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TECHNICAL MEMORANDUM

Hydraulic Analyses for the Rio Salado Town Lake Dams

Prepared for
City of Tempe

MARCH 1996

CHMHILL

Contents, Continued

Appendixes

- A. Rating Curves and Manufacturer's Information for Rubber Dams
- B. Apron and Stilling Basin Length Computations and References
- C. HEC-2 Models for Design and Existing Conditions
- D. Degradation Depth as Limited by Bed Armoring Computations
- E. Local Scour Computations for Cut-off Walls at the Dam Structures

Attachment

Sudden Gate Opening Analysis: Town Lake: Tempe Rio Salado Project, prepared by Carter & Burgess Inc., August 1994.

Introduction

This memorandum documents the hydraulic analyses, computations, and criteria used as a basis for design of the Rio Salado Town Lake dams. It includes documentation for:

- Configurations of the downstream and upstream Town Lake dams.
- Rating curves for flow over the rubber dam crests.
- Apron and stilling basin analyses.
- Basic dam operations plan.
- HEC-2 model for design and existing conditions.
- Computed channel degradation depths as limited by bed armoring.
- Computed local scour depths downstream of the dam aprons or stilling basin.
- Dam failure analysis.

Town Lake Dam System

The Rio Salado Town Lake system will be impounded between the *downstream* and the *upstream* dams, as illustrated in Figure 1. Both dam structures will extend across the entire width of the Salt River channel.

During the initial studies for the Rio Salado Town Lake project (CH2M HILL, 1992), several dam configurations were considered for Town Lake. The Rio Salado advisory committee selected air-inflatable dams. Each dam structure is comprised of four air-inflatable dam segments. Typical sections for the downstream and upstream dams are shown in Figures 2 and 3, respectively. Dimensions of the dam structures are summarized below, in Table 1. Each dam segment will be independently operable to allow flexibility for low flow releases and for maintenance checks.

Table 1 Dam Configurations							
Cross-Section Geometry							
Dam Location		Bed Elev., ft.	Dam Foundation Elev., ft.	Dam Height, H, ft.	Fully Inflated Dam Crest Elev., ft.	Dam Crest Width ft.	No. of Bays
Downstream		1129.0	1132.0	16	1148	890	4
Upstream		1140.4	1143.33	4.67	1148	930	4
Piers							
Dam Location	No. of Piers	Pier Height, ft.	Top-of-Pier Elev., ft.		Top-of-Pier Width, ft.	Side Slopes	Base Width, ft.
Downstream	3	21	1153		6	½:1	27
Upstream	3	12	1155.33-		6	½:1	18
*For modeling, 10 feet was added to the pier height to accommodate architectural details that may be added.							

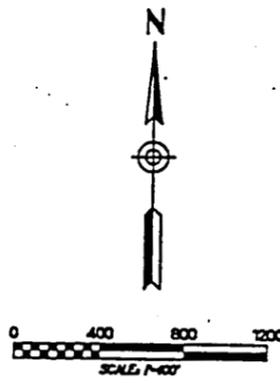
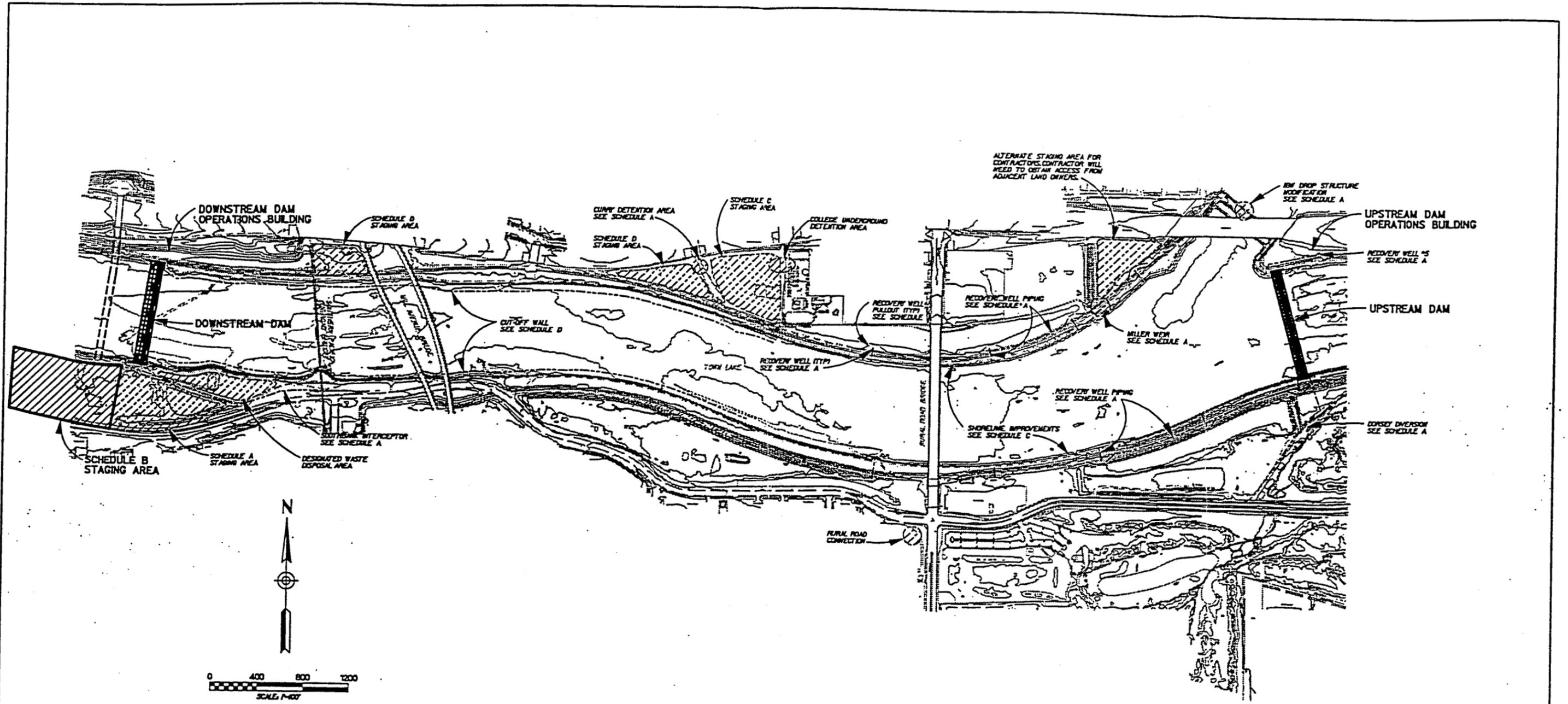


Figure 1

NO WORKING OVER THE CITY OF TEMPE SHALL BE PERMITTED WITHOUT THE CITY OF TEMPE CALL COLLECT

DEPARTMENT OF PUBLIC WORKS		
CITY OF TEMPE		
DIVISION OF ENGINEERING		
P.O. BOX 50022 TEMPE, ARIZONA 85280		
SURVEYED	DESCRIPTION	DATE APRIL 1996
DESIGNED BY	SCHEDULE B	PROJECT NO.
DRAWN BY	GENERAL	9465238
CHECKED BY	OVERALL PROJECT PLAN	
SCALE 1"=400'		SHEET 6 OF 11
		DWG NO. B-C-6

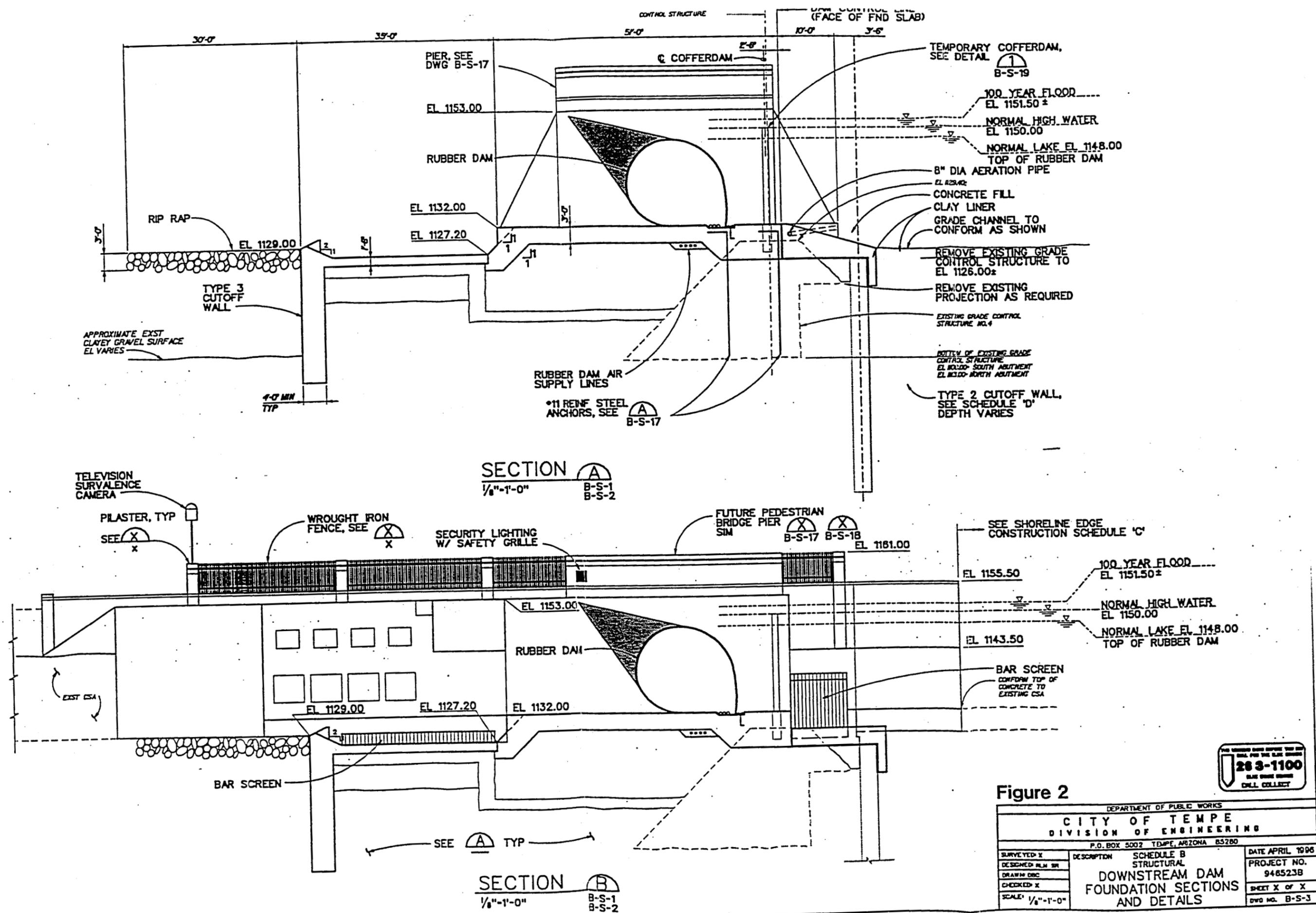


Figure 2

DEPARTMENT OF PUBLIC WORKS		
CITY OF TEMPE		
DIVISION OF ENGINEERING		
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DESIGNED: RLM SR	SCHEDULE B	PROJECT NO. 948523B
DRAWN: DBC	STRUCTURAL	SHEET X OF X
CHECKED: X	DOWNSTREAM DAM	DWG NO. B-S-3
SCALE: 1/8" = 1'-0"	FOUNDATION SECTIONS	
	AND DETAILS	



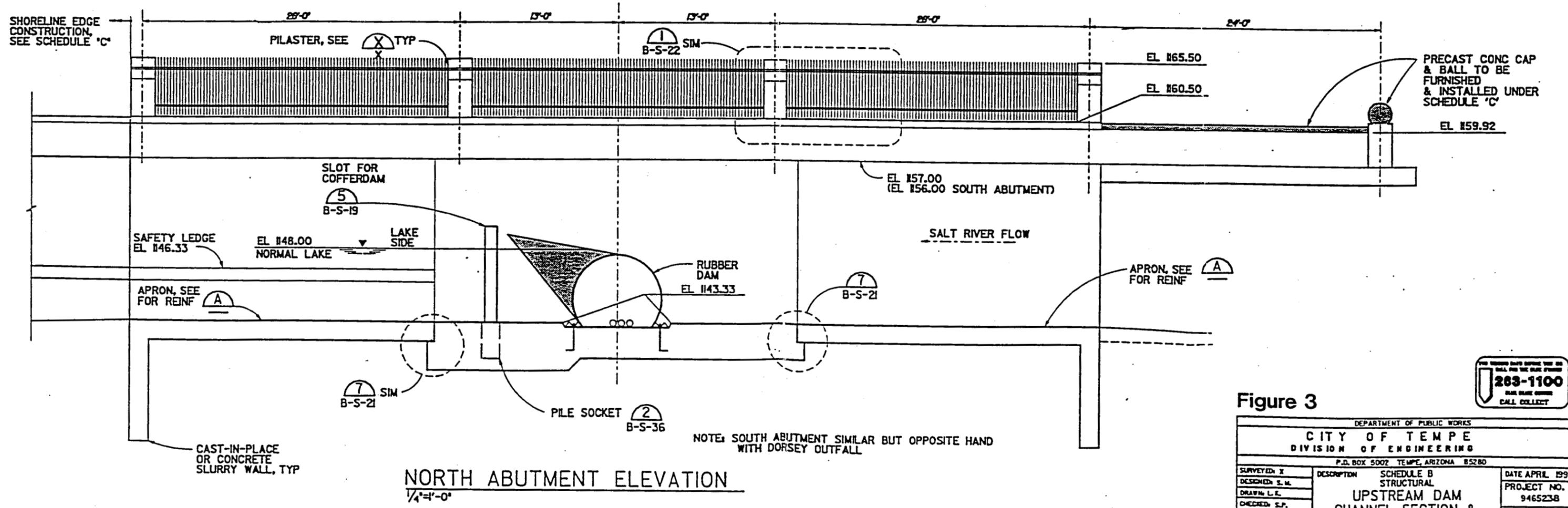
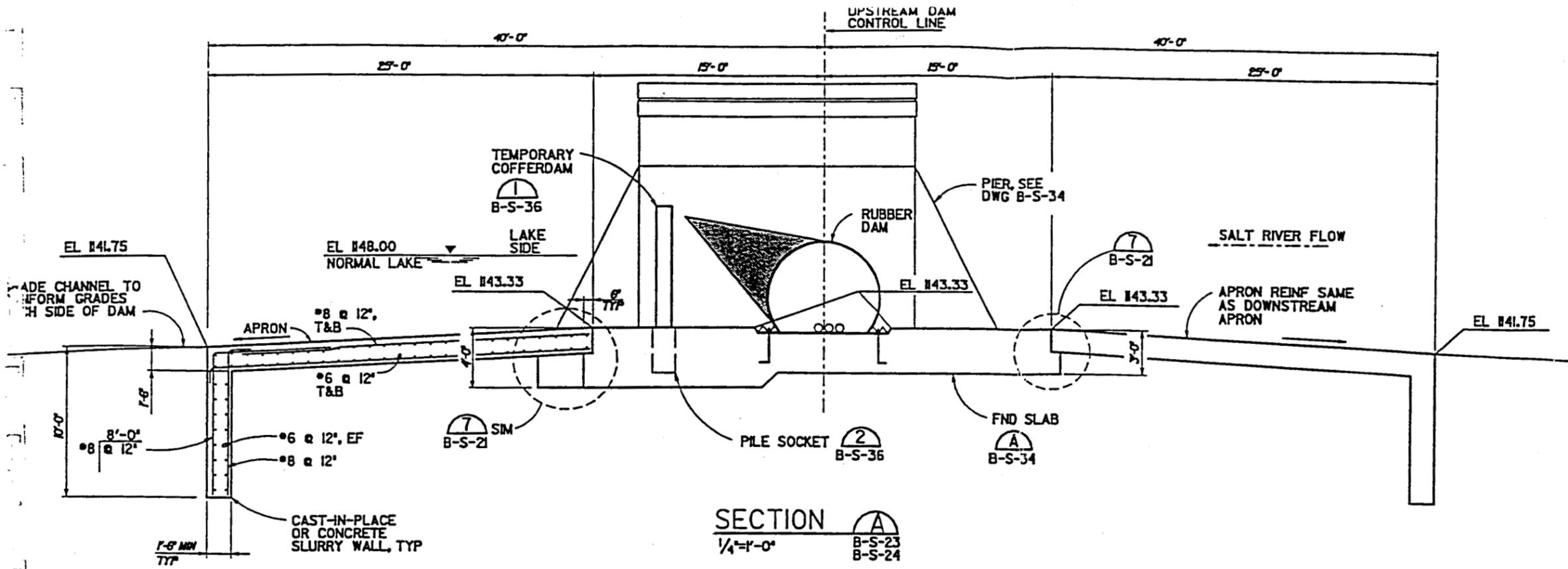


Figure 3

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CALL COLLECT

DEPARTMENT OF PUBLIC WORKS		
CITY OF TEMPE		
DIVISION OF ENGINEERING		
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SURVEYED: X	DESCRIPTION: SCHEDULE B STRUCTURAL	DATE: APRIL 1996
DESIGNED: S.M.		PROJECT NO. 9465238
DRAWN: L.E.		SHEET X OF X
CHECKED: S.P.		DWG NO. B-S-25
SCALE: 1/4"=1'-0"		

Downstream Dam

As indicated in Figure 1, the downstream dam is located approximately 2,200 feet west of the original Mill Avenue Bridge and will form the lake's western boundary. As indicated in Figure 2, the rubber dam will be set on a foundation approximately 3 feet above the channel design elevation. A stilling basin will be used to dissipate energy downstream of the dam during both low and high flow events. To reduce the cost of the dam, the dam foundation will be founded on Grade Control Structure (GCS) No. 4. As indicated in Table 1, the invert on the dam foundation will be at an elevation of 1132 and will match the original channel design elevation.

The original channelization design, for this reach of the Salt River, set a level channel elevation at GCS No. 4 of approximately 1132 feet. During construction, the design was modified from a level channel bottom to a "v-shaped" channel bottom, as a result of the presence of a shallow "bedrock" layer in the vicinity of GCS No. 4 and the need for borrow material. The invert of the channel was lowered to an elevation of approximately 1129.5 feet; however, the toe-of-slope elevation adjacent to the cement stabilized alluvium (CSA) bank protection remained at an elevation of approximately 1132 feet.

Upstream Dam

The upstream dam is located approximately 3,150 feet east of Rural Road and will form the lake's eastern boundary (see Figure 1). As indicated in Figure 3, the lake is on the dam's west or downstream side. However, stormwater may also pond on the upstream or east side of the upstream dam. On the dam's east side, water can pond in the designated riparian detention area due to either (1) periodic Salt River flows and/or (2) stormwater from Indian Bend Wash (IBW) that flows directly into the lake and results in spills over the upstream dam. Since flow may spill over the upstream dam in both directions, the upstream dam will have aprons on both sides of the dam foundation and the rubber dam will have a dual connection system (see Figure 3).

Overflow Computations

Rating curves for flow over the rubber dam crests have been computed using the discharge relationship documented in the Bridgestone Technical Notebook, Questions and Answers about the Bridgestone Rubber Dam (August 1989). An excerpt from the Bridgestone Technical Notebook and rating curves for both the upstream and downstream dams are provided in Appendix A. As indicated, the discharge equation for flow over the dam crest is essentially the same as the broad-crested weir equation, except that the discharge coefficient is a function of the depth of flow over the dam and the dam height.

Apron and Stilling Basin Analyses

The downstream dam has a modified USBR Type II stilling basin on the downstream side of the dam (see Figure 2). The upstream dam has concrete aprons that extend upstream and downstream of the dam foundation (Figure 3). The proposed aprons and stilling basin are intended to minimize the potential scour caused by water flowing over the partially or fully inflated dam structures.

For the downstream dam, the dimensions for the modified USBR Type II stilling basin were computed based on procedures documented in *Hydraulic Engineering Circular No. 14* (FHA, Sept. 1983). Detailed documentation for these computations are given in Appendix B.

For the upstream dam, the required apron length was computed using equations documented in *Open Channel Hydraulics* by V.T. Chow (1959) and *Drainage Design Manual for Maricopa County*, Vol. 2: Hydraulics. These computations include a 1.6 safety factor as recommended by the Flood Control District of Maricopa County (FCDMC). Detailed documentation for these computations are given in Appendix B.

The downstream dam stilling basin and the upstream dam aprons have been designed for the following worst case conditions:

Downstream Dam Design/Worst Case Condition

- Upstream water surface elevation: 1150.
- Dam crest elevation: 1144.
- Height of dam crest above the foundation: 12 feet (partially inflated).
- Computed total discharge over 890' dam crest: 45,800 cfs
- Computed unit discharge over the dam crest: 52 cfs/ft.

Upstream Dam Design/Worst Case Condition

- Town Lake water surface elevation: 1150.
- Dam crest elevation: 1148.
- Height of dam crest above the foundation: 4.67 feet (fully inflated).
- Computed total discharge over 930' dam crest: 8600 cfs
- Estimated unit discharge over the dam crest: 9.3 cfs/ft.
- Note: this condition corresponds to flow spilling over the dam to the east or upstream into the riparian habitat area. This condition can only correspond to a major flow event in Indian Bend Wash.

The computed apron and stilling basin lengths are summarized in Table 2. Corresponding detailed computations are provided in Appendix B.

Table 2 Overflow Discharges and Stilling Basin Lengths							
Location	Dam Inflation	Lake Level, ft.	Crest Elev., ft.	Flow Depth Over Dam, ft.	Dam Height, ft.	Discharge, cfs	Length, ft.
Downstream Dam Stilling Basin	Partially Deflated	1150	1144	6	12	45,800	35 ⁽¹⁾
Upstream Dam Aprons	Fully Inflated	1150	1148	2	4.67	8,600	36 ⁽²⁾

Notes: (1) Recommended length for Modified USBR Type II stilling basin at the downstream dam.
 (2) Recommended length for concrete aprons at the upstream dam.

Dam Operations

Basic Dam Operation Plan

The dam operation plan is to maintain a lake level of 1148 and prevent the lake level from exceeding an elevation 1150 during most storm flows. The crests of the dams are at an elevation of 1148 feet. When stormwater flows into Town Lake, the downstream dam segments will deflate incrementally to maintain a lake level of approximately 1150 feet. During major flood events, the downstream dam segments will deflate incrementally until completely deflated or as required to maintain a lake level of approximately 1150 feet. If the upstream water surface elevation exceeds 1152 or the lake level exceeds an elevation of approximately 1150 feet, the upstream dam will automatically deflate over a period of approximately 1 hour.

Figure 4 illustrates the response of the water surface elevation at each of the dams as a function of stormwater inflow rates. Figure 4 also illustrates the following:

Downstream Dam. In the first stage, the dam is fully inflated and the lake level increases from 1148 to elevation 1150 in response to stormwater inflow rates ranging from 0 to 5790 cfs, respectively. In the second stage, the dam incrementally deflates to maintain a maximum water surface elevation of 1150, as the stormwater inflow rate increases above 5,790 cfs. In the third stage, the dam is completely deflated and the water surface elevation will eventually rise above elevation 1150, as the stormwater inflow rate increases. A water surface elevation of elevation 1150 is exceeded when the discharge is greater than approximately 192,000 cfs.

Upstream Dam. In the first stage, the dam is fully inflated and the upstream water surface elevation increases from 1148 to elevation 1152 in response to stormwater in the Salt River. In the second stage, the dam completely deflates over a 1-hour period. In the third stage, the dam is completely deflated and the water surface elevation will eventually rise above elevation 1150 as the stormwater inflow rate increases.

Salt River Flow Events

The normal operating static water level for the lake will be approximately 1148. When there is flow in the Salt River that exceeds the infiltration rate of the river, water will initially pond behind the upstream dam before rising to the crest of the dam (el. 1148.0) and spilling into Town Lake. The water level upstream of the upstream dam will be allowed to rise to an elevation of approximately 1152 before the upstream dam is deflated. A minimum 1 feet of freeboard will be provided for shoreline treatments and lakeside developments. The normal operating range for the lake will be between elevations 1148 and 1150 during most flow conditions.

With an upstream water surface elevation of 1152, the spill capacity of the fully inflated upstream dam is approximately 29,200 cfs. The spill capacity of the fully inflated downstream dam (lake level 1150) is approximately 5,800 cfs. Therefore, both dams can remain fully inflated during flow rates in the Salt River up to approximately 5,800 cfs.

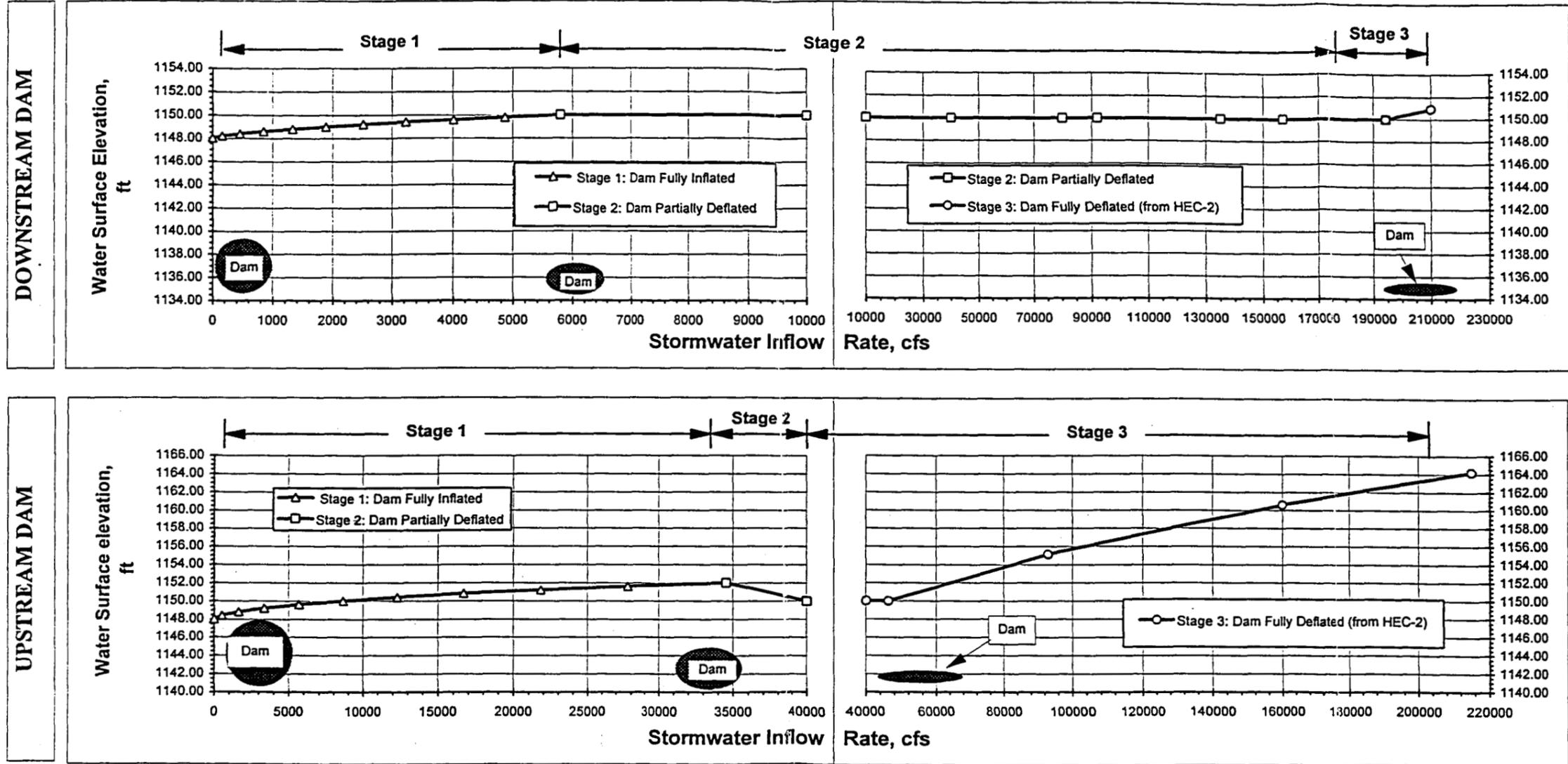


Figure 4
Dam Operation Plan

If the flow rate in the Salt River exceeds approximately 5,800 cfs, the segments of the downstream dam will deflate incrementally to maintain the lake level at approximately 1150. If the water surface elevation upstream of the upstream dam reaches an elevation of approximately 1152 (which corresponds to a flow in the Salt River of approximately 29,200 cfs), the upstream dam will completely deflate in approximately 1 hour, unless a faster deflation rate is appropriate.

