13	677.89	294.41	677.87	294.42	-0.02	0.01
1988/10/26	678.94	791.36	678.91	791.38	-0.03	0.02
1989/08/18	679.55	1115.80	679.53	1115.70	-0.02	-0.10
1989/09/18	678.66	652.66	678.63	652.69	-0.03	0.03
1990/03/16	678.94	751.90	678.91	751.90	-0.03	0.00
1990/05/19	679.34	978.41	679.32	978.33	-0.02	-0.08
1990/08/28	679.12	856.73	679.09	857.03	-0.03	0.30
1990/12/10	678.99	798.86	678.97	798.78	-0.03	-0.08
1991/04/23	678.62	580.70	678.59	580.64	-0.03	-0.06
1991/06/02	678.01	380.54	677.97	380.55	-0.04	0.01
1991/10/09	678.42	555.13	678.37	555.27	-0.05	0.14
1991/11/08	677.98	364.01	677.96	363.99	-0.02	-0.02
1991/12/18	677.81	292.70	677.78	292.68	-0.02	-0.02
1992/09/21	677.65	251.18	677.61	250.98	-0.04	-0.20
1993/01/11	678.71	628.25	678.69	628.19	-0.02	-0.06
1993/04/29	679.12	850.08	679.09	850.22	-0.03	0.14
1993/07/06	679.06	814.25	679.03	814.40	-0.03	0.15
1994/03/13	679.00	781.75	678.97	781.78	-0.03	0.03
1994/07/02	679.02	831.79	678.99	831.80	-0.03	0.01
1994/08/24	677.70	266.09	677.66	266.03	-0.04	-0.06
1995/01/25	678.47	555.22	678.44	555.34	-0.03	0.12
1995/05/06	678.64	591.88	678.61	591.77	-0.03	-0.11
1995/08/24	677.93	350.31	677.90	350.33	-0.04	0.02
1995/11/18	678.34	519.77	678.30	519.87	-0.04	0.10
1996/06/27	678.67	610.60	678.65	610.57	-0.02	-0.03
1996/08/05	678.24	473.24	678.21	473.25	-0.03	0.01
1997/03/06	680.27	1677.20	680.29	1676.20	0.02	-1.00
1998/03/25	678.55	547.23	678.52	547.19	-0.03	-0.04
1998/05/15	678.32	501.77	678.30	501.76	-0.02	-0.01
1998/08/15	678.52	565.13	678.49	565.16	-0.03	0.03
1998/09/14	676.80	129.85	676.75	129.94	-0.05	0.09
1998/10/25	678.49	589.22	678.47	589.23	-0.03	0.01
1999/02/09	679.57	1106.20	679.56	1106.00	-0.01	-0.20
1999/05/06	679.24	908.65	679.21	908.79	-0.03	0.14
2000/04/28	679.31	953.26	679.29	953.09	-0.02	-0.17
2001/03/02	678.91	757.61	678.88	757.59	-0.03	-0.02
2001/09/06	680.09	1527.90	680.10	1527.00	0.01	-0.90
2001/09/30	678.99	771.96	678.96	772.01	-0.03	0.05
2001/10/31	680.01	1451.70	680.02	1451.10	0.00	-0.60
2002/03/15	678.72	625.10	678.69	625.07	-0.03	-0.03
2002/05/22	678.29	502.00	678.27	502.00	-0.02	0.00
2002/07/13	677.93	348.58	677.89	348.60	-0.04	0.02
2002/08/29	679.73	1264.20	679.72	1263.90	-0.01	-0.30
2003/05/19	678.73	671.18	678.71	671.23	-0.03	0.05
2003/08/13	677.51	216.33	677.46	215.65	-0.05	-0.68
2003/11/29	677.94	321.70	677.91	321.65	-0.02	-0.05
2004/03/11	677.63	246.05	677.59	245.98	-0.04	-0.07
2004/06/18	678.52	532.24	678.49	532.25	-0.03	0.01
2005/01/18	679.03	812.74	679.00	812.44	-0.03	-0.30
2006/03/18	678.27	450.38	678.25	450.44	-0.02	0.06
2006/07/03	677.57	231.90	677.53	231.71	-0.04	-0.19
2006/09/29	678.18	435.16	678.16	435.18	-0.02	0.02
2006/10/09	677.64	248.56	677.60	248.43	-0.04	-0.13
2007/03/15	678.92	738.67	678.89	738.65	-0.03	-0.02
2007/08/31	679.26	923.27	679.24	923.04	-0.02	-0.23
2008/03/09	679.01	825.27	678.98	825.26	-0.03	-0.01
2008/05/18	677.01	151.94	676.94	152.25	-0.06	0.31
2008/09/23	681.41	2433.00	681.49	2431.80	0.08*	-1.20
MaximumS&F	681.76	2908.60	681.86	2905.90		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
USEO 141761. USF of Proposed Bridge
9. Branch# 800; Node ID: ELOHARE ; Station: 141746.0000

Nodes ==>	(1) sL16OEX4.PEK 910		(2) sL16OP1o.PEK 910		2-1	2-1
	(S)	(F)	(S)	(F)	(S)	(F)
1925/01/02	674.84	26.07	674.84	26.07	-0.01	0.00
1949/04/08	679.05	813.79	679.02	813.79	-0.03	0.00
1949/06/21	679.49	1122.40	679.47	1121.70	-0.02	-0.70
1949/07/27	678.36	535.63	678.33	535.70	-0.03	0.07
1949/12/31	679.59	1139.00	679.58	1138.70	-0.01	-0.30
1950/01/31	678.84	709.11	678.81	709.08	-0.03	-0.03
1950/05/03	679.75	1268.60	679.74	1268.10	-0.01	-0.50
1950/06/11	679.41	1057.50	679.39	1056.80	-0.02	-0.70
1951/03/09	678.96	769.88	678.93	769.89	-0.03	0.01
1951/05/17	679.06	840.73	679.03	840.48	-0.03	-0.25
1951/07/29	678.41	558.13	678.37	558.28	-0.04	0.15
1952/01/25	678.93	801.20	678.91	801.22	-0.03	0.02
1952/03/28	678.72	641.75	678.70	641.81	-0.03	0.06
1953/03/23	678.64	623.77	678.61	623.74	-0.03	-0.03
1953/06/16	678.20	417.42	678.18	417.34	-0.02	-0.08
1953/07/28	679.26	987.81	679.23	987.86	-0.03	0.05
1954/04/05	680.14	1595.20	680.15	1594.20	0.01	-1.00
1954/05/08	679.59	1157.30	679.58	1157.10	-0.01	-0.20
1954/08/29	678.80	691.40	678.77	691.06	-0.03	-0.34
1954/10/25	680.95	2163.40	681.01	2162.70	0.06*	-0.70
1955/03/09	677.92	350.65	677.89	350.66	-0.04	0.01
1956/05/18	679.18	880.25	679.15	880.19	-0.03	-0.06
1957/01/27	677.88	334.00	677.84	334.05	-0.04	0.05
1957/03/04	679.33	1018.20	679.30	1018.00	-0.03	-0.20
1957/07/28	680.95	2316.30	681.02	2314.60	0.07*	-1.70
1958/04/30	678.42	567.59	678.38	567.53	-0.04	-0.06
1958/06/19	678.10	422.22	678.06	422.23	-0.04	0.01
1958/07/11	677.92	333.88	677.90	333.92	-0.02	0.04
1959/04/07	677.79	262.19	677.77	262.17	-0.02	-0.02
1959/07/27	676.79	130.39	676.74	130.46	-0.05	0.07
1960/01/21	678.44	554.96	678.41	555.08	-0.03	0.12
1960/04/04	676.45	99.53	676.42	99.54	-0.03	0.01
1961/08/09	678.22	447.97	678.20	448.04	-0.02	0.07
1961/10/06	680.17	1596.30	680.18	1595.90	0.01	-0.40
1962/04/15	678.20	408.49	678.18	408.50	-0.02	0.01
1962/07/08	678.38	544.01	678.33	544.11	-0.05	0.10
1963/05/07	678.11	427.92	678.07	427.93	-0.04	0.01
1964/04/12	678.40	486.52	678.37	486.51	-0.03	-0.01
1964/07/25	678.07	409.06	678.03	409.04	-0.04	-0.02
1965/03/22	678.60	581.95	678.57	581.89	-0.03	-0.06
1966/02/15	678.57	576.60	678.54	576.26	-0.03	-0.34
1966/05/18	679.38	994.90	679.36	994.60	-0.02	-0.30
1967/04/09	678.57	563.72	678.54	563.73	-0.03	0.01
1967/07/01	678.73	700.43	678.70	700.46	-0.03	0.03
1968/08/24	678.77	724.98	678.74	725.02	-0.03	0.04
1969/04/13	678.18	402.33	678.16	402.34	-0.02	0.01
1969/06/15	678.85	717.92	678.83	717.92	-0.03	0.00
1969/08/01	677.33	190.61	677.27	190.93	-0.06	0.32
1969/10/25	679.51	1138.70	679.49	1138.30	-0.02	-0.40
1970/05/20	678.83	690.63	678.80	690.62	-0.03	-0.01
1970/12/18	677.89	336.15	677.85	336.17	-0.04	0.02
1971/03/04	677.84	319.04	677.82	319.09	-0.03	0.05
1971/08/28	678.02	390.89	677.98	390.89	-0.04	0.00
1972/03/21	678.20	450.65	678.18	450.72	-0.02	0.07
1972/04/27	679.07	867.32	679.04	867.38	-0.03	0.06
1972/09/01	678.99	804.46	678.97	804.29	-0.03	-0.17
1972/10/05	679.29	961.41	679.26	961.31	-0.03	-0.10
1973/01/08	679.64	1215.90	679.63	1215.20	-0.02	-0.70
1973/05/08	678.35	466.07	678.33	466.14	-0.02	0.07
1974/02/28	678.88	737.16	678.85	736.83	-0.03	-0.33
1974/04/21	677.83	313.44	677.79	313.45	-0.04	0.01
1974/05/25	678.40	487.43	678.38	487.43	-0.02	0.00
1975/01/16	678.91	745.72	678.89	745.62	-0.03	-0.10
1975/05/05	678.57	563.82	678.54	563.92	-0.02	0.10
1975/09/08	679.23	942.25	679.20	942.06	-0.03	-0.19
1976/03/21	679.22	892.46	679.19	892.46	-0.02	0.00
1977/07/05	677.80	305.66	677.77	305.64	-0.04	-0.02
1977/08/13	677.71	273.80	677.67	273.78	-0.04	-0.02
1977/09/07	677.62	246.40	677.58	246.40	-0.04	0.00
1978/04/02	677.88	293.46	677.86	293.45	-0.02	-0.01
1978/05/21	677.84	319.03	677.80	319.01	-0.04	-0.02
1978/07/09	678.85	719.70	678.83	719.57	-0.03	-0.13
1978/09/25	679.32	973.92	679.29	973.80	-0.02	-0.12
1979/04/18	680.22	1487.20	680.23	1486.80	0.02	-0.40
1979/09/05	678.54	550.91	678.51	550.94	-0.03	0.03
1980/01/21	676.76	127.34	676.71	127.40	-0.05	0.06
1980/08/26	678.93	767.27	678.90	767.00	-0.03	-0.27
1980/09/26	678.14	390.40	678.12	390.30	-0.02	-0.10
1981/05/03	678.71	638.43	678.69	638.42	-0.03	-0.01
1981/06/05	679.19	943.45	679.16	943.09	-0.03	-0.36
1981/06/21	677.91	347.44	677.88	347.45	-0.04	0.01

1981/08/23	678.63	599.82	678.61	599.81	-0.03	-0.01
1982/03/28	679.40	1012.70	679.38	1012.60	-0.02	-0.10
1982/07/31	678.78	712.06	678.76	712.11	-0.03	0.05
1982/08/14	678.53	593.10	678.50	593.18	-0.03	0.08
1982/12/12	680.44	1839.20	680.47	1838.40	0.03	-0.80
1983/01/04	679.01	825.49	678.98	825.46	-0.03	-0.03
1983/04/22	679.66	1175.70	679.65	1175.50	-0.01	-0.20
1983/06/04	678.33	492.43	678.31	492.49	-0.02	0.06
1983/07/09	678.70	627.91	678.67	627.82	-0.02	-0.09
1983/12/05	679.28	948.81	679.26	948.86	-0.02	0.05
1984/02/25	679.24	934.53	679.21	934.37	-0.03	-0.16
1984/04/03	678.22	478.01	678.18	478.04	-0.04	0.03
1985/03/19	680.25	1663.80	680.27	1663.50	0.02	-0.30
1985/12/11	678.88	722.52	678.86	722.59	-0.03	0.07
1986/07/19	677.99	335.14	677.97	335.07	-0.02	-0.07
1986/10/10	678.98	779.02	678.95	779.08	-0.03	0.06
1987/09/06	681.74	2907.90	681.84	2905.20	0.10*	-2.70
1988/01/01	678.08	413.51	678.04	413.28	-0.04	-0.23
1988/02/07	678.09	372.43	678.07	372.37	-0.02	-0.06
1988/04/13	677.88	294.40	677.86	294.42	-0.02	0.02
1988/10/26	678.92	791.35	678.89	791.37	-0.03	0.02
1989/08/18	679.53	1115.70	679.51	1115.60	-0.02	-0.10
1989/09/18	678.64	652.65	678.61	652.68	-0.03	0.03
1990/03/16	678.92	751.88	678.89	751.87	-0.03	-0.01
1990/05/19	679.32	978.38	679.30	978.30	-0.02	-0.08
1990/08/28	679.10	856.45	679.07	856.75	-0.03	0.30
1990/12/10	678.98	798.81	678.95	798.72	-0.03	-0.09
1991/04/23	678.60	580.69	678.57	580.63	-0.03	-0.06
1991/06/02	678.00	380.54	677.96	380.55	-0.04	0.01
1991/10/09	678.40	555.13	678.35	555.27	-0.05	0.14
1991/11/08	677.97	364.00	677.95	363.98	-0.02	-0.02
1991/12/18	677.80	292.69	677.77	292.67	-0.02	-0.02
1992/09/21	677.64	251.18	677.59	250.97	-0.04	-0.21
1993/01/11	678.70	628.23	678.67	628.17	-0.03	-0.06
1993/04/29	679.10	850.05	679.07	850.19	-0.03	0.14
1993/07/06	679.04	814.23	679.01	814.38	-0.03	0.15
1994/03/13	678.98	781.74	678.95	781.77	-0.03	0.03
1994/07/02	679.00	831.78	678.97	831.79	-0.03	0.01
1994/08/24	677.69	266.09	677.65	266.03	-0.04	-0.06
1995/01/25	678.45	555.21	678.42	555.34	-0.03	0.13
1995/05/06	678.62	591.86	678.59	591.75	-0.03	-0.11
1995/08/24	677.92	350.30	677.88	350.33	-0.04	0.03
1995/11/18	678.32	519.76	678.28	519.86	-0.04	0.10
1996/06/27	678.66	610.59	678.63	610.55	-0.03	-0.04
1996/08/05	678.22	473.23	678.20	473.25	-0.02	0.02
1997/03/06	680.25	1677.00	680.27	1676.00	0.02	-1.00
1998/03/25	678.53	547.22	678.51	547.18	-0.03	-0.04
1998/05/15	678.31	501.77	678.28	501.76	-0.02	-0.01
1998/08/15	678.50	565.12	678.47	565.15	-0.03	0.03
1998/09/14	676.80	129.85	676.74	129.94	-0.05	0.09
1998/10/25	678.48	589.21	678.45	589.22	-0.03	0.01
1999/02/09	679.55	1106.10	679.53	1105.90	-0.01	-0.20
1999/05/06	679.22	908.62	679.19	908.76	-0.02	0.14
2000/04/28	679.29	953.22	679.27	953.05	-0.02	-0.17
2001/03/02	678.89	757.60	678.86	757.57	-0.03	-0.03
2001/09/06	680.07	1527.70	680.08	1526.90	0.01	-0.80
2001/09/30	678.97	771.94	678.94	772.00	-0.03	0.06
2001/10/31	679.99	1451.60	679.99	1451.00	0.00	-0.60
2002/03/15	678.70	625.09	678.67	625.06	-0.02	-0.03
2002/05/22	678.28	502.00	678.26	501.99	-0.02	-0.01
2002/07/13	677.92	348.58	677.88	348.59	-0.04	0.01
2002/08/29	679.71	1264.10	679.70	1263.70	-0.01	-0.40
2003/05/19	678.72	671.17	678.69	671.22	-0.03	0.05
2003/08/13	677.50	216.32	677.45	215.64	-0.05	-0.68
2003/11/29	677.93	321.69	677.90	321.63	-0.02	-0.06
2004/03/11	677.62	246.04	677.58	245.97	-0.04	-0.07
2004/06/18	678.50	532.24	678.47	532.25	-0.03	0.01
2005/01/18	679.01	812.63	678.98	812.32	-0.03	-0.31
2006/03/18	678.26	450.38	678.24	450.43	-0.02	0.05
2006/07/03	677.56	231.89	677.52	231.71	-0.04	-0.18
2006/09/29	678.17	435.16	678.15	435.18	-0.02	0.02
2006/10/09	677.63	248.56	677.59	248.42	-0.04	-0.14
2007/03/15	678.90	738.65	678.87	738.63	-0.03	-0.02
2007/08/31	679.24	923.23	679.22	923.01	-0.03	-0.22
2008/03/09	678.99	825.26	678.96	825.25	-0.03	-0.01
2008/05/18	677.00	151.94	676.94	152.24	-0.06	0.30
2008/09/23	681.39	2432.70	681.47	2431.50	0.08*	-1.20
MaximumS&F	681.74	2907.90	681.84	2905.20		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
DSEO 141861. DSF of Proposed Bridge
10. Branch# 9; Node ID: ------- ; Station: 141566.0000

Nodes ==>	(1) sL16OEX4.PEK 1002 (S)	(F)	(2) sL16OP1o.PEK 1000 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.84	26.05	674.84	26.07	-0.01	0.03
1949/04/08	678.99	813.59	678.94	813.79	-0.05	0.20
1949/06/21	679.42	1121.00	679.37	1121.70	-0.06	0.70
1949/07/27	678.30	535.57	678.25	535.70	-0.05	0.13
1949/12/31	679.53	1138.70	679.47	1138.70	-0.05	0.00
1950/01/31	678.78	708.90	678.72	709.08	-0.05	0.18
1950/05/03	679.69	1268.10	679.64	1268.10	-0.05	0.00
1950/06/11	679.35	1057.00	679.29	1056.80	-0.06	-0.20
1951/03/09	678.90	769.72	678.84	769.88	-0.05	0.16
1951/05/17	679.00	840.11	678.94	840.48	-0.06	0.37
1951/07/29	678.34	558.06	678.28	558.28	-0.05	0.22
1952/01/25	678.87	801.11	678.82	801.22	-0.05	0.11
1952/03/28	678.66	641.66	678.61	641.81	-0.05	0.15
1953/03/23	678.57	623.63	678.52	623.74	-0.05	0.11
1953/06/16	678.15	417.22	678.10	417.34	-0.05	0.12
1953/07/28	679.20	987.51	679.14	987.86	-0.05	0.35
1954/04/05	680.07	1593.70	680.02	1594.20	-0.05	0.50
1954/05/08	679.53	1156.90	679.48	1157.10	-0.05	0.20
1954/08/29	678.74	691.02	678.69	691.05	-0.05	0.03
1954/10/25	680.90	2162.00	680.85	2162.70	-0.04	0.70
1955/03/09	677.87	350.64	677.82	350.66	-0.05	0.02
1956/05/18	679.12	880.07	679.06	880.19	-0.05	0.12
1957/01/27	677.83	333.98	677.78	334.05	-0.05	0.07
1957/03/04	679.26	1017.60	679.21	1018.00	-0.05	0.40
1957/07/28	680.89	2314.60	680.84	2314.60	-0.05	0.00
1958/04/30	678.35	567.49	678.30	567.53	-0.05	0.04
1958/06/19	678.04	422.18	677.98	422.23	-0.06	0.05
1958/07/11	677.88	333.88	677.84	333.92	-0.04	0.04
1959/04/07	677.75	262.14	677.72	262.17	-0.04	0.03
1959/07/27	676.77	130.36	676.72	130.46	-0.04	0.10
1960/01/21	678.39	554.94	678.33	555.08	-0.05	0.14
1960/04/04	676.44	99.52	676.41	99.54	-0.03	0.01
1961/08/09	678.17	447.92	678.12	448.04	-0.05	0.12
1961/10/06	680.10	1595.80	680.05	1595.90	-0.05	0.10
1962/04/15	678.15	408.37	678.10	408.50	-0.05	0.13
1962/07/08	678.30	543.96	678.23	544.11	-0.07	0.15
1963/05/07	678.05	427.88	677.99	427.93	-0.06	0.05
1964/04/12	678.34	486.46	678.29	486.51	-0.05	0.05
1964/07/25	678.01	409.03	677.95	409.04	-0.06	0.01
1965/03/22	678.54	581.84	678.49	581.89	-0.05	0.05
1966/02/15	678.51	576.08	678.46	576.26	-0.05	0.18
1966/05/18	679.32	994.41	679.27	994.60	-0.05	0.19
1967/04/09	678.51	563.65	678.46	563.73	-0.05	0.08
1967/07/01	678.66	700.35	678.61	700.46	-0.05	0.11
1968/08/24	678.71	724.92	678.65	725.02	-0.05	0.10
1969/04/13	678.14	402.29	678.09	402.34	-0.05	0.05
1969/06/15	678.79	717.67	678.74	717.92	-0.05	0.25
1969/08/01	677.29	190.53	677.24	190.93	-0.05	0.40
1969/10/25	679.45	1137.60	679.39	1138.20	-0.05	0.60
1970/05/20	678.77	690.52	678.72	690.62	-0.05	0.10
1970/12/18	677.84	336.15	677.79	336.17	-0.04	0.02
1971/03/04	677.80	319.01	677.76	319.09	-0.04	0.08
1971/08/28	677.97	390.81	677.91	390.89	-0.06	0.08
1972/03/21	678.16	450.60	678.11	450.72	-0.05	0.12
1972/04/27	679.00	867.19	678.95	867.38	-0.06	0.19
1972/09/01	678.93	803.98	678.88	804.29	-0.05	0.31
1972/10/05	679.22	961.18	679.17	961.31	-0.05	0.13
1973/01/08	679.58	1215.00	679.52	1215.20	-0.05	0.20
1973/05/08	678.30	466.01	678.25	466.14	-0.05	0.13
1974/02/28	678.82	736.69	678.77	736.83	-0.05	0.14
1974/04/21	677.78	313.43	677.73	313.45	-0.05	0.02
1974/05/25	678.35	487.37	678.30	487.43	-0.05	0.06
1975/01/16	678.85	745.41	678.80	745.62	-0.05	0.21
1975/05/05	678.51	563.71	678.46	563.92	-0.05	0.21
1975/09/08	679.17	941.32	679.11	942.05	-0.05	0.73
1976/03/21	679.16	892.24	679.11	892.46	-0.05	0.22
1977/07/05	677.76	305.62	677.71	305.64	-0.05	0.02
1977/08/13	677.67	273.78	677.62	273.78	-0.05	0.00
1977/09/07	677.58	246.37	677.53	246.40	-0.05	0.03
1978/04/02	677.85	293.43	677.81	293.45	-0.04	0.02
1978/05/21	677.79	319.01	677.74	319.01	-0.05	0.00
1978/07/09	678.79	719.35	678.74	719.57	-0.05	0.22
1978/09/25	679.25	973.65	679.20	973.80	-0.05	0.15
1979/04/18	680.16	1486.10	680.12	1486.80	-0.04	0.70
1979/09/05	678.48	550.73	678.43	550.94	-0.05	0.21
1980/01/21	676.73	127.32	676.69	127.40	-0.04	0.08
1980/08/26	678.87	766.79	678.81	767.00	-0.06	0.21
1980/09/26	678.09	390.30	678.05	390.29	-0.05	-0.01
1981/05/03	678.65	638.27	678.60	638.41	-0.05	0.14
1981/06/05	679.13	943.25	679.07	943.09	-0.06	-0.16
1981/06/21	677.86	347.43	677.81	347.45	-0.05	0.02

1981/08/23	678.57	599.67	678.52	599.81	-0.05	0.14
1982/03/28	679.33	1012.50	679.28	1012.60	-0.05	0.10
1982/07/31	678.72	712.00	678.67	712.11	-0.05	0.11
1982/08/14	678.47	593.05	678.42	593.18	-0.05	0.13
1982/12/12	680.38	1838.40	680.33	1838.40	-0.05	0.00
1983/01/04	678.95	825.30	678.89	825.46	-0.06	0.16
1983/04/22	679.60	1175.30	679.55	1175.50	-0.05	0.20
1983/06/04	678.28	492.38	678.22	492.49	-0.05	0.11
1983/07/09	678.64	627.74	678.59	627.82	-0.05	0.08
1983/12/05	679.22	948.55	679.17	948.86	-0.05	0.31
1984/02/25	679.17	934.17	679.12	934.37	-0.05	0.20
1984/04/03	678.16	477.95	678.10	478.04	-0.07	0.09
1985/03/19	680.18	1663.50	680.13	1663.50	-0.05	0.00
1985/12/11	678.82	722.40	678.77	722.59	-0.05	0.19
1986/07/19	677.95	335.08	677.91	335.07	-0.04	-0.01
1986/10/10	678.92	778.82	678.86	779.08	-0.05	0.26
1987/09/06	681.69	2905.00	681.65	2905.20	-0.04	0.20
1988/01/01	678.02	413.48	677.96	413.28	-0.06	-0.20
1988/02/07	678.04	372.37	678.00	372.37	-0.05	0.00
1988/04/13	677.84	294.40	677.80	294.42	-0.04	0.02
1988/10/26	678.85	791.27	678.80	791.37	-0.06	0.10
1989/08/18	679.47	1115.10	679.41	1115.60	-0.05	0.50
1989/09/18	678.58	652.58	678.53	652.68	-0.05	0.10
1990/03/16	678.86	751.69	678.80	751.87	-0.05	0.18
1990/05/19	679.26	978.10	679.21	978.29	-0.05	0.19
1990/08/28	679.04	854.30	678.98	856.75	-0.05	2.45
1990/12/10	678.91	798.43	678.86	798.72	-0.05	0.29
1991/04/23	678.54	580.58	678.49	580.63	-0.05	0.05
1991/06/02	677.94	380.54	677.89	380.55	-0.06	0.01
1991/10/09	678.33	555.09	678.26	555.27	-0.07	0.18
1991/11/08	677.93	363.96	677.89	363.98	-0.04	0.02
1991/12/18	677.76	292.67	677.72	292.67	-0.04	0.00
1992/09/21	677.59	251.14	677.54	250.97	-0.05	-0.17
1993/01/11	678.64	628.06	678.59	628.16	-0.05	0.10
1993/04/29	679.03	849.79	678.98	850.19	-0.06	0.40
1993/07/06	678.98	814.02	678.92	814.38	-0.06	0.36
1994/03/13	678.92	781.59	678.86	781.76	-0.06	0.17
1994/07/02	678.94	831.69	678.88	831.79	-0.06	0.10
1994/08/24	677.64	266.06	677.59	266.03	-0.05	-0.03
1995/01/25	678.39	555.16	678.34	555.34	-0.05	0.18
1995/05/06	678.56	591.74	678.51	591.75	-0.05	0.01
1995/08/24	677.87	350.26	677.82	350.33	-0.06	0.07
1995/11/18	678.25	519.73	678.19	519.86	-0.07	0.13
1996/06/27	678.60	610.50	678.55	610.55	-0.05	0.05
1996/08/05	678.17	473.18	678.13	473.25	-0.04	0.07
1997/03/06	680.18	1675.70	680.13	1676.00	-0.05	0.30
1998/03/25	678.48	547.15	678.42	547.18	-0.05	0.03
1998/05/15	678.26	501.75	678.21	501.76	-0.05	0.01
1998/08/15	678.44	565.08	678.39	565.15	-0.05	0.07
1998/09/14	676.77	129.82	676.73	129.94	-0.04	0.12
1998/10/25	678.42	589.15	678.37	589.22	-0.05	0.07
1999/02/09	679.49	1105.80	679.44	1105.90	-0.05	0.10
1999/05/06	679.16	908.36	679.10	908.76	-0.05	0.40
2000/04/28	679.23	952.95	679.17	953.05	-0.05	0.10
2001/03/02	678.82	757.50	678.77	757.57	-0.05	0.07
2001/09/06	680.00	1526.60	679.95	1526.90	-0.05	0.30
2001/09/30	678.91	771.80	678.85	772.00	-0.05	0.20
2001/10/31	679.93	1450.70	679.88	1451.00	-0.05	0.30
2002/03/15	678.64	625.02	678.59	625.06	-0.05	0.04
2002/05/22	678.23	501.96	678.18	501.99	-0.05	0.03
2002/07/13	677.87	348.51	677.81	348.59	-0.06	0.08
2002/08/29	679.65	1263.20	679.59	1263.70	-0.05	0.50
2003/05/19	678.66	671.13	678.60	671.22	-0.05	0.09
2003/08/13	677.46	216.28	677.41	215.64	-0.05	-0.64
2003/11/29	677.89	321.58	677.84	321.63	-0.04	0.05
2004/03/11	677.58	246.00	677.53	245.97	-0.05	-0.03
2004/06/18	678.44	532.21	678.39	532.25	-0.05	0.04
2005/01/18	678.94	811.71	678.89	812.32	-0.05	0.61
2006/03/18	678.21	450.31	678.16	450.43	-0.05	0.12
2006/07/03	677.52	231.86	677.48	231.71	-0.05	-0.15
2006/09/29	678.12	435.13	678.07	435.18	-0.05	0.05
2006/10/09	677.59	248.55	677.54	248.42	-0.05	-0.13
2007/03/15	678.84	738.50	678.78	738.63	-0.05	0.13
2007/08/31	679.18	922.93	679.13	923.01	-0.05	0.08
2008/03/09	678.92	825.16	678.87	825.25	-0.06	0.09
2008/05/18	676.96	151.93	676.92	152.24	-0.05	0.31
2008/09/23	681.34	2431.20	681.31	2431.50	-0.04	0.30
MaximumS&F	681.69	2905.00	681.65	2905.20		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
P1 141471.
11. Branch# 9; Node ID: XS-P1 ; Station: 141471.0000