When all of the downstream dam segments have been lowered to 1144 and the upstream dam is fully deflated, the downstream dam can pass approximately 45,800 cfs, while maintaining the lake level at an elevation of approximately 1150. A discharge of 45,800 cfs is greater than the 5-year flood event for the Salt River at Mill Avenue Bridge.

Near the end of a major flow event in the Salt River, the downstream dam segments will be re-inflated to full height, when the flow rate decreases to approximately 2,000 cfs at the upstream dam. As the lake level approaches an elevation of approximately 1143, the upstream dam segments will be re-inflated incrementally so as to maintain a crest elevation slightly above the rising lake level until fully inflated.

Indian Bend Wash Flow Events

Except during extreme flood events, discharges from Indian Bend Wash will not require active management of the dams. If the flow rate into the lake exceeds approximately 5,800 cfs, the downstream dam will be incrementally deflated to maintain the lake level at 1150. The operating scenario will be the same as that for Salt River flows, except that the upstream dam will not be lowered. Only the downstream dam will be controlled. To pass the 100-year discharge from Indian Bend Wash, the downstream dam segments would be lowered to a elevation of approximately 1144.5 feet.

Flows in Indian Bend Wash will enter the lake and flow both upstream and downstream. If the inflow rate exceeds the seepage and evaporation losses in the lake, the excess water will spill over both the upstream and the downstream dams. The spill over the upstream dam could potentially pond in the Salt River channel up to the grade control structure at McClintock Drive.

Flood Impacts and Operations

Flooding in the terrace areas between the CSA bank protection and the levees will be limited to wave run-up and minor overtopping, up to about the 20-year flood event for the Salt River. Rio Salado Parkway at Ash Avenue will be inundated by water overtopping the CSA bank at a discharge of approximately 135,000 cfs or about a 20-year flood for the Salt River. Currently, the Rio Salado Parkway will be inundated at about the 10-year flood event. Inundation of the Parkway would temporarily affect transportation, and traffic would need to be detoured to alternate routes. No significant structural damage has occurred as a result of inundation from past flood events.

River Hydraulics, Degradation, and Scour Analyses

HEC-2 Model for Dams Fully Deflated

Within the limits of the Town Lake facilities, the Salt River has been channelized with CSA. The hydraulic modeling, river mechanics, and sediment transport studies that were

submitted to FEMA to obtain LOMRS for the existing channelization improvements have been used as the basis for analyses prepared for the Town Lake facilities.

The primary criteria and assumptions used in evaluating the future Rio Salado facilities are as follows:

- The design discharge is the 100-year storm (per the FCDMC). Within the study reach, the 100-year discharge varies from 210,00 to 215,000 cfs (CRSS, Nov. 1993). Current information prepared by the U.S. Bureau of Reclamation (March 30, 1994) states that following completion of the improvements to Roosevelt Dam, the design discharges will likely be significantly less than 215,000 cfs. However, this evaluation is based on a previous, more conservative estimate.
- Three feet of freeboard is to be maintained at the design discharge per criteria established by the FCDMC.

The following changes were made to the existing conditions model to reflect the proposed design conditions:

- The Ash Avenue Bridge was removed from the model, since the bridge was recently demolished.
- The upstream dam is approximately 3,150 feet upstream of Rural Road. The dam's foundation will be at an elevation of 1143.33 and will be approximately 1½ feet above the current channel bed (Figure 3).
- The downstream dam is located at GCS No. 4 (approximately 2,200 feet west of Mill Avenue). The dam's foundation acts as a grade control structure. The invert of the structure is at an elevation of 1132, which is approximately 3 feet above the existing channel invert.
- As requested by FCDMC, the area upstream of the downstream dam foundation was assumed to be ineffective due to potential sediment deposition up to the invert elevation of the dam foundation (see Figure 5).
- Overbank development was assumed to be represented by the concept design prepared for this study. Upstream of the downstream dam, left and right encroachment stations and elevations were added to model the overbank development. Elevations were taken from the most current landscape architect concept plans. To include the effects of the development, the Manning's "n" for the landscaped portions of the terraces was assumed to be 0.045. Bike, pedestrian, and equestrian trails were modeled as 0.025.
- Discharges modeled were $Q_{100} = 215,000$ cfs., and maximum design $Q = 250,000$ cfs.

The computed water surface profile is provided in Appendix C and illustrated in Figure 5. The line titled "TOP OF LEVEE" shows the elevation of the lower of the left or right bank levees. The "3 FT. FREEBOARD" (based on FCDMC design criteria) line is 3 feet below the top of levee. "CWSEL" is the water surface line and "ELMIN" is the bottom of the channel

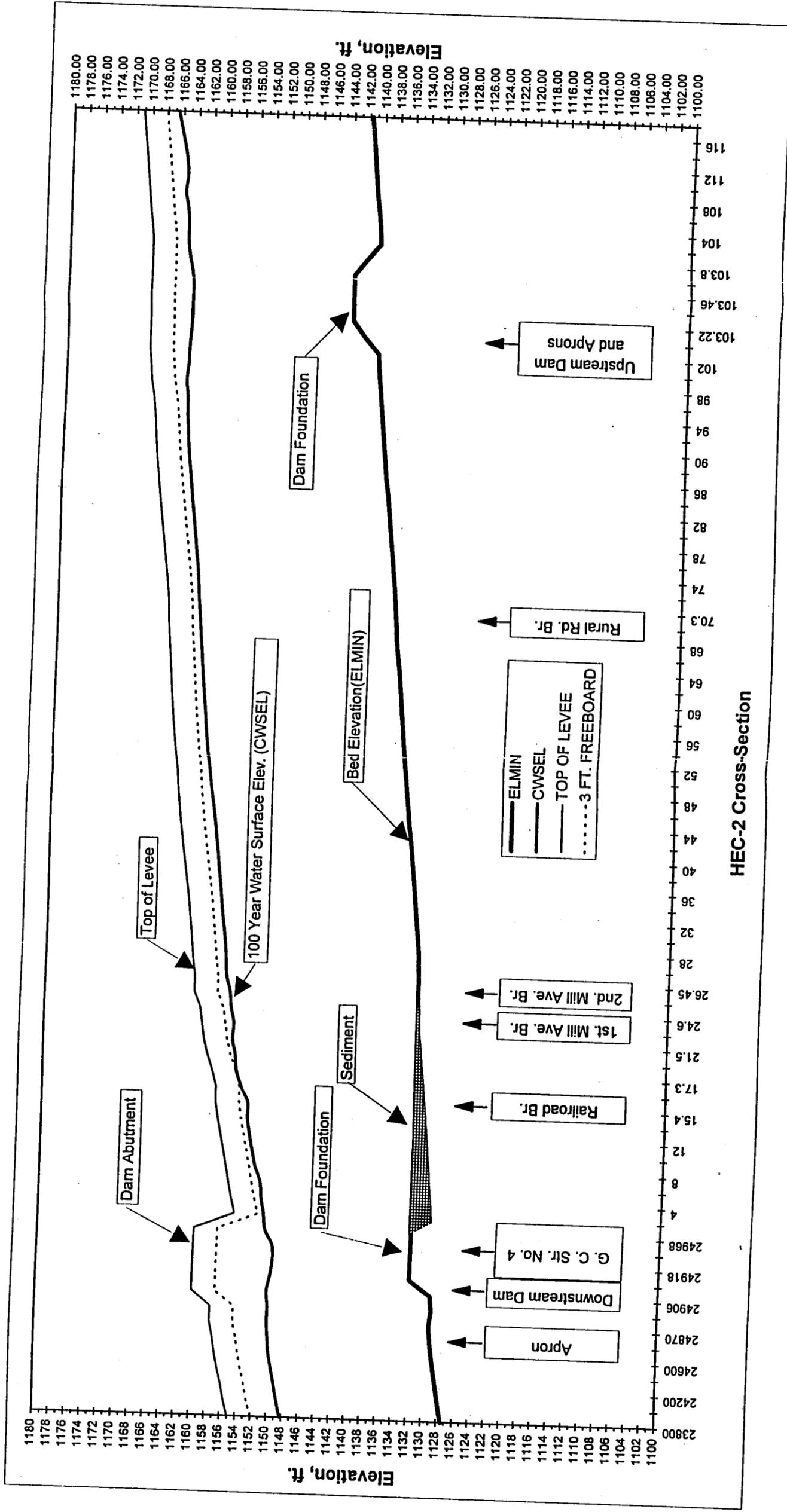


Figure 5
100-Year Water Surface Profile

bed. The resulting water surface complies with the freeboard limit. The minimum freeboard of 3.0 occurs just upstream of the Southern Pacific Railroad Bridge.

At the downstream dam, the reduction in cross-sectional area due to the piers causes the water surface elevation to drop by approximately ½ foot. At the upstream dam, the piers are significantly smaller, and have almost no effect on the computed water surface profile.

The HEC-2 model for existing conditions is provided in Appendix C. Comparison of the HEC-2 models for existing and design conditions indicates that:

- There is an overall slight decrease in the velocity, possibly due to the flattening of the channel grade caused by sediment deposition upstream of the downstream dam.
- The maximum local increase in velocity is approximately 2 ft/s, but this occurs within the hardened dam structure area itself and not in the alluvial river channel.
- The maximum local increase in the 100-year water surface, which occurs upstream of the downstream dam, is less than 1.0 feet due to backwater, but this increase diminishes upstream.

Therefore, the effects of the proposed dams and overbank development on the Salt River floodplain are minimal. The ability of the existing channelization to convey the design discharge and control flooding will not be diminished. The results of the analyses documented in this memorandum indicate that the proposed Town Lake project does not adversely affect the Salt River floodplain.

Sedimentation and Channel Geomorphologic Characteristics

In November 1993, CRSS produced the *Salt River Channelization Floodplain Delineation Study, Southern Pacific Railroad Salt River Bridge to McClintock Drive Bridge*. In that study, CRSS offered the following conclusion:

The possibility of significant sediment deposition in the Tempe reach is low because of the large volume of sand and gravel production in the upper reaches of the Salt River at this time. Also there is a substantial storage of sediments in the series of upper basin dams on the Salt and Verde Rivers. Given the present condition of sediment supply on the Salt River, the channel is actually sediment-deficient, and the river reach has generally degraded during recent floods. Reduction of the river grade in this reach will therefore arrest the scouring process and provide a more stable river reach...The long-term stability of the Salt River channel occurs due to the eventual armoring of the channel bed by the coarse fraction of the sediment gradation.

The Salt River in Tempe has undergone significant and rapid change during the past 30 years. The bed elevation has dropped 10 to 15 feet. Recent channelization has narrowed the floodplain and increased conveyance. Because of this degradation, the bed has become armored with cobble-sized sediment. However, recent grading of the river downstream of the Mill Avenue bridges and in the vicinity of the upstream dam has disturbed the armoring. Construction of numerous bridges and grade control structures has also altered the natural regime of the river. Natural habitat and vegetation has been largely eliminated in the riverbed.

Sand and gravel mining has drastically altered sediment supply in the project reach and is responsible for much of the channel change. An estimated 20 million tons of sediment have been removed from the riverbed by in-channel sand and gravel mining. As a result, the river flows at a sediment deficit condition. The Rio Salado channelization will decrease downstream sediment supply by an additional 1 million tons over the life of the project. Several grade control structures are included in the channelization plans to mitigate the effects of the sediment deficit on adjacent reaches.

The upstream dam will act as a sediment trap for the bed material load during frequent flows. During flows exceeding the 5-year event for the Salt River, the dams will be deflated and the accumulated channel sediments will be removed as part of the naturally occurring channel scour. In the short term, as a result of in-channel grading activities that have disturbed or removed part of the armor layer, sediment deposition rates will be relatively high. However, the sediment transport capacities of the low flows (i.e., less than the 5-year event) are small due to the relatively low depths and velocities which characterize these events.

The actual rate of sediment deposition depends on the flow rates, duration types of in-channel activities, and other factors. Therefore, a definitive volume estimate is not possible. Once an equilibrium armored condition is re-established in the upstream "supply" reach, the volume of sediment deposited will decrease. The sediment deposited at the east dam and at the IBW drop structure will need to be monitored. Removal of accumulated material may be necessary as a regular maintenance activity.

Finer suspended or wash load sediments will pass over the upstream dam. A portion of this material will remain suspended and flow over the downstream dam. The trap efficiency of a reservoir, and the percentage of the suspended sediment load captured, are typically calculated as functions of the storage volume of the reservoir compared to the volume of water passing through it. Based on these relationships, the trap efficiency of the Town Lake is estimated to be very small, indicating that most of the suspended sediment will pass through the lake. As with the upstream dam, monitoring of long-term sediment deposition is recommended.

The Town Lake Dams are designed to completely deflate during extreme flow events and thereby allow sediment loads to move through the dam system. Hence, it is anticipated that the Rio Salado project will not have any significant long-term effect on the downstream sediment balance. Any potential deficit caused by the dam would be small compared to the sediment deficit created by in-stream mining and channelization. Furthermore, the dam structures will function as grade control structures and thereby should minimize long-term bed degradation, in conjunction with the existing grade control structures.

Channel Degradation Limited by Bed Armoring

Due to the relatively coarse bed material gradation, bed armoring and the existing grade control structures will control the long-term channel degradation depth or general scour depth within the project area. Hence, the potential long-term channel degradation depth has been assumed to be a function of bed armoring processes and the formation of low-flow channels. Since the bed material within the project area is relatively coarse (i.e., $D_{50} = 95\text{mm} \pm 4'' \pm$, see Figure 6), it is anticipated that the formation of bedforms will be insignificant and/or limited to isolated locations.

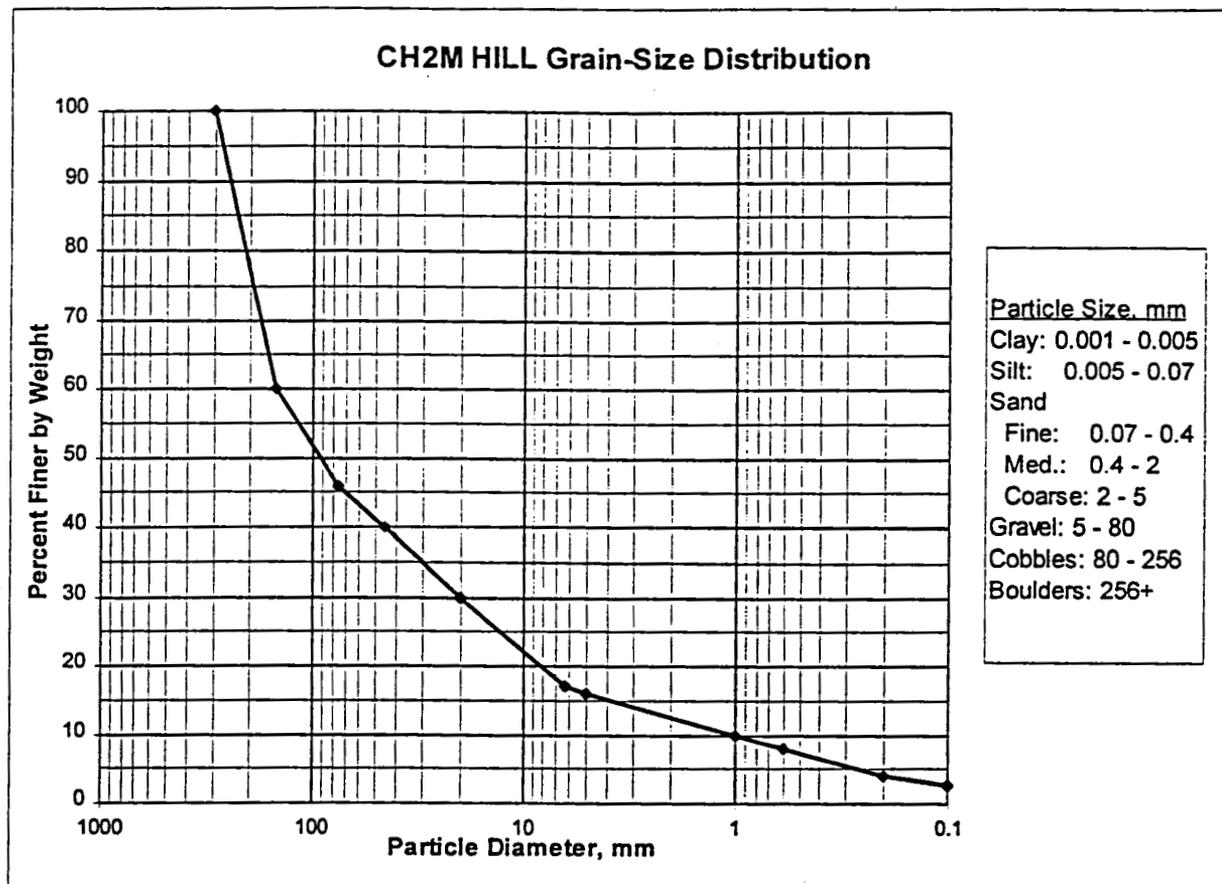


Figure 6: Bed Gradation Data

The methodologies and equations used to compute the general channel degradation depths, as limited by bed armoring, are documented in the following reports and manuals:

- U.S. Bureau of Reclamation, *Computing Degradation and Local Scour: Technical Guideline for Bureau of Reclamation*, January 1984.
- CRSS Civil Engineers, Inc., *Technical Data Notebook: Salt River Channelization: Floodplain Delineation Study: SPRR Salt River Bridge to McClintock Drive Bridge*, prepared for the City of Tempe, November 1993.
- Arizona Department of Water Resources, *Design Manual for Engineering Analysis of Fluvial Systems*, prepared for ADWR by Simons, Li and Associates, Project No. AZ-DWR-05, March 1985.

In general, the degradation depth (as limited by bed armoring) was computed by:

- Calculating the diameter of the smallest particle that cannot be transported during the design flow event.

- Computing the vertical depth of the bed material that must be removed to accumulate one or more layers of the particles that are too large to be transported during the design event, based on the bed material gradation (Figure 6).

This approach is consistent with generally accepted practice for gravel or cobble bed streams and represents a limiting scour depth. The current channel stabilization design for the Salt River was also based on this approach (CRSS, 1993).

As documented in Appendix D, the degradation depth as limited by bed armoring was computed based on:

- Hydraulic parameters from the HEC-2 model for design conditions (Appendix C).
- The composite gradation data for the bed material based on sieve analyses for samples collected from approximately 30 test pits throughout the project reach of the Salt River (Figure 6).
- A safety factor of 1.5 (SF=1.5).

The calculations were performed for cross-sections extending from just downstream of the downstream dam to just upstream of the upstream dam. Figure 7 shows the calculated armor depths for the 100-year discharge and the maximum design discharge. As indicated in Figure 7 and Table 3, the maximum degradation depths in the vicinity of the downstream and upstream dams are 1.5 and 0.3 feet, respectively.

In channels with large "width to depth" ratios, low-flow discharges may initially be conveyed as sheet flow. However, the channel may quickly develop low-flow channels to more efficiently convey these discharges. For these low-flow channels, an incisement depth of 2 feet has been assumed (ADWR, 1985). Table 3 summarizes the total computed general channel degradation depth in the vicinity Town Lake dams.

Table 3 Depth of General Channel Degradation, Design Discharge			
	Degradation Depth, ft.	Low-flow Channel Depth, ft.	Total Degradation, ft.
100-Year Discharge			
Downstream	1.5	2	3.5
Upstream	0.3	2	2.3 say 2.5
Maximum Design Discharge			
Downstream	1.7	2	3.7 say 4.0
Upstream	0.4	2	2.4 say 2.5

Local Scour Downstream of Dam Aprons or Stilling Basin

Due to potential long-term channel degradation, a drop in the bed elevation may form downstream of the energy dissipation apron or stilling basin. Scour holes can form as a jet

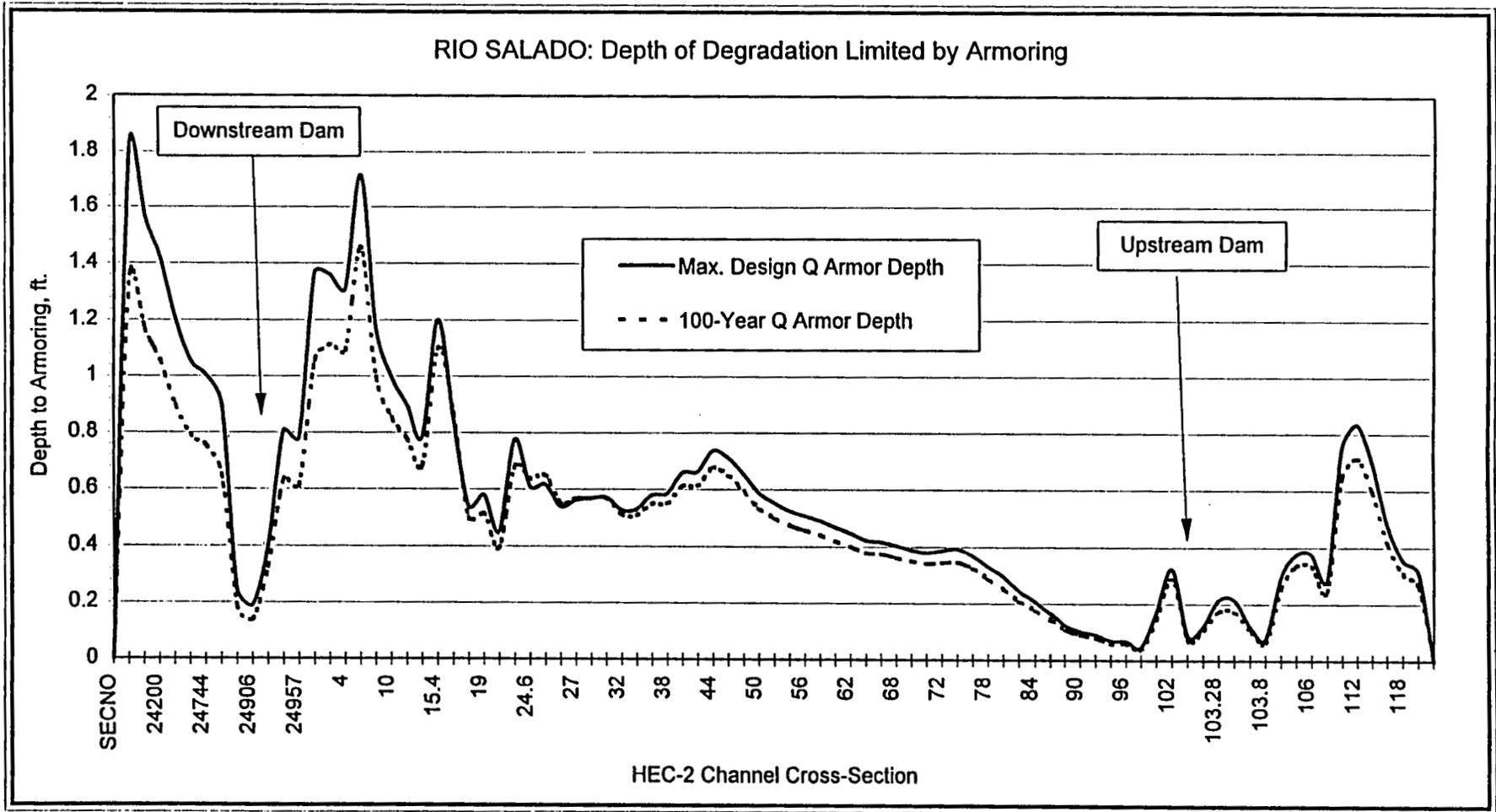


Figure 7
Depth of Degradation Limited by Armoring

of water flows over the brink of the apron or stilling basin, and impinges on the channel bed, as illustrated in Figure 8. The methodology documented by N. E. Bormann and P. Y. Julien in the journal article titled "Scour Downstream of Grade Control Structures" has been used to evaluate local scour downstream of the dam structures (Bormann and Julien, 1991). Some of the input data required for these analyses were obtained from the Technical Data Notebook (TDN) for the Salt River Channelization Floodplain Delineation Study, SPRR Bridge to McClintock Drive Bridge, Nov. 1993.

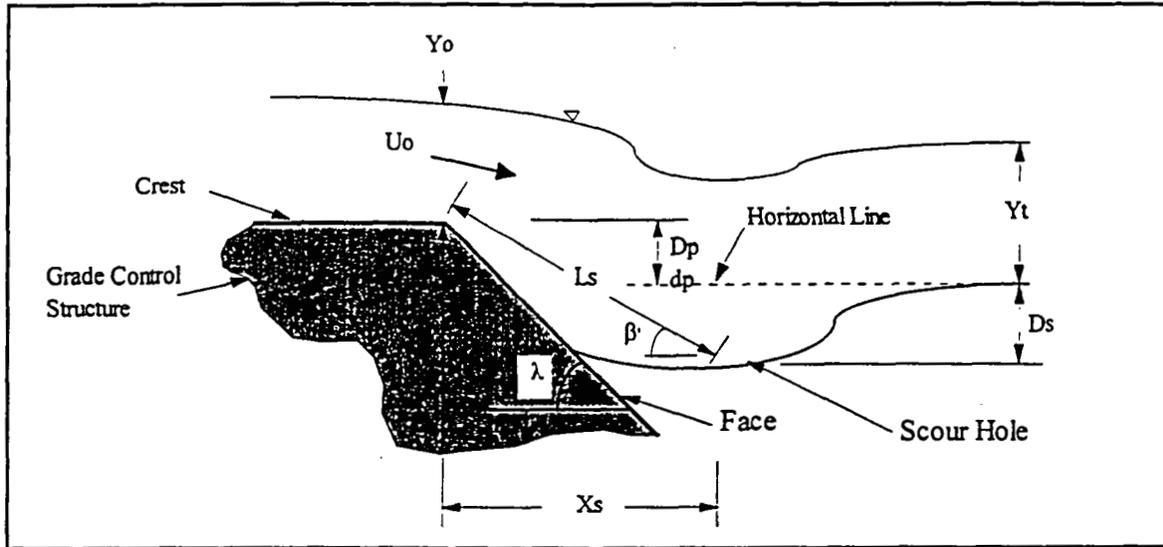


Figure 8: Schematic Diagram of Local Scour Downstream of Aprons and Stilling Basins

The computed local scour depths are summarized in Table 4 and documented in detail in Appendix E. The computed local scour depths are based on the following information:

- The design discharge is the 100-year event (i.e., 215,000 cfs).
- Downstream of the downstream dam's stilling basin, a general bed degradation of 3.5 feet was assumed, based on the computed degradation depth limited by bed armoring and the low flow incisement depth (Table 3).
- In the vicinity of the upstream dam's aprons, a general bed degradation of 2.5 feet was assumed, based on the computed degradation depth limited by bed armoring and the low flow incisement depth (Table 3).
- The hydraulic parameters used in the local scour computations were based on the HEC-2 output provided in Appendix E.
- The specific gravity of the bed material was assumed to be 2.65.
- The submerged angle of repose of 25° for the bed material was obtained from calculations found in the 1993 TDN.
- The bed material gradation shown in Figure 6.
- Drop heights (D_p) were set equal to the degradation depths as limited by bed armoring, as summarized in Table 3.