Nodes ==>	(1) sL16OEX4.PEK 1005 (S)	(F)	(2) sL16OP1o.PEK 1005 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.84	26.03	674.84	26.03	0.00	0.00
1949/04/08	678.96	813.50	678.92	813.66	-0.04	0.16
1949/06/21	679.39	1120.30	679.35	1120.70	-0.04	0.40
1949/07/27	678.27	535.54	678.24	535.66	-0.04	0.12
1949/12/31	679.49	1138.50	679.46	1138.50	-0.03	0.00
1950/01/31	678.75	708.80	678.71	708.94	-0.04	0.14
1950/05/03	679.66	1267.80	679.62	1267.70	-0.03	-0.10
1950/06/11	679.32	1056.70	679.28	1056.40	-0.04	-0.30
1951/03/09	678.87	769.64	678.83	769.77	-0.04	0.13
1951/05/17	678.97	839.82	678.93	840.01	-0.04	0.19
1951/07/29	678.31	558.03	678.27	558.23	-0.04	0.20
1952/01/25	678.84	801.07	678.80	801.17	-0.04	0.10
1952/03/28	678.64	641.62	678.60	641.74	-0.04	0.12
1953/03/23	678.55	623.57	678.51	623.65	-0.04	0.08
1953/06/16	678.13	417.10	678.09	417.18	-0.04	0.08
1953/07/28	679.17	987.36	679.13	987.65	-0.04	0.29
1954/04/05	680.04	1593.00	680.00	1593.20	-0.04	0.20
1954/05/08	679.50	1156.70	679.46	1156.80	-0.04	0.10
1954/08/29	678.71	690.84	678.67	690.82	-0.04	-0.02
1954/10/25	680.87	2161.40	680.84	2161.80	-0.03	0.40
1955/03/09	677.85	350.63	677.82	350.66	-0.03	0.03
1956/05/18	679.09	879.98	679.05	880.07	-0.04	0.09
1957/01/27	677.81	333.97	677.77	334.04	-0.04	0.07
1957/03/04	679.23	1017.30	679.19	1017.50	-0.04	0.20
1957/07/28	680.85	2313.70	680.82	2313.40	-0.03	-0.30
1958/04/30	678.33	567.44	678.29	567.48	-0.04	0.04
1958/06/19	678.01	422.16	677.97	422.20	-0.05	0.04
1958/07/11	677.86	333.88	677.83	333.91	-0.03	0.03
1959/04/07	677.74	262.11	677.71	262.13	-0.03	0.02
1959/07/27	676.75	130.35	676.72	130.44	-0.03	0.09
1960/01/21	678.36	554.93	678.32	555.07	-0.04	0.14
1960/04/04	676.42	99.52	676.40	99.53	-0.02	0.01
1961/08/09	678.15	447.89	678.11	448.00	-0.04	0.11
1961/10/06	680.07	1595.50	680.03	1595.50	-0.04	0.00
1962/04/15	678.13	408.35	678.09	408.41	-0.04	0.06
1962/07/08	678.27	543.93	678.22	544.08	-0.05	0.15
1963/05/07	678.02	427.86	677.98	427.90	-0.05	0.04
1964/04/12	678.32	486.44	678.28	486.47	-0.04	0.03
1964/07/25	677.98	409.02	677.94	409.02	-0.05	0.00
1965/03/22	678.52	581.79	678.48	581.82	-0.04	0.03
1966/02/15	678.48	575.83	678.45	575.82	-0.04	-0.01
1966/05/18	679.29	994.19	679.25	994.28	-0.04	0.09
1967/04/09	678.48	563.62	678.45	563.68	-0.04	0.06
1967/07/01	678.64	700.31	678.60	700.41	-0.04	0.10
1968/08/24	678.68	724.89	678.64	724.99	-0.04	0.10
1969/04/13	678.11	402.27	678.08	402.30	-0.04	0.03
1969/06/15	678.77	717.58	678.73	717.74	-0.04	0.16
1969/08/01	677.27	190.49	677.23	190.90	-0.04	0.41
1969/10/25	679.42	1137.00	679.38	1137.50	-0.04	0.50
1970/05/20	678.74	690.48	678.70	690.57	-0.04	0.09
1970/12/18	677.82	336.15	677.78	336.17	-0.03	0.02
1971/03/04	677.78	319.00	677.75	319.07	-0.03	0.07
1971/08/28	677.94	390.81	677.90	390.83	-0.04	0.02
1972/03/21	678.13	450.58	678.10	450.68	-0.04	0.10
1972/04/27	678.97	867.13	678.93	867.27	-0.04	0.14
1972/09/01	678.90	803.76	678.86	803.97	-0.04	0.21
1972/10/05	679.19	961.07	679.15	961.15	-0.04	0.08
1973/01/08	679.55	1214.70	679.51	1214.70	-0.04	0.00
1973/05/08	678.27	465.98	678.24	466.10	-0.04	0.12
1974/02/28	678.79	736.48	678.75	736.52	-0.04	0.04
1974/04/21	677.76	313.42	677.72	313.45	-0.04	0.03
1974/05/25	678.33	487.34	678.29	487.39	-0.04	0.05
1975/01/16	678.82	745.31	678.78	745.46	-0.04	0.15
1975/05/05	678.48	563.68	678.45	563.86	-0.04	0.18
1975/09/08	679.14	940.88	679.10	941.37	-0.04	0.49
1976/03/21	679.13	892.15	679.09	892.31	-0.04	0.16
1977/07/05	677.74	305.60	677.70	305.62	-0.04	0.02
1977/08/13	677.65	273.77	677.61	273.76	-0.04	-0.01
1977/09/07	677.56	246.35	677.53	246.38	-0.04	0.03
1978/04/02	677.83	293.42	677.80	293.43	-0.03	0.01
1978/05/21	677.77	319.01	677.73	318.99	-0.04	-0.02
1978/07/09	678.77	719.19	678.72	719.32	-0.04	0.13
1978/09/25	679.22	973.52	679.18	973.62	-0.04	0.10
1979/04/18	680.13	1485.60	680.10	1486.10	-0.03	0.50
1979/09/05	678.45	550.66	678.41	550.83	-0.04	0.17
1980/01/21	676.72	127.31	676.69	127.38	-0.03	0.07
1980/08/26	678.84	766.57	678.80	766.69	-0.04	0.12
1980/09/26	678.07	390.24	678.04	390.21	-0.03	-0.03
1981/05/03	678.63	638.19	678.59	638.30	-0.04	0.11
1981/06/05	679.10	943.16	679.06	942.93	-0.04	-0.23
1981/06/21	677.84	347.42	677.80	347.44	-0.04	0.02

1981/08/23	678.55	599.61	678.51	599.72	-0.04	0.11
1982/03/28	679.30	1012.40	679.27	1012.50	-0.04	0.10
1982/07/31	678.69	711.97	678.65	712.07	-0.04	0.10
1982/08/14	678.44	593.02	678.41	593.15	-0.04	0.13
1982/12/12	680.34	1838.00	680.31	1837.90	-0.03	-0.10
1983/01/04	678.92	825.22	678.88	825.34	-0.04	0.12
1983/04/22	679.57	1175.10	679.53	1175.20	-0.03	0.10
1983/06/04	678.25	492.38	678.22	492.45	-0.04	0.07
1983/07/09	678.61	627.66	678.58	627.72	-0.04	0.06
1983/12/05	679.19	948.46	679.15	948.68	-0.04	0.22
1984/02/25	679.14	934.00	679.10	934.11	-0.04	0.11
1984/04/03	678.13	477.91	678.08	478.00	-0.05	0.09
1985/03/19	680.15	1663.40	680.11	1663.30	-0.04	-0.10
1985/12/11	678.79	722.34	678.76	722.50	-0.04	0.16
1986/07/19	677.93	335.04	677.90	335.02	-0.03	-0.02
1986/10/10	678.89	778.73	678.85	778.95	-0.04	0.22
1987/09/06	681.66	2903.70	681.64	2903.30	-0.02	-0.40
1988/01/01	677.99	413.46	677.95	413.25	-0.05	-0.21
1988/02/07	678.02	372.34	677.99	372.32	-0.03	-0.02
1988/04/13	677.82	294.40	677.79	294.42	-0.03	0.02
1988/10/26	678.82	791.23	678.78	791.32	-0.04	0.09
1989/08/18	679.44	1114.80	679.40	1115.10	-0.04	0.30
1989/09/18	678.55	652.55	678.52	652.64	-0.04	0.09
1990/03/16	678.83	751.60	678.79	751.75	-0.04	0.15
1990/05/19	679.23	977.97	679.19	978.12	-0.04	0.15
1990/08/28	679.01	854.18	678.97	855.51	-0.04	1.33
1990/12/10	678.88	798.25	678.84	798.44	-0.04	0.19
1991/04/23	678.52	580.53	678.48	580.57	-0.04	0.04
1991/06/02	677.92	380.54	677.88	380.54	-0.04	0.00
1991/10/09	678.29	555.07	678.24	555.25	-0.05	0.18
1991/11/08	677.91	363.94	677.88	363.96	-0.03	0.02
1991/12/18	677.74	292.66	677.72	292.66	-0.03	0.00
1992/09/21	677.58	251.13	677.54	250.95	-0.04	-0.18
1993/01/11	678.61	627.99	678.57	628.06	-0.04	0.07
1993/04/29	679.00	849.67	678.96	849.99	-0.04	0.32
1993/07/06	678.95	813.92	678.91	814.23	-0.04	0.31
1994/03/13	678.89	781.52	678.85	781.67	-0.04	0.15
1994/07/02	678.91	831.64	678.87	831.73	-0.04	0.09
1994/08/24	677.63	266.05	677.59	266.01	-0.04	-0.04
1995/01/25	678.37	555.13	678.33	555.30	-0.04	0.17
1995/05/06	678.54	591.68	678.50	591.67	-0.04	-0.01
1995/08/24	677.85	350.24	677.80	350.30	-0.04	0.06
1995/11/18	678.22	519.71	678.17	519.83	-0.05	0.12
1996/06/27	678.57	610.46	678.53	610.49	-0.04	0.03
1996/08/05	678.15	473.15	678.12	473.20	-0.03	0.05
1997/03/06	680.15	1675.20	680.11	1675.20	-0.03	0.00
1998/03/25	678.45	547.12	678.41	547.14	-0.04	0.02
1998/05/15	678.23	501.74	678.20	501.75	-0.04	0.01
1998/08/15	678.42	565.06	678.38	565.13	-0.04	0.07
1998/09/14	676.75	129.81	676.72	129.92	-0.03	0.11
1998/10/25	678.40	589.12	678.36	589.18	-0.04	0.06
1999/02/09	679.46	1105.60	679.42	1105.70	-0.04	0.10
1999/05/06	679.13	908.24	679.09	908.61	-0.04	0.37
2000/04/28	679.20	952.83	679.16	952.87	-0.04	0.04
2001/03/02	678.79	757.45	678.76	757.50	-0.04	0.05
2001/09/06	679.97	1526.00	679.94	1526.20	-0.04	0.20
2001/09/30	678.88	771.74	678.84	771.91	-0.04	0.17
2001/10/31	679.89	1450.30	679.86	1450.40	-0.03	0.10
2002/03/15	678.61	624.99	678.58	625.02	-0.04	0.03
2002/05/22	678.21	501.94	678.17	501.96	-0.04	0.02
2002/07/13	677.84	348.50	677.80	348.54	-0.04	0.04
2002/08/29	679.61	1262.90	679.58	1263.20	-0.04	0.30
2003/05/19	678.63	671.11	678.59	671.20	-0.04	0.09
2003/08/13	677.44	216.26	677.40	215.60	-0.04	-0.66
2003/11/29	677.87	321.52	677.84	321.53	-0.03	0.01
2004/03/11	677.56	245.98	677.52	245.94	-0.04	-0.04
2004/06/18	678.42	532.20	678.38	532.23	-0.04	0.03
2005/01/18	678.91	811.27	678.87	811.83	-0.04	0.56
2006/03/18	678.19	450.27	678.15	450.38	-0.04	0.11
2006/07/03	677.51	231.85	677.47	231.68	-0.04	-0.17
2006/09/29	678.10	435.11	678.06	435.15	-0.04	0.04
2006/10/09	677.57	248.54	677.53	248.41	-0.04	-0.13
2007/03/15	678.81	738.43	678.77	738.53	-0.04	0.10
2007/08/31	679.15	922.79	679.11	922.84	-0.04	0.05
2008/03/09	678.90	825.12	678.85	825.19	-0.04	0.07
2008/05/18	676.95	151.93	676.91	152.23	-0.03	0.30
2008/09/23	681.32	2430.50	681.29	2430.50	-0.02	0.00
MaximumS&F	681.66	2903.70	681.64	2903.30		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
E3 141313.
12. Branch# 9; Node ID: XS-E3 ; Station: 141313.0000

Nodes ==>	(1) sL16OEX4.PEK 1010 (S)	(F)	(2) sL16OP1o.PEK 1010 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.83	26.01	674.83	25.98	0.00	-0.03
1949/04/08	678.88	813.33	678.88	813.44	0.00	0.11
1949/06/21	679.31	1119.30	679.31	1119.10	0.00	-0.20
1949/07/27	678.20	535.48	678.20	535.59	0.00	0.11
1949/12/31	679.42	1138.20	679.42	1138.10	0.00	-0.10
1950/01/31	678.67	708.61	678.67	708.69	0.00	0.08
1950/05/03	679.58	1267.30	679.58	1267.10	0.00	-0.20
1950/06/11	679.23	1056.20	679.23	1055.80	0.00	-0.40
1951/03/09	678.79	769.50	678.79	769.57	0.00	0.07
1951/05/17	678.88	839.25	678.88	839.18	0.00	-0.07
1951/07/29	678.24	557.96	678.24	558.16	0.00	0.20
1952/01/25	678.76	800.99	678.76	801.07	0.00	0.08
1952/03/28	678.56	641.54	678.56	641.61	0.00	0.07
1953/03/23	678.47	623.45	678.47	623.49	0.00	0.04
1953/06/16	678.06	416.86	678.06	416.88	0.00	0.02
1953/07/28	679.08	987.09	679.08	987.28	0.00	0.19
1954/04/05	679.96	1591.80	679.96	1591.60	0.00	-0.20
1954/05/08	679.42	1156.40	679.42	1156.30	0.00	-0.10
1954/08/29	678.63	690.50	678.63	690.40	0.00	-0.10
1954/10/25	680.80	2160.40	680.80	2160.50	0.00	0.10
1955/03/09	677.79	350.62	677.79	350.64	0.00	0.02
1956/05/18	679.01	879.83	679.01	879.87	0.00	0.04
1957/01/27	677.74	333.95	677.74	334.01	0.00	0.06
1957/03/04	679.14	1016.70	679.14	1016.80	0.00	0.10
1957/07/28	680.78	2312.50	680.78	2311.60	0.00	-0.90
1958/04/30	678.26	567.36	678.25	567.37	0.00	0.01
1958/06/19	677.93	422.13	677.93	422.15	0.00	0.02
1958/07/11	677.81	333.88	677.81	333.91	0.00	0.03
1959/04/07	677.69	262.05	677.69	262.06	0.00	0.01
1959/07/27	676.70	130.33	676.70	130.42	0.00	0.09
1960/01/21	678.29	554.91	678.29	555.04	0.00	0.13
1960/04/04	676.40	99.52	676.40	99.53	0.00	0.01
1961/08/09	678.07	447.84	678.07	447.94	0.00	0.10
1961/10/06	679.99	1595.10	679.99	1595.00	0.00	-0.10
1962/04/15	678.06	408.32	678.06	408.33	0.00	0.01
1962/07/08	678.17	543.88	678.17	544.02	0.00	0.14
1963/05/07	677.94	427.82	677.94	427.85	0.00	0.03
1964/04/12	678.25	486.39	678.25	486.41	0.00	0.02
1964/07/25	677.90	408.99	677.90	408.98	0.00	-0.01
1965/03/22	678.44	581.69	678.44	581.69	0.00	0.00
1966/02/15	678.41	575.33	678.41	575.02	0.00	-0.31
1966/05/18	679.21	993.81	679.21	993.75	0.00	-0.06
1967/04/09	678.41	563.55	678.41	563.60	0.00	0.05
1967/07/01	678.56	700.24	678.56	700.32	0.00	0.08
1968/08/24	678.60	724.86	678.60	724.94	0.00	0.08
1969/04/13	678.05	402.23	678.05	402.24	0.00	0.01
1969/06/15	678.68	717.40	678.68	717.49	0.00	0.09
1969/08/01	677.21	190.45	677.21	190.87	0.00	0.42
1969/10/25	679.33	1136.20	679.33	1136.30	0.00	0.10
1970/05/20	678.66	690.41	678.66	690.47	0.00	0.06
1970/12/18	677.76	336.14	677.76	336.16	0.00	0.02
1971/03/04	677.73	318.98	677.73	319.04	0.00	0.06
1971/08/28	677.86	390.81	677.86	390.80	0.00	-0.01
1972/03/21	678.07	450.55	678.07	450.62	0.00	0.07
1972/04/27	678.89	867.02	678.89	867.07	0.00	0.05
1972/09/01	678.82	803.33	678.82	803.40	0.00	0.07
1972/10/05	679.11	960.86	679.11	960.87	0.00	0.01
1973/01/08	679.46	1214.10	679.46	1213.90	0.00	-0.20
1973/05/08	678.20	465.93	678.20	466.03	0.00	0.10
1974/02/28	678.71	736.06	678.71	735.99	0.00	-0.07
1974/04/21	677.69	313.41	677.69	313.44	0.00	0.03
1974/05/25	678.25	487.28	678.25	487.31	0.00	0.03
1975/01/16	678.74	745.13	678.74	745.17	0.00	0.04
1975/05/05	678.41	563.61	678.41	563.77	0.00	0.16
1975/09/08	679.05	940.05	679.05	940.19	0.00	0.14
1976/03/21	679.05	892.03	679.05	892.07	0.00	0.04
1977/07/05	677.67	305.57	677.67	305.57	0.00	0.00
1977/08/13	677.59	273.75	677.59	273.74	0.00	-0.01
1977/09/07	677.50	246.33	677.50	246.36	0.00	0.03
1978/04/02	677.78	293.39	677.78	293.40	0.00	0.01
1978/05/21	677.70	318.99	677.70	318.98	0.00	-0.01
1978/07/09	678.68	718.87	678.68	718.88	0.00	0.01
1978/09/25	679.14	973.28	679.14	973.30	0.00	0.02
1979/04/18	680.07	1484.80	680.07	1485.00	0.00	0.20
1979/09/05	678.38	550.57	678.38	550.63	0.00	0.06
1980/01/21	676.67	127.30	676.68	127.36	0.00	0.06
1980/08/26	678.76	766.17	678.76	766.16	0.00	-0.01
1980/09/26	678.01	390.13	678.01	390.07	0.00	-0.06
1981/05/03	678.55	638.05	678.55	638.11	0.00	0.06
1981/06/05	679.01	942.98	679.01	942.65	0.00	-0.33
1981/06/21	677.77	347.41	677.77	347.43	0.00	0.02

1981/08/23	678.47	599.52	678.47	599.56	0.00	0.04
1982/03/28	679.22	1012.10	679.22	1012.20	0.00	0.10
1982/07/31	678.61	711.92	678.61	712.03	0.00	0.11
1982/08/14	678.37	592.98	678.37	593.09	0.00	0.11
1982/12/12	680.26	1837.30	680.26	1837.00	0.00	-0.30
1983/01/04	678.83	825.06	678.83	825.14	0.00	0.08
1983/04/22	679.49	1174.80	679.49	1174.70	0.00	-0.10
1983/06/04	678.18	492.37	678.18	492.42	0.00	0.05
1983/07/09	678.54	627.51	678.54	627.53	0.00	0.02
1983/12/05	679.11	948.28	679.11	948.37	0.00	0.09
1984/02/25	679.06	933.68	679.06	933.65	0.00	-0.03
1984/04/03	678.04	477.85	678.04	477.91	0.00	0.06
1985/03/19	680.07	1663.30	680.07	1663.10	0.00	-0.20
1985/12/11	678.71	722.24	678.71	722.35	0.00	0.11
1986/07/19	677.87	335.00	677.87	334.94	0.00	-0.06
1986/10/10	678.81	778.54	678.81	778.72	0.00	0.18
1987/09/06	681.60	2901.60	681.60	2900.50	0.00	-1.10
1988/01/01	677.91	413.42	677.91	413.19	0.00	-0.23
1988/02/07	677.96	372.28	677.96	372.23	0.00	-0.05
1988/04/13	677.77	294.40	677.77	294.41	0.00	0.01
1988/10/26	678.74	791.16	678.74	791.23	0.00	0.07
1989/08/18	679.36	1114.20	679.36	1114.40	0.00	0.20
1989/09/18	678.47	652.49	678.47	652.57	0.00	0.08
1990/03/16	678.75	751.43	678.75	751.53	0.00	0.10
1990/05/19	679.15	977.72	679.15	977.81	0.00	0.09
1990/08/28	678.92	854.15	678.92	854.10	0.00	-0.05
1990/12/10	678.80	797.92	678.80	798.05	0.00	0.13
1991/04/23	678.44	580.43	678.44	580.46	0.00	0.03
1991/06/02	677.84	380.53	677.84	380.54	0.00	0.01
1991/10/09	678.20	555.04	678.20	555.22	0.00	0.18
1991/11/08	677.85	363.91	677.85	363.91	0.00	0.00
1991/12/18	677.70	292.64	677.70	292.63	0.00	-0.01
1992/09/21	677.52	251.10	677.51	250.91	0.00	-0.19
1993/01/11	678.53	627.92	678.53	627.90	0.00	-0.02
1993/04/29	678.92	849.43	678.92	849.65	0.00	0.22
1993/07/06	678.86	813.74	678.87	813.98	0.00	0.24
1994/03/13	678.81	781.39	678.81	781.50	0.00	0.11
1994/07/02	678.82	831.56	678.82	831.63	0.00	0.07
1994/08/24	677.56	266.03	677.56	265.98	0.00	-0.05
1995/01/25	678.29	555.08	678.29	555.25	0.00	0.17
1995/05/06	678.46	591.57	678.46	591.53	0.00	-0.04
1995/08/24	677.77	350.20	677.77	350.25	0.00	0.05
1995/11/18	678.13	519.66	678.13	519.78	0.00	0.12
1996/06/27	678.49	610.37	678.49	610.38	0.00	0.01
1996/08/05	678.09	473.09	678.09	473.12	0.00	0.03
1997/03/06	680.07	1674.30	680.07	1674.00	0.00	-0.30
1998/03/25	678.38	547.07	678.38	547.06	0.00	-0.01
1998/05/15	678.16	501.71	678.16	501.72	0.00	0.01
1998/08/15	678.34	565.02	678.34	565.08	0.00	0.06
1998/09/14	676.71	129.80	676.71	129.89	0.00	0.09
1998/10/25	678.32	589.06	678.32	589.11	0.00	0.05
1999/02/09	679.38	1105.40	679.38	1105.40	0.00	0.00
1999/05/06	679.04	908.01	679.04	908.35	0.00	0.34
2000/04/28	679.12	952.60	679.12	952.55	0.00	-0.05
2001/03/02	678.71	757.37	678.71	757.38	0.00	0.01
2001/09/06	679.89	1525.10	679.89	1525.00	0.00	-0.10
2001/09/30	678.80	771.62	678.80	771.75	0.00	0.13
2001/10/31	679.82	1449.60	679.82	1449.40	0.00	-0.20
2002/03/15	678.54	624.93	678.54	624.94	0.00	0.01
2002/05/22	678.13	501.89	678.14	501.91	0.00	0.02
2002/07/13	677.77	348.50	677.77	348.51	0.00	0.01
2002/08/29	679.53	1262.20	679.53	1262.30	0.00	0.10
2003/05/19	678.55	671.07	678.55	671.14	0.00	0.07
2003/08/13	677.38	216.23	677.38	215.54	0.00	-0.69
2003/11/29	677.81	321.40	677.81	321.36	0.00	-0.04
2004/03/11	677.50	245.98	677.50	245.92	0.00	-0.06
2004/06/18	678.34	532.17	678.34	532.19	0.00	0.02
2005/01/18	678.83	810.83	678.83	811.22	0.00	0.39
2006/03/18	678.12	450.20	678.11	450.27	0.00	0.07
2006/07/03	677.45	231.82	677.45	231.64	0.00	-0.18
2006/09/29	678.03	435.08	678.03	435.11	0.00	0.03
2006/10/09	677.51	248.52	677.51	248.39	0.00	-0.13
2007/03/15	678.73	738.30	678.73	738.36	0.00	0.06
2007/08/31	679.07	922.52	679.07	922.55	0.00	0.03
2008/03/09	678.81	825.04	678.81	825.08	0.00	0.04
2008/05/18	676.89	151.92	676.90	152.21	0.00	0.29
2008/09/23	681.26	2429.50	681.26	2429.00	0.00	-0.50
MaximumS&F	681.60	2901.60	681.60	2900.50		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
E2 141070.
13. Branch# 11; Node ID: XS-E2 ; Station: 141070.0000

Nodes ==>	(1) sL16OEX4.PEK 1107 (S)	(F)	(2) sL16OP1o.PEK 1107 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.81	25.97	674.81	25.94	0.00	-0.03
1949/04/08	678.66	812.09	678.66	812.20	0.00	0.11
1949/06/21	679.07	1110.90	679.07	1110.70	0.00	-0.20
1949/07/27	678.00	470.11	678.00	470.14	0.00	0.03
1949/12/31	679.21	1135.40	679.21	1135.30	0.00	-0.10
1950/01/31	678.44	706.86	678.44	706.92	0.00	0.06
1950/05/03	679.38	1263.00	679.38	1262.80	0.00	-0.20
1950/06/11	679.00	1051.80	679.00	1051.40	0.00	-0.40
1951/03/09	678.56	768.23	678.56	768.24	0.00	0.01
1951/05/17	678.65	830.99	678.66	831.22	0.00	0.23
1951/07/29	678.04	486.93	678.04	486.60	0.00	-0.33
1952/01/25	678.52	763.97	678.52	764.71	0.00	0.74
1952/03/28	678.34	640.78	678.34	640.77	0.00	-0.01
1953/03/23	678.25	604.62	678.25	604.72	0.00	0.10
1953/06/16	677.88	415.26	677.88	415.26	0.00	0.00
1953/07/28	678.83	956.14	678.83	956.34	0.00	0.20
1954/04/05	679.77	1581.00	679.77	1580.90	0.00	-0.10
1954/05/08	679.21	1153.10	679.21	1153.10	0.00	0.00
1954/08/29	678.40	688.00	678.40	687.82	0.00	-0.18
1954/10/25	680.67	2151.70	680.67	2151.70	0.00	0.00
1955/03/09	677.66	302.78	677.66	302.75	0.00	-0.03
1956/05/18	678.78	878.31	678.78	878.33	0.00	0.02
1957/01/27	677.60	279.61	677.60	279.66	0.00	0.05
1957/03/04	678.90	993.55	678.90	993.34	0.00	-0.21
1957/07/28	680.62	2301.00	680.62	2300.20	0.00	-0.80
1958/04/30	678.05	495.05	678.05	494.19	0.00	-0.86
1958/06/19	677.77	355.58	677.77	355.60	0.00	0.02
1958/07/11	677.67	307.97	677.67	308.01	0.00	0.04
1959/04/07	677.57	261.63	677.57	261.62	0.00	-0.01
1959/07/27	676.63	122.00	676.63	122.06	0.00	0.06
1960/01/21	678.08	508.27	678.08	508.10	0.00	-0.17
1960/04/04	676.34	97.76	676.34	97.77	0.00	0.01
1961/08/09	677.90	423.18	677.90	423.23	0.00	0.05
1961/10/06	679.80	1593.10	679.80	1593.00	0.00	-0.10
1962/04/15	677.90	407.95	677.90	407.97	0.00	0.02
1962/07/08	677.97	461.50	677.97	461.62	0.00	0.12
1963/05/07	677.78	360.52	677.78	360.55	0.00	0.03
1964/04/12	678.05	485.81	678.05	485.87	0.00	0.06
1964/07/25	677.74	344.19	677.74	344.19	0.00	0.00
1965/03/22	678.22	580.65	678.22	580.62	0.00	-0.03
1966/02/15	678.19	568.43	678.19	568.52	0.00	0.09
1966/05/18	679.00	989.79	679.00	989.73	0.00	-0.06
1967/04/09	678.19	562.84	678.19	562.89	0.00	0.05
1967/07/01	678.33	650.36	678.33	651.23	0.00	0.87
1968/08/24	678.37	672.66	678.37	672.56	0.00	-0.10
1969/04/13	677.88	401.72	677.88	401.77	0.00	0.05
1969/06/15	678.46	715.61	678.46	715.67	0.00	0.06
1969/08/01	677.09	163.71	677.09	163.93	0.00	0.22
1969/10/25	679.10	1121.30	679.10	1121.10	0.00	-0.20
1970/05/20	678.44	689.83	678.44	689.81	0.00	-0.02
1970/12/18	677.63	290.65	677.63	290.60	0.00	-0.05
1971/03/04	677.60	279.25	677.60	279.32	0.00	0.07
1971/08/28	677.71	328.50	677.71	328.50	0.00	0.00
1972/03/21	677.90	413.37	677.90	413.37	0.00	0.00
1972/04/27	678.65	840.14	678.65	840.43	0.00	0.29
1972/09/01	678.61	787.94	678.61	788.27	0.00	0.33
1972/10/05	678.86	958.66	678.86	958.72	0.00	0.06
1973/01/08	679.24	1208.30	679.24	1208.10	0.00	-0.20
1973/05/08	678.01	465.46	678.01	465.59	0.00	0.13
1974/02/28	678.48	732.70	678.48	732.76	0.00	0.06
1974/04/21	677.56	262.17	677.56	262.20	0.00	0.03
1974/05/25	678.05	486.79	678.06	486.81	0.00	0.02
1975/01/16	678.52	743.12	678.52	743.05	0.00	-0.07
1975/05/05	678.19	562.95	678.20	563.10	0.00	0.15
1975/09/08	678.80	931.23	678.80	931.21	0.00	-0.02
1976/03/21	678.83	890.86	678.83	890.94	0.00	0.08
1977/07/05	677.55	255.35	677.55	255.35	0.00	0.00
1977/08/13	677.47	227.96	677.47	227.95	0.00	-0.01
1977/09/07	677.39	205.04	677.39	205.06	0.00	0.02
1978/04/02	677.65	293.24	677.65	293.23	0.00	-0.01
1978/05/21	677.58	266.90	677.58	266.89	0.00	-0.01
1978/07/09	678.46	716.28	678.46	716.26	0.00	-0.02
1978/09/25	678.90	970.80	678.90	970.86	0.00	0.06
1979/04/18	679.92	1483.40	679.92	1483.30	0.00	-0.10
1979/09/05	678.17	549.61	678.16	549.77	0.00	0.16
1980/01/21	676.60	119.69	676.60	119.73	0.00	0.04
1980/08/26	678.52	762.93	678.52	763.03	0.00	0.10
1980/09/26	677.85	388.81	677.85	388.75	0.00	-0.06
1981/05/03	678.33	636.95	678.33	636.99	0.00	0.04
1981/06/05	678.76	914.57	678.76	914.68	0.00	0.11
1981/06/21	677.63	291.14	677.63	291.16	0.00	0.02

1981/08/23	678.25	598.81	678.25	598.85	0.00	0.04
1982/03/28	679.00	1010.20	679.00	1010.10	0.00	-0.10
1982/07/31	678.38	679.20	678.38	679.75	0.00	0.55
1982/08/14	678.15	549.15	678.15	549.57	0.00	0.42
1982/12/12	680.08	1833.00	680.08	1832.70	0.00	-0.30
1983/01/04	678.60	803.82	678.60	804.00	0.00	0.18
1983/04/22	679.29	1171.80	679.29	1171.80	0.00	0.00
1983/06/04	677.98	467.37	677.98	467.90	0.00	0.53
1983/07/09	678.32	626.16	678.32	626.18	0.00	0.02
1983/12/05	678.87	946.41	678.87	946.31	0.00	-0.10
1984/02/25	678.82	930.83	678.82	930.84	0.00	0.01
1984/04/03	677.86	404.11	677.86	404.14	0.00	0.03
1985/03/19	679.89	1661.40	679.89	1661.20	0.00	-0.20
1985/12/11	678.49	721.30	678.49	721.45	0.00	0.15
1986/07/19	677.73	334.61	677.73	334.57	0.00	-0.04
1986/10/10	678.58	776.73	678.58	777.14	0.00	0.41
1987/09/06	681.49	2884.20	681.49	2883.10	0.00	-1.10
1988/01/01	677.75	348.03	677.75	347.84	0.00	-0.19
1988/02/07	677.80	371.76	677.80	371.73	0.00	-0.03
1988/04/13	677.64	290.64	677.64	290.64	0.00	0.00
1988/10/26	678.51	753.73	678.51	753.80	0.00	0.07
1989/08/18	679.14	1110.00	679.14	1110.10	0.00	0.10
1989/09/18	678.25	605.83	678.25	605.88	0.00	0.05
1990/03/16	678.52	749.66	678.52	749.71	0.00	0.05
1990/05/19	678.91	975.42	678.91	975.55	0.00	0.13
1990/08/28	678.69	851.59	678.69	851.81	0.00	0.22
1990/12/10	678.57	783.90	678.57	784.14	0.00	0.24
1991/04/23	678.22	579.83	678.22	579.81	0.00	-0.02
1991/06/02	677.70	319.59	677.70	319.60	0.00	0.01
1991/10/09	677.99	470.93	677.99	471.08	0.00	0.15
1991/11/08	677.71	326.75	677.71	326.46	0.00	-0.29
1991/12/18	677.57	265.85	677.57	265.79	0.00	-0.06
1992/09/21	677.40	209.04	677.40	208.88	0.00	-0.16
1993/01/11	678.32	627.09	678.32	627.11	0.00	0.02
1993/04/29	678.68	847.48	678.68	847.92	0.00	0.44
1993/07/06	678.64	811.92	678.64	812.08	0.00	0.16
1994/03/13	678.58	779.89	678.58	780.05	0.00	0.16
1994/07/02	678.59	800.94	678.59	801.20	0.00	0.26
1994/08/24	677.45	221.41	677.45	221.37	0.00	-0.04
1995/01/25	678.09	514.70	678.09	514.47	0.00	-0.23
1995/05/06	678.24	590.91	678.24	590.87	0.00	-0.04
1995/08/24	677.64	293.50	677.64	293.55	0.00	0.05
1995/11/18	677.94	440.54	677.94	440.65	0.00	0.11
1996/06/27	678.28	609.49	678.28	609.51	0.00	0.02
1996/08/05	677.95	398.96	677.95	399.00	0.00	0.04
1997/03/06	679.88	1666.20	679.88	1665.90	0.00	-0.30
1998/03/25	678.17	546.53	678.17	546.53	0.00	0.00
1998/05/15	677.97	453.24	677.97	453.11	0.00	-0.13
1998/08/15	678.13	539.78	678.13	539.76	0.00	-0.02
1998/09/14	676.63	121.31	676.63	121.38	0.00	0.07
1998/10/25	678.11	525.38	678.11	525.03	0.00	-0.35
1999/02/09	679.17	1103.10	679.17	1103.00	0.00	-0.10
1999/05/06	678.81	906.18	678.81	906.40	0.00	0.22
2000/04/28	678.88	950.37	678.88	950.32	0.00	-0.05
2001/03/02	678.48	734.83	678.48	734.83	0.00	0.00
2001/09/06	679.70	1516.60	679.70	1516.30	0.00	-0.30
2001/09/30	678.57	770.53	678.57	770.62	0.00	0.09
2001/10/31	679.62	1443.00	679.62	1442.90	0.00	-0.10
2002/03/15	678.32	624.50	678.32	624.50	0.00	0.00
2002/05/22	677.95	442.67	677.95	442.69	0.00	0.02
2002/07/13	677.63	292.11	677.63	292.12	0.00	0.01
2002/08/29	679.32	1256.30	679.32	1256.50	0.00	0.20
2003/05/19	678.32	644.35	678.32	643.91	0.00	-0.44
2003/08/13	677.27	181.39	677.26	180.87	0.00	-0.52
2003/11/29	677.67	310.26	677.67	310.21	0.00	-0.05
2004/03/11	677.39	204.74	677.39	204.69	0.00	-0.05
2004/06/18	678.13	531.87	678.13	531.94	0.00	0.07
2005/01/18	678.60	800.89	678.60	801.66	0.00	0.77
2006/03/18	677.93	438.24	677.93	438.07	0.00	-0.17
2006/07/03	677.34	193.39	677.34	193.25	0.00	-0.14
2006/09/29	677.86	402.33	677.86	402.36	0.00	0.03
2006/10/09	677.40	206.86	677.40	206.75	0.00	-0.11
2007/03/15	678.50	736.75	678.50	736.84	0.00	0.09
2007/08/31	678.83	920.21	678.83	920.21	0.00	0.00
2008/03/09	678.58	794.60	678.58	794.72	0.00	0.12
2008/05/18	676.79	137.81	676.79	138.03	0.00	0.22
2008/09/23	681.15	2420.80	681.15	2420.30	0.00	-0.50
MaximumS&F	681.49	2884.20	681.49	2883.10		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
E1 140876.
14. Branch# 11; Node ID: XS-E1 ; Station: 140876.0000

Nodes ==>	(1) sL16OEX4.PEK 1112 (S)	(F)	(2) sL16OP1o.PEK 1112 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.78	25.95	674.78	25.92	0.00	-0.03
1949/04/08	678.56	812.45	678.56	812.57	0.00	0.12
1949/06/21	678.98	1110.30	678.98	1110.10	0.00	-0.20
1949/07/27	677.88	469.93	677.88	469.97	0.00	0.04
1949/12/31	679.13	1135.30	679.13	1135.20	0.00	-0.10
1950/01/31	678.33	706.77	678.33	706.83	0.00	0.06
1950/05/03	679.30	1262.80	679.30	1262.50	0.00	-0.30
1950/06/11	678.91	1051.50	678.91	1051.10	0.00	-0.40
1951/03/09	678.46	768.27	678.46	768.28	0.00	0.01
1951/05/17	678.56	830.74	678.56	830.94	0.00	0.20
1951/07/29	677.91	486.50	677.91	486.47	0.00	-0.03
1952/01/25	678.42	763.33	678.42	764.16	0.00	0.83
1952/03/28	678.23	640.86	678.23	640.85	0.00	-0.01
1953/03/23	678.13	603.91	678.13	604.03	0.00	0.12
1953/06/16	677.75	415.23	677.75	415.24	0.00	0.01
1953/07/28	678.73	955.61	678.73	955.79	0.00	0.18
1954/04/05	679.69	1579.90	679.69	1579.70	0.00	-0.20
1954/05/08	679.13	1152.90	679.13	1152.90	0.00	0.00
1954/08/29	678.30	687.81	678.30	687.65	0.00	-0.16
1954/10/25	680.62	2151.20	680.62	2151.20	0.00	0.00
1955/03/09	677.52	302.70	677.52	302.70	0.00	0.00
1956/05/18	678.69	878.43	678.69	878.44	0.00	0.01
1957/01/27	677.47	279.59	677.47	279.64	0.00	0.05
1957/03/04	678.81	993.01	678.81	992.73	0.00	-0.28
1957/07/28	680.55	2299.90	680.55	2299.10	0.00	-0.80
1958/04/30	677.93	494.60	677.93	493.88	0.00	-0.72
1958/06/19	677.63	355.58	677.63	355.61	0.00	0.03
1958/07/11	677.53	307.82	677.53	307.89	0.00	0.07
1959/04/07	677.43	261.65	677.43	261.65	0.00	0.00
1959/07/27	676.47	121.99	676.47	122.05	0.00	0.06
1960/01/21	677.96	507.88	677.96	507.80	0.00	-0.08
1960/04/04	676.24	97.79	676.24	97.80	0.00	0.01
1961/08/09	677.76	423.02	677.76	423.07	0.00	0.05
1961/10/06	679.72	1593.50	679.72	1593.40	0.00	-0.10
1962/04/15	677.77	408.09	677.77	408.11	0.00	0.02
1962/07/08	677.84	461.46	677.84	461.59	0.00	0.13
1963/05/07	677.64	360.53	677.64	360.56	0.00	0.03
1964/04/12	677.93	485.94	677.93	486.00	0.00	0.06
1964/07/25	677.61	344.15	677.61	344.15	0.00	0.00
1965/03/22	678.11	580.68	678.11	580.65	0.00	-0.03
1966/02/15	678.08	568.19	678.08	568.27	0.00	0.08
1966/05/18	678.92	989.45	678.92	989.41	0.00	-0.04
1967/04/09	678.08	562.94	678.08	562.97	0.00	0.03
1967/07/01	678.22	649.83	678.22	650.70	0.00	0.87
1968/08/24	678.26	672.08	678.26	672.03	0.00	-0.05
1969/04/13	677.76	401.79	677.76	401.83	0.00	0.04
1969/06/15	678.35	715.54	678.35	715.67	0.00	0.13
1969/08/01	676.92	163.64	676.92	163.90	0.00	0.26
1969/10/25	679.02	1120.70	679.02	1120.50	0.00	-0.20
1970/05/20	678.34	689.97	678.34	689.95	0.00	-0.02
1970/12/18	677.49	290.52	677.49	290.60	0.00	0.08
1971/03/04	677.46	279.16	677.46	279.18	0.00	0.02
1971/08/28	677.57	328.50	677.57	328.49	0.00	-0.01
1972/03/21	677.77	413.21	677.77	413.20	0.00	-0.01
1972/04/27	678.55	839.62	678.55	839.89	0.00	0.27
1972/09/01	678.52	787.39	678.52	787.75	0.00	0.36
1972/10/05	678.77	958.59	678.77	958.65	0.00	0.06
1973/01/08	679.16	1207.60	679.16	1207.50	0.00	-0.10
1973/05/08	677.89	465.56	677.89	465.68	0.00	0.12
1974/02/28	678.37	732.38	678.37	732.46	0.00	0.08
1974/04/21	677.43	262.26	677.43	262.29	0.00	0.03
1974/05/25	677.94	486.89	677.94	486.92	0.00	0.03
1975/01/16	678.42	743.04	678.42	742.96	0.00	-0.08
1975/05/05	678.08	563.01	678.08	563.17	0.00	0.16
1975/09/08	678.71	930.87	678.71	930.85	0.00	-0.02
1976/03/21	678.74	890.99	678.74	891.08	0.00	0.09
1977/07/05	677.41	255.30	677.41	255.30	0.00	0.00
1977/08/13	677.33	227.92	677.33	227.91	0.00	-0.01
1977/09/07	677.25	205.06	677.25	205.08	0.00	0.02
1978/04/02	677.51	293.32	677.51	293.32	0.00	0.00
1978/05/21	677.44	266.95	677.44	266.95	0.00	0.00
1978/07/09	678.35	716.22	678.35	716.21	0.00	-0.01
1978/09/25	678.82	970.68	678.82	970.74	0.00	0.06
1979/04/18	679.86	1483.80	679.86	1483.70	0.00	-0.10
1979/09/05	678.05	549.58	678.05	549.76	0.00	0.18
1980/01/21	676.46	119.70	676.46	119.74	0.00	0.04
1980/08/26	678.42	762.70	678.42	762.77	0.00	0.07
1980/09/26	677.72	388.67	677.72	388.62	0.00	-0.05
1981/05/03	678.22	636.94	678.22	637.01	0.00	0.07
1981/06/05	678.66	914.01	678.66	914.15	0.00	0.14
1981/06/21	677.49	291.22	677.49	291.24	0.00	0.02

1981/08/23	678.14	598.83	678.14	598.88	0.00	0.05
1982/03/28	678.92	1010.10	678.92	1010.00	0.00	-0.10
1982/07/31	678.28	678.75	678.28	679.37	0.00	0.62
1982/08/14	678.03	548.79	678.04	549.14	0.00	0.35
1982/12/12	680.01	1833.00	680.01	1832.60	0.00	-0.40
1983/01/04	678.50	803.45	678.50	803.52	0.00	0.07
1983/04/22	679.22	1171.80	679.22	1171.80	0.00	0.00
1983/06/04	677.86	467.26	677.86	467.76	0.00	0.50
1983/07/09	678.22	626.08	678.22	626.12	0.00	0.04
1983/12/05	678.78	946.54	678.78	946.40	0.00	-0.14
1984/02/25	678.72	930.62	678.72	930.63	0.00	0.01
1984/04/03	677.73	404.15	677.73	404.18	0.00	0.03
1985/03/19	679.81	1661.40	679.81	1661.30	0.00	-0.10
1985/12/11	678.39	721.39	678.39	721.54	0.00	0.15
1986/07/19	677.59	334.61	677.59	334.57	0.00	-0.04
1986/10/10	678.48	776.89	678.48	777.27	0.00	0.38
1987/09/06	681.44	2882.50	681.44	2881.40	0.00	-1.10
1988/01/01	677.62	348.09	677.62	347.91	0.00	-0.18
1988/02/07	677.67	371.79	677.67	371.76	0.00	-0.03
1988/04/13	677.51	290.70	677.51	290.70	0.00	0.00
1988/10/26	678.40	753.21	678.40	753.31	0.00	0.10
1989/08/18	679.06	1110.10	679.06	1110.20	0.00	0.10
1989/09/18	678.14	605.51	678.14	605.50	0.00	-0.01
1990/03/16	678.41	749.60	678.41	749.65	0.00	0.05
1990/05/19	678.83	975.37	678.83	975.48	0.00	0.11
1990/08/28	678.59	851.81	678.59	852.03	0.00	0.22
1990/12/10	678.47	783.66	678.47	783.86	0.00	0.20
1991/04/23	678.11	579.92	678.11	579.90	0.00	-0.02
1991/06/02	677.56	319.67	677.56	319.68	0.00	0.01
1991/10/09	677.86	470.88	677.86	471.04	0.00	0.16
1991/11/08	677.57	326.57	677.57	326.40	0.00	-0.17
1991/12/18	677.43	265.80	677.43	265.75	0.00	-0.05
1992/09/21	677.26	208.99	677.26	208.82	0.00	-0.17
1993/01/11	678.21	627.09	678.21	627.11	0.00	0.02
1993/04/29	678.59	847.40	678.59	847.81	0.00	0.41
1993/07/06	678.54	811.89	678.54	812.08	0.00	0.19
1994/03/13	678.48	779.75	678.48	779.92	0.00	0.17
1994/07/02	678.49	800.41	678.49	800.75	0.00	0.34
1994/08/24	677.31	221.38	677.31	221.34	0.00	-0.04
1995/01/25	677.97	514.31	677.97	513.93	0.00	-0.38
1995/05/06	678.13	590.99	678.13	590.94	0.00	-0.05
1995/08/24	677.50	293.50	677.50	293.52	0.00	0.02
1995/11/18	677.82	440.54	677.82	440.65	0.00	0.11
1996/06/27	678.17	609.55	678.17	609.55	0.00	0.00
1996/08/05	677.86	398.88	677.86	398.91	0.00	0.03
1997/03/06	679.80	1665.30	679.80	1665.10	0.00	-0.20
1998/03/25	678.05	546.66	678.05	546.66	0.00	0.00
1998/05/15	677.85	452.85	677.85	452.84	0.00	-0.01
1998/08/15	678.01	539.12	678.01	539.08	0.00	-0.04
1998/09/14	676.48	121.32	676.48	121.38	0.00	0.06
1998/10/25	677.99	524.96	677.99	524.55	0.00	-0.41
1999/02/09	679.09	1103.10	679.09	1103.00	0.00	-0.10
1999/05/06	678.72	906.20	678.72	906.46	0.00	0.26
2000/04/28	678.79	950.32	678.79	950.27	0.00	-0.05
2001/03/02	678.38	734.37	678.38	734.49	0.00	0.12
2001/09/06	679.63	1515.70	679.63	1515.30	0.00	-0.40
2001/09/30	678.47	770.63	678.47	770.73	0.00	0.10
2001/10/31	679.55	1442.50	679.55	1442.40	0.00	-0.10
2002/03/15	678.22	624.58	678.22	624.58	0.00	0.00
2002/05/22	677.83	442.32	677.83	442.42	0.00	0.10
2002/07/13	677.49	292.10	677.49	292.12	0.00	0.02
2002/08/29	679.24	1255.80	679.24	1255.90	0.00	0.10
2003/05/19	678.21	643.98	678.21	643.60	0.00	-0.38
2003/08/13	677.11	181.34	677.11	180.82	0.00	-0.52
2003/11/29	677.53	310.16	677.53	310.12	0.00	-0.04
2004/03/11	677.25	204.77	677.25	204.73	0.00	-0.04
2004/06/18	678.02	531.98	678.02	532.05	0.00	0.07
2005/01/18	678.50	800.52	678.50	801.29	0.00	0.77
2006/03/18	677.81	438.04	677.81	437.86	0.00	-0.18
2006/07/03	677.19	193.32	677.19	193.17	0.00	-0.15
2006/09/29	677.72	402.11	677.72	402.17	0.00	0.06
2006/10/09	677.26	206.88	677.26	206.76	0.00	-0.12
2007/03/15	678.40	736.62	678.40	736.71	0.00	0.09
2007/08/31	678.74	920.13	678.74	920.10	0.00	-0.03
2008/03/09	678.47	794.03	678.47	794.14	0.00	0.11
2008/05/18	676.62	137.84	676.62	138.06	0.00	0.22
2008/09/23	681.10	2420.70	681.10	2420.20	0.00	-0.50
MaximumS&F	681.44	2882.50	681.44	2881.40		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

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Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
SCSC3213 139642.
15. Branch# 13; Node ID: ; Station: 139642.0000

Nodes ==>	(1) sL16OEX4.PEK 1306 (S)	(F)	(2) sL16OP1o.PEK 1306 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	674.04	25.80	674.04	25.77	0.00	-0.03
1949/04/08	678.11	811.43	678.11	811.54	0.00	0.11
1949/06/21	678.58	1095.30	678.58	1095.00	0.00	-0.30
1949/07/27	677.27	461.07	677.27	461.05	0.00	-0.02
1949/12/31	678.77	1128.80	678.78	1128.70	0.00	-0.10
1950/01/31	677.80	702.23	677.81	702.29	0.00	0.06
1950/05/03	678.96	1251.70	678.96	1251.40	0.00	-0.30
1950/06/11	678.49	1038.70	678.49	1038.60	0.00	-0.10
1951/03/09	677.97	765.00	677.97	764.93	0.00	-0.07
1951/05/17	678.09	822.45	678.09	822.82	0.00	0.37
1951/07/29	677.31	477.80	677.31	477.83	0.00	0.03
1952/01/25	677.90	752.87	677.90	753.57	0.00	0.70
1952/03/28	677.71	638.76	677.71	638.77	0.00	0.01
1953/03/23	677.60	594.51	677.60	594.50	0.00	-0.01
1953/06/16	677.06	390.06	677.07	389.68	0.00	-0.38
1953/07/28	678.27	942.25	678.27	942.51	0.00	0.26
1954/04/05	679.34	1557.90	679.34	1557.90	0.00	0.00
1954/05/08	678.76	1144.40	678.76	1144.40	0.00	0.00
1954/08/29	677.77	682.44	677.77	682.11	0.00	-0.33
1954/10/25	680.39	2130.70	680.39	2130.70	0.00	0.00
1955/03/09	676.70	285.07	676.70	285.05	0.00	-0.02
1956/05/18	678.26	876.00	678.26	876.04	0.00	0.04
1957/01/27	676.59	252.27	676.59	252.30	0.00	0.03
1957/03/04	678.37	979.60	678.37	979.50	0.00	-0.10
1957/07/28	680.25	2275.00	680.25	2274.60	0.00	-0.40
1958/04/30	677.33	485.47	677.33	485.44	0.00	-0.03
1958/06/19	676.87	331.35	676.87	331.21	0.00	-0.14
1958/07/11	676.66	276.51	676.66	276.42	0.00	-0.09
1959/04/07	676.61	260.65	676.61	260.64	0.00	-0.01
1959/07/27	675.75	119.36	675.75	119.41	0.00	0.05
1960/01/21	677.38	499.71	677.38	499.91	0.00	0.20
1960/04/04	675.67	97.22	675.67	97.23	0.00	0.01
1961/08/09	677.07	397.37	677.07	397.31	0.00	-0.06
1961/10/06	679.36	1593.20	679.36	1593.10	0.00	-0.10
1962/04/15	677.15	407.84	677.15	407.90	0.00	0.06
1962/07/08	677.20	438.46	677.20	438.57	0.00	0.11
1963/05/07	676.85	326.86	676.85	326.47	0.00	-0.39
1964/04/12	677.35	485.57	677.35	485.64	0.00	0.07
1964/07/25	676.79	306.89	676.79	306.88	0.00	-0.01
1965/03/22	677.56	578.59	677.56	578.60	0.00	0.01
1966/02/15	677.51	562.90	677.51	563.17	0.00	0.27
1966/05/18	678.55	981.07	678.55	981.12	0.00	0.05
1967/04/09	677.53	561.97	677.53	561.93	0.00	-0.04
1967/07/01	677.67	640.42	677.67	641.09	0.00	0.67
1968/08/24	677.73	662.02	677.73	661.82	0.00	-0.20
1969/04/13	677.12	401.03	677.12	401.06	0.00	0.03
1969/06/15	677.83	711.36	677.83	711.45	0.00	0.09
1969/08/01	676.08	154.23	676.08	154.46	0.00	0.23
1969/10/25	678.62	1105.50	678.62	1105.40	0.00	-0.10
1970/05/20	677.86	688.72	677.86	688.71	0.00	-0.01
1970/12/18	676.63	270.05	676.63	270.18	0.00	0.13
1971/03/04	676.57	251.83	676.57	251.82	0.00	-0.01
1971/08/28	676.74	293.81	676.74	293.83	0.00	0.02
1972/03/21	677.12	407.07	677.12	406.99	0.00	-0.08
1972/04/27	678.05	829.11	678.05	829.77	0.00	0.66
1972/09/01	678.16	772.55	678.15	772.91	0.00	0.36
1972/10/05	678.34	952.40	678.34	952.47	0.00	0.07
1973/01/08	678.79	1191.70	678.79	1191.60	0.00	-0.10
1973/05/08	677.31	464.88	677.30	465.10	0.00	0.22
1974/02/28	677.85	725.76	677.85	725.89	0.00	0.13
1974/04/21	676.52	238.30	676.52	238.31	0.00	0.01
1974/05/25	677.37	486.46	677.37	486.57	0.00	0.11
1975/01/16	677.92	739.34	677.92	739.35	0.00	0.01
1975/05/05	677.54	561.51	677.54	561.66	0.00	0.15
1975/09/08	678.26	921.33	678.26	921.32	0.00	-0.01
1976/03/21	678.35	889.19	678.35	889.09	0.00	-0.10
1977/07/05	676.49	231.60	676.49	231.60	0.00	0.00
1977/08/13	676.39	208.26	676.39	208.25	0.00	-0.01
1977/09/07	676.30	189.18	676.30	189.20	0.00	0.02
1978/04/02	676.74	293.13	676.74	293.12	0.00	-0.01
1978/05/21	676.54	241.81	676.54	241.83	0.00	0.02
1978/07/09	677.83	711.25	677.83	711.26	0.00	0.01
1978/09/25	678.40	963.83	678.40	963.68	0.00	-0.15
1979/04/18	679.61	1486.10	679.61	1486.00	0.00	-0.10
1979/09/05	677.50	546.75	677.49	547.64	-0.02	0.89
1980/01/21	675.74	117.29	675.75	117.33	0.00	0.04
1980/08/26	677.90	755.33	677.90	755.40	0.00	0.07
1980/09/26	677.05	383.72	677.05	383.72	0.00	0.00
1981/05/03	677.69	634.45	677.69	634.41	0.00	-0.04
1981/06/05	678.18	902.45	678.18	902.55	0.00	0.10
1981/06/21	676.64	262.39	676.64	262.40	0.00	0.01

1981/08/23	677.58	597.08	677.58	597.15	0.00	0.07
1982/03/28	678.53	1005.10	678.53	1005.10	0.00	0.00
1982/07/31	677.74	670.03	677.74	670.55	0.00	0.52
1982/08/14	677.46	540.74	677.46	540.84	0.00	0.10
1982/12/12	679.68	1823.50	679.68	1823.30	0.00	-0.20
1983/01/04	678.01	794.17	678.01	794.17	0.00	0.00
1983/04/22	678.89	1165.30	678.89	1165.30	0.00	0.00
1983/06/04	677.23	451.54	677.23	451.07	0.00	-0.47
1983/07/09	677.75	620.76	677.75	620.83	0.00	0.07
1983/12/05	678.36	942.20	678.36	941.99	0.00	-0.21
1984/02/25	678.28	922.57	678.28	922.62	0.00	0.05
1984/04/03	677.05	385.27	677.05	385.32	0.00	0.05
1985/03/19	679.48	1659.50	679.48	1659.40	0.00	-0.10
1985/12/11	677.91	719.74	677.91	719.85	0.00	0.11
1986/07/19	676.85	322.04	676.85	322.09	0.00	0.05
1986/10/10	678.00	774.36	678.00	774.95	0.00	0.59
1987/09/06	681.23	2841.10	681.23	2840.20	0.00	-0.90
1988/01/01	676.84	324.34	676.84	323.98	0.00	-0.36
1988/02/07	676.97	360.03	676.97	360.07	0.00	0.04
1988/04/13	676.73	290.10	676.73	290.16	0.00	0.06
1988/10/26	677.88	742.78	677.88	742.95	0.00	0.17
1989/08/18	678.68	1102.60	678.68	1102.70	0.00	0.10
1989/09/18	677.58	597.05	677.58	597.26	0.00	0.21
1990/03/16	677.91	745.08	677.91	745.17	0.00	0.09
1990/05/19	678.41	968.93	678.41	969.14	0.00	0.21
1990/08/28	678.12	847.23	678.12	847.45	0.00	0.22
1990/12/10	677.97	775.81	677.97	775.81	0.00	0.00
1991/04/23	677.57	578.58	677.57	578.75	0.00	0.17
1991/06/02	676.76	301.23	676.76	301.05	0.00	-0.18
1991/10/09	677.23	445.70	677.23	445.77	0.00	0.07
1991/11/08	676.78	302.01	676.78	302.03	0.00	0.02
1991/12/18	676.51	240.93	676.51	240.90	0.00	-0.03
1992/09/21	676.29	192.76	676.29	192.63	0.00	-0.13
1993/01/11	677.69	625.40	677.69	625.42	0.00	0.02
1993/04/29	678.12	841.82	678.12	842.20	0.00	0.38
1993/07/06	678.08	807.47	678.08	807.62	0.00	0.15
1994/03/13	677.99	775.75	677.99	775.92	0.00	0.17
1994/07/02	677.98	790.01	677.98	790.15	0.00	0.14
1994/08/24	676.36	202.72	676.36	202.68	0.00	-0.04
1995/01/25	677.38	503.99	677.38	504.24	0.00	0.25
1995/05/06	677.59	589.45	677.59	589.46	0.00	0.01
1995/08/24	676.63	264.05	676.63	264.08	0.00	0.03
1995/11/18	677.19	429.19	677.19	429.59	0.00	0.40
1996/06/27	677.63	608.02	677.63	608.02	0.00	0.00
1996/08/05	677.53	378.72	677.53	378.74	0.00	0.02
1997/03/06	679.48	1653.40	679.48	1653.40	0.00	0.00
1998/03/25	677.51	546.18	677.51	546.22	0.00	0.04
1998/05/15	677.23	445.18	677.23	445.14	0.00	-0.04
1998/08/15	677.43	525.79	677.43	525.70	0.00	-0.09
1998/09/14	675.79	118.42	675.79	118.46	0.00	0.04
1998/10/25	677.41	516.33	677.41	515.99	0.00	-0.34
1999/02/09	678.73	1098.50	678.73	1098.50	0.00	0.00
1999/05/06	678.29	902.19	678.29	902.43	0.00	0.24
2000/04/28	678.38	944.32	678.38	944.28	0.00	-0.04
2001/03/02	677.86	726.04	677.86	725.90	0.00	-0.14
2001/09/06	679.28	1495.00	679.28	1495.80	0.00	0.80
2001/09/30	677.99	768.40	677.99	768.49	0.00	0.09
2001/10/31	679.20	1433.10	679.20	1433.10	0.00	0.00
2002/03/15	677.72	624.06	677.72	624.07	0.00	0.01
2002/05/22	677.20	434.09	677.20	434.19	0.00	0.10
2002/07/13	676.61	263.12	676.61	263.15	0.00	0.03
2002/08/29	678.89	1238.80	678.89	1238.90	0.00	0.10
2003/05/19	677.67	636.49	677.67	636.11	0.00	-0.38
2003/08/13	676.16	169.44	676.15	169.07	0.00	-0.37
2003/11/29	676.68	277.63	676.68	277.59	0.00	-0.04
2004/03/11	676.30	188.76	676.30	188.72	0.00	-0.04
2004/06/18	677.45	531.99	677.45	532.05	0.00	0.06
2005/01/18	678.00	792.40	678.00	793.00	0.00	0.60
2006/03/18	677.17	426.74	677.17	426.60	0.00	-0.14
2006/07/03	676.23	179.01	676.23	178.88	0.00	-0.13
2006/09/29	677.04	386.44	677.04	386.42	0.00	-0.02
2006/10/09	676.30	190.82	676.30	190.74	0.00	-0.08
2007/03/15	677.89	732.60	677.89	732.69	0.00	0.09
2007/08/31	678.32	914.80	678.32	914.62	0.00	-0.18
2008/03/09	677.97	783.57	677.97	783.40	0.00	-0.17
2008/05/18	675.91	132.78	675.91	132.96	0.00	0.18
2008/09/23	680.91	2405.00	680.91	2404.60	0.00	-0.40
MaximumS&F	681.23	2841.10	681.23	2840.20		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
SCSC3212 139275.
16. Branch# 13; Node ID: ; Station: 139275.0000