- The cutoff walls at the end of the basins will be vertical.
- A safety factor of 1.3 was applied.

Table 4 Local Scour Below Energy Dissipater Aprons		
	Scour Depth, Ds, ft.	Design Scour Depth, Including a Safety factor of 1.3 ft.
100-Year Discharge		
Downstream Dam	9.1	12
Upstream Dam	4.6	6
Maximum Design Discharge		
Downstream Dam	11.1	14
Upstream Dam	5.8	8

Total Scour Depths

The channel will be subject to both local scour and long-term degradation at the downstream end of the upstream dam's apron and the downstream dam's stilling basin. The total scour depth at each location has been estimated as the sum of the computed local scour and the long-term degradation depths, as indicated in Table 5.

Table 5 Total Scour Below Dam Aprons/Stilling Basin			
	Long-term Degradation, ft.	Local Scour, ft.	Total Scour, ft.
100-Year Discharge			
Downstream Dam	3.5	12	16
Upstream Dam	2.5	6	9
Maximum Design Discharge			
Downstream Dam	3.5	14	18
Upstream Dam	2.5	8	11

Dam Failure Analyses

Study by Carter & Burgess, Inc.

According to rubber dam manufacturers Sumigate and Bridgestone, no rubber dam has ever had a rapid "breach-type" failure in several hundred installations. However, the potential effects of a rapid failure have been evaluated.

The worst-case dam failure scenario is a "sunny day" instant failure. Carter & Burgess, Inc., (August 19, 1994; see attachment) performed an analysis of a sudden dam segment failure, using a diffusion wave routing model. The analysis indicates that a dam segment failure would result in a sudden water release that would create severe in-channel conditions for approximately 2½ hours. The release of water from Town Lake would essentially end within 4 hours. The flood wave would travel down the Salt River channel at a maximum rate of approximately 19 fps, and an average rate of approximately 11 fps. As the result of in-channel storage, the wave would gradually attenuate to the level generally considered to be fordable, that is, when the depth (ft) times the velocity (fps) is less than 10.

If a rapid dam segment release occurs, channel-bed users would be at risk for many miles downstream of the project. The rate of rise at the wave front would be rapid, with flow depths increasing from near zero depth to a 5- to 6-foot depth in approximately 2 minutes. This rapid rise rate would give channel-bed users, with no previous warning, very little time to exit the channel safely. Such a release would not be a hazard to users located on in-channel terraces that are more than 8 feet above the channel bed elevation, or to users outside of the channel area. From the Carter & Burgess analysis, it can be concluded that flood warning systems may not reduce significant hazards. While the probability of a dam segment failure is extremely low, there could be high risk to anyone within the channel at the time.

Based on this analysis, aggressive and active measures must be taken to prevent danger to life and property. Minimum recommendations may include either:

1. Do not allow recreational uses in the channel downstream of the dam, or
2. Allow very limited channel uses with appropriate signage.

Conclusions

This memorandum documents the hydraulic analyses, computations, and criteria used as a basis for design of the Rio Salado Town Lake dams. It includes documentation for:

- Configurations of the downstream and upstream Town Lake dams.
- Rating curves for flow over the rubber dam crests.
- Apron and stilling basin analyses.
- Basic dam operation plan.
- HEC-2 model for design and existing conditions.
- Computed channel degradation depths as limited by bed armoring.
- Computed local scour depths downstream of the dam aprons or stilling basin.
- Dam failure analysis (attachment).

The results of these analyses indicate that the proposed Town Lake project does not adversely affect the Salt River floodplain and the proposed dam structures are protected from erosion.

Works Cited

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**Appendix A: Rating Curves and Manufacturer's
Information for Rubber Dams**

RIO SALADO: Rubber Dam Rating Curve

DOWNSTREAM DAM

Note: Equation in English units
Equations from Bridgestone Rubber Dam Technical Information

$$Q = 1.81 \cdot C \cdot B \cdot h^{3/2}$$

where: Q = discharge, cfs

$$C = 1.77 \cdot h / H + 1.05$$

h = overfall height (depth of flow over dam), ft.

H = dam height, ft.

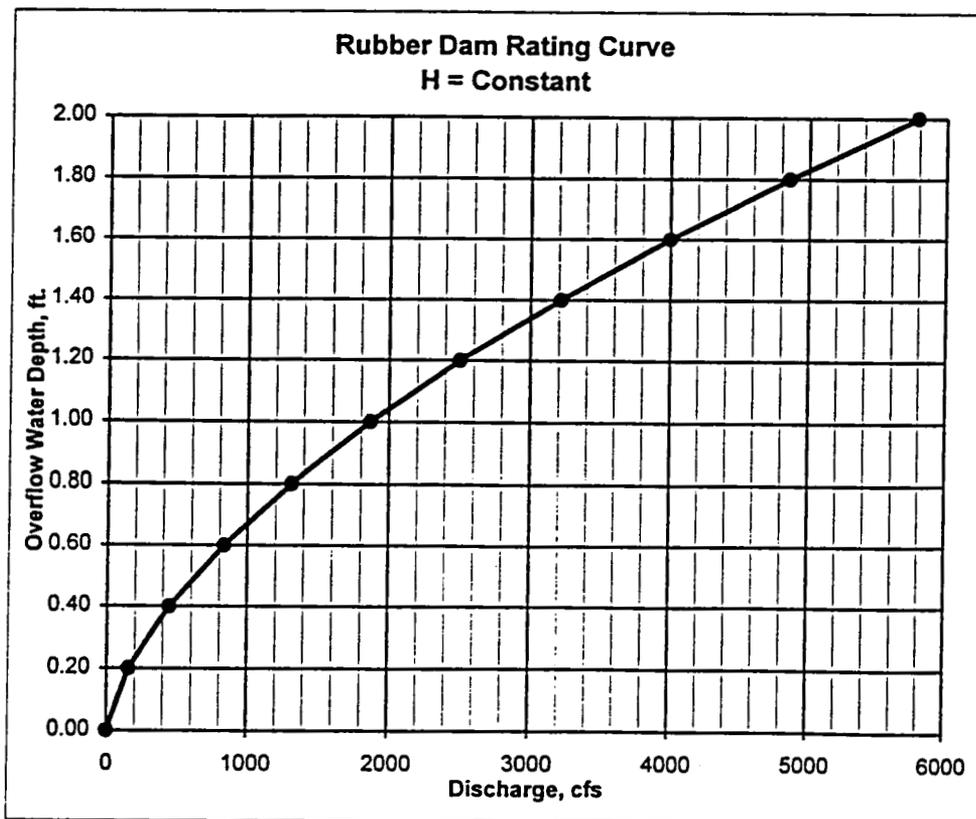
B = length of dam: d-s dam = 890 ft.)

Input:	
Length of rubber dam, B, ft.=	890
Dam Inflated, Depth of flow over dam increasing	
Max. height of flow over dam, h, ft.=	2
Min. height of flow over dam, h, ft.=	0
Height of rubber dam, H, ft.=	16
Dam Deflating	
Height of flow over deflating dam, h, ft.=	2
Max. height of rubber dam, H, ft.=	16
Min. height of rubber dam, H, ft.=	10
Dam Deflating, W.S.El. is constant	
Beginning depth of flow over dam, h, ft.=	2
Max. height of rubber dam, H, ft.=	16
Min. height of rubber dam, H, ft.=	10
(Max. h + H = 18 ft.)	

Dam Inflated, Depth of flow over dam increasing**Calculations:**

H is constant at 16 ft.

h, ft.	C	Q, cfs
0.00	1.05	0
0.20	1.07	154
0.40	1.09	446
0.60	1.12	836
0.80	1.14	1312
1.00	1.16	1870
1.20	1.18	2505
1.40	1.20	3215
1.60	1.23	4000
1.80	1.25	4859
2.00	1.27	5792

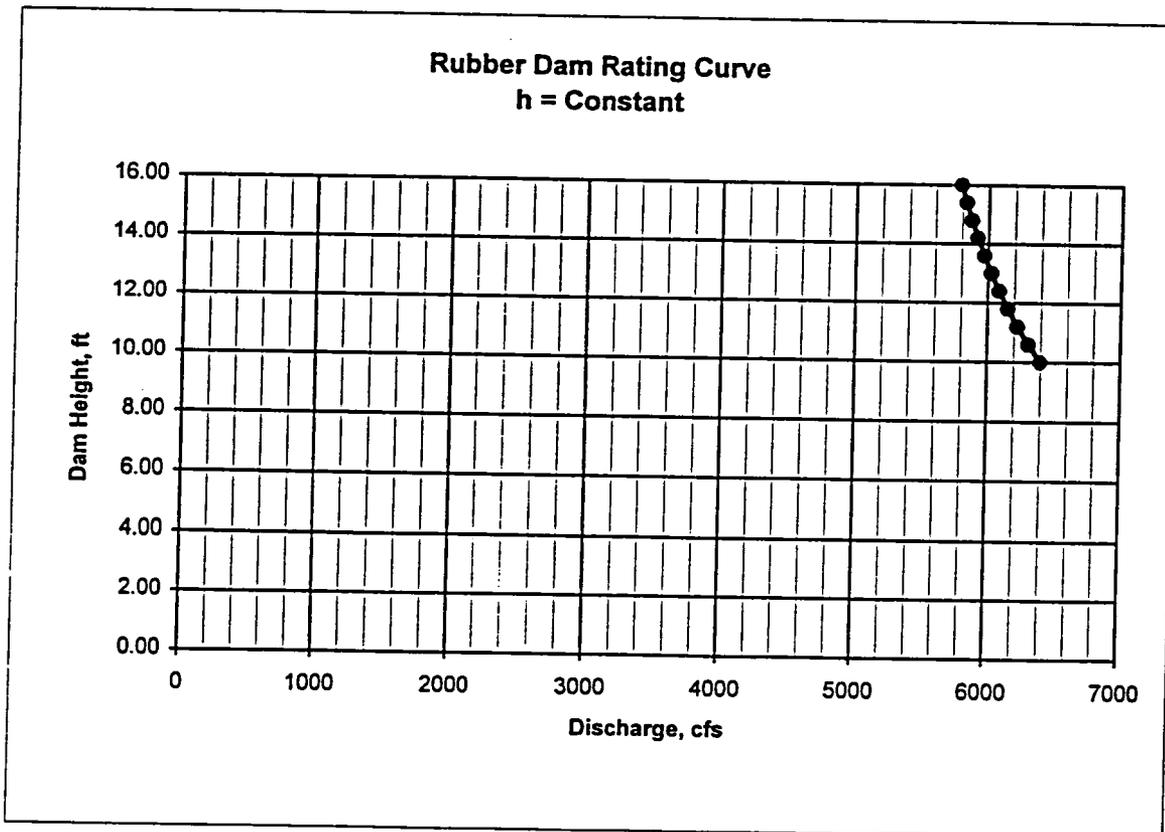


Dam Deflating

Calculations:

h is constant at 2 ft.

H, ft.	C	Q, cfs
16.00	1.27	5792
15.40	1.28	5831
14.80	1.29	5874
14.20	1.30	5920
13.60	1.31	5970
13.00	1.32	6025
12.40	1.34	6085
11.80	1.35	6151
11.20	1.37	6224
10.60	1.38	6306
10.00	1.40	6397

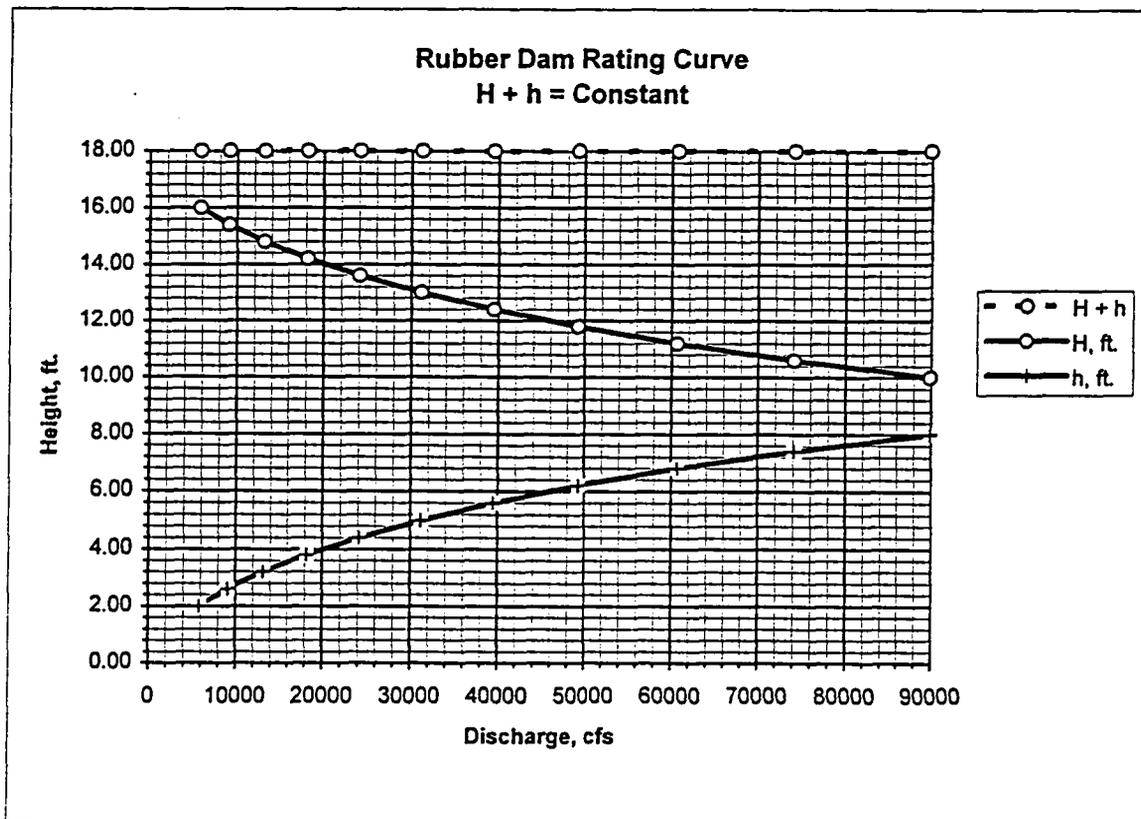


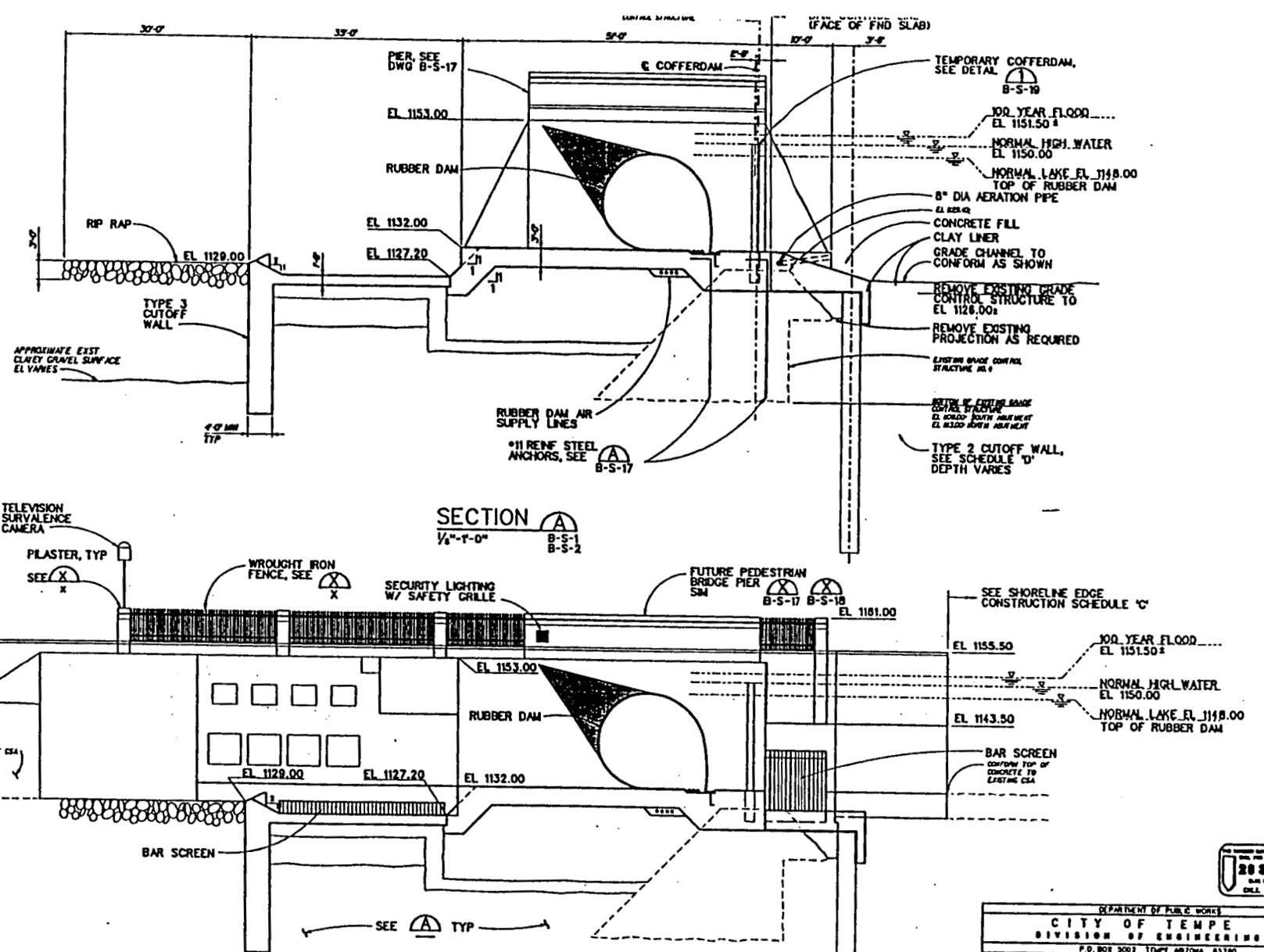
Dam Deflating, W.S.El. is constant

Calculations:

H + h is constant at 18 ft.

H, ft.	h, ft.	H + h	C	Q, cfs	Approx. Vel., ft/s
16.00	2.00	18.00	1.27	5792	3
15.40	2.60	18.00	1.35	9109	4
14.80	3.20	18.00	1.43	13211	5
14.20	3.80	18.00	1.52	18182	5
13.60	4.40	18.00	1.62	24125	6
13.00	5.00	18.00	1.73	31172	7
12.40	5.60	18.00	1.85	39479	8
11.80	6.20	18.00	1.98	49240	9
11.20	6.80	18.00	2.12	60690	10
10.60	7.40	18.00	2.29	74119	11
10.00	8.00	18.00	2.47	89887	13



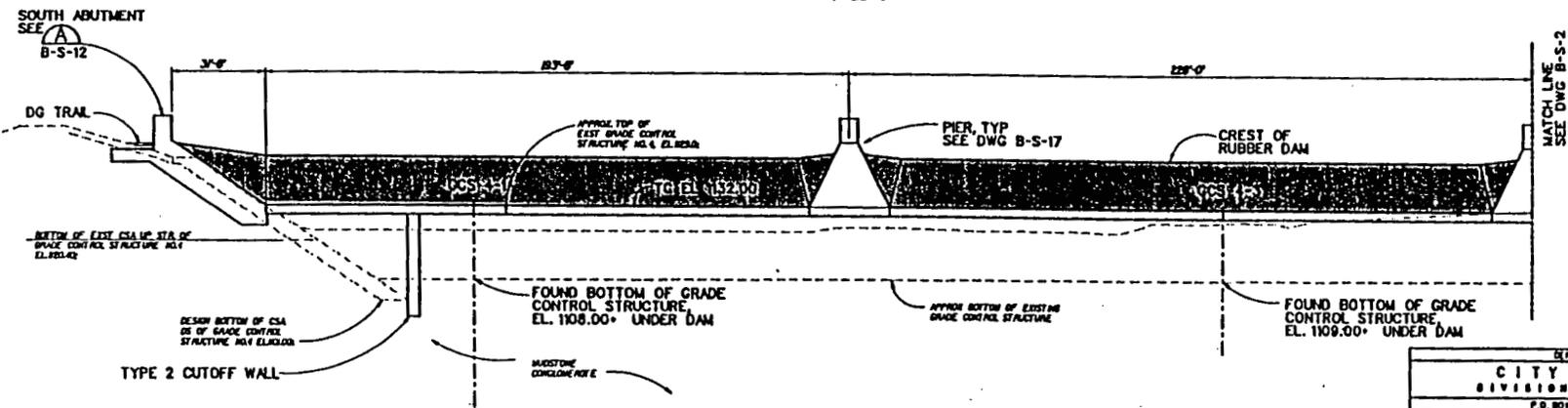
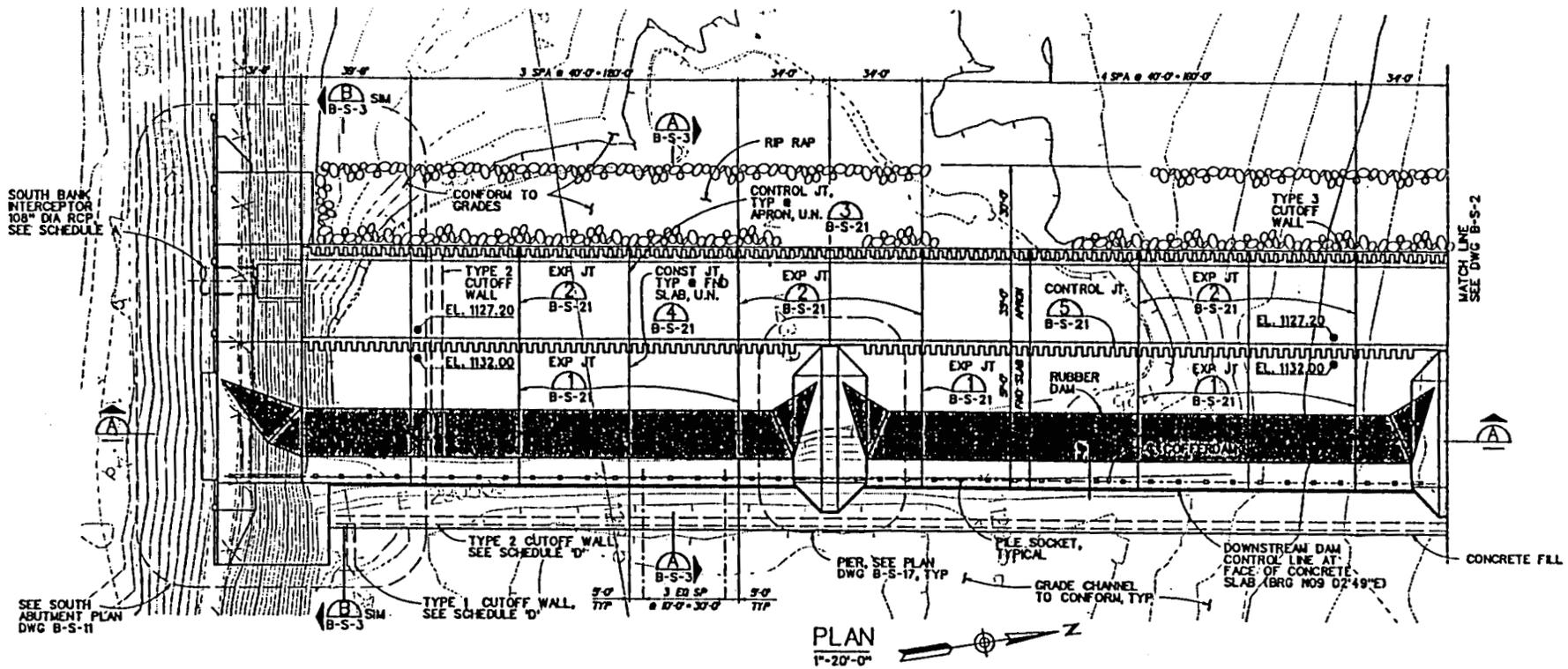


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1/4" = 1'-0" B-S-1 B-S-2

SECTION B
1/4" = 1'-0" B-S-1 B-S-2

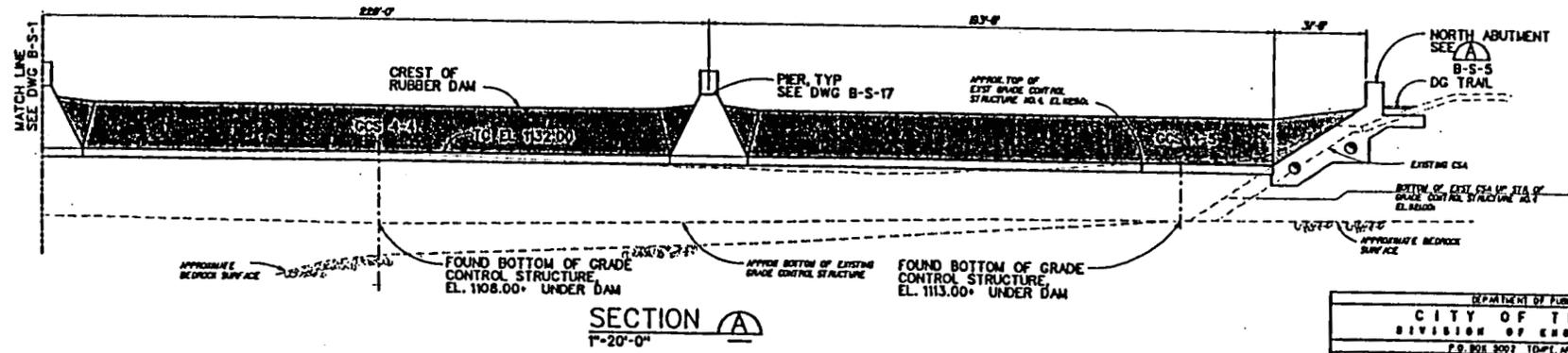
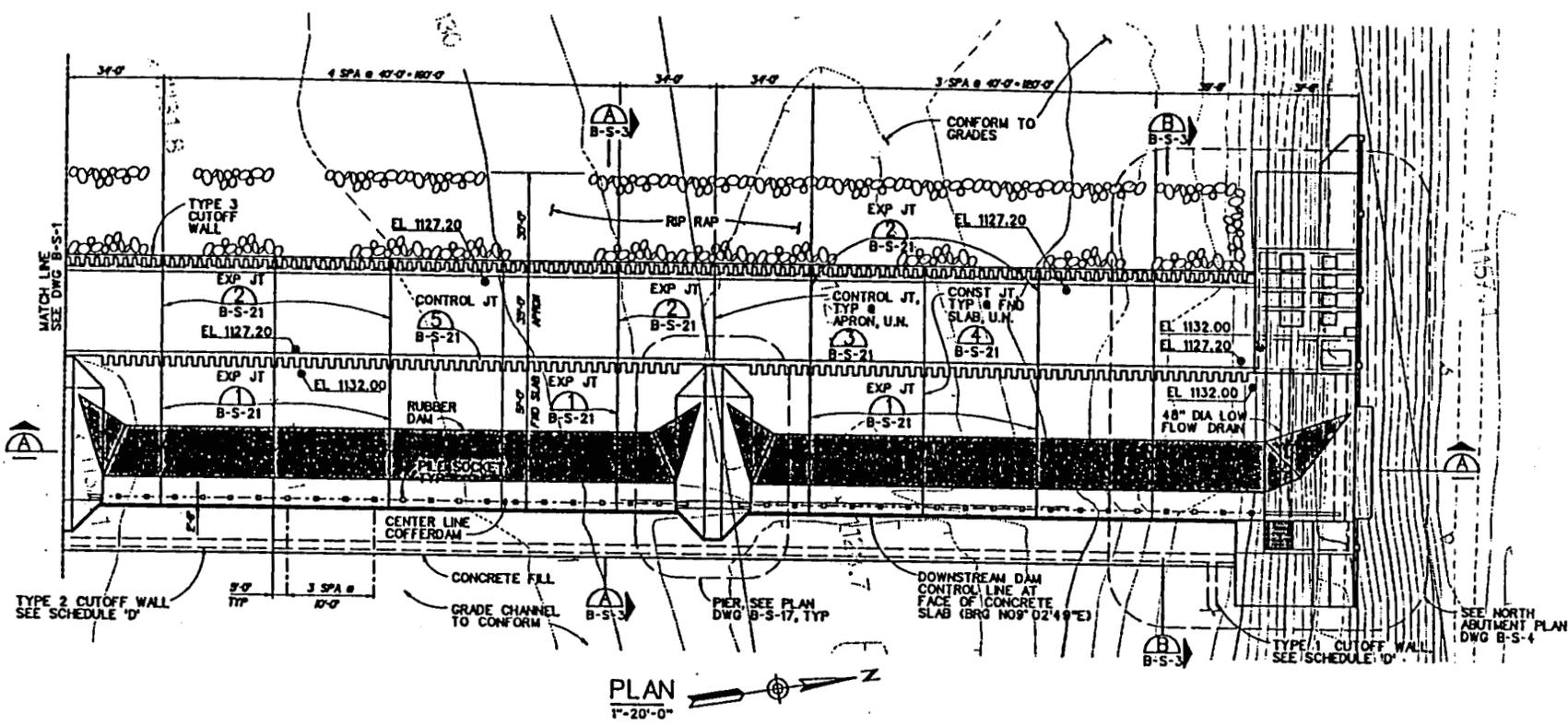
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DATE APRIL 1998

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CITY OF TEMPE			
DIVISION OF ENGINEERING			
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REVISION 11 18 98	STRUCTURAL		PROJECT NO.
DESIGN 02			8165238
CHECKED 2			SHEET X OF X
SCALE 1/4" = 1'-0"			DWG. NO. B-S-3



203-1100
DILL COLLECT

DEPARTMENT OF PUBLIC WORKS		
CITY OF TEMPE		
DIVISION OF ENGINEERING		
P.O. BOX 2027 TOLSON, ARIZONA 85790		
DATE: APR. 1996	DESCRIPTION: SO-SCHEDULE B STRUCTURAL	PROJECT NO.: 914523B
DRAWN BY: J.C.M.C.	CHECKED BY:	SHEET X OF X
SCALE: 1"=20'-0"	DOWNSTREAM DAM SOUTH PARTIAL PLAN AND SECTION	DATE: APR. 1996



288-1100
 200 200 200
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DIVISION OF ENGINEERING			
P.O. BOX 2002 TEMPE, ARIZONA 85280			
DESIGNED BY	DESCRIPTION	SCHEDULE B	DATE APRIL 1990
DESIGNED BY	DESCRIPTION	STRUCTURAL	PROJECT NO.
DESIGNED BY	DESCRIPTION		9465238
SCALE: 1" = 20'-0"	DOWNSTREAM DAM		SHEET X OF X
	NORTH PARTIAL PLAN		DWG NO. B-S-2
	AND SECTION		

RIO SALADO: Rubber Dam Rating Curve

UPSTREAM DAM

Note: Equation in English units
Equations from Bridgestone Rubber Dam Technical Information

$$Q = 1.81 * C * B * h^{3/2}$$

where: Q = discharge, cfs

$$C = 1.77 * h / H + 1.05$$

h = overfall height (depth of flow over dam), ft.

H = dam height, ft.

B = length of dam: u-s dam = 930 ft.)

Input:	
Length of rubber dam, B, ft.=	930
Dam Inflated, Depth of flow over dam increasing	
Max. height of flow over dam, h, ft.=	4
Min. height of flow over dam, h, ft.=	0
Height of rubber dam, H, ft.=	4.67
Dam Deflating	
Height of flow over deflating dam, h, ft.=	4
Max. height of rubber dam, H, ft.=	4.67
Min. height of rubber dam, H, ft.=	4
Dam Deflating, W.S.El. is constant	
Beginning depth of flow over dam, h, ft.=	4
Max. height of rubber dam, H, ft.=	4.67
Min. height of rubber dam, H, ft.=	4
(Max. h + H = 8.67 ft.)	

Submerged Weir Equation (from Brater and King, 1976)

- equation is for sharp-crested weirs

$$Q = Q_1 * (1 - (H_2/H_1)^{1.5})^{0.385}$$

where:

Q₁ = Free (unsubmerged) discharged

H₂ = head d-s of weir (above weir crest) = 1150 - 1148 + (4.67 -H)

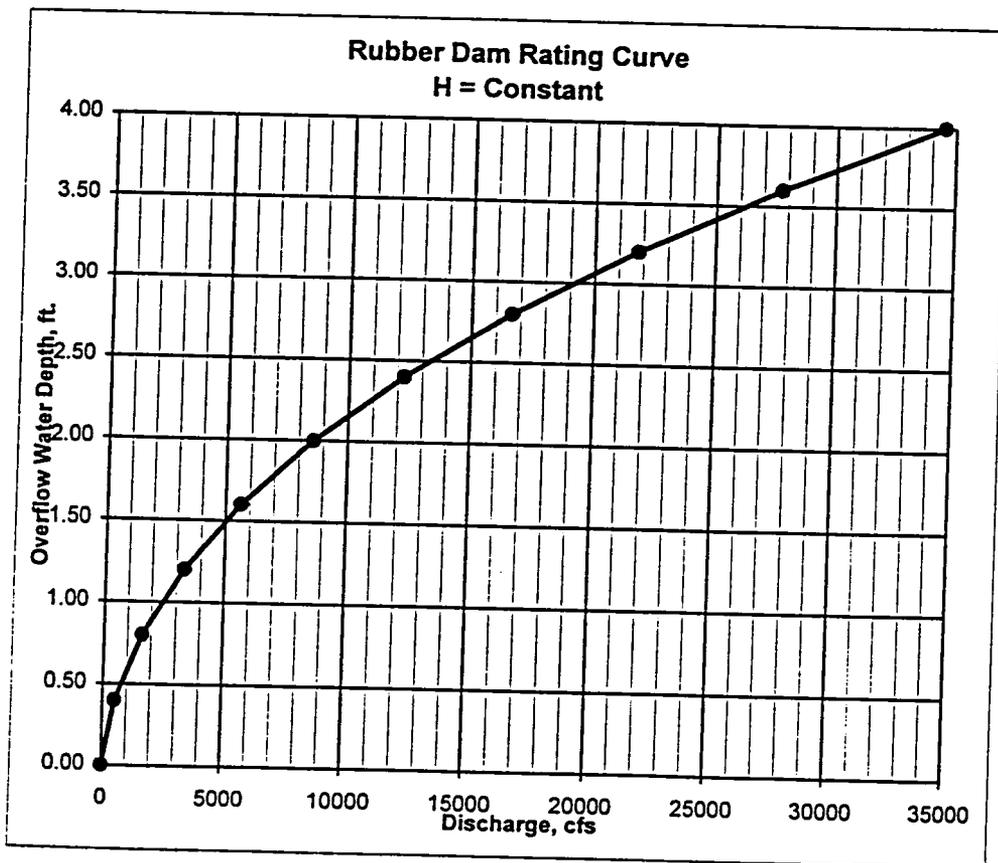
H₁ = head u-s of weir (above weir crest) = h

Dam Inflated, Depth of flow over dam increasing

Calculations:

H is constant at 4.67 ft.

h, ft.	C	Q ₁ , cfs	H ₂	H ₁	Q	Q/Q ₁
0.00	1.05	0	2	0.00	0	N.A.
0.40	1.20	512	2	0.40	0	0.00
0.80	1.35	1630	2	0.80	0	0.00
1.20	1.50	3330	2	1.20	0	0.00
1.60	1.66	5643	2	1.60	0	0.00
2.00	1.81	8608	2	2.00	0	0.00
2.40	1.96	12265	2	2.40	7072	0.58
2.80	2.11	16651	2	2.80	11660	0.70
3.20	2.26	21804	2	3.20	16773	0.77
3.60	2.41	27761	2	3.60	22597	0.81
4.00	2.57	34556	2	4.00	29213	0.85

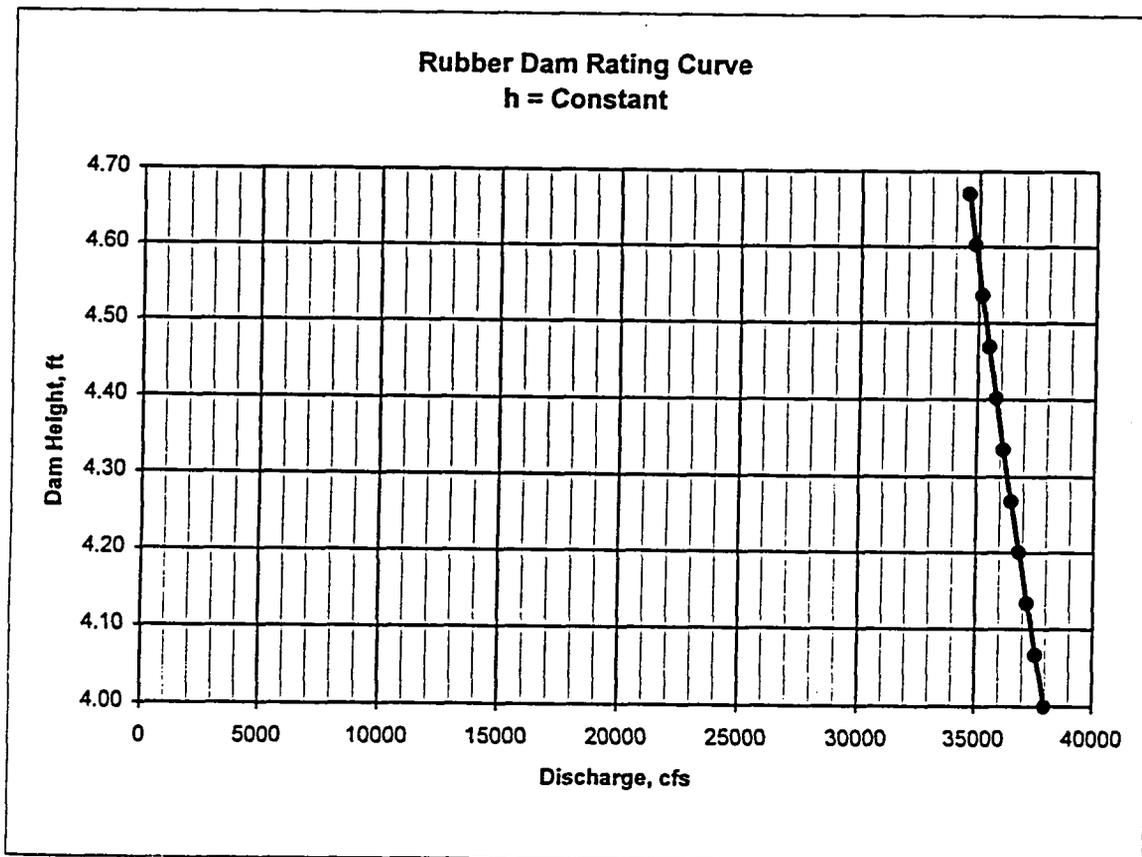


Dam Deflating

Calculations:

h is constant at 4 ft.

H, ft.	C	Q ₁ , cfs	H ₂	H ₁	Q	Q/Q ₁
4.67	2.57	34556	2.00	4.00	29213	0.85
4.60	2.59	34853	2.07	4.00	29147	0.84
4.54	2.61	35159	2.13	4.00	29072	0.83
4.47	2.63	35474	2.20	4.00	28987	0.82
4.40	2.66	35799	2.27	4.00	28892	0.81
4.34	2.68	36133	2.34	4.00	28784	0.80
4.27	2.71	36479	2.40	4.00	28665	0.79
4.20	2.74	36835	2.47	4.00	28531	0.77
4.13	2.76	37203	2.54	4.00	28383	0.76
4.07	2.79	37583	2.60	4.00	28218	0.75
4.00	2.82	37975	2.67	4.00	28035	0.74

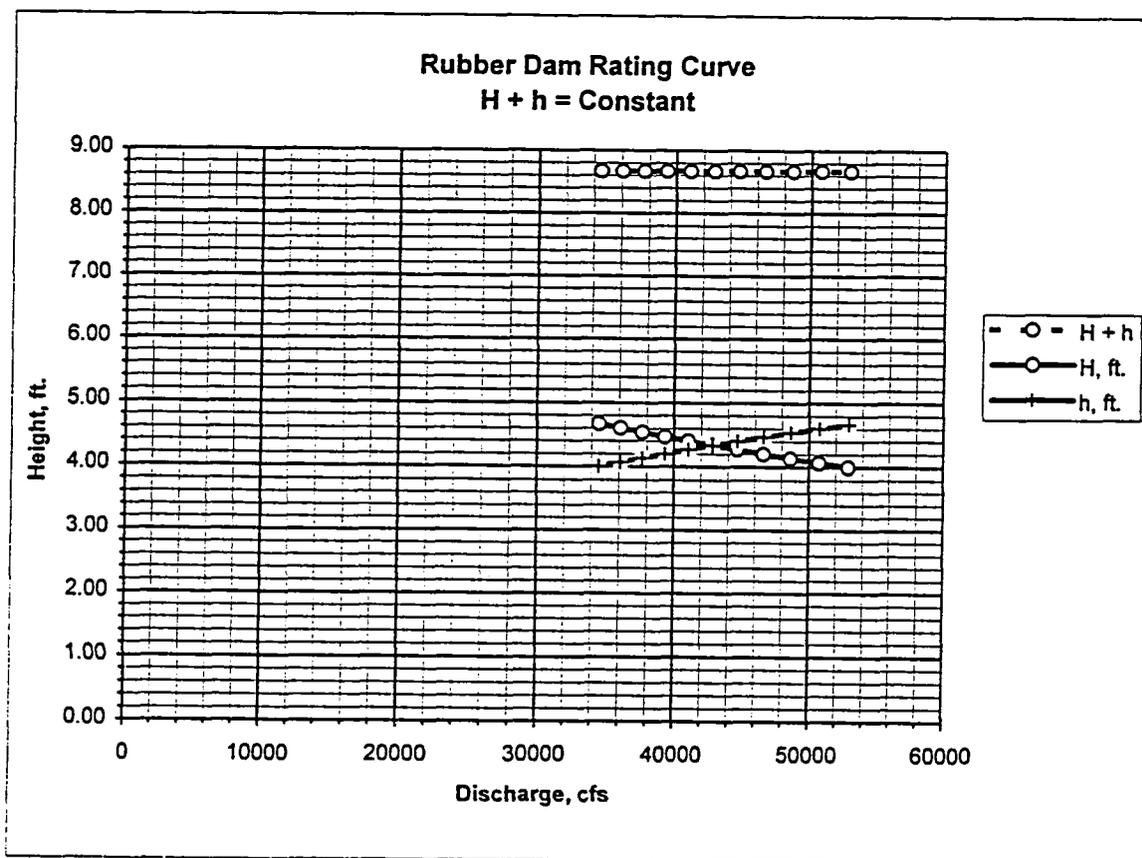


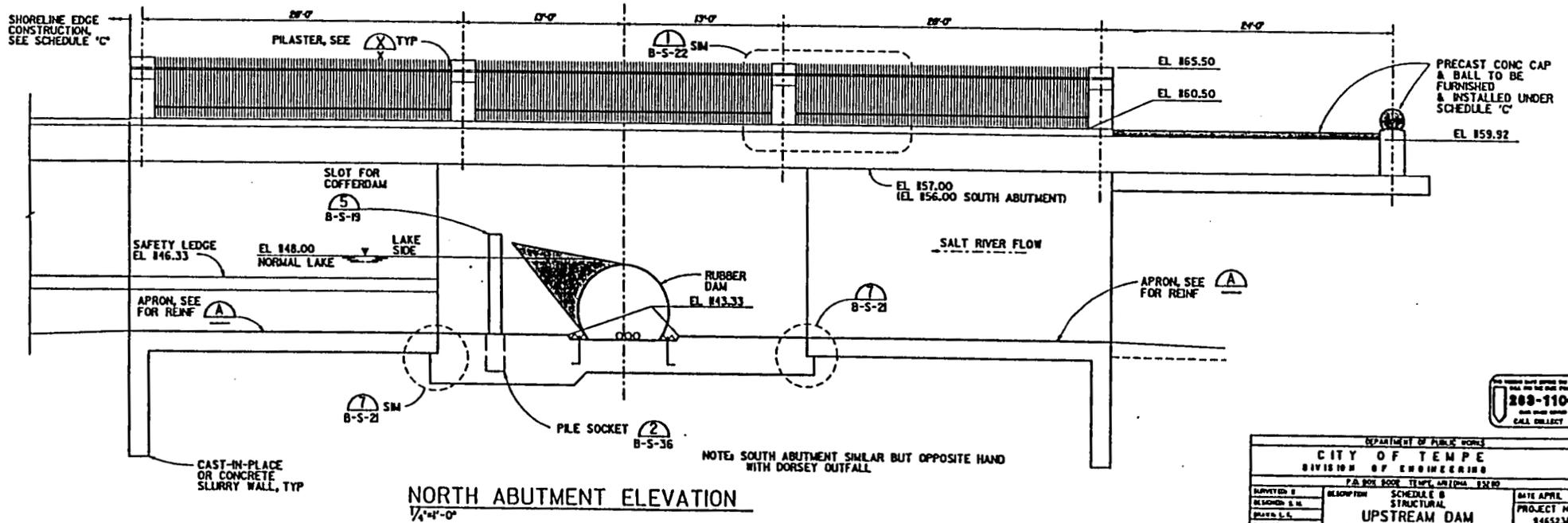
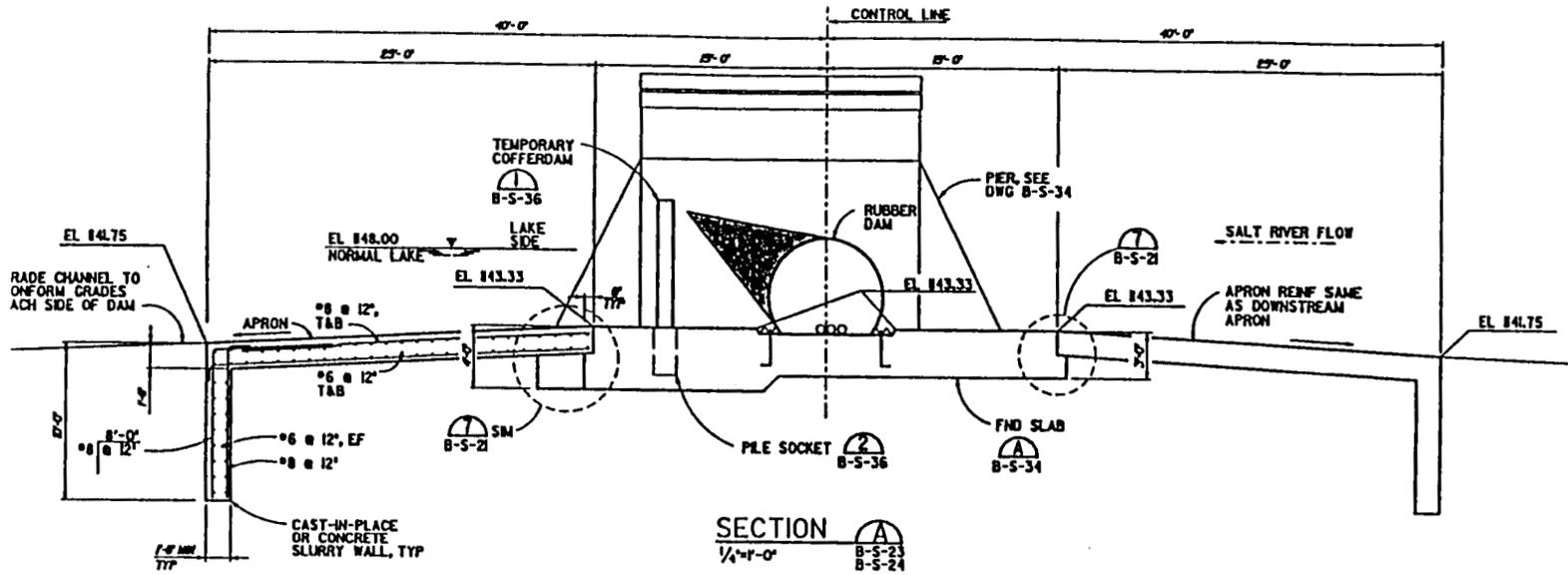
Dam Deflating, W.S.El. is constant

Calculations:

H + h is constant at 8.67 ft.

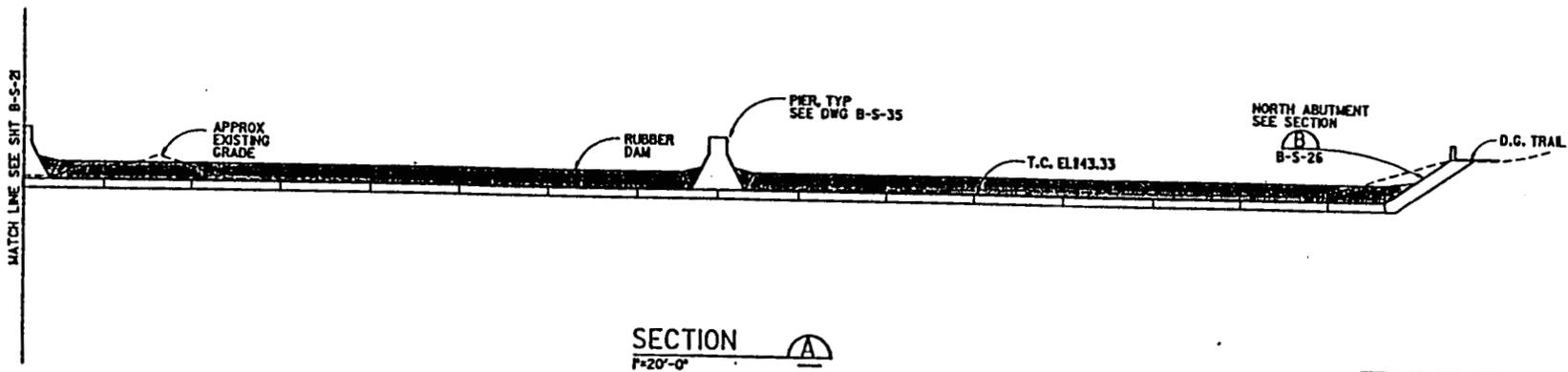
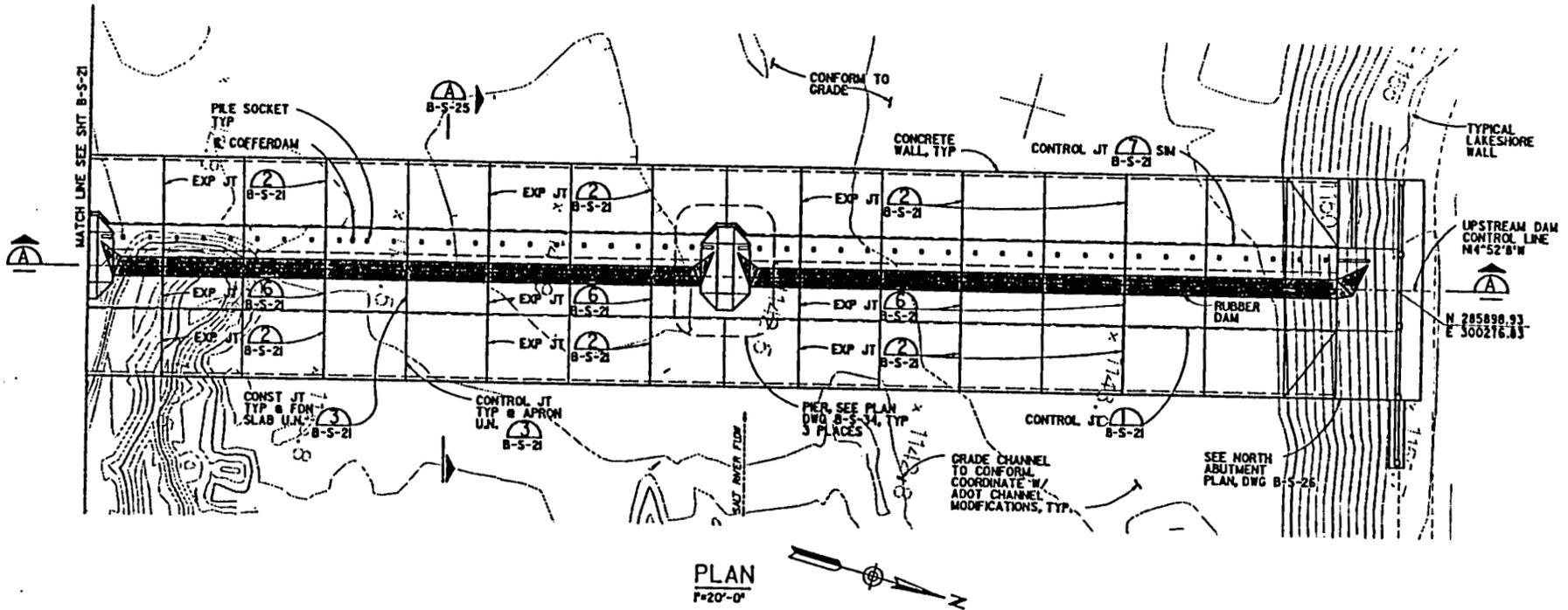
H, ft.	h, ft.	H + h	C	Q ₁ , cfs	H ₂	H ₁	Q	Q/Q ₁
4.67	4.00	8.67	2.57	34556	2.00	4.00	29213	0.85
4.60	4.07	8.67	2.61	36088	2.07	4.07	30348	0.84
4.54	4.13	8.67	2.66	37680	2.13	4.13	31523	0.84
4.47	4.20	8.67	2.71	39335	2.20	4.20	32738	0.83
4.40	4.27	8.67	2.77	41055	2.27	4.27	33997	0.83
4.34	4.34	8.67	2.82	42844	2.34	4.34	35301	0.82
4.27	4.40	8.67	2.88	44705	2.40	4.40	36651	0.82
4.20	4.47	8.67	2.93	46642	2.47	4.47	38052	0.82
4.13	4.54	8.67	2.99	48658	2.54	4.54	39503	0.81
4.07	4.60	8.67	3.05	50756	2.60	4.60	41010	0.81
4.00	4.67	8.67	3.12	52942	2.67	4.67	42573	0.80





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DEPARTMENT OF PUBLIC WORKS			
CITY OF TEMPE			
DIVISION OF ENGINEERING			
P.A. BOX 8000 - TYP. 2/10/94 \$2.00			
DESIGNED BY	DESIGNATION	SCHEDULE B	DATE APRIL 1996
DRYDEN, S.P.	STRUCTURAL		PROJECT NO. 8465238
SCALE: 1/4"=1'-0"			SHEET X OF X
			DWG NO. B-S-25



283-1100
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DEPARTMENT OF PUBLIC WORKS CITY OF TEMPE DIVISION OF ENGINEERING P.O. BOX 3002 TEMPE, ARIZONA 85280			
SUPERVISOR DESIGNED & D. DRAWN & TYPED CHECKED E.P. SCALE F=20'-0"	DESCRIPTION SCHEDULE B STRUCTURAL UPSTREAM DAM NORTH PARTIAL PLAN & SECTION	DATE APRIL 1956 PROJECT NO. 9465236 SHEET 2 OF 2	

NOTE:
 THE UPSTREAM RUBBER
 DAM, FOUNDATION AND
 APRON IS DEDUCTIVE
 ALTERNATE B1



QUESTIONS & ANSWERS

about the

BRIDGESTONE RUBBER DAM

August 1989

BRIDGESTONE CORPORATION
1-10-1 Kyobashi
Chuo-ku, Tokyo 104

3 HYDRODYNAMICS

3.1 Maximum Overflow

What is the maximum overflow recommended for a Rubber Dam?