Nodes ==>	(1) sL16OEX4.PEK 1312 (S)	(F)	(2) sL16OP1o.PEK 1312 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	673.24	25.76	673.24	25.73	0.00	-0.03
1949/04/08	678.02	811.18	678.02	811.31	0.00	0.13
1949/06/21	678.50	1091.30	678.50	1091.20	0.00	-0.10
1949/07/27	677.15	460.11	677.15	460.15	0.00	0.04
1949/12/31	678.70	1127.00	678.70	1127.00	0.00	0.00
1950/01/31	677.70	701.09	677.70	701.17	0.00	0.08
1950/05/03	678.89	1248.80	678.89	1248.40	0.00	-0.40
1950/06/11	678.41	1035.20	678.41	1035.30	0.00	0.10
1951/03/09	677.87	764.10	677.87	764.02	0.00	-0.08
1951/05/17	677.99	820.49	677.99	820.91	0.00	0.42
1951/07/29	677.19	476.64	677.19	476.46	0.00	-0.18
1952/01/25	677.79	751.01	677.79	751.47	0.00	0.46
1952/03/28	677.61	638.13	677.61	638.19	0.00	0.06
1953/03/23	677.49	593.21	677.49	593.26	0.00	0.05
1953/06/16	676.93	388.31	676.93	388.38	0.00	0.07
1953/07/28	678.18	939.36	678.18	939.57	0.00	0.21
1954/04/05	679.27	1557.20	679.27	1557.20	0.00	0.00
1954/05/08	678.69	1142.10	678.69	1142.10	0.00	0.00
1954/08/29	677.66	681.33	677.66	681.05	0.00	-0.28
1954/10/25	680.34	2124.90	680.34	2124.90	0.00	0.00
1955/03/09	676.52	284.70	676.52	284.67	0.00	-0.03
1956/05/18	678.18	875.34	678.18	875.39	0.00	0.05
1957/01/27	676.39	252.12	676.39	252.17	0.00	0.05
1957/03/04	678.28	976.69	678.28	976.49	0.00	-0.20
1957/07/28	680.19	2269.20	680.19	2268.80	0.00	-0.40
1958/04/30	677.21	484.43	677.21	484.35	0.00	-0.08
1958/06/19	676.72	330.17	676.72	329.91	0.00	-0.26
1958/07/11	676.47	275.75	676.47	275.55	0.00	-0.20
1959/04/07	676.42	260.52	676.42	260.50	0.00	-0.02
1959/07/27	675.33	119.38	675.33	119.42	0.00	0.04
1960/01/21	677.26	498.85	677.26	498.85	0.00	0.00
1960/04/04	675.40	97.23	675.40	97.24	0.00	0.01
1961/08/09	676.93	395.90	676.93	395.92	0.00	0.02
1961/10/06	679.29	1593.40	679.29	1593.30	0.00	-0.10
1962/04/15	677.03	407.72	677.03	407.76	0.00	0.04
1962/07/08	677.08	437.23	677.08	437.22	0.00	-0.01
1963/05/07	676.70	325.46	676.70	325.21	0.00	-0.25
1964/04/12	677.24	485.53	677.24	485.58	0.00	0.05
1964/07/25	676.63	306.40	676.63	306.41	0.00	0.01
1965/03/22	677.45	578.06	677.45	578.08	0.00	0.02
1966/02/15	677.40	562.04	677.40	562.18	0.00	0.14
1966/05/18	678.48	979.65	678.48	979.53	0.00	-0.12
1967/04/09	677.42	561.69	677.42	561.63	0.00	-0.06
1967/07/01	677.56	638.90	677.56	639.27	0.00	0.37
1968/08/24	677.62	660.14	677.62	660.35	0.00	0.21
1969/04/13	676.99	400.77	676.99	400.81	0.00	0.04
1969/06/15	677.73	710.28	677.73	710.40	0.00	0.12
1969/08/01	675.76	154.28	675.76	154.50	0.00	0.22
1969/10/25	678.54	1101.60	678.54	1101.40	0.00	-0.20
1970/05/20	677.77	688.27	677.77	688.26	0.00	-0.01
1970/12/18	676.43	269.16	676.43	269.40	0.00	0.24
1971/03/04	676.36	251.14	676.36	251.18	0.00	0.04
1971/08/28	676.57	293.13	676.57	293.14	0.00	0.01
1972/03/21	676.99	406.22	676.99	406.31	0.00	0.09
1972/04/27	677.95	827.06	677.95	827.48	0.00	0.42
1972/09/01	678.09	768.44	678.09	768.83	0.00	0.39
1972/10/05	678.25	950.69	678.25	950.71	0.00	0.02
1973/01/08	678.71	1187.60	678.71	1187.70	0.00	0.10
1973/05/08	677.19	464.73	677.19	464.96	0.00	0.23
1974/02/28	677.75	724.32	677.75	724.44	0.00	0.12
1974/04/21	676.31	238.38	676.31	238.39	0.00	0.01
1974/05/25	677.26	486.30	677.26	486.47	0.00	0.17
1975/01/16	677.82	739.06	677.82	739.08	0.00	0.02
1975/05/05	677.43	561.18	677.43	561.30	0.00	0.12
1975/09/08	678.16	918.91	678.16	918.93	0.00	0.02
1976/03/21	678.27	888.53	678.27	888.40	0.00	-0.13
1977/07/05	676.27	231.05	676.27	231.03	0.00	-0.02
1977/08/13	676.14	207.88	676.14	207.85	0.00	-0.03
1977/09/07	676.02	189.08	676.02	189.11	0.00	0.03
1978/04/02	676.57	293.03	676.57	293.02	0.00	-0.01
1978/05/21	676.33	241.62	676.33	241.62	0.00	0.00
1978/07/09	677.72	710.03	677.72	710.10	0.00	0.07
1978/09/25	678.32	962.01	678.32	961.85	0.00	-0.16
1979/04/18	679.56	1486.20	679.56	1486.20	0.00	0.00
1979/09/05	677.40	546.03	677.37	547.18	-0.02	1.15
1980/01/21	675.34	117.29	675.34	117.32	0.00	0.03
1980/08/26	677.79	753.47	677.79	753.45	0.00	-0.02
1980/09/26	676.91	382.94	676.91	383.12	0.00	0.18
1981/05/03	677.59	633.76	677.59	633.63	0.00	-0.13
1981/06/05	678.09	899.60	678.09	899.61	0.00	0.01
1981/06/21	676.46	262.03	676.46	262.06	0.00	0.03

1981/08/23	677.46	596.62	677.46	596.64	0.00	0.02
1982/03/28	678.45	1003.70	678.45	1003.70	0.00	0.00
1982/07/31	677.63	668.82	677.63	669.21	0.00	0.39
1982/08/14	677.34	539.39	677.34	539.90	0.00	0.51
1982/12/12	679.61	1821.40	679.61	1821.20	0.00	-0.20
1983/01/04	677.91	792.11	677.91	792.36	0.00	0.25
1983/04/22	678.82	1163.60	678.82	1163.50	0.00	-0.10
1983/06/04	677.10	450.30	677.10	449.75	0.00	-0.55
1983/07/09	677.66	619.02	677.66	619.08	0.00	0.06
1983/12/05	678.28	940.86	678.28	940.78	0.00	-0.08
1984/02/25	678.19	920.21	678.19	920.29	0.00	0.08
1984/04/03	676.91	384.14	676.91	384.16	0.00	0.02
1985/03/19	679.41	1658.90	679.41	1658.80	0.00	-0.10
1985/12/11	677.81	719.30	677.81	719.40	0.00	0.10
1986/07/19	676.69	321.15	676.69	321.23	0.00	0.08
1986/10/10	677.91	773.55	677.91	774.28	0.00	0.73
1987/09/06	681.18	2829.90	681.18	2829.00	0.00	-0.90
1988/01/01	676.68	322.79	676.68	322.83	0.00	0.04
1988/02/07	676.82	359.19	676.82	359.22	0.00	0.03
1988/04/13	676.56	289.90	676.56	289.98	0.00	0.08
1988/10/26	677.77	741.25	677.77	741.28	0.00	0.03
1989/08/18	678.60	1100.60	678.61	1100.60	0.00	0.00
1989/09/18	677.47	595.99	677.47	595.80	0.00	-0.19
1990/03/16	677.80	743.95	677.80	744.06	0.00	0.11
1990/05/19	678.33	967.23	678.33	967.33	0.00	0.10
1990/08/28	678.03	846.02	678.03	846.27	0.00	0.25
1990/12/10	677.87	774.11	677.87	774.08	0.00	-0.03
1991/04/23	677.46	578.17	677.46	578.36	0.00	0.19
1991/06/02	676.59	300.07	676.59	299.90	0.00	-0.17
1991/10/09	677.10	444.40	677.10	444.41	0.00	0.01
1991/11/08	676.61	301.89	676.61	301.89	0.00	0.00
1991/12/18	676.27	240.03	676.27	240.03	0.00	0.00
1992/09/21	675.98	192.38	675.98	192.26	0.00	-0.12
1993/01/11	677.59	625.18	677.59	625.17	0.00	-0.01
1993/04/29	678.02	840.28	678.02	840.53	0.00	0.25
1993/07/06	677.99	806.21	677.99	806.40	0.00	0.19
1994/03/13	677.89	774.80	677.89	774.89	0.00	0.09
1994/07/02	677.87	788.23	677.87	788.27	0.00	0.04
1994/08/24	676.10	202.49	676.10	202.44	0.00	-0.05
1995/01/25	677.26	502.89	677.26	502.89	0.00	0.00
1995/05/06	677.48	589.00	677.48	588.96	0.00	-0.04
1995/08/24	676.45	263.77	676.45	263.79	0.00	0.02
1995/11/18	677.06	428.20	677.07	428.27	0.00	0.07
1996/06/27	677.52	607.58	677.52	607.59	0.00	0.01
1996/08/05	677.48	377.70	677.48	377.76	0.00	0.06
1997/03/06	679.42	1651.30	679.41	1651.20	0.00	-0.10
1998/03/25	677.40	546.03	677.40	546.09	0.00	0.06
1998/05/15	677.11	444.16	677.11	444.10	0.00	-0.06
1998/08/15	677.31	524.29	677.31	524.42	0.00	0.13
1998/09/14	675.42	118.54	675.42	118.59	0.00	0.05
1998/10/25	677.29	515.05	677.29	514.71	0.00	-0.34
1999/02/09	678.66	1097.50	678.66	1097.50	0.00	0.00
1999/05/06	678.20	901.05	678.20	901.33	0.00	0.28
2000/04/28	678.30	942.59	678.30	942.56	0.00	-0.03
2001/03/02	677.75	724.46	677.75	724.52	0.00	0.06
2001/09/06	679.21	1494.90	679.21	1495.50	0.00	0.60
2001/09/30	677.89	767.78	677.89	767.89	0.00	0.11
2001/10/31	679.13	1433.10	679.13	1433.30	0.00	0.20
2002/03/15	677.62	623.92	677.62	623.93	0.00	0.01
2002/05/22	677.07	432.82	677.07	432.91	0.00	0.09
2002/07/13	676.42	262.70	676.42	262.71	0.00	0.01
2002/08/29	678.82	1234.10	678.82	1234.30	0.00	0.20
2003/05/19	677.56	635.14	677.56	634.69	0.00	-0.45
2003/08/13	675.82	169.36	675.82	169.00	0.00	-0.36
2003/11/29	676.50	276.55	676.50	276.57	0.00	0.02
2004/03/11	676.03	188.59	676.03	188.55	0.00	-0.04
2004/06/18	677.33	531.93	677.33	531.96	0.00	0.03
2005/01/18	677.90	790.61	677.90	791.08	0.00	0.47
2006/03/18	677.05	425.86	677.05	425.63	0.00	-0.23
2006/07/03	675.93	178.69	675.93	178.57	0.00	-0.12
2006/09/29	676.90	385.00	676.90	384.98	0.00	-0.02
2006/10/09	676.02	190.63	676.02	190.56	0.00	-0.07
2007/03/15	677.79	731.69	677.79	731.74	0.00	0.05
2007/08/31	678.24	913.40	678.23	913.29	0.00	-0.11
2008/03/09	677.87	781.60	677.87	781.61	0.00	0.01
2008/05/18	675.54	132.84	675.54	133.00	0.00	0.16
2008/09/23	680.88	2401.20	680.88	2400.70	0.00	-0.50
MaximumS&F	681.18	2829.90	681.18	2829.00		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
SCSC3211 138937.
17. Branch# 13; Node ID: ; Station: 138937.0000

Nodes ==>	(1) sL16OEX4.PEK 1318 (S)	(F)	(2) sL16OP1o.PEK 1318 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	673.03	25.72	673.03	25.68	0.00	-0.03
1949/04/08	677.98	810.92	677.98	811.07	0.00	0.15
1949/06/21	678.46	1087.60	678.46	1087.40	0.00	-0.20
1949/07/27	677.10	459.06	677.10	459.16	0.00	0.10
1949/12/31	678.67	1125.20	678.67	1125.20	0.00	0.00
1950/01/31	677.66	699.93	677.66	700.03	0.00	0.10
1950/05/03	678.86	1246.10	678.86	1245.70	0.00	-0.40
1950/06/11	678.38	1032.00	678.38	1032.10	0.00	0.10
1951/03/09	677.83	763.21	677.83	763.20	0.00	-0.01
1951/05/17	677.95	818.84	677.95	819.04	0.00	0.20
1951/07/29	677.14	475.80	677.14	475.78	0.00	-0.02
1952/01/25	677.75	749.13	677.75	749.93	0.00	0.80
1952/03/28	677.57	637.56	677.57	637.60	0.00	0.04
1953/03/23	677.45	592.08	677.45	592.05	0.00	-0.03
1953/06/16	676.88	387.47	676.88	387.56	0.00	0.09
1953/07/28	678.14	936.51	678.14	936.68	0.00	0.17
1954/04/05	679.23	1557.60	679.23	1557.70	0.00	0.10
1954/05/08	678.66	1139.70	678.66	1139.70	0.00	0.00
1954/08/29	677.62	680.27	677.61	680.00	0.00	-0.27
1954/10/25	680.32	2118.90	680.32	2118.90	0.00	0.00
1955/03/09	676.46	284.41	676.46	284.37	0.00	-0.04
1956/05/18	678.14	874.68	678.14	874.74	0.00	0.06
1957/01/27	676.32	252.09	676.32	252.11	0.00	0.02
1957/03/04	678.24	973.79	678.24	973.81	0.00	0.02
1957/07/28	680.16	2263.50	680.16	2263.20	0.00	-0.30
1958/04/30	677.16	483.44	677.16	483.31	0.00	-0.13
1958/06/19	676.66	328.76	676.66	328.98	0.00	0.22
1958/07/11	676.41	274.95	676.41	275.15	0.00	0.20
1959/04/07	676.36	260.37	676.36	260.35	0.00	-0.02
1959/07/27	675.17	119.46	675.17	119.51	0.00	0.05
1960/01/21	677.22	497.91	677.22	497.72	0.00	-0.19
1960/04/04	675.32	97.21	675.32	97.22	0.00	0.01
1961/08/09	676.88	394.79	676.88	394.78	0.00	-0.01
1961/10/06	679.25	1593.50	679.25	1593.40	0.00	-0.10
1962/04/15	676.98	407.58	676.98	407.63	0.00	0.05
1962/07/08	677.03	436.34	677.03	436.40	0.00	0.06
1963/05/07	676.64	324.48	676.64	324.00	0.00	-0.48
1964/04/12	677.20	485.51	677.20	485.56	0.00	0.05
1964/07/25	676.58	305.93	676.58	305.93	0.00	0.00
1965/03/22	677.41	577.49	677.41	577.53	0.00	0.04
1966/02/15	677.35	561.39	677.35	561.58	0.00	0.19
1966/05/18	678.45	978.21	678.45	978.23	0.00	0.02
1967/04/09	677.38	561.39	677.38	561.30	0.00	-0.09
1967/07/01	677.52	637.78	677.52	638.28	0.00	0.50
1968/08/24	677.58	659.11	677.58	658.84	0.00	-0.27
1969/04/13	676.95	400.68	676.95	400.70	0.00	0.02
1969/06/15	677.69	709.17	677.69	709.31	0.00	0.14
1969/08/01	675.65	154.36	675.65	154.61	0.00	0.25
1969/10/25	678.51	1097.70	678.51	1097.70	0.00	0.00
1970/05/20	677.73	687.82	677.73	687.81	0.00	-0.01
1970/12/18	676.36	268.53	676.36	268.65	0.00	0.12
1971/03/04	676.28	250.68	676.28	250.69	0.00	0.01
1971/08/28	676.51	292.45	676.51	292.48	0.00	0.03
1972/03/21	676.95	405.75	676.95	405.76	0.00	0.01
1972/04/27	677.91	825.30	677.91	825.37	0.00	0.07
1972/09/01	678.07	764.47	678.06	764.90	0.00	0.43
1972/10/05	678.21	949.03	678.21	949.06	0.00	0.03
1973/01/08	678.68	1183.50	678.68	1183.70	0.00	0.20
1973/05/08	677.15	464.59	677.15	464.86	0.00	0.27
1974/02/28	677.71	723.10	677.71	723.02	0.00	-0.08
1974/04/21	676.24	238.39	676.24	238.41	0.00	0.02
1974/05/25	677.22	486.16	677.22	486.42	0.00	0.26
1975/01/16	677.78	738.73	677.78	738.75	0.00	0.02
1975/05/05	677.39	560.82	677.39	560.96	0.00	0.14
1975/09/08	678.13	916.52	678.13	916.58	0.00	0.06
1976/03/21	678.23	887.99	678.23	887.85	0.00	-0.14
1977/07/05	676.20	230.66	676.20	230.65	0.00	-0.01
1977/08/13	676.05	207.71	676.05	207.69	0.00	-0.02
1977/09/07	675.92	188.99	675.92	189.03	0.00	0.04
1978/04/02	676.51	293.01	676.51	293.00	0.00	-0.01
1978/05/21	676.26	241.37	676.26	241.38	0.00	0.01
1978/07/09	677.68	708.96	677.68	708.91	0.00	-0.05
1978/09/25	678.28	960.19	678.29	960.02	0.00	-0.17
1979/04/18	679.54	1486.30	679.54	1486.30	0.00	0.00
1979/09/05	677.39	545.25	677.33	546.69	-0.06	1.44
1980/01/21	675.19	117.29	675.19	117.32	0.00	0.03
1980/08/26	677.75	751.58	677.75	751.78	0.00	0.20
1980/09/26	676.86	382.49	676.86	382.50	0.00	0.01
1981/05/03	677.54	633.19	677.54	633.09	0.00	-0.10
1981/06/05	678.05	897.40	678.05	897.60	0.00	0.20
1981/06/21	676.39	261.58	676.39	261.60	0.00	0.02

1981/08/23	677.42	596.24	677.42	596.27	0.00	0.03
1982/03/28	678.42	1002.50	678.42	1002.80	0.00	0.30
1982/07/31	677.59	667.58	677.59	667.84	0.00	0.26
1982/08/14	677.30	538.70	677.30	538.88	0.00	0.18
1982/12/12	679.57	1819.20	679.57	1819.00	0.00	-0.20
1983/01/04	677.87	790.45	677.87	790.61	0.00	0.16
1983/04/22	678.79	1161.70	678.79	1161.70	0.00	0.00
1983/06/04	677.05	449.31	677.05	449.00	0.00	-0.31
1983/07/09	677.63	617.24	677.63	617.32	0.00	0.08
1983/12/05	678.24	939.66	678.24	939.56	0.00	-0.10
1984/02/25	678.15	917.90	678.15	918.01	0.00	0.11
1984/04/03	676.86	382.89	676.86	382.98	0.00	0.09
1985/03/19	679.37	1658.30	679.37	1658.20	0.00	-0.10
1985/12/11	677.77	718.88	677.77	718.94	0.00	0.06
1986/07/19	676.64	320.50	676.64	320.57	0.00	0.07
1986/10/10	677.87	772.95	677.87	773.61	0.00	0.66
1987/09/06	681.16	2818.50	681.16	2817.60	0.00	-0.90
1988/01/01	676.63	321.95	676.63	321.95	0.00	0.00
1988/02/07	676.77	358.48	676.77	358.54	0.00	0.06
1988/04/13	676.50	289.74	676.50	289.86	0.00	0.12
1988/10/26	677.73	739.88	677.73	739.97	0.00	0.09
1989/08/18	678.57	1098.50	678.57	1098.60	0.00	0.10
1989/09/18	677.42	594.92	677.42	594.79	0.00	-0.13
1990/03/16	677.76	742.80	677.76	742.94	0.00	0.14
1990/05/19	678.30	965.52	678.30	965.55	0.00	0.03
1990/08/28	678.00	844.88	678.00	845.16	0.00	0.28
1990/12/10	677.83	772.65	677.83	772.59	0.00	-0.06
1991/04/23	677.42	577.83	677.42	578.07	0.00	0.24
1991/06/02	676.53	299.15	676.53	298.84	0.00	-0.31
1991/10/09	677.06	443.42	677.06	443.35	0.00	-0.07
1991/11/08	676.55	301.76	676.55	301.77	0.00	0.01
1991/12/18	676.19	239.58	676.19	239.56	0.00	-0.02
1992/09/21	675.88	192.12	675.88	191.98	0.00	-0.14
1993/01/11	677.55	624.93	677.55	624.94	0.00	0.01
1993/04/29	677.98	838.78	677.98	838.90	0.00	0.12
1993/07/06	677.95	805.17	677.95	805.29	0.00	0.12
1994/03/13	677.85	774.01	677.85	774.12	0.00	0.11
1994/07/02	677.83	786.44	677.83	786.66	0.00	0.22
1994/08/24	676.02	202.39	676.02	202.34	0.00	-0.05
1995/01/25	677.21	501.75	677.21	502.09	0.00	0.34
1995/05/06	677.44	588.65	677.44	588.62	0.00	-0.03
1995/08/24	676.38	263.57	676.38	263.60	0.00	0.03
1995/11/18	677.02	427.17	677.02	427.47	0.00	0.30
1996/06/27	677.48	607.11	677.48	607.13	0.00	0.02
1996/08/05	677.46	377.11	677.46	377.17	0.00	0.06
1997/03/06	679.39	1649.20	679.39	1649.20	0.00	0.00
1998/03/25	677.36	545.84	677.36	545.94	0.00	0.10
1998/05/15	677.07	443.32	677.07	443.38	0.00	0.06
1998/08/15	677.27	523.18	677.27	523.18	0.00	0.00
1998/09/14	675.29	118.78	675.30	118.82	0.00	0.04
1998/10/25	677.24	514.15	677.24	513.83	0.00	-0.32
1999/02/09	678.62	1096.50	678.62	1096.40	0.00	-0.10
1999/05/06	678.17	900.00	678.17	900.33	0.00	0.33
2000/04/28	678.27	941.10	678.27	941.05	0.00	-0.05
2001/03/02	677.71	722.87	677.71	723.22	0.00	0.35
2001/09/06	679.17	1495.50	679.17	1496.40	0.00	0.90
2001/09/30	677.85	767.16	677.85	767.29	0.00	0.13
2001/10/31	679.09	1433.30	679.09	1433.50	0.00	0.20
2002/03/15	677.58	623.77	677.58	623.79	0.00	0.02
2002/05/22	677.03	432.04	677.03	432.06	0.00	0.02
2002/07/13	676.35	262.23	676.35	262.26	0.00	0.03
2002/08/29	678.78	1229.60	678.78	1229.80	0.00	0.20
2003/05/19	677.51	634.08	677.51	633.50	0.00	-0.58
2003/08/13	675.71	169.28	675.71	168.95	0.00	-0.33
2003/11/29	676.44	275.93	676.44	275.91	0.00	-0.02
2004/03/11	675.95	188.52	675.94	188.47	0.00	-0.05
2004/06/18	677.29	531.93	677.29	531.97	0.00	0.04
2005/01/18	677.86	789.23	677.86	789.77	0.00	0.54
2006/03/18	677.00	425.11	677.00	424.85	0.00	-0.26
2006/07/03	675.83	178.52	675.83	178.39	0.00	-0.13
2006/09/29	676.85	384.01	676.85	384.04	0.00	0.03
2006/10/09	675.93	190.57	675.93	190.50	0.00	-0.07
2007/03/15	677.75	730.84	677.75	730.92	0.00	0.08
2007/08/31	678.20	912.14	678.20	911.97	0.00	-0.17
2008/03/09	677.83	779.64	677.83	779.80	0.00	0.16
2008/05/18	675.41	132.94	675.41	133.10	0.00	0.16
2008/09/23	680.86	2398.30	680.86	2398.10	0.00	-0.20
MaximumS&F	681.16	2818.50	681.16	2817.60		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

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Lower Salt Creek FEQ Modeling (CBBEL Project No. 07-0404)
Comparison of Peak Water Surface Elevations (S) and Flow Rates (F)
at
SCSC3210 138638.
18. Branch# 13; Node ID: ; Station: 138638.0000

Nodes ==>	(1) sL16OEX4.PEK 1323 (S)	(F)	(2) sL16OP1o.PEK 1323 (S)	(F)	2-1 (S)	2-1 (F)
1925/01/02	672.89	25.68	672.89	25.65	0.00	-0.03
1949/04/08	677.91	810.77	677.91	810.92	0.00	0.15
1949/06/21	678.39	1084.10	678.39	1084.00	0.00	-0.10
1949/07/27	677.02	458.72	677.02	458.65	0.00	-0.07
1949/12/31	678.61	1123.90	678.61	1123.70	0.00	-0.20
1950/01/31	677.58	699.02	677.58	699.14	0.00	0.12
1950/05/03	678.80	1243.80	678.80	1243.30	0.00	-0.50
1950/06/11	678.30	1029.10	678.30	1029.10	0.00	0.00
1951/03/09	677.76	762.52	677.76	762.57	0.00	0.05
1951/05/17	677.88	817.53	677.88	817.73	0.00	0.20
1951/07/29	677.06	475.32	677.06	475.27	0.00	-0.05
1952/01/25	677.67	747.97	677.67	748.90	0.00	0.93
1952/03/28	677.49	637.19	677.49	637.25	0.00	0.06
1953/03/23	677.37	591.51	677.37	591.51	0.00	0.00
1953/06/16	676.80	386.82	676.80	387.14	0.00	0.32
1953/07/28	678.06	933.97	678.06	934.11	0.00	0.14
1954/04/05	679.17	1558.00	679.17	1558.20	0.00	0.20
1954/05/08	678.59	1137.90	678.59	1137.80	0.00	-0.10
1954/08/29	677.53	679.57	677.53	679.29	0.00	-0.28
1954/10/25	680.27	2113.20	680.27	2113.20	0.00	0.00
1955/03/09	676.36	284.21	676.36	284.15	0.00	-0.06
1956/05/18	678.07	874.08	678.07	874.15	0.00	0.07
1957/01/27	676.22	252.14	676.22	252.17	0.00	0.03
1957/03/04	678.17	971.07	678.17	971.29	0.00	0.22
1957/07/28	680.10	2258.40	680.10	2258.20	0.00	-0.20
1958/04/30	677.08	482.99	677.08	483.03	0.00	0.04
1958/06/19	676.58	328.46	676.58	328.48	0.00	0.02
1958/07/11	676.30	274.87	676.30	274.82	0.00	-0.05
1959/04/07	676.25	260.37	676.25	260.34	0.00	-0.03
1959/07/27	675.04	119.50	675.04	119.55	0.00	0.05
1960/01/21	677.16	497.21	677.16	497.13	0.00	-0.08
1960/04/04	675.25	97.22	675.25	97.23	0.00	0.01
1961/08/09	676.80	394.27	676.80	394.30	0.00	0.03
1961/10/06	679.19	1593.60	679.19	1593.50	0.00	-0.10
1962/04/15	676.91	407.49	676.91	407.54	0.00	0.05
1962/07/08	676.95	435.87	676.95	435.77	0.00	-0.10
1963/05/07	676.56	324.01	676.55	323.66	0.00	-0.35
1964/04/12	677.12	485.72	677.12	485.75	0.00	0.03
1964/07/25	676.49	305.78	676.49	305.79	0.00	0.01
1965/03/22	677.33	577.11	677.33	577.13	0.00	0.02
1966/02/15	677.27	560.90	677.27	561.12	0.00	0.22
1966/05/18	678.39	976.84	678.39	976.98	0.00	0.14
1967/04/09	677.30	561.17	677.30	561.06	0.00	-0.11
1967/07/01	677.43	636.91	677.43	637.57	0.00	0.66
1968/08/24	677.50	658.30	677.50	657.80	0.00	-0.50
1969/04/13	676.87	400.62	676.87	400.65	0.00	0.03
1969/06/15	677.61	708.32	677.61	708.47	0.00	0.15
1969/08/01	675.53	154.44	675.53	154.67	0.00	0.23
1969/10/25	678.44	1094.70	678.44	1094.60	0.00	-0.10
1970/05/20	677.66	687.59	677.66	687.56	0.00	-0.03
1970/12/18	676.25	268.30	676.25	268.47	0.00	0.17
1971/03/04	676.17	250.42	676.17	250.47	0.00	0.05
1971/08/28	676.42	292.17	676.42	292.18	0.00	0.01
1972/03/21	676.87	405.42	676.87	405.46	0.00	0.04
1972/04/27	677.83	823.89	677.83	824.10	0.00	0.21
1972/09/01	678.02	761.36	678.02	761.81	0.00	0.45
1972/10/05	678.14	947.47	678.14	947.53	0.00	0.06
1973/01/08	678.62	1180.30	678.62	1180.40	0.00	0.10
1973/05/08	677.07	464.54	677.07	464.79	0.00	0.25
1974/02/28	677.63	722.14	677.63	722.17	0.00	0.03
1974/04/21	676.13	238.42	676.13	238.44	0.00	0.02
1974/05/25	677.15	486.16	677.15	486.42	0.00	0.26
1975/01/16	677.71	738.54	677.71	738.57	0.00	0.03
1975/05/05	677.31	560.56	677.31	560.71	0.00	0.15
1975/09/08	678.05	914.62	678.05	914.60	0.00	-0.02
1976/03/21	678.17	887.58	678.17	887.43	0.00	-0.15
1977/07/05	676.09	230.42	676.09	230.39	0.00	-0.03
1977/08/13	675.93	207.58	675.93	207.57	0.00	-0.01
1977/09/07	675.80	188.97	675.80	188.99	0.00	0.02
1978/04/02	676.41	292.99	676.41	293.00	0.00	0.01
1978/05/21	676.15	241.30	676.15	241.30	0.00	0.00
1978/07/09	677.60	708.24	677.60	708.19	0.00	-0.05
1978/09/25	678.21	958.53	678.22	958.27	0.01	-0.26
1979/04/18	679.49	1487.20	679.49	1487.10	0.00	-0.10
1979/09/05	677.38	544.66	677.25	546.32	-0.13	1.66
1980/01/21	675.07	117.30	675.07	117.34	0.00	0.04
1980/08/26	677.67	750.33	677.67	750.46	0.00	0.13
1980/09/26	676.78	382.19	676.78	382.21	0.00	0.02
1981/05/03	677.47	632.81	677.47	632.72	0.00	-0.09
1981/06/05	677.97	895.74	677.97	895.89	0.00	0.15
1981/06/21	676.30	261.21	676.30	261.24	0.00	0.03