The maximum overflow of a Bridgestone Rubber Dam is 1.4 times dam height. Therefore the crest on a 2.0 meter (6.6') high dam should not exceed 0.8 meters (2.6'). Such a high crest without significant oscillation is possible with the Rubber Dam because of its employment of a fin (see 3.7 Lessening of Oscillation). For Ogee crested weirs the maximum overflow depends on the particular shape of the weir crest, but a maximum overflow of 1.3 times the Rubber Dam height is normally advised. If demanded, design modifications can make it possible to increase the permitted overflow. Such special cases should be referred to Bridgestone for study and comment.

3.2 Watercourse Gradient

What information on the watercourse gradient is needed for the design of a Rubber Dam installation?

Bridgestone requires no information on watercourse gradient for the design of a standard Rubber Dam. Employment of the optional SCUL waterhead level control system is an exception to this. The design of this system requires data on water build-up over time behind the Rubber Dam so that it can maintain a constant head of water (see 5.7 SCUL).

3.3 Rubber Dam Air Pressure Settings

At what inner air pressure settings do Rubber Dams operate?

As can be seen in the condensed table below, the design inner air pressure of a Rubber Dam depends on its height. Note that inner pressure for a given dam height is the same as water pressure at the same depth of water.

Table 3.3 Rubber Dam Design Inner Air Pressure Settings

<u>Dam Height</u>	<u>Design Pressure</u>	<u>Dam Height</u>	<u>Design Pressure</u>
0.5 meter	0.05 (kg/cm ²)	2 feet	0.87 (lb/in ²)
1.0	0.10	5	2.17
2.0	0.20	8	3.47
3.0	0.30	10	4.33
4.0	0.40	13	5.63
5.0	0.50	17	7.37

3.4 Discharge Coefficient

What is the discharge coefficient of the Rubber Dam?

The discharge coefficient for a Bridgestone Rubber Dam is provided in the formula and graph below:

Metric:

$$Q = C \times B \times h^{3/2}$$

English:

$$Q' = 1.81 \times C \times B' \times h'^{3/2}$$

where: Q = Discharge volume (m^3/sec)

C = Discharge coefficient

B = Width of Rubber Dam (m)

h = Overflow water depth (crest) (m)

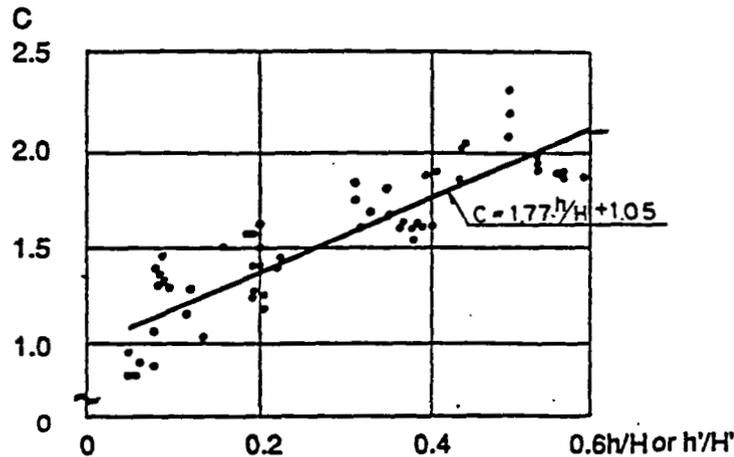
Q' = Discharge volume ($feet^3/sec$)

C = Discharge coefficient

B' = Width of Rubber Dam (feet)

h' = Overflow water depth (crest) (feet)

Graph 3.4 Discharge Coefficient In Case of No Downstream Water Level Against Rubber Dam Body



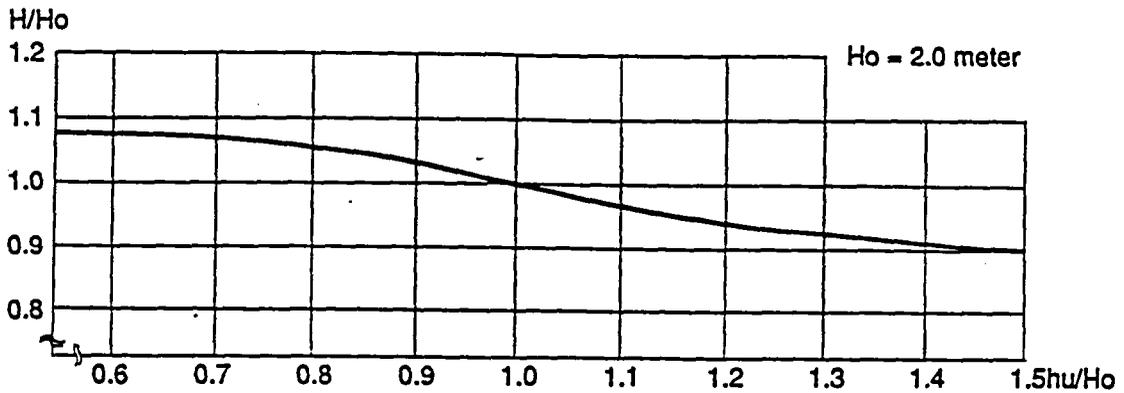
where: H = Actual height of Rubber Dam (meter)
 H' = " " " (feet)

3.5 Water Overflow and Dam Pressure/Height Relationship

The air pressure inside an inflatable dam must vary with the height of the headwater (weight of water) bearing on it. How does this effect the inner pressure and height of an inflatable dam body?

The weight of water bearing on an air-filled inflatable dam has little effect on its height. Graph 3.5A on the following page shows the relationship between the height of a Rubber Dam and a head of water, with 1.0 on the x-y axis representing water height equal to designed dam height.

Graph 3.5A Rubber Dam Height/Waterhead Height Relationship

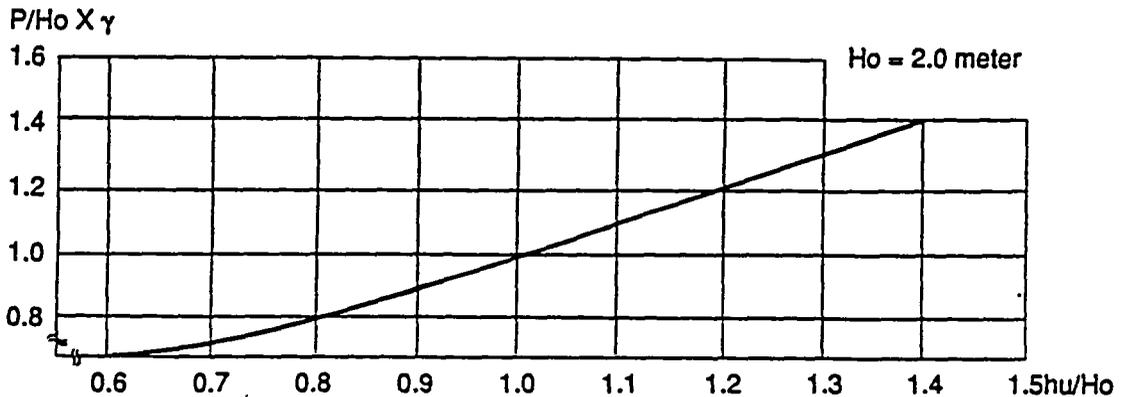


where: H = Actual height of Rubber Dam
 Ho = Design height of Rubber Dam
 hu = Upstream water depth

Example: 2m (6.6') high dam with an upstream water depth of 1.3 times design height (2.6m or 8.5') will have an actual height of about 1.86m (6.1') (Waterhead at 1.3 times Rubber Dam design height on x axis equals 0.93 times design height on y axis; 0.93 X 2.0m (6.6') equals 1.86m (6.1)').

Graph 3.5B below shows the increase in the internal pressure of a Rubber Dam as the head of water acting against it increases. 1.0 on the x-y axis indicates inner pressure of a Rubber Dam at the designed operating height of the dam.

Graph 3.5B Rubber Dam Inner Pressure/Waterhead Height Relationship



where: P = Inner pressure of Rubber Dam
 hu = Upstream water depth
 Ho = 2.0 meter
 γ = Specific weight of water (1 gram/cm³)

3.6 V-Notch Effect

What is the V-notch effect in Rubber Dams?

A Rubber Dam body does not deflate evenly, that is, the crest of a dam does not remain straight and parallel with the foundation as it lowers. Discharging water rushing over a deflating dam increases the pressure acting on it, which tends to push it down in a particular place, creating a depression shaped like a "V" notch as the dam deflates to around 70% of its normal operating height. The V notch has the effect of increasing water discharge over a deflating dam and concentrating its downstream flow at the V notch position. While the V notch normally starts at the center of the dam body it often moves to either side during deflation. The occurrence of a V notch moving to the side of a dam is a function of the side slope angle. Dams with gradual side slopes keep the V notch in the center position while sharp side slopes tend to result in a V notch which shifts to the side. The V notch effect is not a practical concern as it does not result in detrimental stress to the Rubber Dam and the increase in waterflow to a particular area of the downstream riverbed is of short duration.

3.7 Lessening of Oscillation

Does oscillation effect inflatable dams, what is its effect, and how does Bridgestone deal with it?

Bridgestone's employment of a fin on the downstream side of the Rubber Dam crest minimizes oscillation of the dam body. A drawing of this fin is in *Introducing the Bridgestone Rubber Dam*, section 5.43 Fin Structure. (Also see paper *Rubber Dam: Causes of Oscillation of Rubber Dams and Countermeasures* presented by Bridgestone at the International Association for Hydraulic Research, 21st Congress, August 1985, Melbourne, Australia, available on request.)

3.8 Test Models

How does Bridgestone scale down Rubber Dam models used for testing?

Bridgestone Rubber Dam models used in tank tests are scaled down in accordance with Froude's Law.

**Appendix B: Apron and Stilling Basin Length
Computations and References**

Rio Salado Project - Downstream Dam: MODIFIED USBR TYPE II STILLING BASIN

Objective: Identify Minimum Stilling Basin Dimensions for Worse Case Conditions

Case Descriptions:

Case	Upstream WSEL	Dam Crest Elev.	Downstream WSEL	Comments
1	1150	1145	1136.6	8' +/- Drop with steady jump
2	1150	1144	1138.3	Worse case conditions: 6' +/- drop with oscillating to steady jump
3	1150	1143	1140.2	Tailwater drowns out stilling basin - weak jump occurs at base of dam(see Figure 2)
4	1150	1142	1142.2	Dam crest submerged - weak jump occurs

USBR Type II Stilling Basin Dimension Computations:

Case	Dam & Discharge Parameters					Free Overfall Parameters								USBR TYPE II						
	Crest					D/S WSEL								Basin Length Lb						
	Ha (ft)	Yf(ft)	Width(ft)	Qa(cfs)	q(cfs/ft)	Dn	Y1(ft)	Y2(ft)	per HEC-2	V1(fps)	Fr1	Jump	Y2*1.1 ⁽³⁾ (FT)	Lb/Y2 ^{(1)&(2)}	Lb(ft)	Dent. Sill h2 (ft)	W1=W2 (FT)	W3=W4 (FT)	W5 (ft)	Sill Height (h4) TW-Y2
1	5	13	890	31,172	35.0	0.01734	1.3	7.2	7.6	28.0	4.4	steady	7.9	3.70	29	1.6	1.3	1.2	0.18	0.42
2	6	12	890	45,812	51.5	0.04782	1.8	8.8	9.3	29.0	3.8	oscillating	9.6	3.60	35	1.9	1.8	1.4	0.19	0.55
3	7	11	890	64,930	73.0	0.12419	2.4	10.4	11.2	29.8	3.4	oscillating	-	-	-	-	-	-	-	-
4	8	10	890	89,887	101.0	0.31678	3.3	12.2	13.2	30.5	3.0	oscillating	-	-	-	-	-	-	-	-

FREE OVERFALL CONDITIONS PER CHOW(1959) pgs 423-424

WHERE: Ha = height of upstream water surface elev. above dam crest
 Yf = height of free overfall (ft) = Crest elevation to Dam Foundation Elevation
 $q = (Y1)(V1)$ = unit discharge (cfs/ft)
 $Dn = (q^2)/(gYf^3)$
 $Y1 = 0.54(Yf)(Dn^{0.425})$ = depth at base of free overfall
 $Y2 = 1.66(Yf)(Dn^{0.27})$ = depth downstream of jump
 $Fr1 = V1/((gY1)^{0.5})$ = Froude Number
 $Y2' = (Y1)0.5((1+8Fr1^2)^{0.5} + 1)$ = sequent depth for rectangular channel
 g = acceleration of gravity = 32.2 ft/s/s
 V1 = velocity at base of free overfall(fps)
 Qa = total discharge over dam crest per rating curves (Appendix B)

USBR Type II Stilling Basin Parameters per FHA Hydraulic Engineering Circular No. 14

Where: Lb = total basin length (ft)
 Y2 = sequent depth (ft)
 D/S WSEL = tailwater depth per HEC-2 (ft)
 Fr1 = Froude Number
 $h2 = 0.2(Y2)$
 $W1 = W2 = Y1$
 $W3 = W4 = 0.15(Y2)$
 $W5 = 0.02Y2$

NOTES:

- 1) Lb/Y2 per FIGURE VII-D-3. (FHW A HEC No. 14 Sept 1983) pg VII-D-7
- 2) Min Fr Number for Type II curve is 4.0; hence, min value of 3.6 assumed for FR < 4.0
- 3) Ten percent Safety Factor
- 4) h3/Y1 & h4/Y1 per FIGURE VII-E-2. (FHW A HEC No. 14 Sept 1983) pg VII-E-6

References:

Chow, *Open Channel Hydraulics*, McGraw Hill, New York, 1959.

Federal Highway Administration, *Hydraulic Design of Energy Dissipators for Culverts and Channels: Hydraulic Engineering Circular No. 14*, September 1983

VII-D. USBR TYPE II BASIN

The Type II basin was developed by the United States Bureau of Reclamation (VII-D-1). The design is based on model studies and evaluation of existing basins.

The basin elements are shown in figure VII-D-1. Chute blocks and a dentated sill are used, but because the useful range of the basin involves relatively high velocities entering the jump, baffle blocks are not employed.

The chute blocks tend to lift part of the incoming jet from the floor, creating a large number of energy dissipating eddies. The blocks also reduces the tendency of the jump to sweep off the apron. Test data and evaluation of existing structures indicated that a chute block height, width, and spacing equal to the depth of incoming flow (y_1) are satisfactory.

The effect of the chute slope was also investigated by USBR. As long as the velocity distribution of the incoming jet is fairly uniform, the effect of the slope on jump performance is insignificant. For steep chutes or short flat chutes, the velocity distribution can be considered uniform. Difficulty will be experienced with long flat chutes where frictional resistance results in center velocities substantially exceeding those on the sides. This results in an asymmetrical jump with strong side eddies. The same effect will result from sidewall divergent angles too large for the water to follow. See chapter IV for details on the design of diverging transition sections.

The design information for this basin is considered valid for rectangular sections only. If trapezoidal or other sections are proposed, a model study is recommended to determine design parameters.

It is also recommended that a margin of safety for tailwater be included in the design. The basin should always be designed with a tailwater 10 percent greater than the conjugate depth. Figure VII-D-2 includes a design curve which incorporates the factor of safety.

Design Recommendation

The basin may be utilized for Froude numbers of 4.0 to 14.

The required tailwater depth is as indicated on figure VII-D-2.

The height of the chute blocks (h_1) is equal to the depth of the incoming flow, y_1 , figure VII-D-1. The width (W_1) and spacing (W_2) of the chute blocks also equals y_1 . A space $y_1/2$ is preferred along each wall.

The height (h_2) of the dentated sill is $0.2(y_2)$ and the maximum width (W_3) and spacing (W_4) is $0.15(y_2)$. The downstream slope of the sill is 2:1. For narrow basins, the width and spacing may be reduced but should remain proportional.

The chute blocks and end sill do not need to be staggered relative to each other.

The USBR tests indicated that the slope of the incoming chute has no perceptible effect on stilling basin action. Their test slopes varied from 0.6:1 to 2:1. If the chute slope is 2:1 or greater, a reasonable radius curve should be incorporated into the chute design, see figure IV-B-5.

The length of the basin (L_B) may be obtained from figure VII-D-3.

These design recommendations will result in a conservative stilling basin for flows up to 500 cfs per foot of basin width.

Design Procedure

1. Determine basin width (W_B), elevation (z_1), length (L_B), total length (L), incoming depth (y_1), incoming Froude number (Fr_1), and jump height (y_2) by using the design procedure in section IV-B, Supercritical Expansion Into Hydraulic Jump Basins. For step 5E, use $C = 1.1$ or figure VII-D-2 to find y_2 . For step 5F, use figure VII-D-3 to find L_B .
2. The chute block height (h_1), width (W_1), and spacing (W_2) are all equal to the incoming depth.

$$W_1 = W_2 = h_1 = y_1$$

The number of blocks (N_C) is equal to

$$N_C = W_B / 2y_1, \text{ rounded to a whole number.}$$

Adjusted $W_1 = W_2 = W_B / 2N_C$
Side wall spacing = $W_1 / 2$

3. The dentated sill height, (h_2) = $0.2y_2$, the block width (W_3) = the spacing width (W_4) which is equal to 0.15 times the jump depth.

$$h_2 = 0.2y_2$$
$$W_3 = W_4 = 0.15y_2$$

The number of blocks (N_S) plus spaces approximately equals W_B/W_3 . Round this to the next lowest odd whole number and adjust $W_3=W_4$ to fit W_B .

Example Problem

Given: Same Conditions as IV-B, Supercritical Expansion
 10X6 RCB, $Q=417$ cfs, $S_o=6.5\%$
 Elevation outlet invert $z_o=100$ ft.
 $V_o=27.8$ fps, $y_o=1.5$ ft.
 Downstream channel is a 10 ft. bottom
 trapezoidal channel with 2:1 side slopes and
 $n=.03$

Find: Dimensions for a USBR Type II basin

Solution:

- Determine basin elevation using design procedure outlined in section IV-B, Supercritical Expansion Into Hydraulic Jump Basins

Steps from IV-B:

- $V_o=27.8$ fps, $y_o=1.5$ ft., $Fr_o=4$
- In channel $TW=y_n=1.9$ ft., $V_n=15.9$ fps
- $y_2=C_1y_1[\sqrt{1+8Fr^2}-1]/2=1.1(1.5)[\sqrt{1+8(4)^2}-1]/2=8.6$
- $y_2>TW$, $8.6>1.9$ drop the basin
- Use $z_1=84.5$ ft. = z_2
 - $W_B=10$ ft., $S_T=S_S=.5$
 - W_B -OK no flare
 - $Q=y_1 10 [2g(100-84.5+1.5-y_1)+27.8^2]^{1/2}$
 $Q=10y_1 [64.4(17-y_1)+772.8]^{1/2}$
 $y_1=.98$ OK
 $V_1=417/.98(10)=42.6$ fps
 - $Fr_1=42.6/\sqrt{g(.98)}=7.58$
 - For $C_1=1.1$, $y_2=1.1(.98)[\sqrt{1+8(7.58)^2}-1]/2=11$ ft.
 - From figure VII-D-3 $L_B/y_2=4.3$, $L_B=47.5$ ft.
 $L_T=(z_o-z_1)/S_T=(100-84.5)/.5=31$ ft.
 $z_3=[100-(47.5+31-84.5)/.5].065]/1.13$
 $z_3=93.7$ ft.
 - $y_2+z_2=95.5$ ft.
 $z_3+TW=95.6$ ft. OK

6. $L_T=31$ ft., $L_B=47.5$ ft.
 $L_S=(z_3-z_2)/S_S=(93.7-84.5)/.5=18.4$ ft.
 $L=31+47.5+18.4=97$ ft.

7. $Fr_0=4$ from figure IV-B-5 $y_0/r=.1$
 $r=1.5/.1=15$ ft.

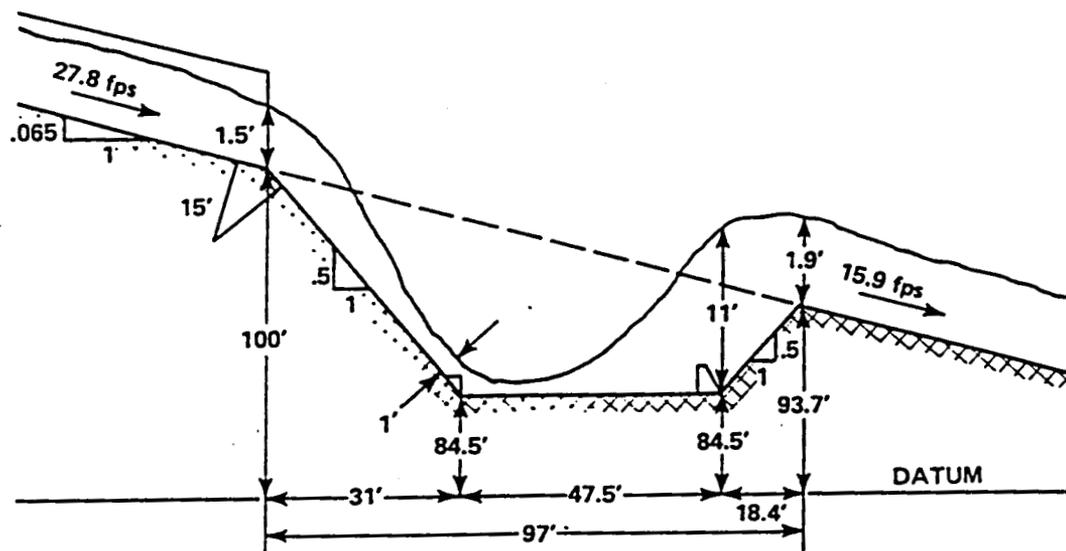
Basin width, $W_B=10$ ft.
 Basin elevation, $z_1=84.5$ ft.
 Basin length, $L_B=47.5$ ft.
 Total length, $L=97$ ft.
 Incoming depth, $y_1=1$ ft.
 Incoming Froude number, $Fr_1=7.6$
 Jump height, $y_2=11$ ft.

2. Chute Blocks:

$h_1=W_1=W_2=y_1=1.0$ ft.
 $N_C=10/2(1)=5$ -OK whole number
 $W_1=W_2=10/2(.5)=1$
 Sidewall spacing = .5 ft.

3. Dentated Sill:

$h_2=0.2y_2=.2(11)=2.2$ ft.
 $W_3=W_4=.15y_2=1.65$ ft.
 $N_S=W_B/W_3=10/1.65=6$, Use 5
 which makes 3 blocks and 2 spaces each 2 ft.



Note: See the USBR and SAF design comparison at the end of section VII-G.

VII-D-1. U.S. Bureau of Reclamation, DESIGN OF SMALL DAMS, U.S. Government Printing Office, 2nd Ed. 1973, pp. 393-439.

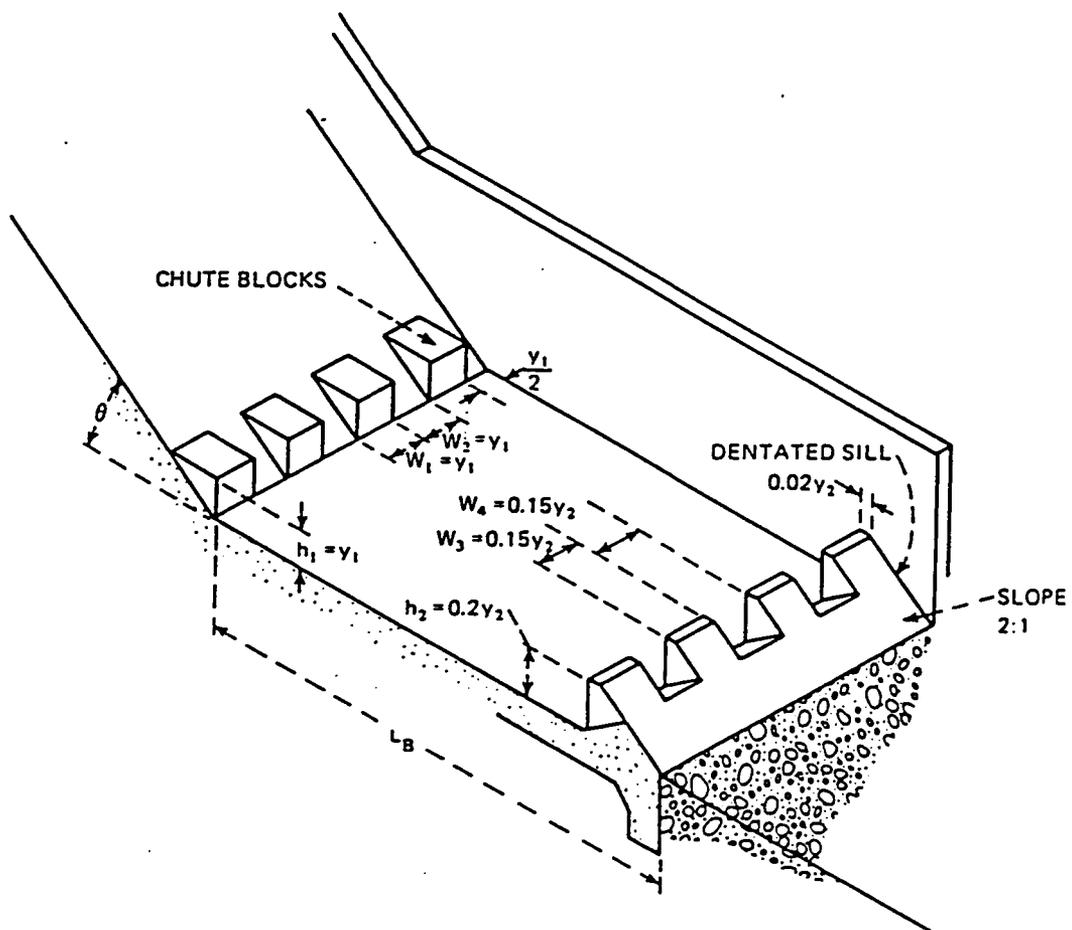


FIGURE VII - D-1 USBR TYPE II BASIN

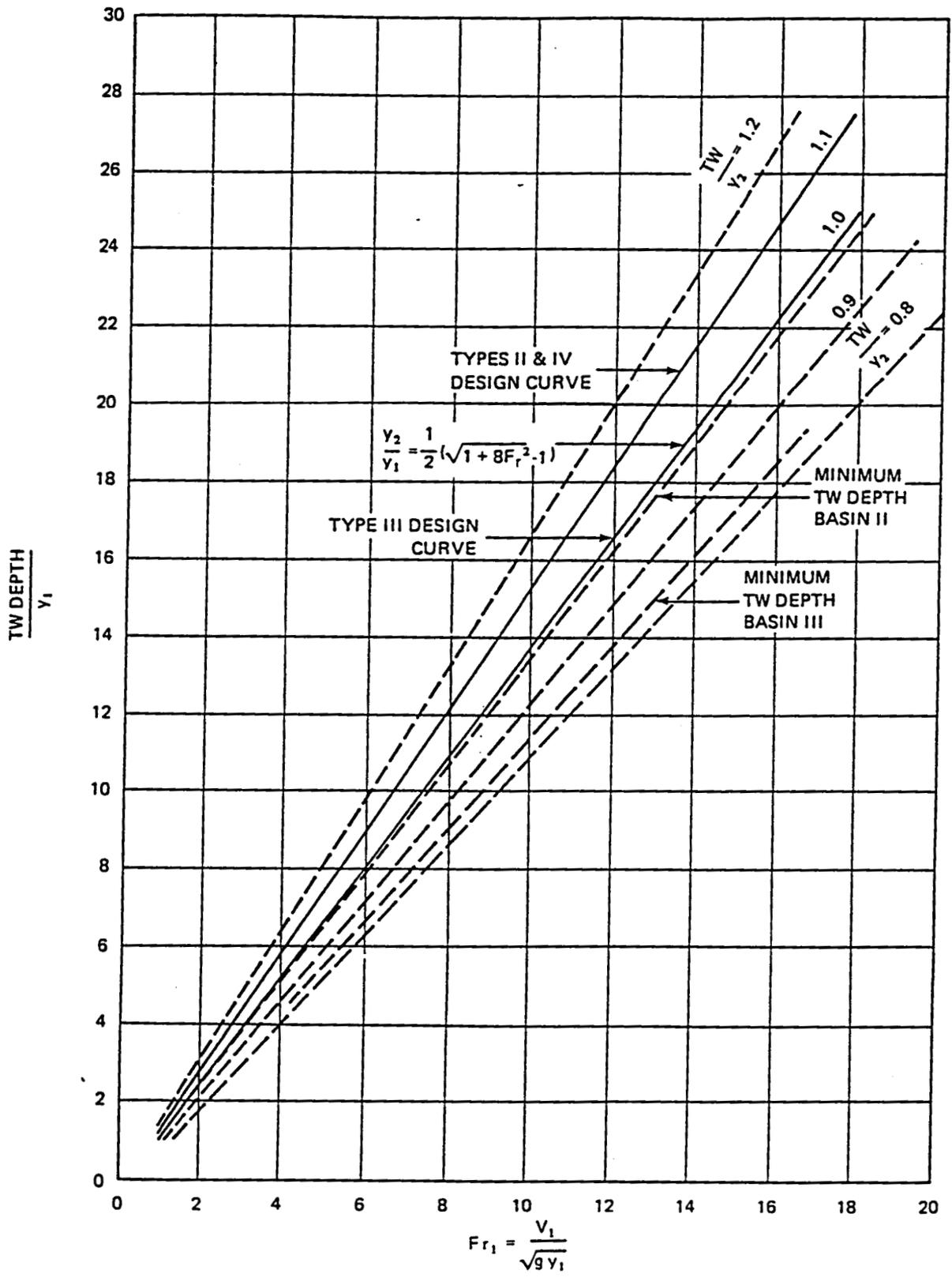


FIGURE VII - D - 2 TAIL WATER DEPTH (BASIN II, III & IV)

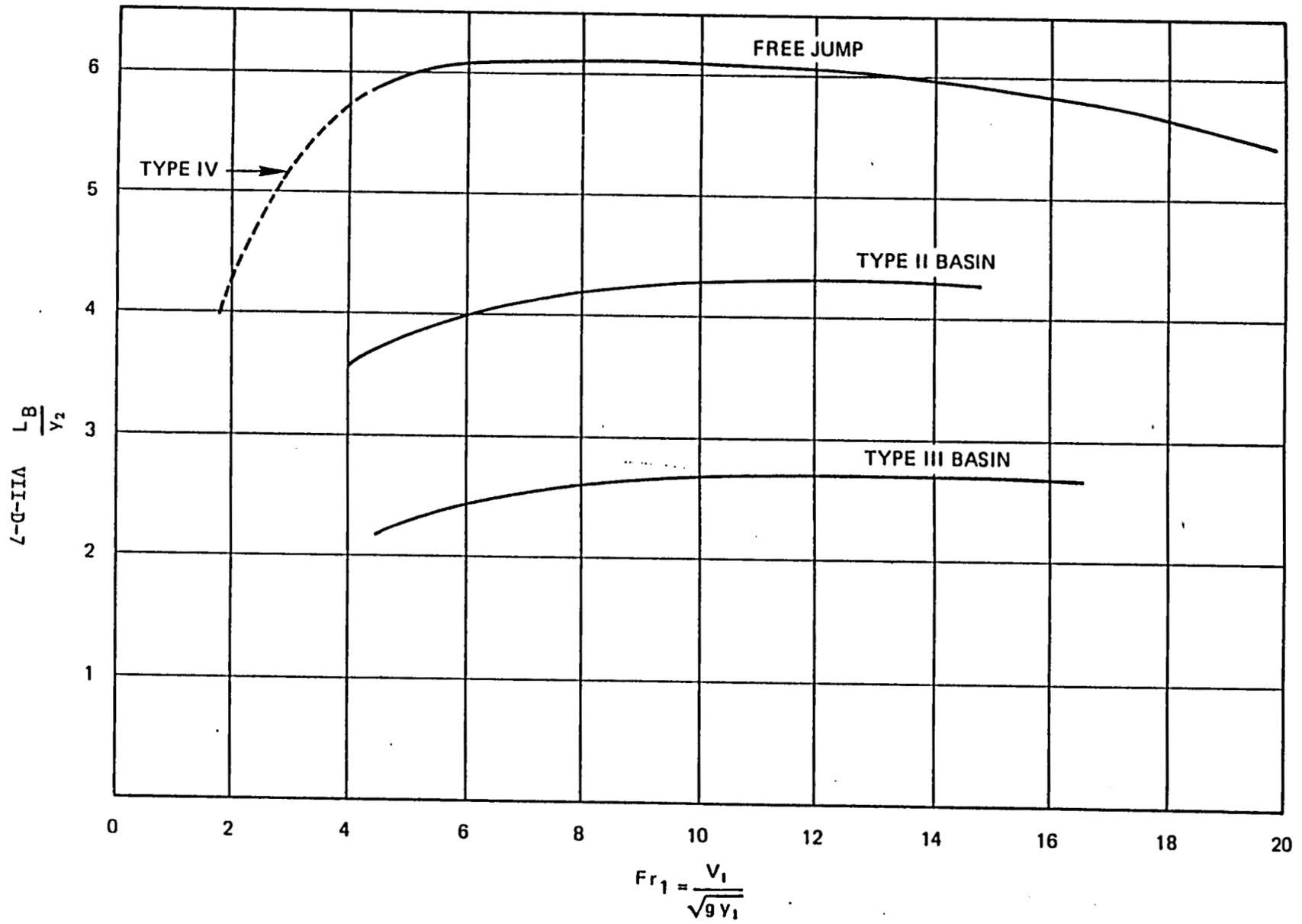


FIGURE VII - D - 3. LENGTH OF JUMP ON HORIZONTAL FLOOR

RIO SALADO: Apron/Stilling Basin Rating Curve for Rubber Dam UPSTREAM DAM

Note: Equation in English units
 Stilling Basin length equation derived from equations found in
 - *Open Channel Hydraulics* by V.T. Chow, 1959 and
 - *Drainage Design Manual for Maricopa County, Vol. 2: Hydraulics*
 Discharge and coefficient equations from Bridgestone Rubber Dam Technical Information

Length of Apron/Stilling Basin, $L = 8*(Y^{0.19})*(q^{0.54})$

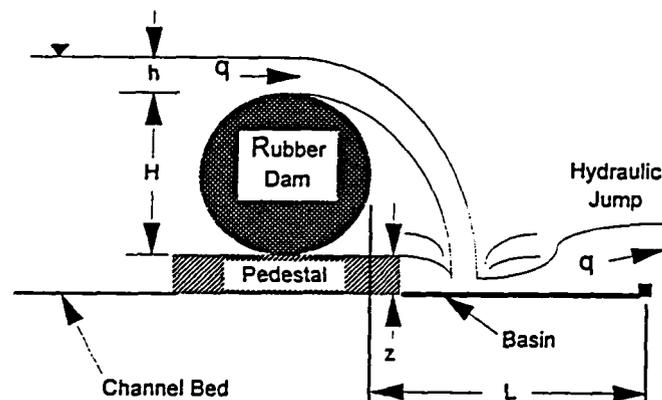
where: L = length, ft. (includes factor of safety recommended by FCDMC)
 Y = distance from top of dam to Stilling Basin floor, ft
 q = unit discharge over dam, cfs/ft

Unit discharge over dam, $q = 1.81*C*B*h^{3/2}$

where: $C = 1.77*h/H + 1.05$
 h = overfall depth, ft.
 H = dam height, ft.
 B = length of dam = 1 ft.

Total discharge, Q , cfs = $q * \text{total dam length}$

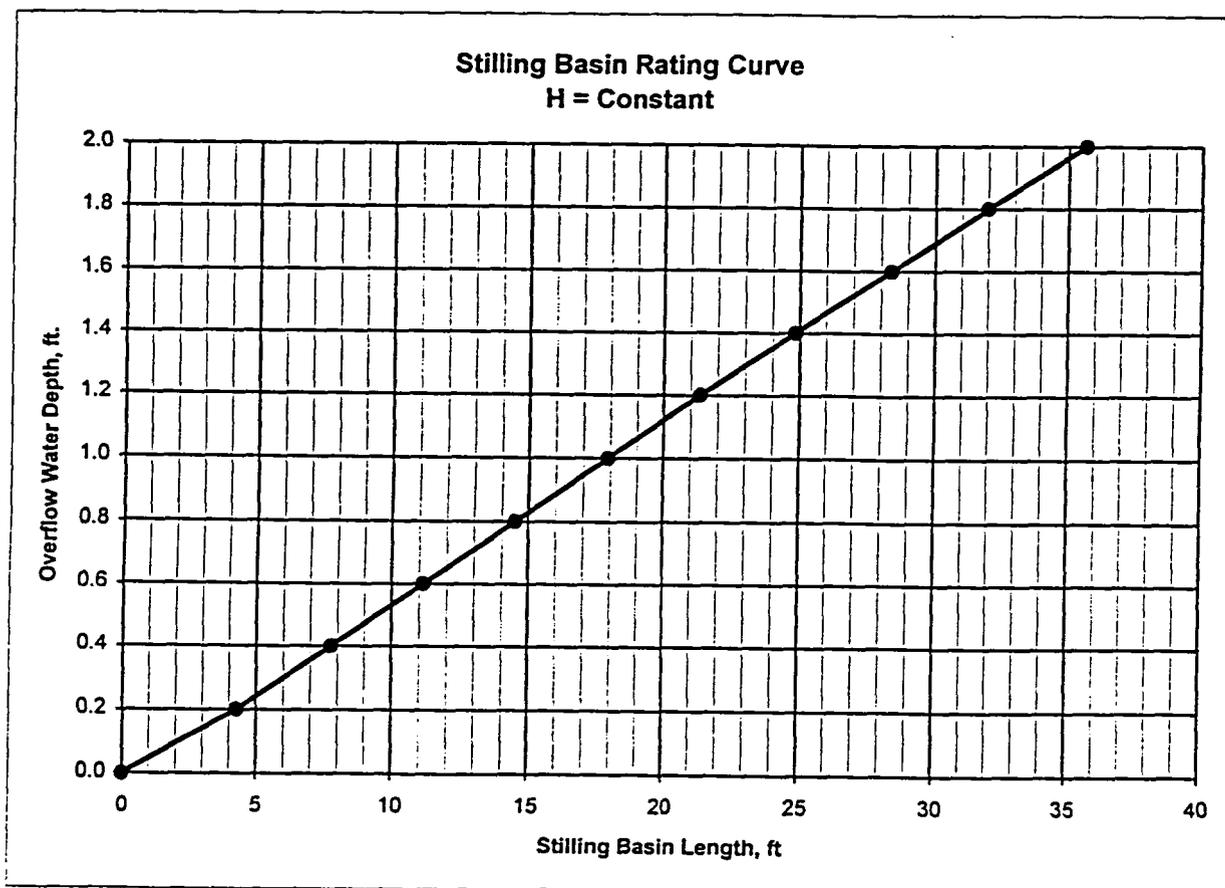
Input:	
Total Dam Length, ft. =	930
Max. depth of flow over fully inflated dam, h, ft. =	2
Max. height of rubber dam, H, ft. =	4.67
Min. height of rubber dam, H, ft. =	4
Pedestal height, z =	0
Calculated:	
Max. $h + H$ =	6.67
Max. depth of water at dam, $h + H + z$ =	6.67



Calculations:

H is constant at 4.67 ft.

h, ft.	C	q, cfs	Q, cfs	Y = H + z	L, ft.
0.0	1.05	0.0	0	4.67	0
0.2	1.13	0.2	169	4.67	4
0.4	1.20	0.6	512	4.67	8
0.6	1.28	1.1	999	4.67	11
0.8	1.35	1.8	1630	4.67	15
1.0	1.43	2.6	2405	4.67	18
1.2	1.50	3.6	3330	4.67	21
1.4	1.58	4.7	4407	4.67	25
1.6	1.66	6.1	5643	4.67	28
1.8	1.73	7.6	7042	4.67	32
2.0	1.81	9.3	8608	4.67	36





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- Stilling basin equation

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Stilling Basin length equation

- incorporating rating equation from Bridgestone Tech. Info.

Length of splashpad, L_h = Length of overfall drop + Length of Hydraulic jump
 $= L_d + L_j$ (L_d = length of drop, L_j = length of jump)

where $L_d = 4.3 Y_f D_n^{0.27}$

$D_n = \frac{q^2}{g Y_f^3}$
 - assumes jump begins right after nappe hits

$L_j = (1.6)(6)(Y_2) * 1.6 = FCDMC \text{ safety factor}$
 $= 9.6 Y_2$

$Y_2 = 1.66 Y_f D_n^{0.27}$

$\therefore L_j = (9.6)[1.66 Y_f D_n^{0.27}]$

$= 16 Y_f D_n^{0.27}$

$\therefore L = L_d + L_j = 4.3 Y_f D_n^{0.27} + 16 Y_f D_n^{0.27}$
 $= 20.3 Y_f D_n^{0.27}$

$= 20.3 Y_f \left(\frac{q^2}{g Y_f^3} \right)^{0.27}$

$= \frac{20.3}{g^{0.27}} Y_f \left(\frac{q^{0.54}}{Y_f^{0.81}} \right)$

$= 8 Y_f^{0.19} q^{0.54}$

$q = 1.81 C B h^{1.5}, \beta = 1$
 $= 1.81 C h^{1.5}, C = 1.77 H^{-0.1} + 1.05$

$= 1.81 [1.77 H^{-0.1} + 1.05] h^{1.5}$

$= (3.2 H^{-0.1} + 1.9) h^{1.5}$

$= \frac{3.2}{H} h^{2.5} + 1.9 h^{1.5}$

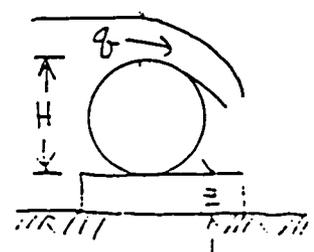
height of rubber dam

← from Bridgestone Tech. Info.

$\therefore L = 8 Y_f^{0.19} \left(\frac{3.2}{H} h^{2.5} + 1.9 h^{1.5} \right)^{0.54}$

Since downstream dam is on a pedestal of height, z ,

$\therefore L = 8(H+z)^{0.19} \left(\frac{3.2}{H} h^{2.5} + 1.9 h^{1.5} \right)^{0.54}$



OPEN-CHANNEL HYDRAULICS

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New York Toronto London

1959

15-15. The Straight Drop Spillway. The aerated free-falling nappe in a straight drop spillway (Fig. 15-18) will reverse its curvature and turn smoothly into supercritical flow on the apron. Consequently, a hydraulic jump may be formed downstream. Based on his own experimental data

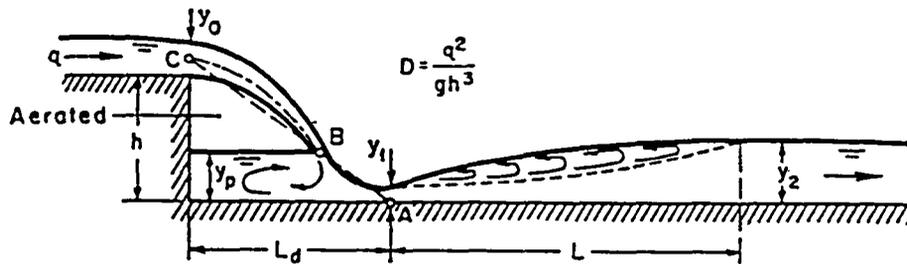


FIG. 15-18. Flow geometry of a straight drop spillway.

and those of Moore [40] and Bakhmeteff and Feodoroff [65], Rand [66] found that the flow geometry at straight drop spillways can be described by functions of the *drop number*, which is defined as

$$D = \frac{q^2}{gh^3} \tag{15-9}$$

where q is the discharge per unit width of the crest of overfall, g is the acceleration of gravity, and h is the height of the drop. The functions are

$$\frac{L_d}{h} = 4.30D^{0.27} \tag{15-10}$$

$$\frac{y_p}{h} = 1.00D^{0.22} \tag{15-11}$$

$$\frac{y_1}{h} = 0.54D^{0.425} \tag{15-12}$$

$$\frac{y_2}{h} = 1.66D^{0.27} \tag{15-13}$$

where L_d is the drop length, that is, the distance from the drop wall to the position of the depth y_1 ; y_p is the pool depth under the nappe; y_1 is the depth at the toe of the nappe or the beginning of the hydraulic jump; and y_2 is the tailwater depth sequent to y_1 . The position of the depth y_1 can be approximately determined by the straight line ABC which joins the point A on the apron at the position of y_1 , the point B on the axis of the nappe at the height of pool depth, and the point C on the axis of the nappe at the crest of the fall. The fact that these three points lie on a straight line was also verified by experiment.

For a given height h and discharge q per unit width of the fall crest, the sequent depth y_2 and the drop length L_d can be computed by Eqs. (15-10) and (15-13). On the one hand, if the tailwater depth is less than

y_2 , the hydraulic jump will recede downstream. On the other hand, if the tailwater depth is greater than y_2 , the jump will be submerged. As the tailwater level rises, the spillway crest may be finally submerged. The spillway will still be effective if the submergence does not reach the control depth on the spillway crest. The upper surface of the submerged nappe may be assumed as a straight line tangent to the upper surface of the free nappe at the point where the nappe plunges into the tailwater. The upper surface of the free nappe may be represented by the general equation given in Art. 14-1.

In the above discussion it is assumed that the length of the spillway crest is the same as the width of the approach channel. If the crest length is less than the width of the approach channel, the contraction at the ends of the spillway notch will be so great that the ends of the nappe may land beyond the stilling-basin sidewalls and the concentration of high velocities at the center of the outlet may cause additional scour in the downstream channel. It is, therefore, important to design the approach end properly by shaping the approach channel to reduce the effect of end contractions.

The straight drop spillway is commonly installed in small drainage structures by the U.S. Soil Conservation Service. The simplest form of such a structure, known as the *box inlet drop spillway*, is simply a rectangular box open at the top and at the downstream end [67-69]. Storm runoff is directed to the box by dikes and headwalls, enters over the upstream end and two sides, and leaves through the open downstream end leading to a channel outlet. A generalized design has also been developed by the Service as a result of tests and analyses at the St. Anthony Falls Hydraulic Laboratory [70,71].

By placing a gridiron or grate on top of the straight drop spillway, the overfalling jet can be separated into a number of long thin sheets of water which fall nearly vertically into the channel below. Thus the energy in the jet can be dissipated without resort to the use of hydraulic jump, and hence wave action can be reduced if $F_1 = 2.5$ to 4.5 . This scheme has been adopted by the U.S. Bureau of Reclamation [34,35] for developing a so-called *drop energy dissipator* as a substitute design for USBR basin IV (Art. 15-14). In this design, the grate may be composed of a series of beams, such as steel rails, channel irons, or timbers, which form slots parallel to the direction of flow. The width of the slots is equal to two-thirds the width of the beams. If the rails are tilted downward at an angle of 3° or more, the grate is self-cleaning. On the other hand, if the grate is tilted upward, it can check the upstream water level but may pose a cleaning problem. The length of the grate slots can be computed by

$$L_G = \frac{4.1Q}{WN \sqrt{2gy_1}} \quad (15-14)$$

where Q is the total discharge in cfs, W is the width of a space in ft, N is the number of spaces, g is the gravitational acceleration, and y_1 is the depth of flow in the canal upstream.

15-16. Jump in Sloping Channels. In the analysis of hydraulic jumps in sloping channels or channels having appreciable slope, it is essential to consider the weight of water in the jump; in horizontal channels the effect of this weight is negligible. Thus, the momentum formulas for jumps on horizontal floor cannot be applied straightforwardly to jumps on sloping floor. As will be shown in this article, however, the momentum principle can be used to derive an equation analogous to Eq. (3-21), which will contain an empirical function that has to be determined experimentally.

Early studies on hydraulic jumps in sloping channels were made by Riegel and Beebe [9] and by Ellms [72,73]. Later investigations were made by Bakhmeteff and Matzke [74] and also by Yarnell¹ and Kindsvater [75].

Hydraulic jump in sloping channels may occur in various forms, as shown in Fig. 15-19. Case 1 is a typical form, but it is not common in practical problems. Cases 2 to 4, known as *drowned-out jumps*, are common forms and usually appear simply as jets of water plunging into a downstream pool below the steep slope. For practical purposes, it is believed that the solutions for the typical form of case 1 and for the drowned-out jumps are mutually applicable. Case 5 shows the jump on an adverse slope. This is a rare type of jump, and no adequate experimental data are available at the present moment.

For the analysis of the jump of case 1, a rectangular channel of unit width is assumed. Considering all effective forces parallel to the channel bottom, the momentum equation may be written

$$\frac{Qw}{g} (\beta_2 V_2 - \beta_1 V_1) = P_1 - P_2 + W \sin \theta - F_f \quad (3-14)$$

where $Q = V_1 d_1$, $V_2 = V_1 d_1 / d_2$, $P_1 = 0.5 w d_1^2 \cos \theta$, $P_2 = 0.5 w d_2^2 \cos \theta$, F_f is negligible, and β_1 and β_2 may be taken as unity. If the surface profile of the jump is a straight line, the weight of water in the jump can be computed. The discrepancy between the straight-line and actual profiles and the effect of slope may be corrected by a factor K . Thus,

$$W = \frac{1}{2} K w L (d_1 + d_2) \quad (15-15)$$

Substituting Eq. (15-15) in Eq. (3-14), letting $F_1 = V_1 / \sqrt{g d_1}$, and

¹ The work started in 1936 by David L. Yarnell at the Iowa Institute of Hydraulic Research, Iowa City, Iowa, was interrupted by his death in 1937. The Yarnell data were lent to the Tennessee Valley Authority in 1939 for an extensive investigation by Kindsvater.