1981/08/23	677.33	595.96	677.33	596.00	0.00	0.04
1982/03/28	678.35	1001.60	678.35	1001.90	0.00	0.30
1982/07/31	677.51	666.61	677.51	666.87	0.00	0.26
1982/08/14	677.22	538.17	677.22	538.17	0.00	0.00
1982/12/12	679.51	1817.30	679.51	1817.10	0.00	-0.20
1983/01/04	677.79	789.31	677.79	789.30	0.00	-0.01
1983/04/22	678.73	1160.50	678.73	1160.40	0.00	-0.10
1983/06/04	676.97	448.97	676.97	448.50	0.00	-0.47
1983/07/09	677.57	615.89	677.57	615.96	0.00	0.07
1983/12/05	678.17	938.63	678.17	938.55	0.00	-0.08
1984/02/25	678.08	916.17	678.08	916.20	0.00	0.03
1984/04/03	676.78	382.59	676.78	382.56	0.00	-0.03
1985/03/19	679.31	1657.70	679.31	1657.60	0.00	-0.10
1985/12/11	677.70	718.57	677.70	718.69	0.00	0.12
1986/07/19	676.55	320.22	676.55	320.31	0.00	0.09
1986/10/10	677.79	772.54	677.79	773.20	0.00	0.66
1987/09/06	681.12	2807.80	681.12	2807.00	0.00	-0.80
1988/01/01	676.53	321.34	676.53	321.50	0.00	0.16
1988/02/07	676.68	358.26	676.68	358.27	0.00	0.01
1988/04/13	676.41	289.66	676.41	289.76	0.00	0.10
1988/10/26	677.65	738.94	677.65	738.99	0.00	0.05
1989/08/18	678.51	1096.70	678.51	1096.80	0.00	0.10
1989/09/18	677.34	594.10	677.34	594.25	0.00	0.15
1990/03/16	677.68	741.90	677.68	742.06	0.00	0.16
1990/05/19	678.22	963.89	678.23	964.12	0.00	0.23
1990/08/28	677.93	843.94	677.93	844.25	0.00	0.31
1990/12/10	677.75	771.51	677.75	771.47	0.00	-0.04
1991/04/23	677.34	577.61	677.34	577.87	0.00	0.26
1991/06/02	676.44	298.64	676.43	298.50	0.00	-0.14
1991/10/09	676.98	442.90	676.98	442.73	0.00	-0.17
1991/11/08	676.46	301.65	676.46	301.67	0.00	0.02
1991/12/18	676.07	239.21	676.07	239.23	0.00	0.02
1992/09/21	675.74	191.97	675.74	191.85	0.00	-0.12
1993/01/11	677.47	624.75	677.47	624.77	0.00	0.02
1993/04/29	677.91	837.57	677.91	837.84	0.00	0.27
1993/07/06	677.88	804.39	677.88	804.55	0.00	0.16
1994/03/13	677.78	773.38	677.78	773.51	0.00	0.13
1994/07/02	677.75	785.03	677.75	785.39	0.00	0.36
1994/08/24	675.90	202.33	675.90	202.28	0.00	-0.05
1995/01/25	677.13	501.40	677.13	501.49	0.00	0.09
1995/05/06	677.36	588.39	677.36	588.37	0.00	-0.02
1995/08/24	676.28	263.43	676.28	263.44	0.00	0.01
1995/11/18	676.94	426.43	676.94	426.86	0.00	0.43
1996/06/27	677.40	606.77	677.40	606.78	0.00	0.01
1996/08/05	677.43	377.00	677.43	377.00	0.00	0.00
1997/03/06	679.33	1647.40	679.33	1647.50	0.00	0.10
1998/03/25	677.28	545.72	677.28	545.83	0.00	0.11
1998/05/15	676.99	442.77	676.99	442.98	0.00	0.21
1998/08/15	677.19	522.50	677.19	522.51	0.00	0.01
1998/09/14	675.18	118.89	675.19	118.93	0.00	0.04
1998/10/25	677.16	513.48	677.16	513.17	0.00	-0.31
1999/02/09	678.56	1095.50	678.56	1095.50	0.00	0.00
1999/05/06	678.10	899.21	678.10	899.40	0.00	0.19
2000/04/28	678.20	939.83	678.20	939.79	0.00	-0.04
2001/03/02	677.63	721.90	677.63	722.21	0.00	0.31
2001/09/06	679.11	1496.10	679.11	1497.20	0.00	1.10
2001/09/30	677.78	766.68	677.78	766.82	0.00	0.14
2001/10/31	679.03	1433.70	679.03	1434.00	0.00	0.30
2002/03/15	677.51	623.77	677.51	623.77	0.00	0.00
2002/05/22	676.95	431.49	676.95	431.42	0.00	-0.07
2002/07/13	676.24	261.98	676.24	261.99	0.00	0.01
2002/08/29	678.72	1225.90	678.72	1226.00	0.00	0.10
2003/05/19	677.43	633.44	677.43	632.87	0.00	-0.57
2003/08/13	675.57	169.30	675.57	168.98	0.00	-0.32
2003/11/29	676.34	275.51	676.34	275.53	0.00	0.02
2004/03/11	675.83	188.51	675.82	188.47	0.00	-0.04
2004/06/18	677.21	531.94	677.21	531.99	0.00	0.05
2005/01/18	677.78	788.12	677.78	788.72	0.00	0.60
2006/03/18	676.92	424.77	676.92	424.54	0.00	-0.23
2006/07/03	675.71	178.43	675.70	178.29	0.00	-0.14
2006/09/29	676.77	383.68	676.77	383.66	0.00	-0.02
2006/10/09	675.80	190.54	675.80	190.46	0.00	-0.08
2007/03/15	677.67	730.18	677.67	730.26	0.00	0.08
2007/08/31	678.13	911.02	678.13	910.74	0.00	-0.28
2008/03/09	677.76	778.10	677.76	778.38	0.00	0.28
2008/05/18	675.29	133.00	675.29	133.16	0.00	0.16
2008/09/23	680.84	2395.90	680.84	2395.70	0.00	-0.20
MaximumS&F	681.12	2807.80	681.12	2807.00		
StormEvent	1987/09/06	1987/09/06	1987/09/06	1987/09/06		

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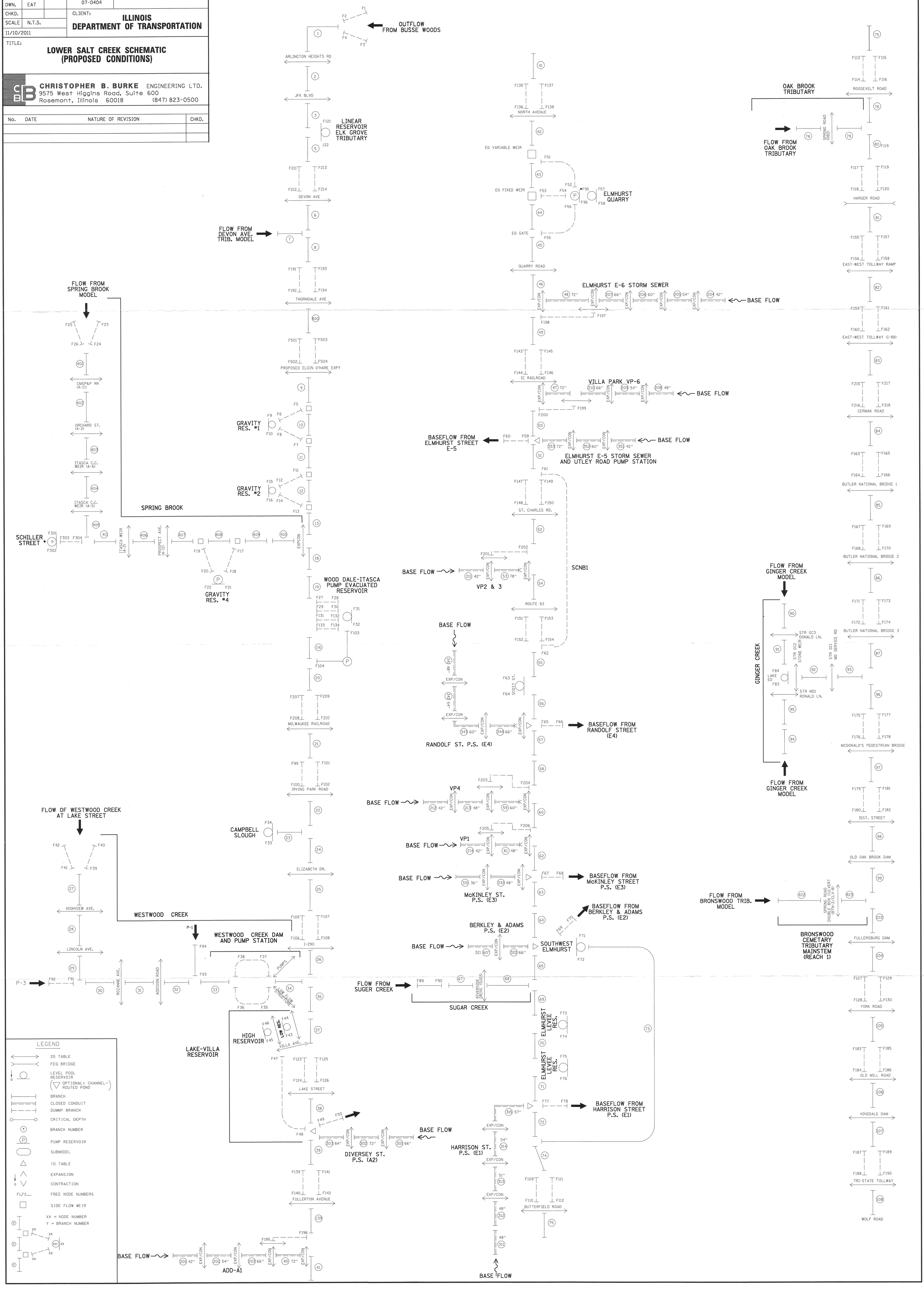
DSGN.	MY		PROJECT No. 07-0404
DWN.	EAT		
CHKD.			CLIENT: ILLINOIS DEPARTMENT OF TRANSPORTATION
SCALE	N.T.S.		
11/10/2011			

TITLE:

LOWER SALT CREEK SCHEMATIC (PROPOSED CONDITIONS)

CHRISTOPHER B. BURKE ENGINEERING LTD.
9575 West Higgins Road, Suite 600
Rosemont, Illinois 60018 (847) 823-0500

No.	DATE	NATURE OF REVISION	CHKD.



LEGEND

XS-ID / PROPOSED WSEL — E1 (13214) 681.6 — CROSS-SECTION LOCATION

100-YR FLOODPLAIN BOUNDARY

CLIENT:

ILLINOIS DEPARTMENT OF TRANSPORTATION

TITLE:

SALT CREEK FLOODPLAIN
PROPOSED CROSS-SECTION LOCATIONS
PROPOSED CONDITIONS

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500

DSGN.			SCALE:	150'
DWN.			PLOT DATE:	11/14/2012
CHKD.			CAD USER:	elmotoda
FILE:			MODEL:	Default

PROJ. NO. 07-0404
DATE:
SHEET 3 OF
DRAWING NO.
11.2

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TAB 12

SECTION 12

IDNR-OWR FLOODWAY PERMIT SUMMARY AND COMPENSATORY STORAGE SUMMARY

Illinois Department of Transportation

Permit Summary for Floodway Construction in Northeast Illinois

Applicant Agency:	IDOT	County:	DuPage
Route:	Elgin O'Hare Expressway	Stream:	Salt Creek
Section:		SN:	1089+00

General Description (bridge length, bridge width, number of spans, abutment type, proposed scope of work within floodway, etc.):
Existing Facility: N/A
Proposed Improvement: 220' 2-span bridge with a 3' pier

1. Is the proposed work classified as repairs such as deck replacement, pavement resurfacing, or the armoring or filling of a scour hole? ☐ Yes ☒ No

2. Does the proposed work only consist of modifications to the existing structure which will occur above the regulatory 100-year flood profile? ☐ Yes ☒ No

Note: If the answer to question 1 or 2 is yes, no permit is required and questions 3 through 12 may be omitted.

3. Does the proposed work below the regulatory 100-year flood profile consist of widening of the existing structure by 12 feet or less? ☐ Yes ☒ No

Note: If yes, Regional Permit No. 2 applies and questions 4 through 9 may be omitted.

4. Is the proposed improvement, including the approach roadway, more restrictive to normal and flood flows than the existing structure? ☐ Yes ☒ No

5. Is a Channel Modification proposed? ☐ Yes ☒ No

6. Are there any buildings or structures located upstream in the 100-year floodplain within the influence of the structure backwater? ☐ Yes ☒ No

   6a. If no, does the backwater of the proposed improvement exceed the backwater of the existing structure by more than 0.1 foot? ☐ Yes ☒ No

   6b. If yes, does the proposed backwater exceed the natural high water elevation by more than 0.1 foot? ☐ Yes ☒ No

7. Are transitions required for this project? ☐ Yes ☒ No

8. Is the flood profile at the project site impacted by backwater from a downstream receiving stream? ☐ Yes ☒ No

   If yes, list frequency of starting elevation for analysis: 100-year

9. Is backwater from a downstream structure affecting the flood profile at the project site? ☐ Yes ☒ No

   9a. Was the existing downstream structure used in the analysis for determining flood profile at the project site? years? (Attach documentation) ☒ Yes ☐ No

   9b. Is the downstream structure scheduled for improvement in the next 5 ☐ Yes ☒ No

   9c. Was the proposed downstream improvement used in the analysis? ☐ Yes ☒ No

10. Is a floodway map change required due to the proposed project? ☐ Yes ☒ No

11. Will fill or material be placed in the floodway due to the proposed work? ☒ Yes ☐ No

   11a. If yes, is compensatory storage provided at the project location? (Attach a copy of completed Attachment A) ☒ Yes ☐ No

   11b. If the answer to 11a is no, is compensatory storage provided at another location? If yes, give location and attach a copy of completed Attachment A. ☐ Yes ☐ No

   11c. Has compensatory storage relief been granted? (Attach Documentation) ☐ Yes ☒ No

12. Coordination based on Memorandum of Agreement has occurred with Agency(ies) (Attach documentation):. ☐ Yes ☒ No

---

All engineering analysis has been performed by me or under my direct supervision.

Signature: _____ IL/P.E. #: 062.063534

Date: 11/15/12 P.E. Expiration Date: 11/30/2013

FOR DEPARTMENTAL USE ONLY

Is a permit required for this project? ☐ Yes ☐ No

If yes, specify type of permit: ☐ Floodway, ☐ Regional 1, ☐ Regional 2

Permit Summary
(Attachment A - Compensatory Storage)

Part of Permit Summary for Floodway Construction in Northeast Illinois:

☒ Phase I (Preliminary) ☐ Phase II (Final)

Applicant Agency:	IDOT	County:	DuPage
Route:	Elgin O'Hare Expressway	Stream:	Salt Creek
Section:		SN:	NA

Provide the following information for Item 11:

a. Flood Water Elevations (Natural): 100-year 682.0 ft. 10-year 680.0 ft.
Normal ±673.0 ft.

b. Determine the amount of fill or material being placed in the floodway:

1. Between the 100-year and 10-year flood elevation 1.36 ac-ft
2. Between the 10-year and normal water elevation 2.51 ac-ft

c. Determine the volume being provided to compensate for above item b:
(i.e. from structures removal, excavation, etc.)

1. Between the 100-year and 10-year flood elevation 6.48 ac-ft
2. Between the 10-year and normal water elevation 20.76 ac-ft

d. Mark on the exhibits the location and amount of compensatory storage to be excavated. Also show the location of floodway and floodplain boundaries. (Include a set of plans and cross sections)

Attach copy of calculations and Exhibit(s) reflecting the above finding.

All engineering analysis has been performed by me or under my direct supervision.

Signature:		IL/P.E. #:	062.063534
Date:	11/15/12	P.E. Expiration Date:	11/30/2013

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EOWB
CBBEL Proj. # 07-0404
Available Storage Volume
Rev. 10/2012
ICP Compensatory Storage Volume

Floodplain

WATERWAY	Comp. Storage Site	Notes[a]	NWL - 10 YR				10 YR - 100 YR				Total
			Fill Volume[c] (A-F)	Required Storage (A-F)	Available Storage (A-F)	Excess Storage (A-F)	Fill Volume[d] (A-F)	Required Storage (A-F)	Available Storage (A-F)	Excess Storage (A-F)	Excess Storage (A-F)
Salt Creek[b]	CS5-NW		8.38	12.57	20.76	8.19	13.29	19.94	6.48	-4.36	3.84
	CS5-SE	10- to 100-year access pool			0.00				9.10		
Total			8.38	12.57	20.76	8.19	13.29	19.94	15.58	-4.36	3.84

a) All road cross-sections modified to slope downward from the guard rail at 3:1 side slopes into the compensatory storage area.
b) Incremental 1:1 compensatory storage requirement satisfied. Total NWL to 100-year 1.5:1 compensatory storage requirement satisfied.
c) Includes 8.25 ac-ft of fill due to roadway and 0.13 ac-ft of fill due to detention basin.
d) Includes 11.41 ac-ft of fill due to roadway and 1.88 ac-ft of fill due to detention basin.

Floodway

WATERWAY	Comp. Storage Site	Notes	NWL - 10 YR				10 YR - 100 YR				Total
			Fill Volume (AC-FT) (A-F)	Required Storage (A-F)	Available Storage (A-F)	Excess Storage (A-F)	Fill Volume (AC-FT) (A-F)	Required Storage (A-F)	Available Storage (A-F)	Excess Storage (A-F)	Excess Storage (A-F)
Salt Creek[b]	CS5-NW		2.51	2.51	20.76	18.25	1.36	1.36	6.48	5.12	23.37
	CS5-SE	10- to 100-year access pool			0.00				0.00		
Total			2.51	2.51	20.76	18.25	1.36	1.36	6.48	5.12	23.37

Available Detention Volume
ELEVATION-STORAGE RELATIONSHIP

POND: Detention Basin 13 West (D13-W) separating compensatory storage from detention - Salt Creek
JOB NO. 07-0404
PROJECT: Elgin O'Hare - West Bypass
FILE: Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Available Storage Volume\[B1 Detention STORAGE VOL.xls]Sheet1
DATE: 6-Nov-12

SIDE SLOPES: 3:1 (H:V)

ELEVATION (ft)		AREA (s.f.)	AREA (ac)	AVERAGE AREA (ac)	VOID RATIO	Δ ELEVATION (ft)	INCREMENTAL STORAGE (ac-ft)	CUMULATIVE STORAGE (ac-ft)
675.00		75,117	1.724					0.00
				1.851		3.00	5.553	
678.00		86,155	1.978					5.55
				2.022		1.00	2.022	
679.00		90,032	2.067					7.58
				2.200		3.00	6.601	
682.00		101,664	2.334					14.18
floodplain fill								
679.00		3,355	0.077					0.00
				0.126		1.00	0.126	
680.00	10-yr	7,612	0.175					0.13
				0.403		1.00	0.403	
681.00		27,454	0.630					0.53
				1.482		1.00	1.482	
682.00	100-yr	101,664	2.334					2.01

storage volume =	7.58
0-10yr floodplain fill =	0.13
10-100yr floodplain fill =	1.88

Elgin O'Hare Expressway (STA. 1074+00 to STA. 1096+00)

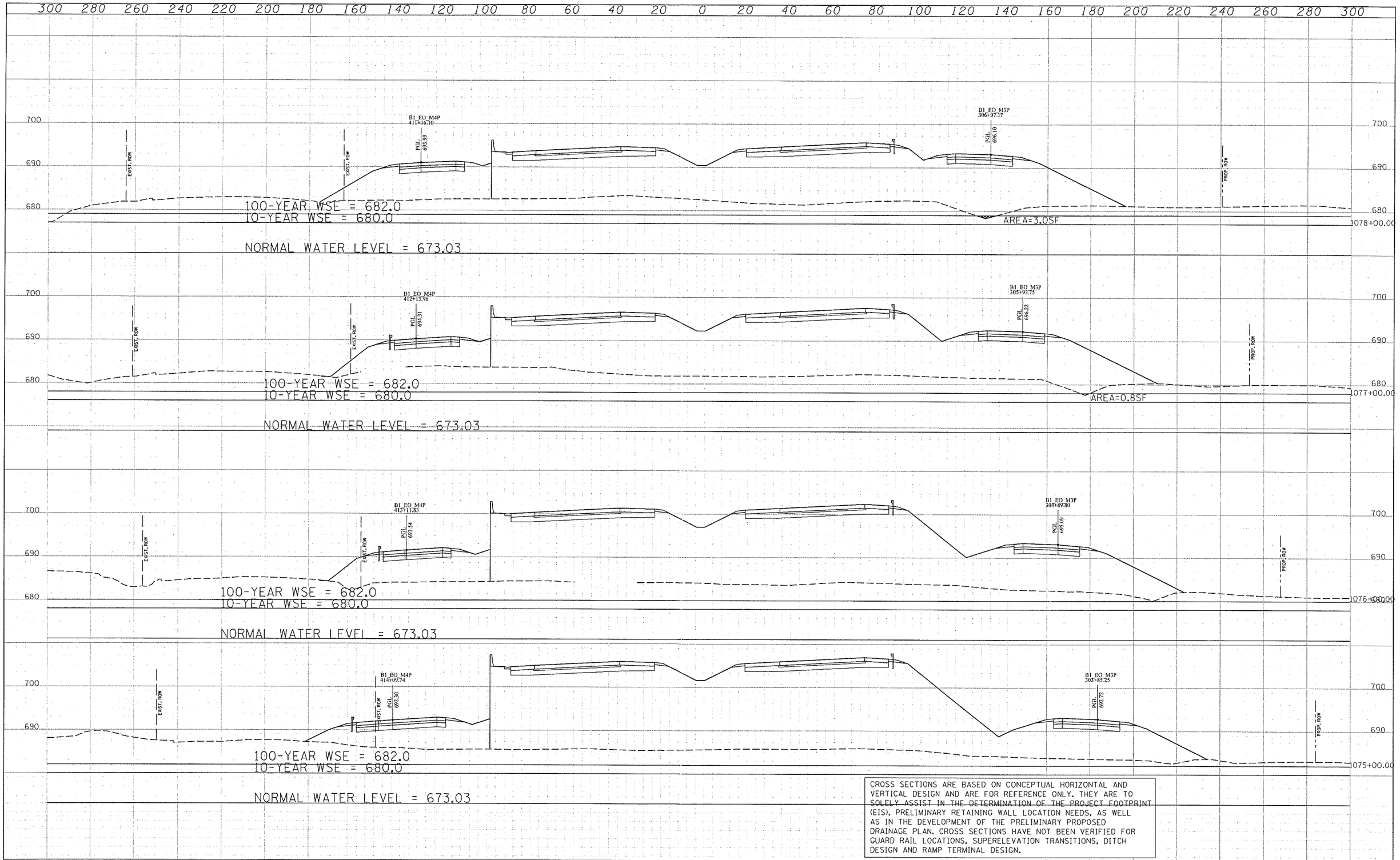
Normal Elevation	673.03 ft
10-Year Elevation	680.00 ft
100-Year Elevation	682.00 ft

	Normal - 10 YR (SF)	10 YR -100 YR (SF)	Normal - 10 YR (AC-FT)	10 YR - 100 YR (AC-FT)	
1074+00	0	0			
			0.00	0.00	
1075+00	0	0.8			
			0.00	0.00	
1076+00	0	3			
			0.00	0.02	
1077+00	0	15.9			
			0.00	0.02	
1078+00	0	2.1			
			0.00	0.03	
1079+00	0	27.6			
			0.00	0.20	
1080+00	0	147.9			
			0.00	0.60	
1081+00	0	372.1			
			0.08	0.95	
1082+00	71.7	452.7			
			0.29	1.08	
1083+00	179.5	492.5			
			0.52	1.14	
1084+00	272.1	499.6			
			0.78	1.15	
1085+00	411.5	502			
			0.69	1.16	
1086+00	190.5	504.7			
			0.83	1.16	
1087+00	532.5	507.5			
			0.72	0.57	
1087+49	744.4	501.5			floodway (area interpolated)
			1.00	0.58	
1088+00	965	495.2			
			1.20	0.61	
1088+54	965.0	495.2			bridge opening (assumes same as sta. 1088+00 fill)
1089+00	0	0			
1090+00	0	0			
1090+10	0.0	0.0			floodway
1090+94	309.8	317.5			bridge opening (assumed same as sta. 1091+00 fill)
			0.04	0.04	
1091+00	309.8	317.5			
			1.22	0.98	
1092+00	756.9	533.1			
			0.87	0.81	
1093+00	0	171.8			
			0.00	0.25	
1094+00	0	43			
			0.00	0.05	
1095+00	0	2.1			
			0.00	0.00	
1096+00	0	0			
			0.00	0.00	
1097+00	0	0.0			
		Total:	**8.25**	**11.41**	

Elgin O'Hare Expressway (STA. 1074+00 to STA. 1096+00)

Normal Elevation	673.03 ft
10-Year Elevation	680.00 ft
100-Year Elevation	682.00 ft

	Normal - 10 YR (SF)	10 YR -100 YR (SF)	Normal - 10 YR (AC-FT)	10 YR - 100 YR (AC-FT)	
1074+00	0	0			
			0.00	0.00	
1075+00	0	0			
			0.00	0.00	
1076+00	0	0			
			0.00	0.00	
1077+00	0	0			
			0.00	0.00	
1078+00	0	0			
			0.00	0.00	
1079+00	0	0			
			0.00	0.00	
1080+00	0	0			
			0.00	0.00	
1081+00	0	0			
			0.00	0.00	
1082+00	0	0			
			0.00	0.00	
1083+00	0	0			
			0.00	0.00	
1084+00	0	0			
			0.00	0.00	
1085+00	0	0			
			0.00	0.00	
1086+00	0	0			
			0.30	0.19	
1087+00	265.4	165.7			
			0.40	0.23	
1087+49	445.1	243.9			floodway at centerline (area interpolated)
			0.63	0.33	
1088+00	632.2	325.2			
			1.17	0.60	
1088+64	965.0	495.2			bridge opening (same as floodplain fill due to floodway angle)
1089+00	0	0			
1090+00	0	0			
1090+10	0.0	0.0			floodway
1090+84	0.0	0.0			bridge opening (assumed same as 1091+00)
			0.00	0.00	
1091+00	0	0			
			0.00	0.00	
1092+00	0	0			
			0.00	0.00	
1093+00	0	0			
			0.00	0.00	
1094+00	0	0			
			0.00	0.00	
1095+00	0	0.0			
			0.00	0.00	
1096+00	0	0			
			0.00	0.00	
1097+00	0	0.0			
		Total:	**2.51**	**1.36**	



CROSS SECTIONS ARE BASED ON CONCEPTUAL HORIZONTAL AND VERTICAL DESIGN AND ARE FOR REFERENCE ONLY. THEY ARE TO SOLELY ASSIST IN THE DETERMINATION OF THE PROJECT FOOTPRINT (EIS), PRELIMINARY RETAINING WALL LOCATION NEEDS, AS WELL AS IN THE DEVELOPMENT OF THE PRELIMINARY PROPOSED DRAINAGE PLAN. CROSS SECTIONS HAVE NOT BEEN VERIFIED FOR GUARD RAIL LOCATIONS, SUPERELEVATION TRANSITIONS, DITCH DESIGN AND RAMP TERMINAL DESIGN.

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

FILE NAME = Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Compensatory Storage\B1-sht-xssht-EOML.dgn

CH2MHILL.