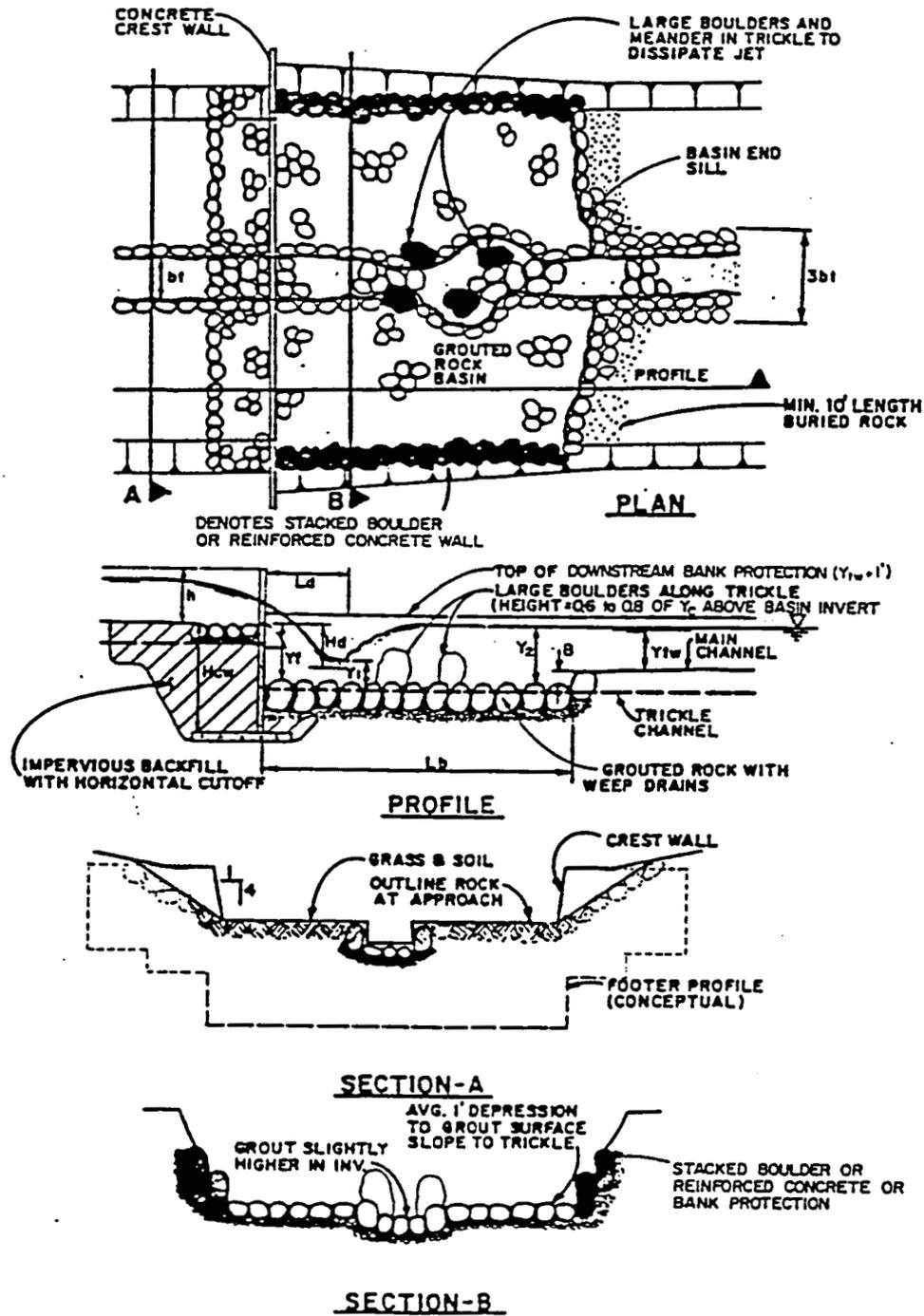


Figure 6.10
 Vertical Hard Basin Drop
 (McLaughlin Water Engineers, Ltd. 1986)

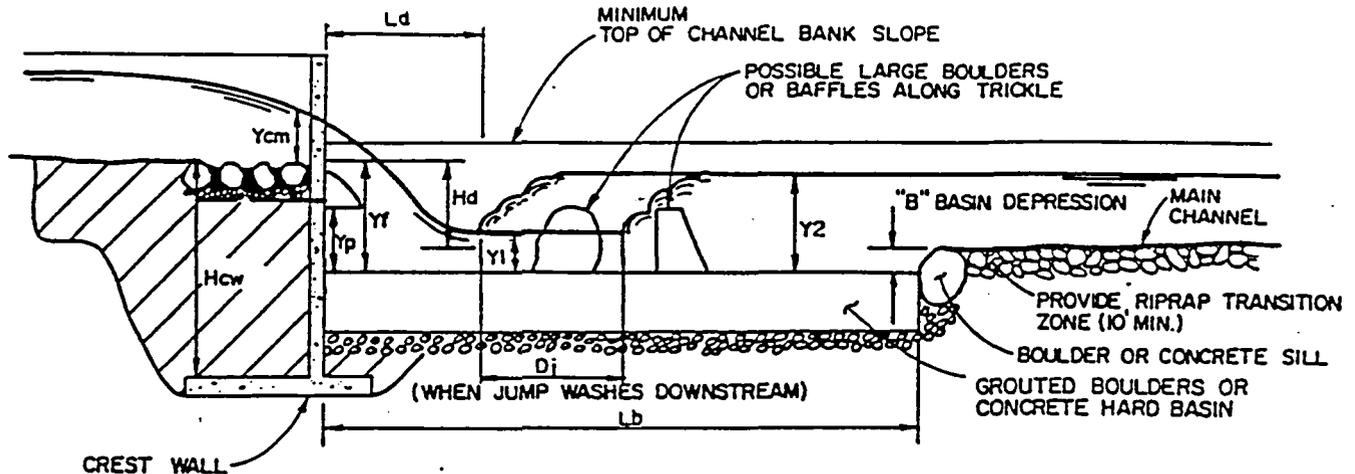


Figure 6.11
Vertical Drop Hydraulic System
(McLaughlin Water Engineers, Ltd. 1986)

$$Y_p / Y_f = 1.0 D_n^{0.22} \quad (6.7)$$

$$Y_1 / Y_f = 0.54 D_n^{0.425} \quad (6.8)$$

$$Y_2 / Y_f = 1.66 D_n^{0.27} \quad (6.9)$$

5. In the case where the tailwater does not provide a depth equivalent to or greater than Y_2 , the jet will wash downstream as supercritical flow until its specific force is sufficiently reduced to allow the jump to occur. Determination of the distance to the hydraulic jump, D_j , requires a separate water surface profile analysis for the main and low flow zones. Any change in tailwater affects the stability of the jump in both locations.
6. Caution is advised regarding the higher unit flow condition in the low flow zone. Large boulders and meanders in the trickle zone of the basin are shown to help dissipate the jet, and rock is extended downstream along the low flow channel. This results in three possible basin length design conditions:
 - a. At the main channel zone:

$$L_{bm} = L_{dm} + D_{jm} + 0.60 (6Y_2)_m \quad (6.10)$$

- b. At the trickle zone, standard design:

$$L_{bt} = L_{dt} + D_{jt} + 0.60 (6Y_2)_t \quad (6.11)$$

- c. When large boulders or baffles are used to confine the jump to the impingement area of the low flow zone, the low flow basin length may be reduced:

$$L_{bt} = L_{dt} + 0.60 (6Y_2)_t \quad (6.12)$$

7. The basin floor elevation is depressed at depth B, variable with drop height and practical for trickle flow drainage. Note that the basin depth adds to the effective tailwater depth. The basin is constructed of concrete or grouted rock. Either material must be evaluated for the hydraulic forces and seepage uplift.
8. There is a sill at the basin end to bring the invert elevation to that of the downstream channel and side walls extending from the crestwall to the sill. The sill is important in causing the hydraulic jump to form in the basin. Buried riprap should be used downstream of the sill to minimize any local scour caused by the lift over the sill.
9. Water surface profile analyses have proven that base widths of the rectangular crest which are less than that of the channel will result in high unit discharges and velocities, thereby requiring unreasonable extensions of both the basin length and upstream rock protection. Roughness in the basin area can reduce the basin length required to contain the hydraulic jump. This is the primary advantage of the use of grouted rock in the drop basin.

Construction Considerations: Foundation and seepage concerns are very critical with regard to the vertical wall, as poor control can result in sudden failure. The use of caissons or pile can mitigate this effect. Put in comparative terms with the baffle chute, seepage problems can result in displacement of the vertical wall with no warning, where the box-like structure of the baffle chute may evidence some movement or cracking, but not total failure, and thus allow time for repairs.

The quality control concerns and measures for reinforced concrete are described under baffle chutes. The foundation concerns for the wall are critical as described above. The subsoil conditions for the basin are also important so that the basin concrete or grouted riprap is stable against uplift pressures.

A grouted boulder stilling basin provides roughness, which is useful in shortening the basin length. As the name implies, the basin should be constructed of individual boulders placed on a prepared subgrade. Boulders should be a minimum dimension that exceeds the grout layer thickness, so that the contractor and the inspector can see and have grout placed directly to the subgrade and completely filling the voids. Graded riprap should not be used for grouting, as the smaller rock prevents the voids from being completely filled with grout. The result is a direct piping route for water beneath the grout, and a structural slab with insufficient mass. The completed combination of boulders and grout should have an overall weight sufficient to offset uplift forces. A minimum dimension of 18 inches is recommended for boulders, and 12 inches for the grout layer. By maintaining the finished surface of the grout below the top of the boulder, both appearance and roughness characteristics are enhanced. Seepage relief for the basin slab should be provided.

**Appendix C: HEC-2 Models for Design and
Existing Conditions**

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*****
* HEC-2 WATER SURFACE PROFILES *
* *
* Version 4.6.2; May 1991 *
* *
* RUN DATE 01MAR96 TIME 16:18:15 *
*****

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*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET, SUITE D *
* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104 *
*****

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X X XXXXXXX XXXXX XXXXX
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XXXXXXXX XXXX X XXXXX XXXXX
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PAGE 1

THIS RUN EXECUTED 01MAR96 16:18:15

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*****
HEC-2 WATER SURFACE PROFILES
Version 4.6.2; May 1991
*****

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RIO SALADO - TOWN LAKE FINAL RUN

PROPOSED DEVELOPMENT OF SALT RIVER FOR TOWN LAKE

Downstream dam: at section Grade Control Structure #4:
sections 24871 to 24968
3 piers w/0.5H:1V side slopes, 6 ft. topwidth, 16' high
includes concrete USBR TYPE II stilling basin
Foundation elevation = 1132

Upstream dam: at section 103.00
3 piers w/0.5H:1V side slopes, 6 ft. topwidth, 6' high
includes concrete apron
Foundation elevation = 1143.33

Sediment deposition at elev. 1132 upstream of downstream dam

Overbank Development:

Placed on top of CSA
Manning's n: walkways = 0.025
landscaped slopes = 0.045
Elevations from landscape plans

Notes:

- this run was created by combining the CRSS runs: RSSRP1.hc2 and RSSRP2.hc2
The seam is at GC #4
- see note at Priest Ave. Br.
- starting WSEL's on RC card at first cross-section
- these cross-section were set up with the left and right banks defined
by looking upstream

T1 RIO SALADO TOWN LAKE for TEMPE, AZ
 T2 CH2M HILL Walker/Allen Sept. 1994
 T3 RS-PROP3

J1 ICHECK INQ NINV IDIR STRT METRIC HVINS Q WSEL FQ
 4 1119.15
 J2 NPROF IPLOT PRFVS XSECV XSECH FN ALLDC IBW CHNIM ITRACE

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J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38 39 66 43 1 8 42 26 5
 150

J5 LPRNT NUMSEC *****REQUESTED SECTION NUMBERS*****

-10 -10

NC 0.050 0.050 0.035 0.1 0.3
 QT 4 90000 155000 205000 250000

Begin ADOT Channelization

***** Begin ADOT Channelization *****

X1	10035	12	10020.0	11105.0	0.0	0.0	0.0	0.0	1000	0
RC	4	90000	1112.21	155000	1116.42	205000	1119.15	250000	1120.10	
GR	125.0	10000.	125.0	10010.	122.00	10020.	105.00	10056.	104.00	10340.
GR	100.00	10356.	97.20	10540.	100.00	10750.	105.00	10770.	105.00	11050.
GR	125.0	11105.	125.0	11150.						
X1	10200	11	10025.0	11100.0	165.0	165.0	165.0	0.0	1000	0
GR	122.00	10000.	123.00	10025.	105.00	10065.	104.00	10355.	100.00	10365.
GR	98.10	10548.	100.00	10758.	105.00	10775.	105.00	11060.	123.00	11100.
GR	123.00	11150.								
X1	10400	11	10035.0	11103.0	200.0	200.0	200.0	0.0	1000	0
GR	122.00	10000.	122.00	10035.	105.00	10070.	105.00	10353.	100.00	10385.
GR	98.10	10548.	100.00	10758.	105.00	10775.	105.00	11060.	123.00	11103.
GR	123.00	11140.								
X1	10600	11	10025.0	11100.0	200.0	200.0	200.0	0.0	1000	0
GR	123.00	10000.	123.00	10025.	105.00	10068.	105.00	10362.	100.00	10392.
GR	98.50	10544.	100.00	10760.	105.00	10775.	106.00	11050.	124.00	11100.
GR	124.00	11130.								
X1	10800	11	10030.0	11100.0	200.0	200.0	200.0	0.0	1000	0
GR	123.00	10000.	123.00	10030.	105.00	10067.	106.00	10380.	100.00	10400.
GR	99.00	10540.	101.00	10780.	106.00	10800.	107.00	11060.	124.00	11100.
GR	124.00	11145.								

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X1	11000	11	10022.0	11095.0	200.0	200.0	200.0	0.0	1000	0
GR	123.00	10000.	123.00	10022.	105.00	10065.	106.00	10392.	101.00	10418.
GR	99.50	10538.	101.00	10810.	106.00	10830.	107.00	11060.	124.00	11095.
GR	125.00	11195.								

X1	11200	12	10030.0	11100.0	200.0	200.0	200.0	0.0	1000	0
GR	123.00	10000.	123.00	10030.	106.00	10064.	106.00	10413.	100.00	10425.
GR	100.00	10538.	100.00	10815.	103.00	10821.	106.00	10875.	107.00	11055.
GR	126.00	11100.	126.00	11160.						

X1	11400	11	10030.0	11113.0	200.0	200.0	200.0	0.0	1000	0
GR	124.00	10000.	124.00	10030.	107.00	10064.	103.40	10405.	100.40	10411.
GR	100.40	10810.	103.40	10816.	108.00	10925.	108.00	11060.	126.00	11113.
GR	128.00	11195.								

X1	11600	12	10030.0	11122.0	200.0	200.0	200.0	0.0	1000	0
GR	124.00	10000.	124.00	10030.	108.00	10065.	103.90	10399.	100.90	10405.
GR	100.90	10805.	103.90	10811.	103.90	11060.	116.50	11080.	116.50	11089.
GR	127.50	11122.	127.50	11133.						

X1	11800	12	10035.0	11130.0	200.0	200.0	200.0	0.0	1000	0
GR	125.50	10000.	125.00	10035.	110.00	10075.	104.40	10386.	101.40	10392.
GR	101.40	10792.	104.40	10798.	104.40	11071.	116.90	11089.	116.90	11097.
GR	127.90	11130.	127.90	11141.						

X1	12000	12	10035.0	11130.0	200.0	200.0	200.0	0.0	1000	0
GR	127.60	10000.	127.00	10035.	110.00	10070.	104.80	10364.	101.80	10370.
GR	101.80	10770.	104.80	10776.	104.80	11070.	117.40	11089.	117.40	11097.
GR	128.40	11130.	128.40	11140.						

X1	12100	12	10035.0	11125.0	100.0	100.0	100.0	0.0	1000	0
GR	127.80	10000.	127.00	10035.	110.50	10070.	105.10	10347.	102.10	10353.
GR	102.10	10753.	105.10	10759.	105.10	11065.	117.60	11084.	117.60	11092.
GR	128.60	11125.	128.60	11136.						

X1	12200	12	10032.0	11123.0	100.0	100.0	100.0	0.0	1000	0
GR	128.00	10000.	126.00	10032.	110.00	10082.	105.30	10334.	102.30	10340.
GR	102.30	10740.	105.30	10746.	105.30	11063.	117.80	11082.	117.80	11090.
GR	128.80	11123.	128.80	11134.						

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X1	12400	12	10047.0	11109.0	200.0	200.0	200.0	0.0	1000	0
GR	129.30	10000.	129.00	10047.	111.00	10085.	105.80	10308.	102.80	10314.
GR	102.80	10714.	105.80	10720.	105.80	11049.	118.20	11068.	118.20	11076.
GR	129.20	11109.	129.20	11119.						

X1	12600	14	10033.0	11097.0	200.0	200.0	200.0	0.0	1000	0
GR	130.00	10000.	130.00	10033.	118.60	10078.	118.60	10086.	106.20	10105.
GR	106.20	10281.	103.20	10287.	103.20	10687.	106.20	10693.	106.20	11038.
GR	118.60	11056.	118.60	11064.	129.60	11097.	129.60	11108.		

X1	12800	14	10055.0	11130.0	200.0	200.0	200.0	0.0	1000	0
GR	130.40	10000.	131.00	10055.	119.10	10108.	119.10	10116.	106.70	10135.
GR	106.70	10284.	103.70	10290.	103.70	10690.	106.70	10696.	106.70	11071.
GR	119.10	11089.	119.10	11097.	130.00	11130.	130.00	11141.		

X1	13000	14	10059.0	11115.0	200.0	200.0	200.0	0.0	1000	0
GR	132.00	10000.	131.00	10059.	119.40	10087.	119.40	10095.	107.20	10113.
GR	107.20	10244.	104.20	10250.	104.20	10650.	107.20	10656.	107.20	11055.
GR	119.50	11074.	119.50	11082.	130.50	11115.	130.50	11126.		

X1	13200	14	10040.0	11092.0	200.0	200.0	200.0	0.0	1000	0
GR	131.00	10000.	130.00	10040.	119.90	10064.	119.90	10072.	107.70	10090.
GR	107.70	10194.	104.70	10200.	104.70	10600.	107.70	10606.	107.70	11032.
GR	119.90	11051.	119.90	11059.	130.90	11092.	130.90	11102.		

X1	13400	14	10040.0	11092.0	200.0	200.0	200.0	0.0	1000	0
GR	131.00	10000.	130.00	10040.	120.30	10064.	120.30	10072.	108.10	10090.
GR	108.10	10172.	105.10	10178.	105.10	10578.	108.10	10584.	108.10	11032.
GR	120.30	11051.	120.30	11059.	131.30	11092.	131.30	11102.		

X1	13600	14	10042.0	11087.0	200.0	200.0	200.0	0.0	1000	0
GR	132.00	10000.	130.00	10042.	120.80	10067.	120.80	10075.	108.60	10093.
GR	108.60	10144.	105.60	10150.	105.60	10550.	108.60	10556.	108.60	11027.
GR	120.80	11046.	120.80	11054.	131.80	11087.	131.80	11097.		

X1	13800	14	10035.0	11081.0	200.0	200.0	200.0	0.0	1000	0
GR	132.50	10000.	130.00	10035.	121.20	10055.	121.20	10063.	109.10	10081.
GR	109.10	10114.	106.10	10120.	106.10	10520.	109.10	10526.	109.10	11022.
GR	121.20	11040.	121.20	11048.	132.20	11081.	132.20	11092.		

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X1	14000	14	10033.0	11085.0	200.0	200.0	200.0	0.0	1000	0
GR	132.00	10000.	130.00	10033.	121.60	10049.	121.60	10057.	109.50	10075.
GR	109.50	10096.	106.50	10102.	106.50	10502.	109.50	10508.	109.50	11026.
GR	121.60	11044.	121.60	11052.	132.60	11085.	132.60	11096.		

X1	14200	14	10011.0	11093.0	200.0	200.0	200.0	0.0	1000	0
GR	133.00	10000.	133.00	10011.	122.00	10044.	122.00	10052.	110.00	10070.
GR	110.00	10091.	107.00	10097.	107.00	10497.	110.00	10503.	110.00	11034.
GR	122.00	11052.	122.00	11060.	133.00	11093.	133.00	11104.		

NC 0.0 0.0 0.0 0.3 0.5

Grade Control Str. No. 2

***** Grade Control Str. No. 2 *****

X1	14400	13	10027.0	11093.0	200.0	200.0	200.0	0.0	1000	0
GR	133.50	10000.	133.50	10027.	133.50	10035.	110.50	10070.	110.50	10086.
GR	107.50	10092.	107.50	10492.	110.50	10498.	110.50	11034.	122.50	11052.
GR	122.50	11060.	133.50	11093.	133.50	11104.				

NC 0.050 0.050 0.035 0.3 0.5

SR 153 Bridge (D/S limit)

***** SR 153 Bridge (D/S limit) *****

X1	14665	10	10036.0	11068.0	265.0	265.0	265.0	0.0	1000	0
X3	0	0.0	0.0	10036.0	147.0	11068.0	147.0	0.0	0.0	
GR	134.10	10000.	134.10	10036.	111.20	10070.	111.20	10092.	108.20	10098.
GR	108.20	10498.	111.20	10504.	111.20	11034.	134.10	11068.	134.10	11103.

SR 153 Bridge (U/S limit)

***** SR 153 Bridge (U/S limit) *****

X1	14785	12	10011.0	11068.0	120.0	120.0	120.0	0.0	1000	0
GR	134.30	10000.	134.30	10011.	123.30	10044.	123.30	10052.	111.40	10070.
GR	111.40	10092.	108.40	10098.	108.40	10498.	111.40	10504.	111.40	11034.
GR	134.30	11068.	134.30	11103.						

NC 0.0 0.0 0.0 0.1 0.3

X1	15000	14	10011.0	11091.0	215.0	215.0	215.0	0.0	1000	0
GR	134.70	10000.	134.70	10011.	123.70	10044.	123.70	10052.	111.90	10070.
GR	111.90	10091.	108.90	10097.	108.90	10497.	111.90	10503.	111.90	11033.
GR	123.70	11050.	123.70	11058.	134.70	11091.	134.70	11102.		

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NC 0.050 0.050 0.035 0.1 0.3

X1	15200	14	10011.0	11091.0	200.0	200.0	200.0	0.0	1000	0
GR	135.20	10000.	135.20	10011.	124.20	10044.	124.20	10052.	112.40	10070.
GR	112.40	10091.	109.40	10097.	109.40	10497.	112.40	10503.	112.40	11033.
GR	124.20	11050.	124.20	11058.	135.20	11091.	135.20	11102.		

X1	15400	12	10035.0	11091.0	200.0	200.0	200.0	0.0	1000	0
GR	135.60	10000.	135.60	10035.	112.80	10069.	112.80	10091.	109.80	10097.
GR	109.80	10497.	112.80	10503.	112.80	11033.	124.60	11051.	124.60	11059.
GR	135.60	11091.	135.60	11102.						

NC 0.050 0.050 0.035 0.3 0.5

QT 4 92000 157000 210000 250000

SR 143 Bridge (D/S limit)

***** SR 143 Bridge (D/S limit) *****

X1	15586	12	10035.0	11091.0	186.0	186.0	186.0	0.0	1000	0
X3	0	0.0	0.0	10035.0	145.4	11091.0	145.4	0.0	0.0	
GR	136.00	10000.	136.00	10035.	113.30	10069.	113.30	10091.	110.30	10097.
GR	110.30	10497.	113.30	10503.	113.30	11033.	125.00	11051.	125.00	11059.
GR	136.00	11091.	136.00	11102.						

SB 1.05 1.56 2.6 200.0 963.0 48.0 26680.0 1.5 1110.50 1110.30

SR 143 Bridge (U/S limit)

2111033

***** SR 143 Bridge (U/S limit) *****

X1	15710	12	10011.0	11066.0	124.0	124.0	124.0	0.0	1000	0
X2	0.0	0.0	1	1137.0	1145.4	0.0	0	2.00	0.0	
GR	136.10	10000.	136.20	10011.	125.20	10044.	125.20	10052.	113.60	10070.
GR	113.60	10091.	110.60	10097.	110.60	10497.	113.60	10503.	113.60	11032.
GR	136.20	11066.	136.20	11102.						

NC 0.0 0.0 0.0 0.1 0.3

X1	16000	16	10011.0	11084.0	290.0	290.0	290.0	0.0	1000	0
GR	136.90	10000.	136.90	10011.	125.90	10044.	125.90	10052.	114.30	10078.
GR	114.30	10089.	111.30	10095.	111.30	10495.	114.30	10501.	114.30	11032.
GR	125.90	11050.	125.90	11058.	122.90	11062.	122.90	11063.	136.90	11084.
GR	136.90	11098.								

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NC 0.035 0.035 0.035 0.1 0.3

X1	16200	15	10020.0	11096.0	200.0	200.0	200.0	0.0	1000	0
GR	137.30	10000.	137.30	10012.	137.30	10020.	114.70	10081.	114.70	10109.
GR	111.70	10115.	111.70	10515.	114.70	10521.	114.70	11043.	126.30	11061.
GR	126.30	11069.	123.30	11073.	123.30	11074.	137.30	11096.	137.30	11109.

X1	16400	16	10011.0	11083.0	200.0	200.0	200.0	0.0	1000	0
GR	137.70	10000.	137.70	10011.	126.70	10044.	126.70	10052.	115.20	10069.
GR	115.20	10102.	112.20	10108.	112.20	10508.	115.20	10514.	115.20	11031.
GR	126.70	11049.	126.70	11057.	123.70	11061.	123.70	11062.	138.30	11083.
GR	138.30	11098.								

X1	16600	16	10011.0	11085.0	200.0	200.0	200.0	0.0	1000	0
GR	138.10	10000.	138.10	10011.	127.10	10043.	127.10	10051.	115.70	10069.
GR	115.70	10124.	112.70	10130.	112.70	10530.	115.70	10536.	115.70	11033.
GR	127.10	11050.	127.10	11058.	124.10	11063.	124.10	11064.	138.70	11085.
GR	138.70	11099.								

X1	16800	16	10010.0	11087.0	200.0	200.0	200.0	0.0	1000	0
GR	138.60	10000.	138.60	10010.	127.60	10043.	127.60	10051.	116.20	10069.
GR	116.20	10157.	113.20	10163.	113.20	10563.	116.20	10569.	116.20	11035.
GR	127.60	11052.	127.60	11060.	124.60	11065.	124.60	11066.	139.20	11087.
GR	139.20	11101.								

X1	17000	16	10011.0	11089.0	200.0	200.0	200.0	0.0	1000	0
GR	139.00	10000.	139.00	10011.	128.00	10044.	128.00	10052.	116.60	10069.
GR	116.60	10205.	113.60	10211.	113.60	10611.	116.60	10617.	116.60	11037.
GR	128.00	11054.	128.00	11062.	125.00	11067.	125.00	11068.	139.60	11089.
GR	139.60	11103.								

X1	17200	16	10011.0	11089.0	200.0	200.0	200.0	0.0	1000	0
GR	139.40	10000.	139.40	10011.	128.40	10044.	128.40	10052.	117.10	10069.
GR	117.10	10263.	114.10	10269.	114.10	10669.	117.10	10675.	117.10	11037.
GR	128.40	11054.	128.40	11062.	125.40	11067.	125.40	11068.	140.00	11089.
GR	140.00	11103.								

X1	174.00	12	10010.0	11088.0	200.0	200.0	200.0	0.0	1000	0
GR	139.80	10000.	139.80	10010.	128.80	10043.	128.80	10051.	117.60	10068.
GR	117.60	10322.	114.60	10328.	114.60	10728.	117.60	10734.	117.60	11036.
GR	140.40	11088.	140.40	11102.						

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X1	17600	12	10011.0	11070.0	200.0	200.0	200.0	0.0	1000	0
GR	140.30	10000.	140.30	10011.	129.30	10044.	129.30	10052.	118.00	10069.
GR	118.00	10382.	115.00	10388.	115.00	10788.	118.00	10794.	118.00	11035.
GR	140.90	11070.	140.90	11084.						

X1	17800	12	10011.0	11067.0	200.0	200.0	200.0	0.0	1000	0
GR	140.70	10000.	140.70	10011.	129.70	10044.	129.70	10052.	118.50	10068.
GR	118.50	10431.	115.50	10437.	115.50	10837.	118.50	10843.	118.50	11033.
GR	141.30	11067.	141.30	11081.						

X1	18000	12	10011.0	11065.0	200.0	200.0	200.0	0.0	1000	0
GR	141.00	10000.	141.00	10011.	130.10	10044.	130.10	10052.	119.00	10069.
GR	119.00	10485.	116.00	10491.	116.00	10891.	119.00	10897.	119.00	11031.
GR	141.70	11065.	141.70	11079.						