USER NAME = aanderson
PLOT SCALE = 40'
PLOT DATE = 11/6/2012

DESIGNED - CH2MHILL.
DRAWN - CH2MHILL.
CHECKED - CH2MHILL.
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

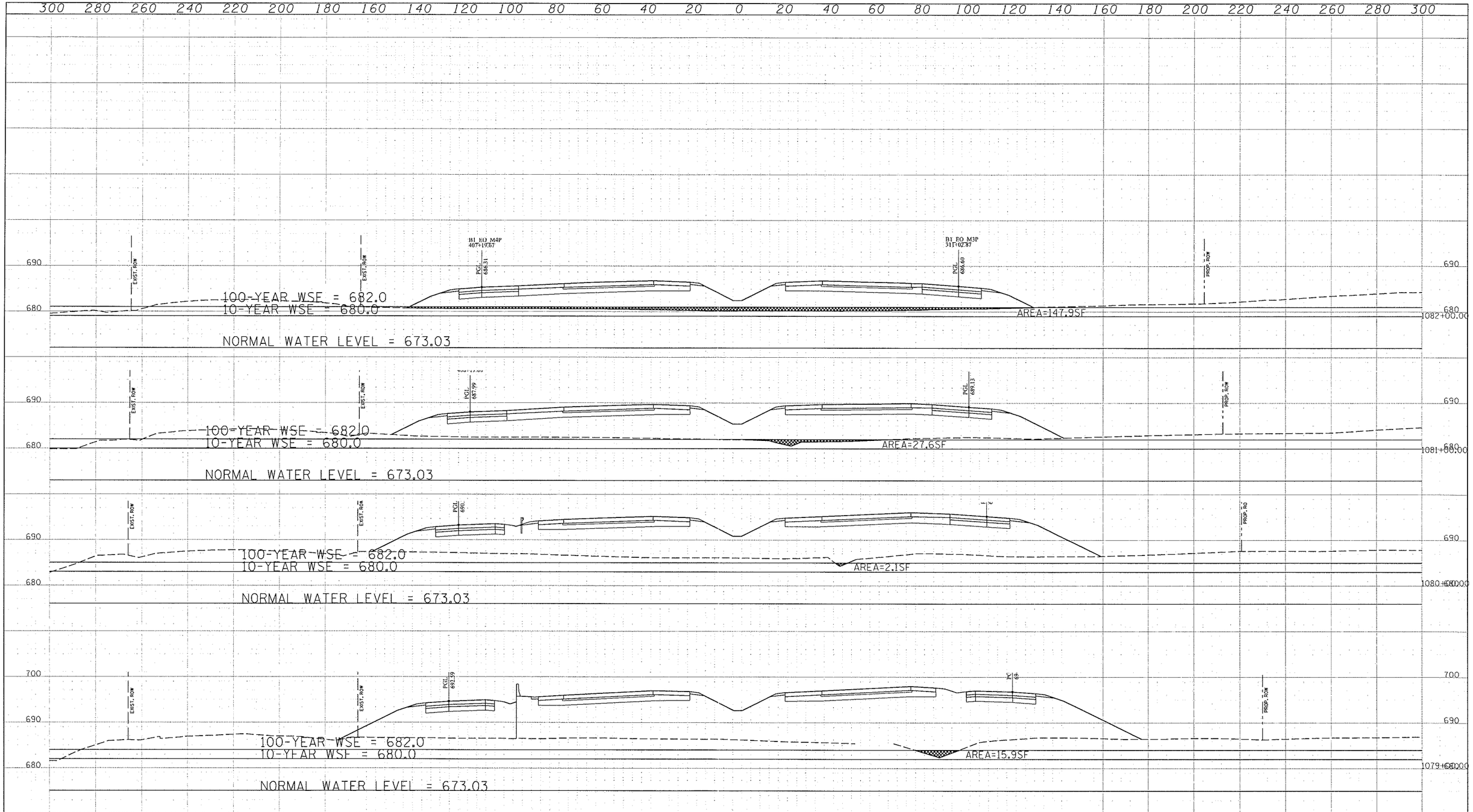
THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

PROPOSED CROSS SECTIONS
ELGIN O'HARE EXPWAY

SCALE: | SHEET NO. S* OF T* SHEETS | STA. 1075+00.00 TO STA. 1078+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			765	#NUM

DRAWING NO. XS-58 | CONTRACT NO.
PROJECT B1 | ILLINOIS | FED. AID PROJECT



CROSS SECTIONS ARE BASED ON CONCEPTUAL HORIZONTAL AND VERTICAL DESIGN AND ARE FOR REFERENCE ONLY. THEY ARE TO SOLELY ASSIST IN THE DETERMINATION OF THE PROJECT FOOTPRINT (EIS), PRELIMINARY RETAINING WALL LOCATION NEEDS, AS WELL AS IN THE DEVELOPMENT OF THE PRELIMINARY PROPOSED DRAINAGE PLAN. CROSS SECTIONS HAVE NOT BEEN VERIFIED FOR GUARD RAIL LOCATIONS, SUPERELEVATION TRANSITIONS, DITCH DESIGN AND RAMP TERMINAL DESIGN.

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

FILE NAME = Y:\361180 - Elgin O'Hare - West Bypass\TIER.TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Compensatory Storage\B1-sht-xsht-EOML.dgn

CH2MHILL.

USER NAME = eanderson
PLOT SCALE = 40'
PLOT DATE = 11/6/2012

DESIGNED - CH2MHILL.
DRAWN - CH2MHILL.
CHECKED - CH2MHILL.
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

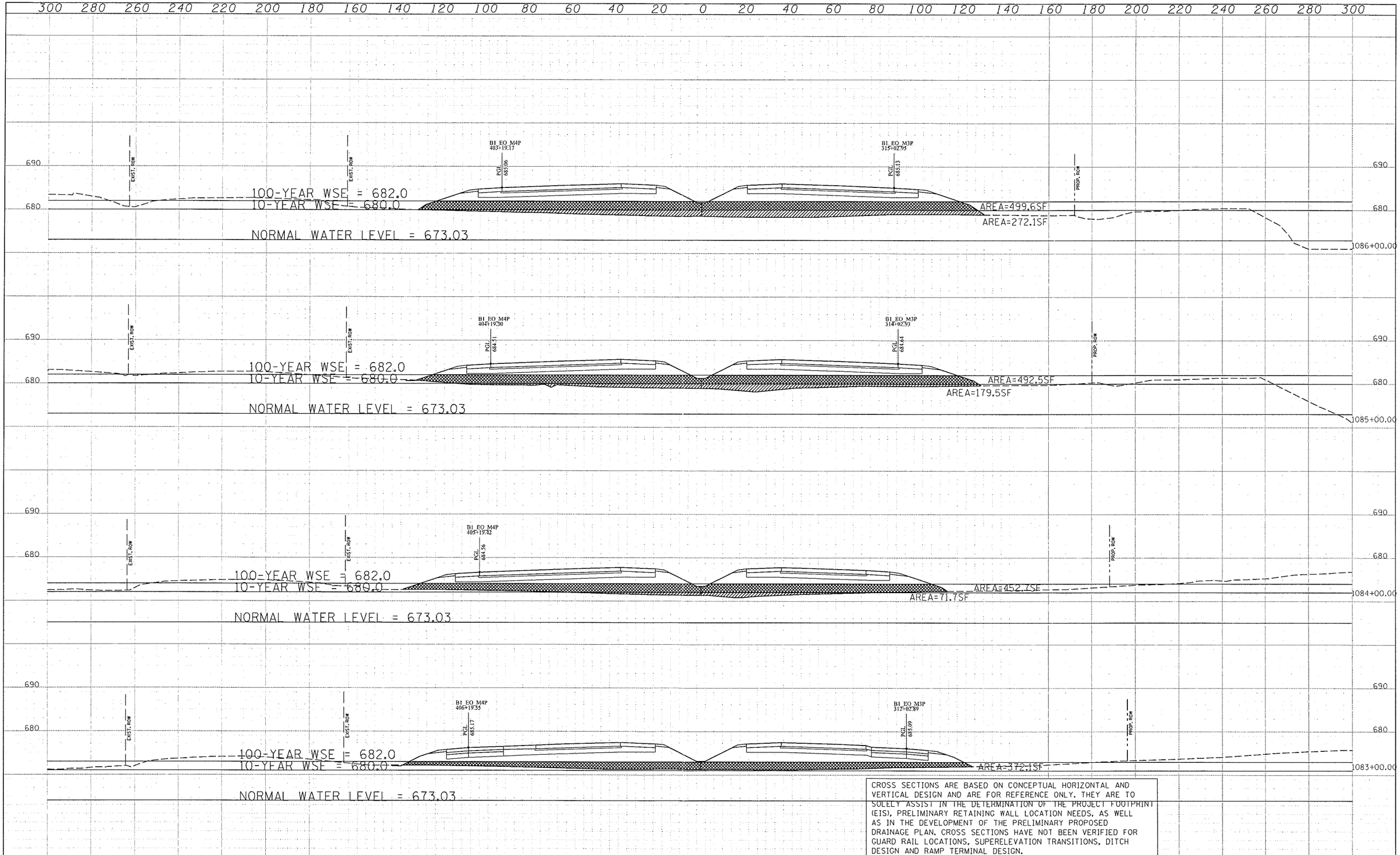
PROPOSED CROSS SECTIONS
ELGIN O'HARE EXPWAY

SCALE: | SHEET NO. S* OF T* SHEETS | STA. 1079+00.00 TO STA. 1082+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			765	$NUM

DRAWING NO. XS-59 | CONTRACT NO.

PROJECT B1 | ILLINOIS | FED. AID PROJECT



CROSS SECTIONS ARE BASED ON CONCEPTUAL HORIZONTAL AND VERTICAL DESIGN AND ARE FOR REFERENCE ONLY. THEY ARE TO SOLELY ASSIST IN THE DETERMINATION OF THE PROJECT FOOTPRINT (EIS), PRELIMINARY RETAINING WALL LOCATION NEEDS, AS WELL AS IN THE DEVELOPMENT OF THE PRELIMINARY PROPOSED DRAINAGE PLAN. CROSS SECTIONS HAVE NOT BEEN VERIFIED FOR GUARD RAIL LOCATIONS, SUPERELEVATION TRANSITIONS, DITCH DESIGN AND RAMP TERMINAL DESIGN.

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

FILE NAME = Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Compensatory Storage\B1-sht-xssht-EOML.dgn

USER NAME = eanderson

PLOT SCALE = 40'

PLOT DATE = 11/6/2012

DESIGNED - CH2MHILL.

CHECKED - CH2MHILL.

DATE -

REVISED -

REVISED -

REVISED -

REVISED -

CH2MHILL.

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

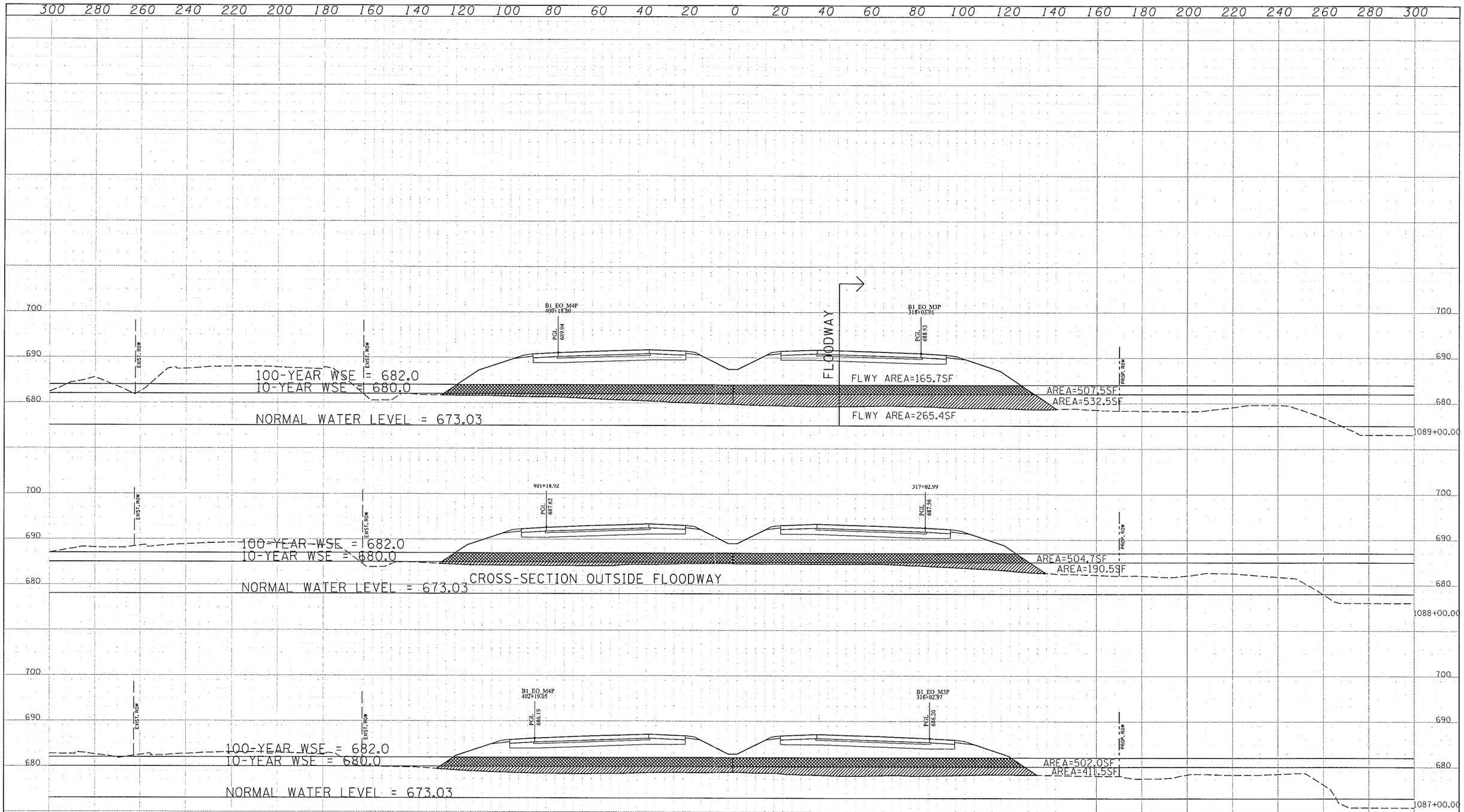
PROPOSED CROSS SECTIONS
ELGIN O'HARE EXPWAY

SCALE: | SHEET NO. S* OF T* SHEETS | STA. 1083+00.00 TO STA. 1086+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			765	#NUM

DRAWING NO. XS-60 | CONTRACT NO.

PROJECT B1 | ILLINOIS | FED. AID PROJECT



CROSS SECTIONS ARE BASED ON CONCEPTUAL HORIZONTAL AND VERTICAL DESIGN AND ARE FOR REFERENCE ONLY. THEY ARE TO SOLELY ASSIST IN THE DETERMINATION OF THE PROJECT FOOTPRINT (EIS), PRELIMINARY RETAINING WALL LOCATION NEEDS, AS WELL AS IN THE DEVELOPMENT OF THE PRELIMINARY PROPOSED DRAINAGE PLAN. CROSS SECTIONS HAVE NOT BEEN VERIFIED FOR GUARD RAIL LOCATIONS, SUPERELEVATION TRANSITIONS, DITCH DESIGN AND RAMP TERMINAL DESIGN.

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

FILE NAME = Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Compensatory Storage\B1-sht-xssht-EOML.dgn

CH2MHILL.

USER NAME = eanderson | DESIGNED - CH2MHILL. | REVISED -
PLOT SCALE = 40' | CHECKED - CH2MHILL. | REVISED -
PLOT DATE = 11/6/2012 | DATE - | REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

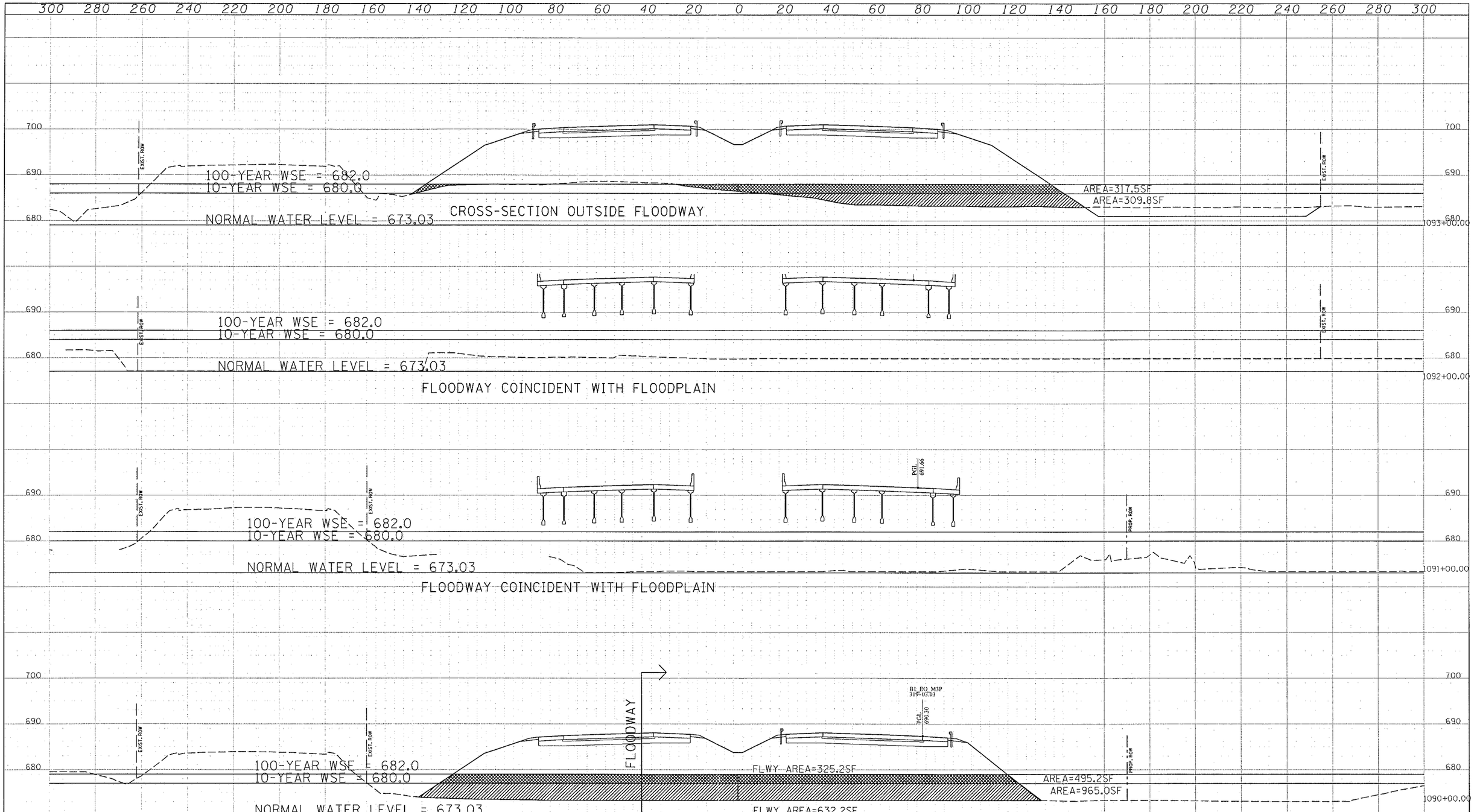
PROPOSED CROSS SECTIONS
ELGIN O'HARE EXPWAY

SCALE: | SHEET NO. S* OF T* SHEETS | STA. 1087+00.00 TO STA. 1089+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			765	$NUM

DRAWING NO. XS-61 | CONTRACT NO.

PROJECT B1 | ILLINOIS | FED. AID PROJECT



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FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

300 280 260 240 220 200 180 160 140 120 100 80 60 40 20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300

FILE NAME = Y:\361180 - Elgin O'Hare - West Bypass\TIER.TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Compensatory Storage Calculations\REVISED-1-sht-xssht-EOML.dgn

CH2MHILL.

USER NAME = eanderson | DESIGNED - CH2MHILL. | REVISED -
PLOT SCALE = 40' | CHECKED - CH2MHILL. | REVISED -
PLOT DATE = 11/6/2012 | DATE - | REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

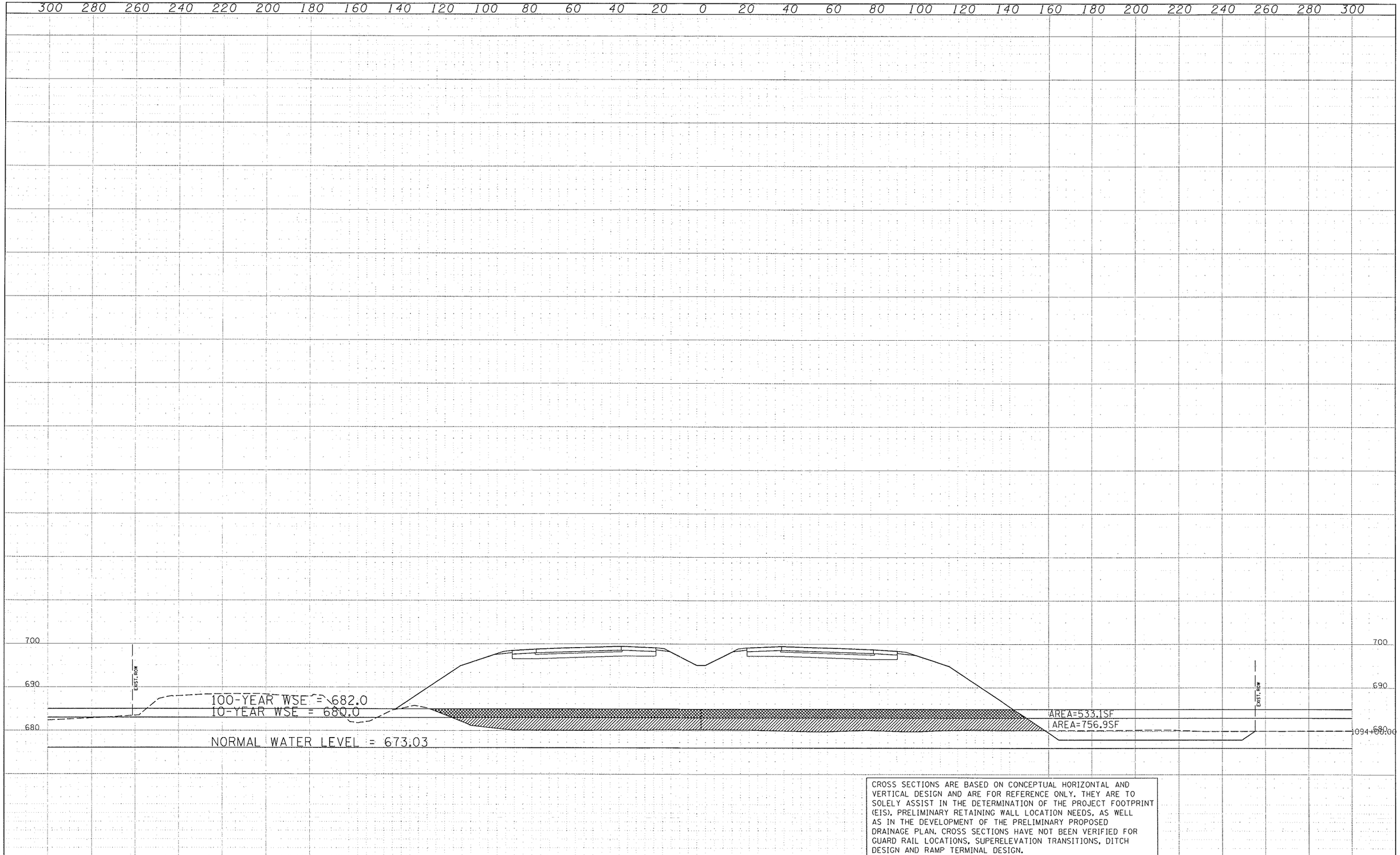
PROPOSED CROSS SECTIONS
ELGIN O'HARE EXPWAY

SCALE: | SHEET NO. S* OF T* SHEETS | STA. 1090+00.00 TO STA. 1093+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			765	*NUM
DRAWING NO.	XS-62	CONTRACT NO.		
PROJECT B1	ILLINOIS	FED. AID PROJECT		

FINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		

ORIGINAL SURVEY	BY	DATE
SURVEYED		
PLOTTED		
TEMPLATE		
AREAS		
AREAS CHECKED		
NOTE BOOK		
NO.		



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FILE NAME = Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Compensatory Storage\B1-sht-xssht-EOML.dgn	USER NAME = eanderson	DESIGNED - CH2MHILL.	REVISED -
		DRAWN - CH2MHILL.	REVISED -
	PLOT SCALE = 40'	CHECKED - CH2MHILL.	REVISED -
	PLOT DATE = 11/6/2012	DATE -	REVISED -

CH2MHILL.

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

PROPOSED CROSS SECTIONS
ELGIN O'HARE EXPWAY

SCALE: | SHEET NO. S* OF T* SHEETS | STA. 1094+00.00 TO STA. 1094+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			765	$NUM

DRAWING NO. XS-63 | CONTRACT NO.

PROJECT B1 | ILLINOIS | FED. AID PROJECT

Available Compensatory Storage Volume
ELEVATION-STORAGE RELATIONSHIP

POND: Compensatory Storage Area 5 Northwest (CS5-NW) - Salt Creek
JOB NO. 07-0404
PROJECT: Elgin O'Hare - West Bypass
FILE: Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Available Storage Volume\[B1 Comp STORAGE VOL.xls]CS5 - NW alternative
DATE: 6-Nov-12

SIDE SLOPES: 3:1 (H:V)

ELEVATION (ft)		AREA (s.f.)	AREA (ac)	AVERAGE AREA (ac)	Δ ELEVATION (ft)	INCREMENTAL STORAGE (ac-ft)	CUMULATIVE STORAGE (ac-ft)
675.00	bottom	0	0.000				0.00
				2.410	1.00	2.410	
676.00		209,977	4.820				2.41
				4.729	2.00	9.459	
678.00		202,052	4.638				11.87
				4.443	2.00	8.886	
680.00	10-yr	185,027	4.248				20.76
				3.996	0.50	1.998	
680.50		163,129	3.745				22.75
				2.991	1.50	4.486	
682.00	HWL	97,436	2.237				27.24

0 to 10-year storage =	**20.76**
10 to 100-year storage =	**6.48**

Available Compensatory Storage Volume
ELEVATION-STORAGE RELATIONSHIP

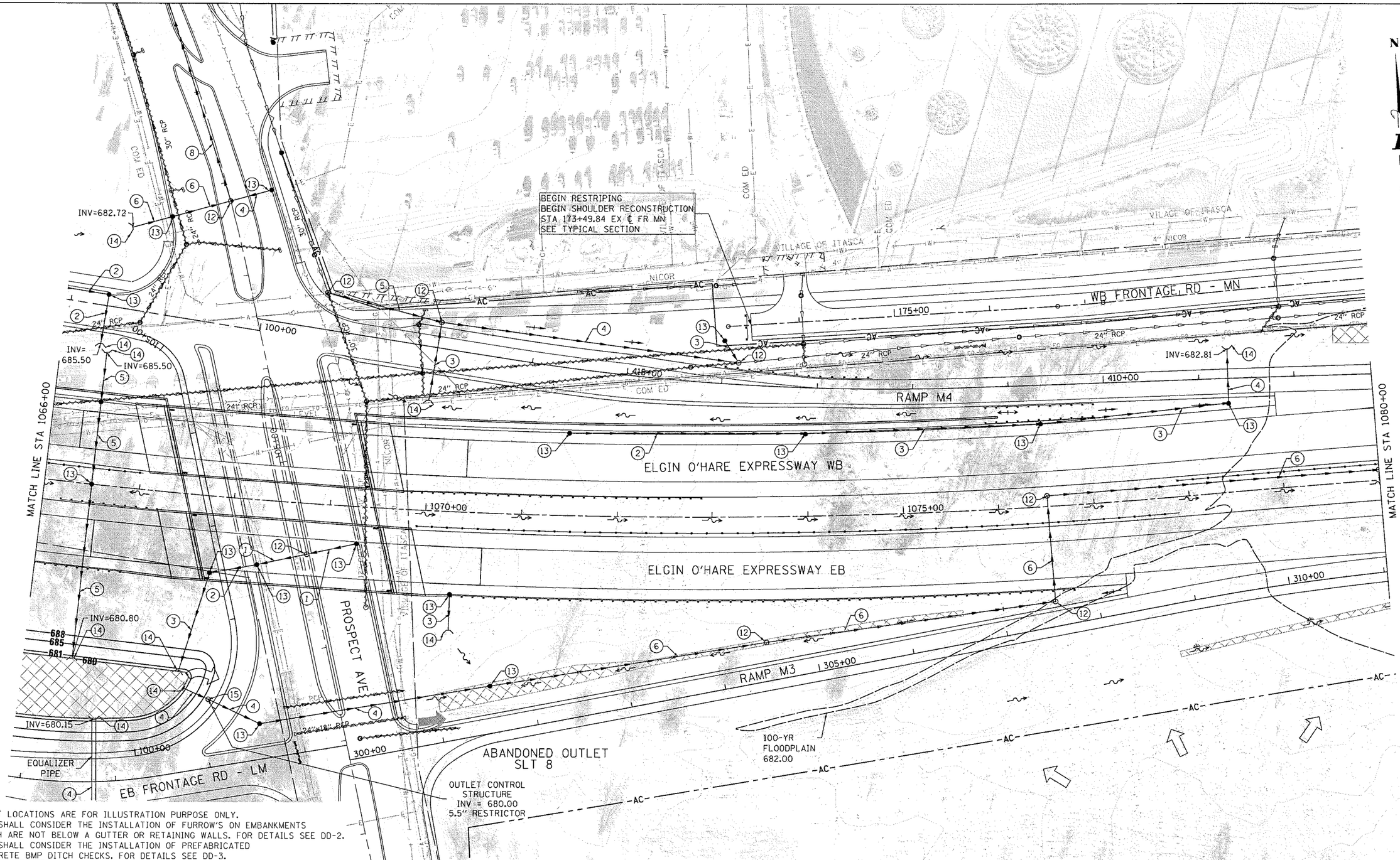
POND: Compensatory Storage Area 5 Southeast (CS5-SE) - Salt Creek
JOB NO. 07-0404
PROJECT: Elgin O'Hare - West Bypass
FILE: Y:\361180 - Elgin O'Hare - West Bypass\TIER_TWO\HY\CAD\Models TICP Project B1\Drainage Calculations\Available Storage Volume\[B1 Comp STORAGE VOL.xls]CS5 - NW alternative
DATE: 6-Nov-12

SIDE SLOPES: 3:1 (H:V)

ELEVATION (ft)		AREA (s.f.)	AREA (ac)	AVERAGE AREA (ac)	Δ ELEVATION (ft)	INCREMENTAL STORAGE (ac-ft)	CUMULATIVE STORAGE (ac-ft)
673.00	* NWL	0	0.000				0.00
				0.000	2.00	0.000	
675.00		0	0.000				0.00
				0.685	0.00	0.000	
675.00		59,693	1.370				0.00
				1.281	3.00	3.843	
678.00		51,917	1.192				3.84
				1.254	2.00	2.508	
680.00	10yr	57,311	1.316				6.35
				1.377	2.00	2.754	
682.00	HWL	62,645	1.438				9.10

0 to 10-year storage =	**6.35**
10 to 100-year storage =	**2.75**
* storage basin used as 10- to 100-year level pool =	**9.10**

ETE
File: B1 Comp STORAGE VOL.xls
Date Printed: 11/6/2012



NOTES:
1. INLET LOCATIONS ARE FOR ILLUSTRATION PURPOSE ONLY.
2. DSE SHALL CONSIDER THE INSTALLATION OF FURROW'S ON EMBANKMENTS WHICH ARE NOT BELOW A GUTTER OR RETAINING WALLS. FOR DETAILS SEE DD-2.
3. DSE SHALL CONSIDER THE INSTALLATION OF PREFABRICATED CONCRETE BMP DITCH CHECKS. FOR DETAILS SEE DD-3.

LEGEND

	EXISTING	PROPOSED
REFERENCE LINE/CENTERLINE AND STATIONING	1930+00	1830+00
RIGHT OF WAY LINE		
DRAINAGE DIVIDE (HYDROLOGIC ATLAS)		

	PROPOSED
TEMPORARY EASEMENT	
PERMANENT EASEMENT	
STORM SEWER REMOVAL	

	EXISTING	PROPOSED
HEADWALL		
CATCH BASIN		
INLET/SCUPPER		
MANHOLE		
INVERT	(XXX.XX)	XXX.XX
STORM SEWER		

	EXISTING	PROPOSED
OVERFLOW		
OUTLET		
SHEET FLOW		

	EXISTING	PROPOSED
BIOSWALE		
GRASS SWALE		
SWALE		
DITCH SUMMIT		
BMP FEATURE		

CALLOUT

1. STORM SEWER 12"
2. STORM SEWER 15"
3. STORM SEWER 18"
4. STORM SEWER 24"
5. STORM SEWER 30"
6. STORM SEWER 36"
7. STORM SEWER 42"
8. STORM SEWER 48"
9. STORM SEWER 54"
10. STORM SEWER 60"
11. STORM SEWER 72"
12. MANHOLE
13. CATCH BASIN
14. HEADWALL
15. MANHOLE W/ RESTRICTOR

SCALE IN FEET
0 50 100

FILE NAME = 01E0WB-PB1-HY-sht-Pr-Plan-012	USER NAME = eanderson	DESIGNED -MA	REVISED -
CHRISTOPHER B. BURKE (ENGINEERING), LTD. 8875 W. Higgins Road, Suite 500 Rosemont, Illinois 60018 (847) 823-0500		DRAWN -MYG	REVISED -
	PLOT SCALE = 100'	CHECKED -CW	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

DRAINAGE PLANS
ELGIN O'HARE EXPRESSWAY

SCALE: | SHEET NO. 11 OF 32 SHEETS | STA. 1066+00 TO STA. 1080+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	757	273
DRAWING NO. DR-11		CONTRACT NO.		
PROJECT B1	ILLINOIS	FED. AID PROJECT		

MATCH LINE SEE CS-1

FLOODWAY

SALT CREEK

N

COM ED

100-YR FLOODPLAIN
682.00

EXISTING BRIDGE
TO REMAIN

SEE "THORNDALE AVENUE OVER SALT CREEK"
HYDRAULIC REPORT

100-YR FLOODPLAIN
682.00

180+00

185+00

WB FRONTAGE RD - MN

190+00

24" RCP

36" RCP

18" RCP

AC

INV=677.25

INV=(672.98)

EX. OUTLET
SLT 4

TWO SPAN BRIDGE

INV=680.80

EOH EXPY OVER
SALT CREEK
D.A. = 71 SQ MI

RAMP M4

405+00

400+00

ELGIN O'HARE EXPRESSWAY WB

MATCH LINE STA 1080+00

1080+00

1085+00

1090+00

MATCH LINE STA 1094+00

ELGIN O'HARE EXPRESSWAY EB

D4-EX-1
FLOODPLAIN FILL
MITIGATED IN CS5

RAMP M3

315+00

320+00

FLOODWAY

TWO SPAN BRIDGE

COMPENSATORY STORAGE
SITE: CS5-SE

AVAILABLE STORAGE:
NORMAL - 10YR: 0.00 AC-FT
10-100YR: 9.19 AC-FT

PROP. OUTLET
SLT 4
TRIBUTARY AREA: 71 SQ MI

BACKFLOW
PREVENTION
DEVICE

100-YR FLOODPLAIN
682.00

100 YR = 682.00
10 YR = 680.00
NWL = 673.00

FLOODWAY

WOODDALE - ITASCA
RESERVOIR

100-YR FLOODPLAIN
682.00

NOTES:
1. INLET LOCATIONS ARE FOR ILLUSTRATION PURPOSE ONLY.
2. DSE SHALL CONSIDER THE INSTALLATION OF FURROW'S ON EMBANKMENTS WHICH ARE NOT BELOW A GUTTER OR RETAINING WALLS. FOR DETAILS SEE DD-2.
3. DSE SHALL CONSIDER THE INSTALLATION OF PREFABRICATED CONCRETE BMP DITCH CHECKS. FOR DETAILS SEE DD-3.

LEGEND

	EXISTING	PROPOSED
REFERENCE LINE/CENTERLINE AND STATIONING	1930+00	1830+00
RIGHT OF WAY LINE		
DRAINAGE DIVIDE (HYDROLOGIC ATLAS)		

	PROPOSED
TEMPORARY EASEMENT	
PERMANENT EASEMENT	
STORM SEWER REMOVAL	

	EXISTING	PROPOSED
HEADWALL		
CATCH BASIN		
INLET/SCUPPER		
MANHOLE		
INVERT	(XXX.XX)	XXX.XX
STORM SEWER		

	EXISTING	PROPOSED
OVERFLOW		
OUTLET		
SHEET FLOW		

	EXISTING	PROPOSED
BIOSWALE		
GRASS SWALE		
SWALE		
DITCH SUMMIT		
BMP FEATURE		

CALLOUT

1. STORM SEWER 12"
2. STORM SEWER 15"
3. STORM SEWER 18"
4. STORM SEWER 24"
5. STORM SEWER 30"
6. STORM SEWER 36"
7. STORM SEWER 42"
8. STORM SEWER 48"
9. STORM SEWER 54"
10. STORM SEWER 60"
11. STORM SEWER 72"
12. MANHOLE
13. CATCH BASIN
14. HEADWALL
15. MANHOLE W/ RESTRICTOR

SCALE IN FEET
0 50 100

FILE NAME = DIEOWB-PBI-HY-sht-Pr-Plan-013	USER NAME = eanderson	DESIGNED -MA	REVISED -
CHRISTOPHER B. BURKE ENGINEERING, LTD. 9575 W. Higgins Road, Suite 600 Rosemont, Illinois 60018 (847) 823-0500		DRAWN -MYG	REVISED -
	PLOT SCALE = 100'	CHECKED -CW	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

DRAINAGE PLANS
ELGIN O'HARE EXPRESSWAY

SCALE: | SHEET NO. 12 OF 32 SHEETS | STA. 1080+00 TO STA. 1094+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	757	274
DRAWING NO.	DR-12	CONTRACT NO.		
PROJECT BI	ILLINOIS FED. AID PROJECT			

ICP PROJECT B1 | ICP PROJECT B2

COM ED (3)

VILLAGE OF WOODDALE 12"

WB FRONTAGE RD - MN

AC

LEVEL 3 COMMUNICATIONS

VERIZON

AT&T

6"

END PROJECT B1 RESTRIPING
STA 194+92.71 PR ℄ FR MN
SEE TYPICAL SECTION

3-1/2" RESTRICTOR
SHOWN IN RECORD
DRAWINGS

MATCH LINE STA 1094+00

ELGIN O'HARE EXPRESSWAY WB

MITTEL BLVD

END CONSTRUCTION
STA 1095+00.00 PR ℄ EO EXPY

ELGIN O'HARE EXPRESSWAY EB

COMPENSATORY STORAGE
SITE: CS5-SE
100 YR = 682.00
10 YR = 680.00
NWL = 673.00
AVAILABLE STORAGE:
NORMAL - 10YR: 0.00 AC-FT
10-100YR: 9.19 AC-FT
(POND DESIGNED TO BE ACCESSED
ABOVE 10-YEAR ELEVATION)

675
678
680
682
690

ICP PROJECT B1 | ICP PROJECT B2

BAUMAN CT

N

NOTES:
1. INLET LOCATIONS ARE FOR ILLUSTRATION PURPOSE ONLY.
2. DSE SHALL CONSIDER THE INSTALLATION OF FURROW'S ON EMBANKMENTS WHICH ARE NOT BELOW A GUTTER OR RETAINING WALLS. FOR DETAILS SEE DD-2.
3. DSE SHALL CONSIDER THE INSTALLATION OF PREFABRICATED CONCRETE BMP DITCH CHECKS. FOR DETAILS SEE DD-3.

LEGEND

	EXISTING	PROPOSED
REFERENCE LINE/CENTERLINE AND STATIONING	1930+00	1830+00
RIGHT OF WAY LINE		
DRAINAGE DIVIDE (HYDROLOGIC ATLAS)		

	PROPOSED
TEMPORARY EASEMENT	
PERMANENT EASEMENT	
STORM SEWER REMOVAL	

	EXISTING	PROPOSED
HEADWALL		
CATCH BASIN		
INLET/SCUPPER		
MANHOLE		
INVERT	(XXX.XX)	XXX.XX
STORM SEWER		

	EXISTING	PROPOSED
OVERFLOW		
OUTLET		
SHEET FLOW		

	EXISTING	PROPOSED
BIOSWALE		
GRASS SWALE		
SWALE		
DITCH SUMMIT		
BMP FEATURE		

CALLOUT

1. STORM SEWER 12"
2. STORM SEWER 15"
3. STORM SEWER 18"
4. STORM SEWER 24"
5. STORM SEWER 30"
6. STORM SEWER 36"
7. STORM SEWER 42"
8. STORM SEWER 48"
9. STORM SEWER 54"
10. STORM SEWER 60"
11. STORM SEWER 72"
12. MANHOLE
13. CATCH BASIN
14. HEADWALL
15. MANHOLE W/ RESTRICTOR

SCALE IN FEET
0 50 100

FILE NAME = DIEOWB-PB1-HY-sht-Pr-Plan-014	USER NAME = eanderson	DESIGNED -MA	REVISED -
		DRAWN -MYG	REVISED -
	PLOT SCALE = 100'	CHECKED -CW	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

CHRISTOPHER B. BURKE ENGINEERING, LTD.
9575 W. Higgins Road, Suite 600
Rosemont, Illinois 60018
(847) 823-0500

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

DRAINAGE PLANS
ELGIN O'HARE EXPRESSWAY

SCALE: | SHEET NO. 13 OF 32 SHEETS | STA. 1094+00 TO STA. 1095+00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	757	275
DRAWING NO.	DR-13	CONTRACT NO.		
PROJECT B1	ILLINOIS FED. AID PROJECT			

LEGEND

	EXISTING	PROPOSED
REFERENCE LINE/CENTERLINE AND STATIONING	1930+00	1830+00
RIGHT OF WAY LINE		
DRAINAGE DIVIDE (HYDROLOGIC ATLAS)		

	PROPOSED
TEMPORARY EASEMENT	
PERMANENT EASEMENT	
STORM SEWER REMOVAL	

	EXISTING	PROPOSED
HEADWALL		
CATCH BASIN		
INLET/SCUPPER		
MANHOLE		
INVERT	(XXX.XX)	XXX.XX
STORM SEWER		

	EXISTING	PROPOSED
OVERFLOW		
OUTLET		
SHEET FLOW		

	EXISTING	PROPOSED
BIOSWALE		
GRASS SWALE		
SWALE		
DITCH SUMMIT		
BMP FEATURE		

CALLOUT

1. STORM SEWER 12"
2. STORM SEWER 15"
3. STORM SEWER 18"
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6. STORM SEWER 36"
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9. STORM SEWER 54"
10. STORM SEWER 60"
11. STORM SEWER 72"
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13. CATCH BASIN
14. HEADWALL
15. MANHOLE W/ RESTRICTOR

NOTES:

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3. DSE SHALL CONSIDER THE INSTALLATION OF PREFABRICATED CONCRETE BMP DITCH CHECKS. FOR DETAILS SEE DD-3.

FILE NAME = D1EOWB-PBI-HY-sht-Pr-Plan-036	USER NAME = eanderson	DESIGNED -MA	REVISED -
CHRISTOPHER B. BURKE ENGINEERING, LTD. 2975 W. Higgins Road, Suite 600 Hoffman Estates, Illinois 60195 (847) 823-0500		DRAWN -MYG	REVISED -
	PLOT SCALE = 100'	CHECKED -CW	REVISED -
	PLOT DATE = 11/16/2012	DATE -	REVISED -

THE ILLINOIS STATE TOLL HIGHWAY AUTHORITY
2700 OGDEN AVENUE
DOWNERS GROVE, ILLINOIS 60515

DRAINAGE PLANS
COMPENSATORY STORAGE SITE – CS5-NW

SCALE: | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		DUPAGE	757	295
DRAWING NO. CS-1		CONTRACT NO.		
PROJECT BI	ILLINOIS	FED. AID PROJECT		

TAB 13

SECTION 13

CORRESPONDENCE AND NOTES

Emily T. Anderson

From: Chinliang R. Wang [cwang@cbbel.com]
Sent: Wednesday, March 28, 2012 9:38 AM
To: jrobinson@cbbel.com
Cc: myounus@cbbel.com; eanderson@cbbel.com
Subject: FW: EOWB @ Salt Creek

Jerry:

Please model a single span bridge according to the requirements below. Thanks.

Chinliang R. Wang, PE
Vice President
Head, Drainage Department
Christopher B. Burke Engineering, Ltd.
9575 W. Higgins Road, Suite 600 Rosemont, IL 60018
Phone: (847) 823-0500 Fax: (847) 823-0520
E-Mail: cwang@cbbel.com

From: Yousif, Edward [mailto:Edward.Yousif@aecom.com]
Sent: Monday, February 06, 2012 9:53 AM
To: cwang@cbbel.com
Subject: FW: EOWB @ Salt Creek

Chin,

Below are comments from Perry and our structural person. Thanks.

Edward Yousif, PE
AECOM
Technical Leader
303 E. Wacker Drive, Suite 600
Chicago, IL 60601-5212
P: (312) 373-6786 / F: (312) 373-6834

From: Masouridis, Eleftherios P [mailto:Eleftherios.Masouridis@illinois.gov]
Sent: Saturday, February 04, 2012 8:42 AM
To: Yousif, Edward; Nowak, Art
Cc: Morgan, John
Subject: RE: EOWB @ Salt Creek

Are you going to communicate this to CBBEL?

A single span with a 5' deep construction depth seems like it will meet the criteria noted below based on the roadway profile included in the HR. To be conservative I used 7' (3 lanes @ 2% & 1 shoulder @ 4.5% is about 1.25'+ misc for mass transit) from the PGL to get a low beam of 684 which is 2' above the 100-yr and about 0.1 above the 500-yr. The all time high water is reported as 683.4 on Thorndale so the 1' above record event may be within reach as this seems to be the worst case. They may have some cross-sections by now to better estimate the ultimate bridge configuration.

Hopefully as they incorporate a more realistic channel design into the bridge opening the results do not change much. The large trapezoidal channel they are proposing is probably why the WIT shows a decrease in WSEL for the proposed condition.

Perry

E. Perry Masouridis, P.E.
Hydrology and Hydraulics Engineer
Illinois Department of Transportation, Region 1
Bureau of Programming, Hydraulics Section
201 West Center Court
Schaumburg, IL. 60196-1096

Phone: (847) 705-4474 Fax: (847) 221-3052
Email: eleftherios.masouridis@illinois.gov

From: Nowak, Art [mailto:anowak@getipass.com]
Sent: Friday, February 03, 2012 3:47 PM
To: 'Yousif, Edward'
Cc: Masouridis, Eleftherios P; Morgan, John
Subject: RE: EOWB @ Salt Creek

Ed,

The attachment has very limited information, but I offer the following comments:

- We should look into a single span alternative. I went on Google Earth and was able to establish a span length of about 200'. With such a span length we would be looking at about 5' deep, steel, multi girder bridge superstructure.
- A single span concept will be most economical (no piers).
- We have to keep in mind that for steam crossings, the Tollway requires min. vert. clearance of 2' measured between design high water and bottom of beam or 1' between any measured high water or bottom of beam. Use whichever criteria produces the highest low structure.

Thank you,
Art

From: Yousif, Edward [mailto:Edward.Yousif@aecom.com]
Sent: Monday, January 30, 2012 9:09 AM
To: Nowak, Art
Cc: Masouridis, Eleftherios P; Morgan, John
Subject: FW: EOWB @ Salt Creek

Art,

Can you please look at this issue from a Tollway structural standpoint and provide comments. Thank you.

From: Morgan, John
Sent: Monday, January 30, 2012 8:38 AM
To: Yousif, Edward
Subject: FW: EOWB @ Salt Creek

Ed,

I did not have a problem with the single pier presented in the Hydraulic Report for Salt Creek because the upstream bridge only has a single pier. I think a single pier aligned with the existing upstream pier would be better from a hydraulics point of view. Normally, I would prefer two piers located outside the channel as a better option. I think in this case though that might lead to more hydraulic losses and possibly scour as the flow changes direction between the bridges with the different pier alignments and the two bridges so close to each other.

Two piers are probably better from a structural point of view and will probably result in a shallower depth of beams that is more cost effective. If the two piers could be aligned with the abutments of the existing bridge, this would be acceptable from a hydraulic point of view. Structural will have a lot to say on the balancing the length of the outer spans with the length of the center span for the most efficient combination of lengths.

I think this issue should be discussed with the structural engineers before we make any changes in the bridge design. I am not sure who handles these questions for the Tollway.

How do you want to handle these comments with IDOT and CBBEL?

John G. Morgan, P.E.
Senior Hydraulic Engineer
D 312.373.6780
john.morgan@aecom.com

AECOM
303 East Wacker Drive, Suite 600, Chicago, IL 60601
T 312.938.0300 F 312.938.1109

Edward Yousif, PE
AECOM
Technical Leader
303 E. Wacker Drive, Suite 600
Chicago, IL 60601-5212
P: (312) 373-6786 / F: (312) 373-6834

From: Masouridis, Eleftherios P [mailto:Eleftherios.Masouridis@illinois.gov]
Sent: Saturday, January 28, 2012 1:59 PM
To: cwang@cbbel.com; jrobinson@cbbel.com
Cc: Yousif, Edward; Morgan, John; Lockwood, Roger S.
Subject: EOWB @ Salt Creek

Chin,

Attached are comments developed by Fluid Clarity.

I would like to add to comment 1. The waterway opening through the bridge should reflect to the greatest degree possible a channel configuration that matches the stream channel away from the bridge. A trapezoidal channel with a 142.4' bottom does not reflect what the creek is doing today and will only tend to silt in and try to reestablish itself. Part of the concern is reflecting/modeling an opening that includes area that probably will not be able to be sustained as it appears to be in the current proposed opening. There have been projects where regulatory agencies have required bridge openings such as the one currently proposed to be redesigned. The proposed opening sketch should show any proposed piers. There should be sketch for the upstream and downstream face. Another concern is that it is clear if the proposed ROW is adequate to transition the proposed bridge opening to the existing channel.

Attached is a sample.

<<sample bridge opening.pdf>>

<<EOWB_Salt Creek_Review20120125.doc>>

Perry

E. Perry Masouridis, P.E.

Hydrology and Hydraulics Engineer

Illinois Department of Transportation, Region 1

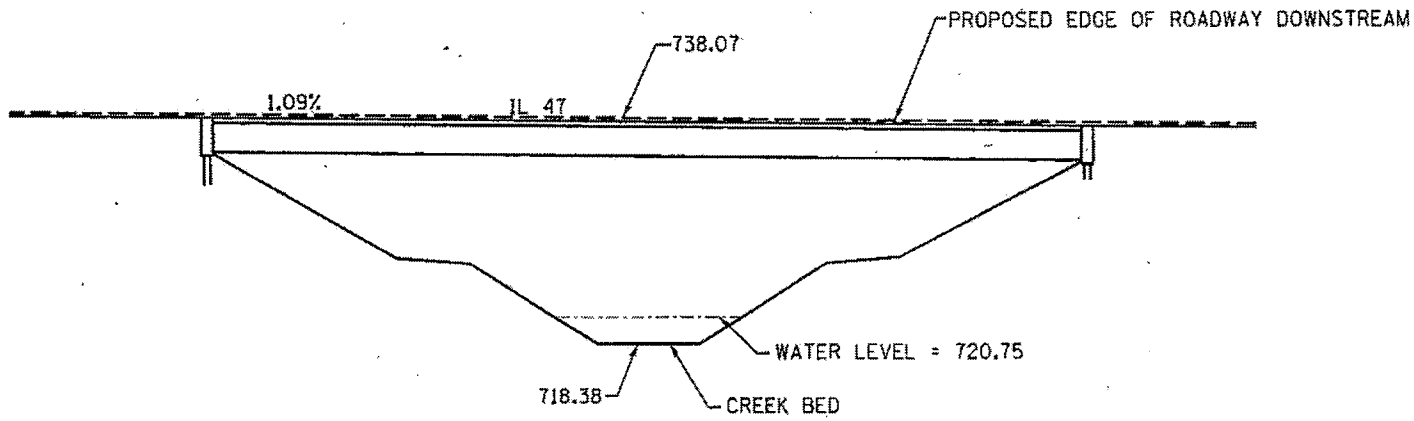
Bureau of Programming, Hydraulics Section

201 West Center Court

Schaumburg, IL. 60196-1096

Phone: (847) 705-4474 Fax: (847) 221-3052

Email: eleftherios.masouridis@illinois.gov



LOOKING AT DOWNSTREAM FACE

FILE NAME =	USER NAME =	DESIGNED =	REVISED =	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	IL 47 BRIDGE PROFILE	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		PLOT SCALE =	CHECKED =	REVISED =	SCALE: SHEET OF SHEETS STA. TO STA.			CONTRACT NO.		
	PLOT DATE =	DATE =	REVISED =					ILLINOIS FED. AID PROJECT		

MINUTES OF MEETING

MEETING SUBJECT: Elgin O'Hare-West Bypass Preparation Date: 10/20/2010
Revised to Reflect Comments: November 16, 2010

An Elgin O'Hare-West Bypass Coordination Meeting between IDOT and CBBEL was held on October 12, 2010 at CBBEL's office, beginning at approximately 9:00 am and ending at approximately 4:00 pm. The following is a summary of topics and issues discussed at the meeting.

FROM: Gerald Robinson, PE, CFM

SUBJECT: Elgin O'Hare-West Bypass – Meacham Creek

The process DuPage County uses to model stream systems was discussed. The hydrologic model used in DuPage County floodplain studies is the Hydrologic System Program – FORTRAN (HSPF) model. The HSPF model simulates a continuous set of hydrologic parameters for a period of record from 1949-2008. The HSPF model is calibrated by comparing stream flows at USGS gages wherever they exist in DuPage County. The results of the HSPF simulation are then input into the FEQ unsteady flow hydraulic model. The FEQ model is also calibrated by using high water elevations and gage data (where available) to show that the hydraulic model is accurately simulating the stream system. The final component used to develop the 100-year recurrence interval floodplain (and all other recurrence intervals) elevations and flows is the PVSTATS statistical model that uses the storm volume and peak elevation and flow rate to determine the desired recurrence interval floodplain.

The Meacham Creek model is part of the larger Spring Brook FEQ unsteady flow model. Work on this model is being completed by Hey and Associates and AECOM, which are both under contract to DuPage County to complete the modeling effort. The Meacham Creek model was already extended up to the existing culvert crossing at the Elgin-O'Hare Expressway. The survey completed by IDOT will be inserted into the FEQUTL program and used for the modeling effort. This will require that the datum used in the survey be converted from NAVD 88 to NGVD29. The FEQ model uses NGVD 29 for all of its information and it would be very time consuming to convert the entire model to NAVD 88, so the IDOT data will be converted. The results of this updated model will be compared to the results of the original DuPage County modeling.

An exhibit was prepared that depicts the limits of the 100-year recurrence interval floodplain obtained from running the PVSTATS program. The data from the FEQ unsteady flow hydraulic model will be used to generate the waterway information tables for the Elgin-O'Hare Expressway and the Medinah Road crossings. The new crossing that was recently completed for IL Route 19 should also be included in the information for Meacham Creek. (P.S. IDOT provided a set of the bridge T.S. and L. on October 20, 2010) There is an existing private crossing of Meacham Creek located immediately upstream of Medinah Road. The private crossing and the Medinah Road crossing will be removed one at a time to determine the amount of backwater generated by each crossing. The report will address the effect of leaving these crossings in place or removing them as part of the overall project.

The natural profile for the area will require that the storage located north of the expressway will be removed from the FEQ unsteady flow hydraulic model because it was constructed as part of the overall expressway development. An exhibit will be prepared to depict the limit of where 640 acres (1 square mile) of tributary area are located within the Meacham Creek Watershed. A floodway will be required to be determined below this point in the watershed and a comparison between the storage and conveyance floodway will be completed.

A DI will be completed for the subdivision located along Poplar Avenue and Hawthorne Lane (located east of Plum Grove Road). IDOT recommended that a field investigation of the subdivision should be completed to identify the location(s) of problem areas within the area. Once these areas are identified, additional modeling may be required to determine what remedial measures may be required for the subdivision.

FROM: Gerald Robinson, PE, CFM

SUBJECT: Elgin O'Hare-West Bypass –Devon Avenue Tributary

Devon Avenue Tributary is also located primarily in DuPage County and is currently being prepared for floodplain mapping for DuPage County by Montgomery Watson Harza (MWH). The same procedure previously discussed in the Meacham Creek portion of the memorandum is used for the Devon Avenue Tributary (HSPF hydrology, FEQ hydraulics and PVSTATS statistical analysis). The FEQ unsteady flow hydraulic model was obtained from MWH and once again, the hydraulic structure sizes and cross-sections used in the FEQ unsteady flow hydraulic model agreed with the survey completed for the EOWB. The survey completed by IDOT will be inserted into the FEQUTL program and used for the modeling effort. This will require that the datum used in the survey be converted from NAVD 88 to NGVD 29. The FEQ model uses NGVD 29 for all of its information and it would be very time consuming to convert the entire model to NAVD 88, so the IDOT data will be converted. The results of this updated model will be compared to the results of the original DuPage County modeling.

An exhibit was prepared that depicts the limits of the 100-year recurrence interval floodplain obtained from running the PVSTATS program. The data from the FEQ unsteady flow hydraulic model will be used to generate the waterway information tables for the Thorndale Avenue and Interstate 290 crossings. An exhibit will be prepared to depict the limit of where 640 acres (1 square mile) of tributary area are located within the Devon Avenue Tributary Watershed. A floodway will be required to be determined below this point in the watershed and a comparison between the storage and conveyance floodway will be completed.

There are a series of cross-road culverts located within the watershed study area that will be included in the report. The culverts will be removed to generate the natural profile for Devon Avenue Tributary and each culvert will be added from an upstream to downstream direction to determine the backwater effects of each of the crossings.

IDOT would also like to include the new culvert under Rohlwing Road as part of the report for the Devon Avenue Tributary reports. IDOT will send us information on the crossing to use in the analysis.

A DI will be completed for the subdivision bounded by Thorndale Avenue on the north side and I-290 on the east side. Modeling will be used to determine created heads caused by the existing culvert under Thorndale Avenue. Evaluation of impacts due to created heads and remedial measures for subdivision will be included in the hydraulic report.

FROM: Gerald Robinson, PE, CFM

SUBJECT: Elgin O'Hare-West Bypass – Salt Creek

The existing bridge at Thorndale Avenue and Salt Creek was discussed during the meeting. The bridge has recently been replaced by DuDOT and the Salt Creek FEQ unsteady flow hydraulic model was used to permit the replacement structure. IDOT would like to include the new crossing in the report, so CBBEL will compare the data received from DuDOT to the survey completed as part of the Elgin O'Hare West Bypass study. The survey completed by IDOT will be inserted into the FEQUTL program and used for the modeling effort. This will require that the datum used in the survey be converted from NAVD 88 to NGVD 29. The FEQ model uses NGVD 29 for all of its information and it would be very time consuming to convert the entire model to NAVD 88, so the IDOT data will be converted. The results of this updated model will be compared to the results of the original DuPage County modeling.

The results from the FEQ unsteady flow hydraulic model will be used to provide a hydraulic report for this crossing as long as the DuDOT and current survey data are in substantial agreement. Any substantial changes will be input into the FEQUTL model and the FEQ hydraulic model will be re-run using the updated information.

FROM: Jeana Gowin, PE, CFM

SUBJECT: Elgin O'Hare-West Bypass - Willow Creek under Thorndale Avenue and York Road

The effective flow rates published in the FIS were superseded in the late 1980s (approximately 1988). A new hydrologic model, including enhanced subbasins, was completed and calibrated to the 1987 storm event. These flow rates upstream of York Road have been used since this time. This hydrologic model was again revised to reflect the construction of Structure 140 and the flows downstream of this structure have been certified by IDNR-OWR.

The effective HEC-2 hydraulic model for the South Unnamed Tributary of Willow Creek upstream of York Road does not include the numerous projects that have taken place along this watercourse. CBBEL developed a HEC-RAS model for the South Tributary of Willow

Creek that reflects all of the projects to date, including the Thorndale Avenue and York Road crossing improvements. This model was approved for the York Road and Thorndale Ave improvements by both DuPage County and IDNR-OWR.

A HEC-RAS model for Willow Creek from the upstream face of the C & NW Railroad to the confluence with the Des Plaines River is being used for Completion Phase (Phase 2) permitting purposes within the O'Hare Airport.

The effective HEC-2 hydraulic model for the North Unnamed Tributary of Willow Creek has been revised and reviewed by DuPage County and IDNR-OWR for various construction activities along the watercourse.

CBBEL will use the O'Hare Completion Phase (Phase 2) hydraulic model that extends from the confluence with the Des Plaines River upstream to the upstream side of the C&NW Railroad. Upstream of York Road, CBBEL will append the CBBEL developed HEC-RAS model for the South Unnamed Tributary to the O'Hare model. CBBEL will convert the HEC-2 hydraulic model for the North Unnamed Tributary to a HEC-RAS and append upstream of the O'Hare model. Flow rates used in the hydraulic modeling will be consistent with the previously developed TR-20 hydrologic model.

IDOT will contact Gary Jereb and Bill Boyd at IDNR-OWR to discuss this approach and the permitting procedure for this watercourse. If required, a meeting with IDOT, IDNR-OWR and CBBEL will be set up to discuss the project, modeling procedure and permitting.

Post-Meeting Note: IDOT met with IDNR-OWR on October 27, 2010. The use of this modeling was discussed and it was decided that since the current regulatory mapping does not reflect this modeling, the modeling should be submitted to IDNR-OWR for concurrence prior to use for evaluating proposed conditions.

FROM: Emily Anderson, EI, CFM

SUBJECT: Elgin O'Hare-West Bypass - Addison Creek under I-294/Northwest Avenue and County Line Road

1. Addison Creek Regulatory Model to be used
    a. June 2005 FEMA Effective Model
    b. HEC-2: Addfinal.dat. It is important to note that the HEC-2 model is in NGVD 29 while the survey was completed in NAVD 88. All models and elevation comparisons will be in NGVD29. All information tables and survey will be in NAVD 88.
2. Baseline Model
    a. Truncated Regulatory HEC-2 model upstream of CH& NW Railroad to just upstream of Cemetery crossing #1
    b. 10-, 50-, 100-, and 500-year profiles match regulatory model results
3. Corrected Baseline Model
    a. Correct errors in regulatory model
    b. Cemetery crossing #1 bridge points added to complete geometry. County Line Rd bridge points added to complete geometry. Distance between I-294

and County Line Road changed from 80 feet to actual 53 feet. Size of I-294 culvert corrected to match survey

c. This model does not match the regulatory model results with the smaller culvert opening at I-294

4. Existing Conditions Model
   a. Additional CONSPAN crossing to be added to model between County Line Road and the dam
   b. Waiting on supplemental CONSPAN and dam survey to complete.
   c. Available cross sections were entered into the model with proposed CONSPAN dimensions
   d. Does not match regulatory model
5. Natural Conditions Model
   a. It was decided that if the project extents do not include County Line Road at Addison Creek, and that the crossing will not need to be analyzed for proposed conditions
   b. I-294 natural conditions will be analyzed with and without the County Line Road structure to see upstream effects of County Line Road
6. Proposed Conditions Model
   a. I-294 only will be analyzed when functional geometry is available
   b. This is not expected to close the 53 ft gap between I-294 and County Line Road

Post-Meeting Note: IDOT met with IDNR/OWR on October 27, 2010. Cases such as the corrected baseline model above that reflects obviously shortfalls with the FIS model were discussed. Since the analysis corrects obvious errors in the FIS (such as the culvert size), this corrected model is acceptable for permitting purposes.

Results of the I-290 Flow Diversion Discussion

1. A discussion outline, DVD, and set of exhibits was provided to IDOT for review
2. Actions to be taken:
   a. IDOT to find and provide the hydraulic report for Roosevelt Rd to CBBEL
   b. CBBEL to update unsteady HEC-RAS model with correct bridge low chord
   c. No additional survey is planned at this time

Post-Meeting Note: IDOT provided the desired information and the modeling was updated. It still shows overflow for the 50 year event. Since the July 24, 2010 storm is the only event with a history of overtopping IDOT questions the 50-year overtopping conclusion.

FROM: Donald C. Oliphant, PE, CFM

SUBJECT: Elgin O'Hare-West Bypass - Silver Creek under I-294 and Franklin Park Industrial Complex

IDOT was informed about the status of the I-294 Industrial Park Drainage Investigation (DI). The DI was going through internal review and would be submitted when the report is finalized. CBBEL mentioned that XP-SWMM modeling of the industrial park would likely be needed to determine the most efficient location for storage and potential pump sizing for the watershed.

CBBEL was waiting on IDOT to provide the regulatory hydraulic model for Silver Creek. Perry said he was still looking for it. Until the regulatory model is provided, CBBEL was directed to construct a new HEC-RAS model using the 1 ft. topography completed as part of this study. Regulatory flow rates would be used for this new hydraulic model. CBBEL was also directed to notify Peter if supplemental survey information would be needed to complete the hydraulic model.

IDOT would contact Cook County to obtain permission for the EOWB project to utilize the 1ft. topography available to the MWRD Lower Des Plaines River Subwatershed study.

FROM: Dave Vogel, PE

SUBJECT: Elgin O'Hare-West Bypass – North Avenue Flooding @ I-290 & I-294

- Attendees met at the CBBEL Rosemont office to discuss progress of the flooding study at the North Ave underpass of I-290/I-294;
- Darren gave a brief synopsis of existing drainage conditions at the North Ave underpass:
    - There are two low points along North Ave within the flooding area, one is located just west of I-290 and one is at I-294. There is a saddle point in between the two low points. The low point west of I-290 will overflow into the eastern low point that is under I-294 if it fills above the saddle point.
    - There are two storm systems that drain North Avenue into Doyle Reservoir. The reservoir is owned/operated by MWRD and is manually pump evacuated to the Lake Street storm sewer system after storm events. The pumps are meant only for dewatering and do not keep up with inflow to the reservoir during storm events. The pump capacity is approximately 9 cfs.
    - The capacity of both North Ave storm sewer systems would be affected by the water elevation in Doyle Reservoir. Higher water elevations would create a tailwater effect on the sewer systems.
    - The western portion of North Avenue (under I-290) is drained by a system that outlets into Doyle Reservoir.

- This system was studied by CDM in 2005. A review of the CDM report reveals that portions of the pipe are back-pitched or elliptical in shape. The far western portion of the system that drains the low point west of I-290 is a 10-inch diameter storm sewer.
- Based on aerial 2-foot topographic mapping, stormwater runoff from an additional 175 acres within the City of Elmhurst that is not picked up in the City's storm sewer likely flows overland to the North Avenue low point west of I-290.
- Runoff from approximately 114 acres within the City of Elmhurst drains to the western North Avenue storm sewer system through a 42-inch pipe.
- A review of the Lower Elmhurst Reservoir plans shows that there is a structure located in East End Park with a sluice gate that diverts a portion of the stormwater runoff from the City of Elmhurst away from the western North Avenue storm sewer system and into the Lower Elmhurst Reservoir. The Lower Elmhurst Reservoir is located between I-290 and I-294 at St. Charles Road. Low flows to the diversion structure are bypassed around the sluice gate and into the western North Ave system through an 8-inch diameter pipe. High flows are designed to backup into the Lower Elmhurst Reservoir. The sluice gate was field verified to be closed per the design drawings.
- Pump Station #34 located at I-290 & Emroy Ave pumps into the western North Ave storm sewer system from the northwest at a maximum rate of 25 cfs.
- Based on review of I-294 design plans, portions of I-294 south of North Ave appear to drain to the western North Ave storm sewer system. This was confirmed by a recent CBBEL field visit.
- CBBEL field visits indicate that several inlets along the western storm sewer system are in poor condition.

o The eastern portion of North Avenue (under I-294) is drained by a storm sewer system that also outlets into Doyle Reservoir.

- Based on review of I-294 design plans, portions of I-294 north of North Avenue appear to drain to the eastern North Avenue storm sewer system.
- The overflow elevation of Doyle Reservoir (±658 ft) is above the low point on North Avenue under I-294 (±654 ft). If Doyle Reservoir filled to this elevation, there would be several feet of standing water on North Avenue under I-294.

- There was some discussion regarding the drainage investigation report prepared by CDM in December 2005. Darren explained that pipes in the system are back-pitched by about 0.5 feet and there are several elliptical sections of pipe. It was not clear why there were sections of elliptical pipe. IDOT noted that the plots in the

CDM report may have been developed for modeling purposes. Inspection and cleaning of the pipe revealed that there is actually a siphon condition. Rick Wojcik is more familiar with the history of this and should be consulted.

- Darren noted that the pipe sizes and configurations in the CDM study do not match the design plans for Doyle Reservoir, Lower Elmhurst Reservoir, or I-294 plans. The need for additional survey of the drainage system was discussed.
- It was agreed that CBBEL should eventually design a storm sewer system for the low point on North Avenue west of I-290 as if the existing sewer system did not exist. It would then be clear which portions of the existing system can be salvaged as part of the new design.
- Perry said that flooding of North Avenue occurs frequently. Flooding from smaller events is as much a concern as from larger events such as July 2010. He recommended we check with Rick Wojcik regarding what events are of most concern to IDOT.
- Perry said that Rick Wojcik with IDOT should be consulted regarding the findings to date. It was agreed that a meeting would be scheduled.
- IDOT was provided with the CBBEL tributary area map and storm sewer/topo map that were discussed during the meeting.

ATTENDEES: Perry Masouridis – IDOT
Santos Batista – IDOT
Jerry Robinson - CBBEL
Donald R. Dressel – CBBEL
Chin Wang – CBBEL
Peter Procaccio – CBBEL
Donald Oliphant – CBBEL
Darren Olson – CBBEL
Dave Vogel – CBBEL
Jeana Gowin – CBBEL
Emily Anderson – CBBEL

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TAB 14

SECTION 14

SURVEY NOTES

SALT CREEK - THORNDALE

12.02.09

31

4P. TU - SUNNY - 39°F.

FILE NAME: SALTCREEK 120209

S/A # 704 ⇒ # SNSF = 5.13 | ΔHRZ = +0.035
D/S # 125 ⇒ # D/S = 500 | ΔVRT = -0.001

Autopoint # 1430 → 1491

S/A # 707 ⇒ # SNSF = 5.02 | ΔHRZ = +0.006
D/S # 704 ⇒ # D/S = 500 | ΔVRT = +0.020

Autopoint # 1492 → 1509

S/A 709 ⇒ # SNSF = 4.97 | ΔHRZ = -0.021
D/S # 704 ⇒ # D/S = 500 | ΔVRT = +0.002

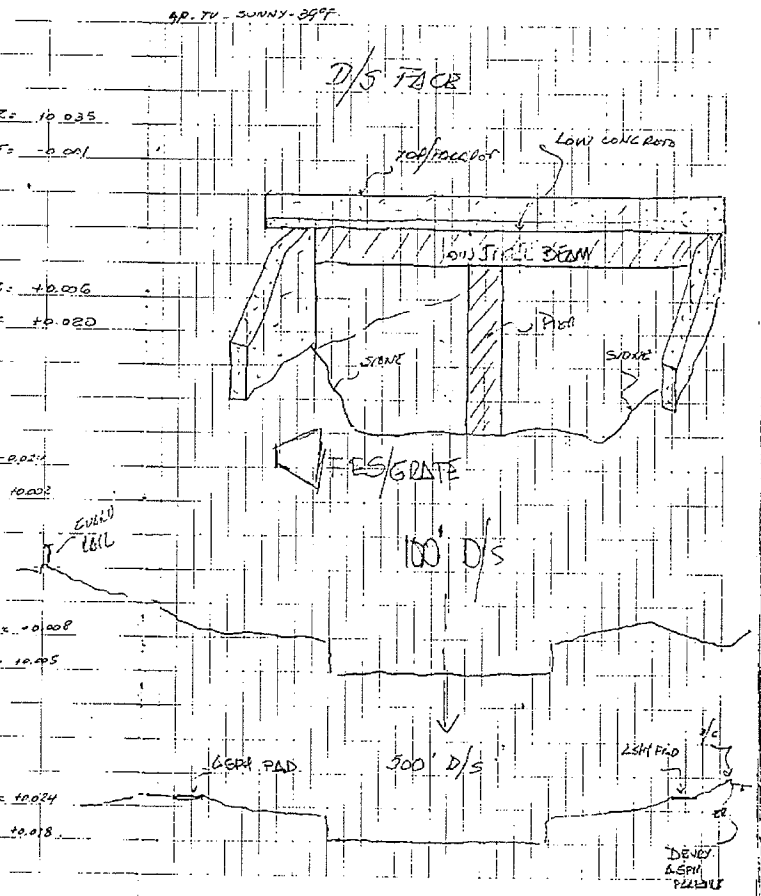
Autopoint # 1510 → 1535

S/A # 710 → # SNSF = 5.01 | ΔHRZ = +0.008
D/S # 709 → # D/S = 500 | ΔVRT = +0.005

Autopoint # 1536 → 1544

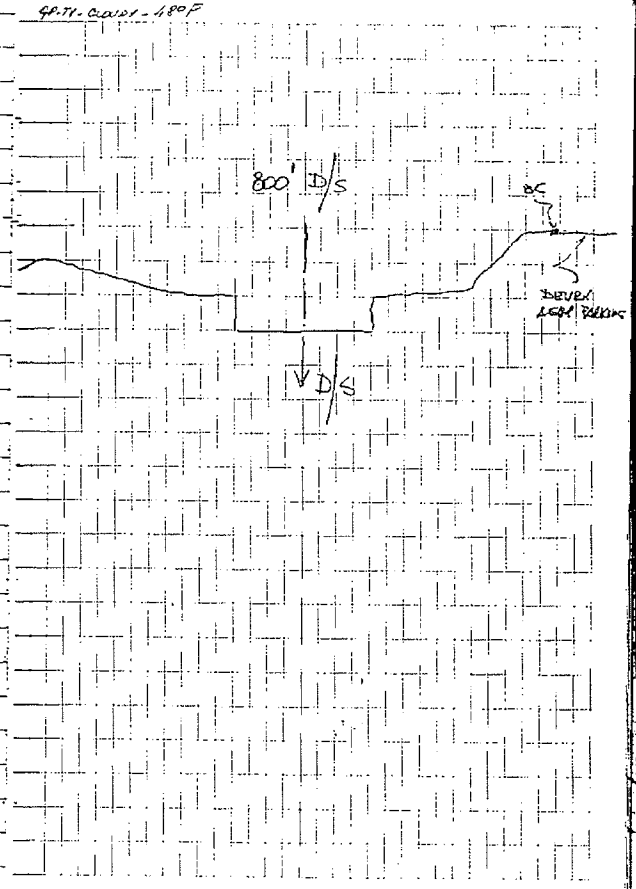
S/A # 711 ⇒ # SNSF = 5.20 | ΔHRZ = +0.024
D/S # 710 ⇒ # D/S = 500 | ΔVRT = +0.018

Autopoint # 1547 → 1565



SPLIT CREEK THORNDALE

4P.M. CLOUDY - 48°F



SALT CREEK - THORNDALE

File Name: SATCREEK 113009-DC

Sta # 125 ⇒ # INGF = 508 — Δhorz: +0.101

B/S # 700 ⇒ # B/S = 500 — Δvert: +0.042

Autopoint # 1000 ⇒ 1089

Sta # 701 ⇒ # INGF: 4.71 — Δhorz: +0.09

B/S # 135 ⇒ # B/S = 500 — Δvert: −0.031

Autopoint # 1090 ⇒ 1106

100' U/S

U/S FACE

11-30-09.

29

AP-TV. SUNNY. 36°F.

CP # 125 — 1936955.006 / 1077531.921

PK NAIL — 685.823 - GPS ELEV.

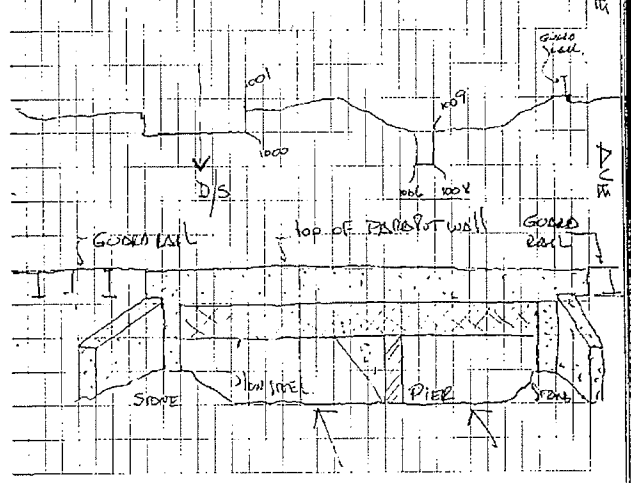
4 NEST. POINT THORNDALE AVE S. — 685.996. - LEVEL RUN ADJUSTED

NEX CORNER BRIDGE OF SALT CREEK — 1937007.690

CP # 700 — 1078357.426

IRON ROD/CAP — 691.474 - GPS ELEV.

NWX OF THORNDALE AVE S. MIDDLE BLVD.



SALT CREEK - TIPPERNDALE

File NAME: SALTCREEK120109-DC-

Sta # 702 ⇒ HDNSH = 5045 ΔHCC: +0.009

D/S # 125 ⇒ H D/S = 5.00 ΔVCC = -0.001

Autopoint # 1107 → 1250

Sta # 706 ⇒ HDNST = 5.130 ΔHCC = +0.030

D/S # 704 ⇒ H D/S = 5.00 ΔVCC = +0.015

Autopoint # 1251 → 1429

12-01-09 30

AP-TY-SUNNY-36°F

Vertical Datum Shift at Tribshed Centroid:
(NGVD29 Z) - (NAVD88 Z) = Vert_Datum_Z_Diff

Tribshed	Centroid_X	Centroid_Y	Vert_Datum_Z_Diff
DPAC	1090851.805	1915917.988	0.284
DPBD	1090300.408	1928251.631	0.289
DPBP	1069526.246	1834401.078	0.273
DPCT	1095138.663	1933742.369	0.297
DPDP	1086075.951	1836308.959	0.281
DPFC	1092186.933	1862169.450	0.273
DPWL	1087693.122	1935775.362	0.290
DULC	1068557.762	1844102.949	0.269
DUSG	1024560.823	1846891.871	0.260
EBAR	1054307.337	1912078.738	0.265
EBAT	1063079.858	1918498.724	0.271
EBCR	1063409.687	1850057.241	0.269
EBE1	1064848.564	1908545.753	0.274
EBE2	1056600.283	1905924.860	0.266
EBE3	1067754.554	1889224.245	0.274
EBE6	1049763.550	1858655.226	0.266
EBE7	1050951.260	1852487.637	0.266
EBEB	1057861.023	1878313.365	0.269
EBGL	1056727.717	1890149.084	0.267
EBGP	1068420.299	1882803.828	0.271
EBLA	1069166.542	1877016.345	0.270
EBPR	1067217.160	1857896.209	0.269
EBRC	1042528.535	1874506.900	0.263
EBSJ	1071053.387	1867231.853	0.268
EBSM	1062134.451	1921591.295	0.271
EBTS	1068312.705	1886187.964	0.273
EBWI	1050210.931	1882005.809	0.266
FRBC	1012948.509	1932703.573	0.260
FRIC	1006861.549	1867709.057	0.238
FRNC	1010296.442	1920800.567	0.250
FRWA	1012353.067	1853795.526	0.244
SCBW	1086620.100	1874905.185	0.269
SCDA	1069824.327	1939096.404	0.282
SCGC	1081124.119	1882900.764	0.273
SCOB	1083032.901	1888401.164	0.278
SCSB	1058010.472	1933660.642	0.280
SCSC	1083902.855	1908499.038	0.282
SCSU	1077616.404	1893610.873	0.276
SCWC	1070755.062	1916608.760	0.277
SWSW	1083447.228	1846508.809	0.268
SWWD	1074386.588	1847435.676	0.266
WBCC	1034367.472	1867556.844	0.263
WBFE	1014752.456	1876081.139	0.252
WBFX	1037056.063	1845059.989	0.267
WBKC	1040926.759	1912276.937	0.260
WBKR	1010353.705	1900888.881	0.245
WBSP	1040160.456	1887762.853	0.257
WBSR	1041615.540	1862408.865	0.266
WBW1	1040852.583	1928887.384	0.269
WBW2	1028202.170	1938439.343	0.262
WBW3	1022203.395	1909294.269	0.256
WBW4	1031770.194	1914696.360	0.262
WBW5	1026104.116	1900851.136	0.256
WBW6	1043797.510	1856220.038	0.266
WBW7	1044498.398	1853424.223	0.265
WBW8	1035709.627	1840964.889	0.269
WBWB	1032468.229	1902535.180	0.258
WBWF	1043025.773	1898112.419	0.256
WBWG	1034722.953	1849634.602	0.268

← Lower Salt Creek

TAB 15

SECTION 15

CD (MODELING AND SURVEY DATA)

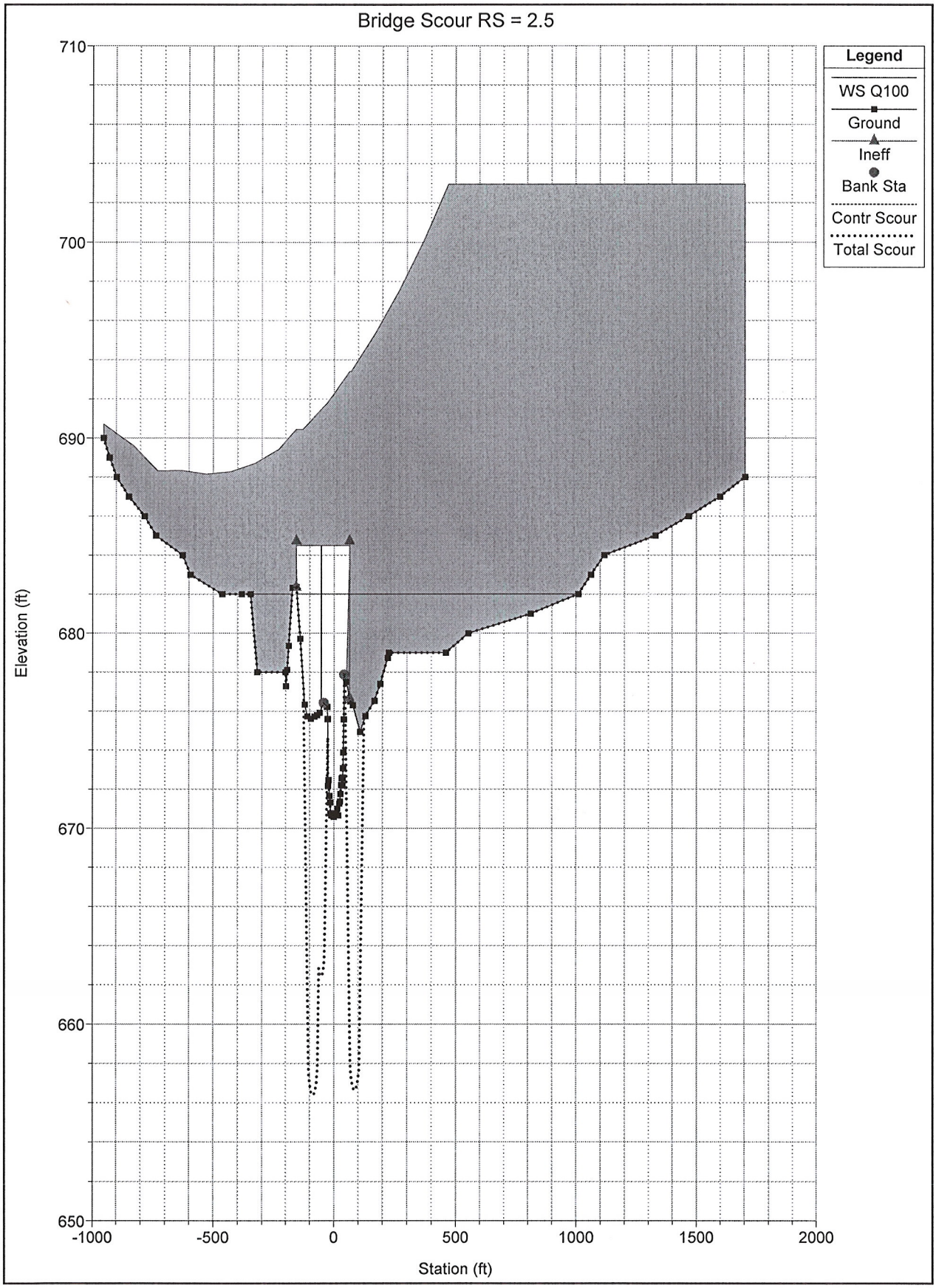
C D

Tab 16

SECTION 16

SCOUR ANALYSIS

100-YEAR SCOUR



100-YEAR SCOUR

Contraction Scour

		Left	Channel	Right
Input Data				
	Average Depth (ft):		8.29	
	Approach Velocity (ft/s):		3.70	
	Br Average Depth (ft):	5.22	9.52	3.23
	BR Opening Flow (cfs):	944.67	2085.23	69.10
	BR Top WD (ft):	107.22	84.80	17.02
	Grain Size D50 (mm):	0.035	0.035	0.035
	Approach Flow (cfs):		3099.00	
	Approach Top WD (ft):		101.00	
	K1 Coefficient:		0.690	
Results				
	Scour Depth Ys (ft):		0.00	
	Critical Velocity (ft/s):		0.78	
	Equation:		Live	

Pier Scour

All piers have the same scour depth

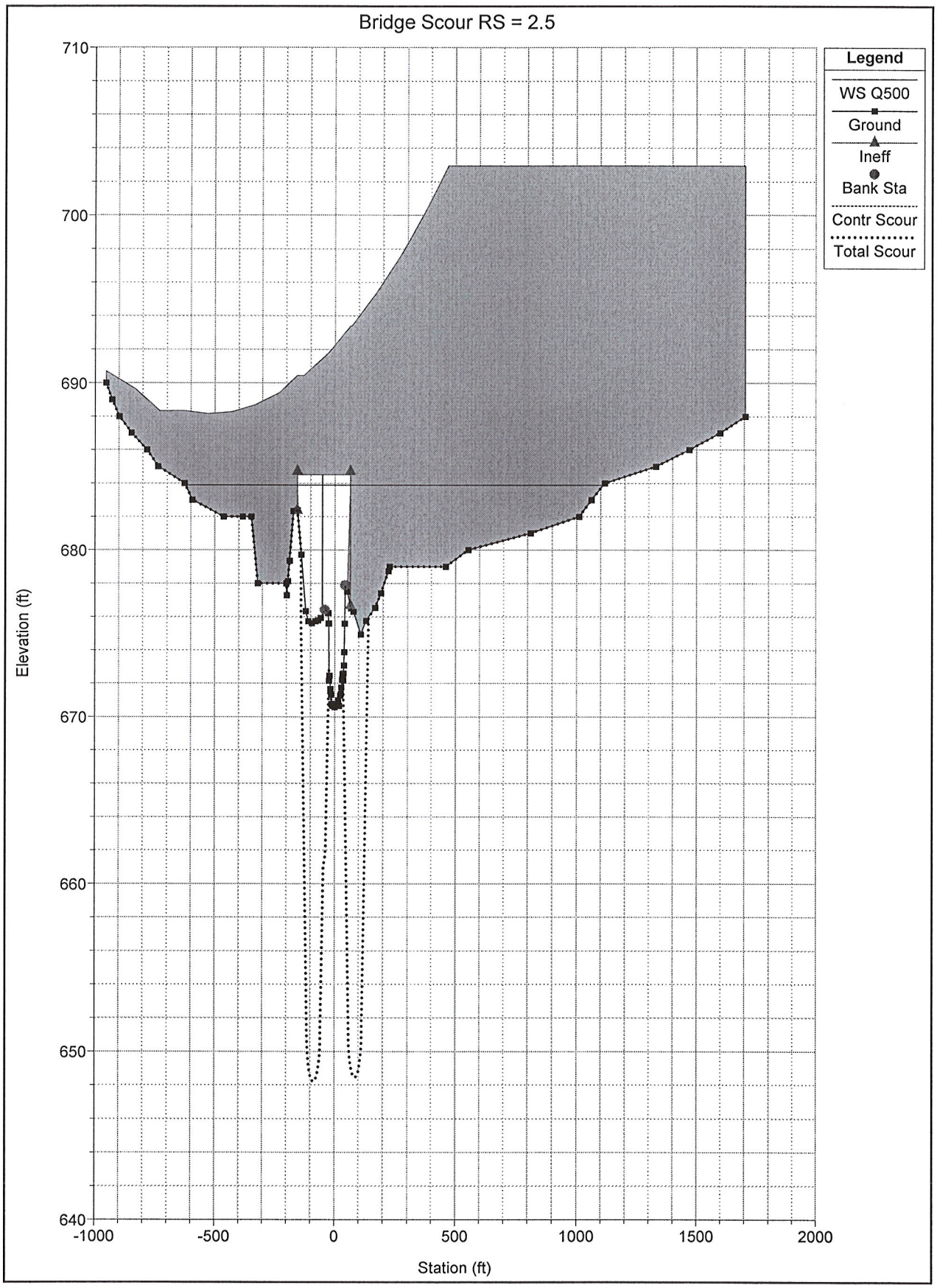
Input Data		
	Pier Shape:	Round nose
	Pier Width (ft):	3.00
	Grain Size D50 (mm):	0.03500
	Depth Upstream (ft):	11.37
	Velocity Upstream (ft/s):	2.74
	K1 Nose Shape:	1.00
	Pier Angle:	22.00
	Pier Length (ft):	193.00
	K2 Angle Coef:	3.00
	K3 Bed Cond Coef:	1.10
	Grain Size D90 (mm):	0.20000
	K4 Armouring Coef:	1.00
	Set K1 value to 1.0 because angle > 5 degrees	
Results		
	Scour Depth Ys (ft):	13.70
	Froude #:	0.14
	Equation:	CSU equation

Abutment Scour

		Left	Right
Input Data			
	Station at Toe (ft):	-86.00	86.00
	Toe Sta at appr (ft):	-86.00	86.00
	Abutment Length (ft):	195.00	195.00
	Depth at Toe (ft):	5.00	5.00
	K1 Shape Coef:	1.00 - Vertical abutment	
	Degree of Skew (degrees):	90.00	90.00
	K2 Skew Coef:	1.00	1.00
	Projected Length L' (ft):	195.00	195.00
	Avg Depth Obstructed Ya (ft):	1.50	2.21
	Flow Obstructed Qe (cfs):	77.44	101.43
	Area Obstructed Ae (sq ft):	329.90	2085.83
Results			
	Scour Depth Ys (ft):	19.30	19.30

Froude #:	0.15	0.15
Equation:	HIRE	HIRE

500-YEAR SCOUR



500-YEAR SCOUR

Contraction Scour

		Left	Channel	Right
Input Data				
	Average Depth (ft):		10.10	
	Approach Velocity (ft/s):		4.77	
	Br Average Depth (ft):	6.89	11.39	4.35
	BR Opening Flow (cfs):	1660.92	3062.04	150.03
	BR Top WD (ft):	110.98	84.80	20.78
	Grain Size D50 (mm):	0.035	0.035	0.035
	Approach Flow (cfs):		4873.00	
	Approach Top WD (ft):		101.00	
	K1 Coefficient:		0.690	
Results				
	Scour Depth Ys (ft):		0.00	
	Critical Velocity (ft/s):		0.80	
	Equation:		Live	

Pier Scour

All piers have the same scour depth

Input Data		
	Pier Shape:	Round nose
	Pier Width (ft):	3.00
	Grain Size D50 (mm):	0.03500
	Depth Upstream (ft):	13.26
	Velocity Upstream (ft/s):	3.28
	K1 Nose Shape:	1.00
	Pier Angle:	22.00
	Pier Length (ft):	180.00
	K2 Angle Coef:	3.00
	K3 Bed Cond Coef:	1.10
	Grain Size D90 (mm):	0.20000
	K4 Armouring Coef:	1.00
	Set K1 value to 1.0 because angle > 5 degrees	
Results		
	Scour Depth Ys (ft):	15.10
	Froude #:	0.16
	Equation:	CSU equation

Abutment Scour

		Left	Right
Input Data			
	Station at Toe (ft):	-86.00	86.00
	Toe Sta at appr (ft):	-86.00	86.00
	Abutment Length (ft):	195.00	195.00
	Depth at Toe (ft):	6.88	6.88
	K1 Shape Coef:	1.00 - Vertical abutment	
	Degree of Skew (degrees):	90.00	90.00
	K2 Skew Coef:	1.00	1.00
	Projected Length L' (ft):	195.00	195.00
	Avg Depth Obstructed Ya (ft):	2.00	3.69
	Flow Obstructed Qe (cfs):		
	Area Obstructed Ae (sq ft):	1227.00	3714.45
Results			
	Scour Depth Ys (ft):	27.48	27.48

Froude #:	0.16	0.16
Equation:	HIRE	HIRE