X1	18200	12	10011.0	11061.0	200.0	200.0	200.0	0.0	1000	0
GR	141.50	10000.	141.50	10011.	130.50	10044.	130.50	10052.	119.50	10069.
GR	119.50	10528.	116.50	10534.	116.50	10934.	119.50	10940.	119.50	11027.
GR	142.10	11061.	142.10	11075.						

X1	18400	10	10015.0	11080.0	200.0	200.0	200.0	0.0	1000	0
GR	142.00	10000.	142.00	10015.	119.90	10077.	119.90	10567.	116.90	10573.
GR	116.90	10973.	119.90	10979.	119.90	11032.	142.60	11080.	142.60	11090.

X1	18600	10	10018.0	11050.0	200.0	200.0	200.0	0.0	1000	0
GR	142.40	10000.	142.40	10018.	120.40	10067.	120.40	10576.	117.40	10582.
GR	117.40	10982.	120.40	10988.	120.40	11016.	143.00	11050.	143.00	11063.

X1	18800	12	10011.0	11046.0	200.0	200.0	200.0	0.0	1000	0
GR	142.80	10000.	142.80	10011.	131.80	10044.	131.80	10052.	120.90	10069.
GR	120.90	10587.	117.90	10593.	117.90	10993.	120.90	10999.	120.90	11012.
GR	143.40	11046.	143.40	11060.						

X1	19000	12	10011.0	11039.0	200.0	200.0	200.0	0.0	1000	0
GR	143.20	10000.	143.20	10011.	132.20	10044.	132.20	10052.	121.30	10069.
GR	121.30	10586.	118.30	10592.	118.30	10992.	121.30	10998.	121.30	11005.
GR	143.80	11039.	143.80	11053.						

X1	19200	12	10011.0	11031.0	200.0	200.0	200.0	0.0	1000	0
GR	143.70	10000.	143.70	10011.	132.70	10044.	132.70	10052.	121.80	10068.
GR	121.80	10574.	118.80	10580.	118.80	10980.	121.80	10986.	121.80	10998.
GR	144.30	11031.	144.30	11045.						

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X1	19400	12	10011.0	11023.0	200.0	200.0	200.0	0.0	1000	0
GR	144.10	10000.	144.10	10011.	133.10	10044.	133.10	10052.	122.30	10068.
GR	122.30	10555.	119.30	10561.	119.30	10961.	122.30	10967.	122.30	10989.
GR	144.70	11023.	144.70	11037.						

X1	19600	12	10011.0	11014.0	200.0	200.0	200.0	0.0	1000	0
GR	144.50	10000.	144.50	10011.	133.50	10044.	133.50	10052.	122.80	10068.
GR	122.80	10516.	119.80	10522.	119.80	10922.	122.80	10928.	122.80	10980.
GR	145.10	11014.	145.10	11028.						

X1	19800	12	10011.0	11005.0	200.0	200.0	200.0	0.0	1000	0
GR	145.00	10000.	145.00	10011.	134.00	10044.	134.00	10052.	123.20	10068.
GR	123.20	10480.	120.20	10486.	120.20	10886.	123.20	10892.	123.20	10972.
GR	145.60	11005.	145.60	11019.						

X1	20000	12	10010.0	10994.0	200.0	200.0	200.0	0.0	1000	0
GR	145.60	10000.	145.60	10010.	134.60	10043.	134.60	10051.	123.70	10068.
GR	123.70	10435.	120.70	10441.	120.70	10841.	123.70	10847.	123.70	10961.
GR	145.60	10994.	145.60	11008.						

X1	20200	12	10011.0	10987.0	200.0	200.0	200.0	0.0	1000	0
GR	146.10	10000.	146.10	10011.	135.10	10044.	135.10	10052.	124.20	10068.
GR	124.20	10382.	121.20	10388.	121.20	10788.	124.20	10794.	124.20	10951.
GR	146.10	10987.	146.10	11000.						

X1	20400	10	10020.0	10987.0	200.0	200.0	200.0	0.0	1000	0
GR	146.60	10000.	146.60	10020.	124.60	10066.	124.60	10325.	121.60	10331.
GR	121.60	10731.	124.60	10737.	124.60	10938.	146.60	10987.	146.60	11000.

X1	20600	12	10010.0	10965.0	200.0	200.0	200.0	0.0	1000	0
GR	147.10	10000.	147.10	10010.	136.10	10043.	136.10	10051.	125.10	10068.
GR	125.10	10276.	122.10	10282.	122.10	10682.	125.10	10688.	125.10	10932.
GR	147.10	10965.	147.10	10979.						

X1	20782	14	10012.0	10988.0	178.0	178.0	178.0	0.0	1000	0
GR	147.67	10000.	147.67	10012.	136.66	10045.	136.66	10053.	125.56	10069.
GR	125.56	10230.	122.50	10236.	122.50	10636.	125.56	10642.	125.56	10931.
GR	136.66	10947.	136.66	10955.	147.67	10988.	147.67	10999.		

Grade Control Str. No. 3

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***** Grade Control Str. No. 3 *****

X1	20800	14	10012.0	10988.0	18.0	18.0	18.0	0.0	1000	0
GR	147.70	10000.	147.70	10012.	136.69	10045.	136.69	10053.	125.59	10069.
GR	125.59	10230.	122.53	10236.	122.53	10636.	125.59	10642.	125.59	10931.
GR	136.69	10947.	136.69	10955.	147.70	10988.	147.70	10999.		

X1	21000	10	10032.0	10964.0	200.0	200.0	200.0	0.0	1000	0
GR	148.20	10000.	148.20	10032.	125.94	10069.	125.94	10190.	122.86	10196.
GR	122.86	10596.	125.94	10602.	125.94	10931.	148.20	10964.	148.20	10999.

NC 0.050 0.050 0.035 0.3 0.5

Priest Bridge (D/S)

***** Priest Bridge (D/S) *****

X1	21050	10	10032.0	10964.0	50.0	50.0	50.0	0.0	1000	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	157.0	157.0	
GR	148.3	10000.0	148.3	10032.0	126.2	10069.0	126.2	10190.0	123.2	10196.0
GR	123.2	10596.0	126.2	10602.0	126.2	10931.0	148.3	10964.0	148.8	10999.0

SB	1.05	1.56	2.6	1000.0	861.8	42.0	24080.0	1.5	1123.4	1123.2
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Priest Bridge (U/S)

***** Priest Bridge (U/S) *****

X1	21150	10	10032.0	10964.0	100.0	100.0	100.0	0.0	1000	0
X2	0.0	0.0	1	1150.0	1157.0	0.0	0	2.0	0.0	
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	157.0	157.0	
GR	148.5	10000.0	148.5	10032.0	126.4	10069.0	126.4	10190.0	123.4	10196.0
GR	123.4	10596.0	126.4	10602.0	126.4	10931.0	148.5	10964.0	148.5	10999.0

Note: the following change in contraction/expansion coefficients was not in the original file, RSSRP1.hc2, provided to CH2M HILL. When the coefficients are left here as 0.3/0.5, then the CWSEL at GC #4 in RSSRP1 does not match the starting water surface elevation in the file RSSRP2 which begins at GC #4. To make the two runs compatible and since between Priest Ave. and GC #4 there are not any drastic changes in the cross-section, the coefficients were reduced to 0.1/0.3 as shown below. A result of this, though, is that the CWSEL's in this run from Priest to GC #4 will not match those in RSSRP1.

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NC .1 .3

X1	21200	10	10035.0	10965.0	50.0	50.0	50.0	0.0	1000	0
GR	148.90	10000.	148.90	10035.	126.20	10069.	126.20	10160.	123.19	10166.
GR	123.19	10566.	126.20	10572.	126.20	10931.	148.90	10965.	148.90	11000.

X1	21400	14	10011.0	10991.0	200.0	200.0	200.0	0.0	1000	0
GR	149.60	10000.	149.60	10011.	137.86	10045.	137.86	10053.	126.56	10070.
GR	126.56	10133.	123.52	10139.	123.52	10539.	126.56	10545.	126.56	10932.
GR	137.86	10949.	137.86	10957.	149.60	10991.	149.60	11002.		

X1	21600	10	10013.0	11006.0	200.0	200.0	200.0	0.0	1000	0
GR	150.00	10000.	150.00	10013.	126.91	10078.	126.91	10119.	123.85	10125.
GR	123.85	10525.	126.91	10531.	126.91	10940.	150.50	11006.	150.50	11017.

X1	21800	14	10011.0	10991.0	200.0	200.0	200.0	0.0	1000	0
GR	150.50	10000.	150.50	10011.	138.47	10045.	138.47	10053.	127.17	10070.
GR	127.17	10101.	124.18	10107.	124.18	10507.	127.17	10513.	127.17	10932.
GR	138.47	10949.	138.47	10957.	150.50	10991.	150.50	11002.		

X1	22000	14	10011.0	10991.0	200.0	200.0	200.0	0.0	1000	0
GR	151.00	10000.	151.00	10011.	138.82	10045.	138.82	10053.	127.52	10070.
GR	127.52	10104.	124.51	10110.	124.51	10510.	127.52	10516.	127.52	10932.

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GR	138.82	10949.	138.82	10957.	151.00	10991.	151.00	11002.		
X1	22200	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	151.40	10000.	151.40	10010.	139.08	10044.	139.08	10052.	127.88	10069.
GR	127.88	10123.	124.84	10129.	124.84	10529.	127.88	10535.	127.88	10931.
GR	139.08	10948.	139.08	10956.	151.40	10990.	151.40	11000.		
X1	22400	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	151.90	10000.	151.90	10010.	139.44	10044.	139.44	10052.	128.24	10069.
GR	128.24	10160.	125.18	10166.	125.18	10566.	128.24	10572.	128.24	10931.
GR	139.44	10948.	139.44	10956.	151.90	10990.	151.90	11000.		
X1	22600	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	152.30	10000.	152.30	10010.	139.69	10044.	139.69	10052.	128.49	10069.
GR	128.49	10205.	125.51	10211.	125.51	10611.	128.49	10617.	128.49	10931.
GR	139.69	10948.	139.69	10956.	152.30	10990.	152.30	11000.		

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X1	22800	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	152.80	10000.	152.80	10010.	140.05	10044.	140.05	10052.	128.85	10069.
GR	128.85	10260.	125.84	10266.	125.84	10666.	128.85	10672.	128.85	10931.
GR	140.05	10948.	140.05	10956.	152.80	10990.	152.80	11000.		
X1	23000	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	153.20	10000.	153.20	10011.	140.30	10045.	140.30	10053.	129.20	10069.
GR	129.20	10325.	126.70	10331.	126.70	10731.	129.20	10737.	129.20	10931.
GR	140.30	10947.	140.30	10955.	153.20	10989.	153.20	11000.		
X1	23200	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	153.70	10000.	153.70	10010.	140.66	10044.	140.66	10052.	129.46	10069.
GR	129.46	10390.	126.50	10396.	126.50	10796.	129.46	10802.	129.46	10931.
GR	140.66	10948.	140.66	10956.	153.70	10990.	153.70	11000.		
X1	23400	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	154.10	10000.	154.10	10011.	140.92	10045.	140.92	10053.	129.82	10069.
GR	129.82	10440.	126.83	10446.	126.83	10846.	129.82	10852.	129.82	10931.
GR	140.92	10947.	140.92	10955.	154.10	10989.	154.10	11000.		
X1	23600	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	154.60	10000.	154.60	10011.	141.27	10045.	141.27	10053.	130.17	10069.
GR	130.17	10480.	127.16	10486.	127.16	10886.	130.17	10892.	130.17	10931.
GR	141.27	10947.	141.27	10955.	154.60	10989.	154.60	11000.		
X1	23800	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	155.00	10000.	155.00	10011.	141.53	10045.	141.53	10053.	130.53	10069.
GR	130.53	10500.	127.46	10506.	127.46	10906.	130.53	10912.	130.53	10931.
GR	141.53	10947.	141.53	10955.	155.00	10989.	155.00	11000.		
X1	24000	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	155.50	10000.	155.50	10011.	141.88	10045.	141.88	10053.	130.40	10069.
GR	130.40	10510.	127.82	10516.	127.82	10916.	130.40	10922.	130.40	10931.
GR	141.88	10947.	141.88	10955.	155.50	10989.	155.50	11000.		

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X1	24200	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	155.90	10000.	155.90	10011.	142.14	10045.	142.14	10053.	130.40	10069.
GR	130.40	10507.	128.15	10513.	128.15	10913.	130.40	10919.	130.40	10931.
GR	142.14	10947.	142.14	10955.	155.90	10989.	155.90	11000.		

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X1	24400	10	10014.0	10981.0	200.0	200.0	200.0	0.0	1000	0
GR	156.40	10000.	156.40	10014.	130.40	10066.	130.40	10487.	128.48	10493.
GR	128.48	10893.	130.40	10899.	130.40	10928.	156.40	10981.	156.40	10994.

X1	24600	10	10010.0	11004.0	200.0	200.0	200.0	0.0	1000	0
GR	156.80	10000.	156.80	10010.	130.40	10076.	130.40	10465.	128.81	10471.
GR	128.81	10871.	130.40	10877.	130.40	10938.	156.80	11004.	156.80	11019.

X1	24744	14	10053.0	10947.0	144	144	144		999.91	0
GR	157.30	10000.	157.30	10011.	143.11	10045.	143.11	10053.	130.40	10069.
GR	130.40	10410.	129.14	10416.	129.14	10816.	130.40	10822.	130.40	10931.
GR	143.11	10947.	143.11	10955.	157.30	10989.	157.30	11000.		

X1	24841	8	10050	10951	97	97	97			
GR	1158	10000	1158	10050	1151	10050	1129.0	10083	1129.0	10918
GR	1151	10951	1158	10951	1158	11000				

NC .025 .3 .5

BEGINNING OF DOWNSTREAM DAM

d.s. edge of USBR Type II Stilling basin

D/S ground elevation & sill elevation @ 1129.

top of thrust block elevation at 1130.5: 50% of area between elev's 1129.0 & 1130.5 has been blocked out in the GR-DATA to represent the thrust blocks

X1	24871	12	10050	10951	30	30	30			
GR	1158	10000	1158	10050	1151	10050	1129.0	10083	1129.	10291.
GR	1130.5	10291.1	1130.5	10708.9	1129.	10709.	1129.0	10918	1151	10951
GR	1158	10951	1158	11000						

u/s limit of stilling basin

X1	24906	8	10050	10951	35	35	35		0.25	
GR	1158	10000	1158	10050	1151	10050	1129.0	10083	1129.0	10918
GR	1151	10951	1158	10951	1158	11000				

d.s. edge of foundation

X1	24907	8	10050	10951	1	1	1			
GR	1160	10000	1160	10050	1151	10050	1132	10078.5	1132	10922.5
GR	1151	10951	1160	10951	1160	11000				

Dam cross section with piers

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X1	24918	26	10050	10951	11	11	11			
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GR	1160	10000	1160	10050	1151	10050	1132	10078.5	1132	10261
GR	1153	10271.5	1163	10271.5	1163	10277.5	1153	10277.5	1132	10288
GR	1132	10487	1153	10497.5	1163	10497.5	1163	10503.5	1153	10503.5
GR	1132	10514	1132	10713	1153	10723.5	1163	10723.5	1163	10729.5
GR	1153	10729.5	1132	10740	1132	10922.5	1151	10951	1160	10951
GR	1160	11000								

Dam cross section with piers

***** Grade Control Str. No. 4 *****

X1	24957			39	39	39				
NH	5	.045	10045	.025	10053	.035	10947	.025	10955	.045
NH	11000									

river channel section u/s of dam

flow area ineffective below 1132.0: blocked out with X3-CARD data

X1	24968	14	10053.0	10947.0	11	11			999.91	0
X3		1132		10053	1150	10947	1150			
GR	157.30	10000.	157.30	10011.	143.11	10045.	143.11	10053.	130.40	10069.
GR	130.40	10410.	129.14	10416.	129.14	10816.	130.40	10822.	130.40	10931.
GR	143.11	10947.	143.11	10955.	157.30	10989.	157.30	11000.		

NC .1 .3

Here is the seam between the two FEMA runs RSSRP1.hc2 and RSSRP2.hc2.
Grade Control Str. No. 4 now under the d/s dam

NH	5	.045	574.5	.025	598.5	.035	1500	.025	1568	.045
NH	1609									
X1	2.0	13	598.50	1500.00	107.0	187.0	147.0	0.0	0.0	0
X3		1132		598.50	1150	1500.00	1150			
GR	1154.9	522.00	1154.91	573.00	1142.40	574.50	1142.40	598.50	1132.53	626.94
GR	1129.6	1082.00	1132.61	1454.55	1147.83	1500.00	1147.83	1515.00	1145.83	1521.00
GR	1145.8	1568.00	1155.04	1594.00	1155.04	1609.00				
NH	5	.045	587.5	.025	611.5	.035	1500	.025	1611	.045
NH	1654									
X1	4.0	13	611.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3		1132		611.50	1150	1500.00	1150			
GR	1155.4	535.00	1155.41	550.00	1142.90	587.50	1142.90	611.50	1132.74	640.63
GR	1129.8	1141.00	1132.82	1454.34	1148.17	1500.00	1148.32	1515.00	1146.17	1521.00
GR	1146.1	1611.00	1155.44	1639.00	1155.44	1654.00				

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NH	5	.045	597.5	.025	621.5	.035	1460	.025	1660	.045
NH	1701									
X1	6.0	13	621.50	1460.00	200.0	200.0	200.0	0.0	0.0	0
X3		1132		621.50	1150	1460.00	1150			
GR	1155.9	545.00	1155.91	560.00	1143.40	597.50	1143.40	621.50	1132.96	651.29
GR	1130.0	1190.00	1133.03	1413.59	1148.50	1460.00	1148.50	1515.00	1146.50	1521.00
GR	1146.5	1660.00	1155.83	1686.00	1155.83	1701.00				

NH	5	.045	605.5	.025	629.5	.035	1500	.025	1701.83	.045
NH	1745									
X1	8.0	13	629.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3		1132		629.50	1150	1500.00	1150.4			
GR	1156.4	553.00	1156.41	568.00	1143.90	605.50	1143.66	629.50	1133.50	659.98
GR	1130.2	1225.00	1133.50	1454.01	1148.83	1500.00	1148.83	1515.00	1146.83	1521.00
GR	1147.7	1701.83	1156.22	1730.00	1156.22	1745.00				

NH	5	.045	603.5	.025	627.5	.035	1500	.025	1748	.045
NH	1792									
X1	10.0	13	627.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3		1132		627.50	1150	1500.00	1150.8			
GR	1156.9	551.00	1156.91	566.00	1144.40	603.50	1144.40	627.50	1133.38	658.64
GR	1130.4	1247.00	1133.45	1453.86	1149.17	1500.00	1149.17	1515.00	1147.17	1521.00
GR	1148.3	1748.00	1156.63	1777.00	1156.63	1792.00				

NH	5	.045	599.5	.025	623.5	.035	1500	.025	1796	.045
NH	1837									
X1	12.0	13	623.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3		1132		623.50	1150	1500.00	1151.2			
GR	1157.4	547.00	1157.41	562.00	1144.90	599.50	1144.90	623.50	1133.60	655.15
GR	1130.6	1255.00	1133.66	1453.65	1149.50	1500.00	1149.50	1515.00	1147.50	1521.00
GR	1148.8	1796.00	1157.04	1822.00	1157.04	1837.00				

NH	5	.045	587.55	.025	611.43	.035	1500	.025	1830.74	.045
NH	1874.6									
X1	14.0	13	611.43	1500.00	115.0	200.0	158.0	0.0	0.0	0
X3		1132		611.43	1150	1500.00	1151.6			
GR	1157.6	535.31	1157.69	550.24	1145.19	587.55	1145.19	611.43	1133.72	643.13
GR	1130.8	1243.75	1133.86	1452.09	1149.83	1500.00	1149.83	1507.43	1147.83	1513.40
GR	1149.4	1830.74	1157.47	1859.66	1157.47	1874.6				

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NC				0.3	0.5					
NH	5	.045	575.61	.025	599.49	.035	1420	.025	1886.52	.045
NH	1926.3									
X1	15.4	13	599.49	1420.00	85.0	160.0	122.0	0.0	0.0	0
X3		1132		599.49	1150	1420.00	1152			
GR	1157.9	523.37	1157.90	538.30	1145.40	575.61	1145.40	599.49	1133.81	630.71
GR	1131.0	1233.8	1134.03	1371.79	1150.10	1420.00	1150.10	1515.00	1148.10	1521.00
GR	1149.9	1886.52	1157.79	1911.32	1157.79	1926.3				

QT	4	93000	160000	215000	250000					
SB	1.48	1.56	2.67	1388.0	816.0	72.0	29800.0	10.7	1131.58	1131.55

SPRR bridge U/S

NH	5	.045	574.61	.025	598.49	.035	1420	.025	1886.52	.045
NH	1926.3									

***** SPRR bridge U/S *****

X1	15.6	13	598.49	1420.00	15.0	20.0	18.0	0.0	0.0	0
X2	0.0	0.0	1	1161.0	1165.0	0.0	0	2.0	0.0	
X3		1132		598.49	1150	1420.00	1152			
GR	1158.9	522.38	1157.94	537.30	1145.44	574.61	1145.44	598.49	1133.83	629.75
GR	1131.0	1232.81	1134.05	1371.76	1150.13	1420.00	1150.13	1515.00	1148.13	1521.00
GR	1149.9	1886.52	1157.79	1911.40	1157.79	1926.3				

NC				0.1	0.3					
NH	5	.045	578.34	.025	602.29	.035	1500	.025	1790	.045
NH	2050									

X1	17.3	13	602.29	1500.00	155.0	150.0	152.0	0.0	0.0	0
X3		1132		602.29	1150	1500.00	1152			
GR	1158.3	525.95	1158.33	540.92	1145.83	578.34	1145.83	602.29	1133.99	634.21
GR	1131.2	1229.54	1134.21	1450.17	1150.38	1500.00	1150.38	1515.00	1148.57	1521.00
GR	1150.0	1790.00	1160.04	1880.00	1160.04	2050.00				

Old Ash Bridge alignment

NH	5	.045	578.42	.025	602.9	.035	1500	.025	1698.3	.045
NH	1741.3									

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***** Old Ash Bridge alignment *****

X1	19.0	13	602.90	1500.00	180.0	165.0	172.0	0.0	0.0	0
X3		1132		602.90	1150	1500.00	1152			
GR	1158.9	526.47	1158.99	541.46	1146.49	578.42	1146.49	602.90	1134.19	636.64
GR	1131.3	1218.78	1134.38	1450.88	1150.66	1500.00	1150.66	1515.00	1148.66	1521.00
GR	1149.5	1698.30	1160.47	1726.27	1160.47	1741.3				

NH	5	.045	534.27	.025	557.48	.035	1500	.025	1658.02	.045
NH	1702.6									

X1	21.5	13	557.48	1500.00	90.0	275.0	182.0	0.0	0.0	0
X3		1132		557.48	1150	1500.00	1152			
GR	1159.4	483.50	1159.48	498.01	1146.98	534.27	1146.98	557.48	1134.28	590.08
GR	1131.6	1142.03	1134.67	1450.65	1151.12	1500.00	1151.12	1515.00	1149.12	1521.00
GR	1149.8	1658.02	1160.79	1688.10	1160.79	1702.60				

NH	5	.045	453.8	.025	522.05	.035	1371	.025	1511.75	.045
NH	1556									

X1	24.0	13	522.05	1371.00	50.0	230.0	140.0	0.0	0.0	0
X3		1132		522.05	1150	1371.00	1152			
GR	1159.7	405.82	1159.76	419.53	1147.26	453.80	1147.26	522.05	1134.34	551.50
GR	1131.9	1031.91	1134.91	1327.70	1151.50	1371.00	1151.50	1386.00	1149.50	1392.00
GR	1150.1	1511.75	1160.90	1541.00	1160.90	1556.00				

Mill Avenue bridge

NH	5	.045	450.15	.025	530	.035	1370	.025	1501.65	.045
NH	1545									

***** Mill Avenue bridge *****

12/4/96

X1	24.6	13	530.00	1370	60.0	60.0	60.0	0.0	0.0	0
RC	7	40000.0	1141.84	93000.0	1147.51	135000.0	1151.04	160000.0	1152.84	215000.0
RC	1156.1	250000.0	1158.80	296000.0	1162.00					
X2	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	
X3		1132		530.00	1150	1370	1152			
GR	1160.0	402.16	1160.09	415.87	1147.59	450.15	1147.59	530.00	1134.40	560.00
GR	1131.9	1021.85	1134.97	1327.65	1151.62	1370.00	1151.62	1385.00	1149.62	1391.00
GR	1150.1	1501.65	1161.06	1530.00	1161.06	1545.00				

NC	0.035	0.035								
NH	5	.045	492.66	.025	587.86	.035	1428	.025	1550	.045
NH	1594.6									

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X1	26.0	13	587.86	1428.00	230.0	140.0	185.0	0.0	0.0	0
X3		1132		587.86	1150	1428.00	1152			
GR	1160.9	442.68	1160.90	456.96	1148.40	492.66	1148.40	587.86	1134.65	620.48
GR	1132.1	1024.35	1135.12	1382.59	1151.88	1428.00	1151.88	1442.28	1149.88	1447.99
GR	1150.3	1550.00	1161.16	1580.32	1161.16	1594.60				

SB	1.11	1.56	2.67	1040.0	760.0	85.0	30000.0	5.2	1132.12	1132.22
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Second Mill Avenue bridge

NH	5	.045	492.66	.025	587.86	.035	1428	.025	1550	.045
NH	1594.6									

***** Second Mill Avenue bridge *****

X1	26.45	13	587.86	1428.00	45.0	45.0	45.0	0.0	0.0	0
X2	0.0	0.0	1	1172.51	1176.14	0.0	0	2.0	0.0	
X3				587.86	1150	1428.00	1152			
GR	1160.9	442.68	1160.90	456.96	1148.40	492.66	1148.40	587.86	1134.65	620.48
GR	1132.1	1024.35	1135.12	1382.59	1151.88	1428.00	1151.88	1442.28	1149.88	1447.99
GR	1150.3	1550.00	1161.22	1580.32	1161.22	1594.60				

NH	5	.045	549.19	.025	648.59	.035	1491	.025	1601.21	.045
NH	1646									

X1	27.0	13	648.59	1491.00	255.0	55.0	155.0	0.0	0.0	0
X3				648.59	1150	1491.00	1153			
GR	1161.2	497.00	1161.22	511.91	1148.72	549.19	1148.72	648.59	1134.97	683.18
GR	1132.2	1034.75	1135.22	1443.40	1152.08	1491.00	1152.08	1505.91	1150.08	1511.87
GR	1150.5	1601.21	1161.29	1631.00	1161.29	1646.00				

NH	5	.045	554.5	.025	654.5	.035	1500	.025	1598	.045
NH	1643									

X1	28.0	13	654.50	1500.00	220.0	100.0	160.0	0.0	0.0	0
X3				654.50	1150	1500.00	1154			
GR	1161.4	502.00	1161.44	517.00	1148.94	554.50	1148.94	654.50	1135.20	689.57
GR	1132.3	999.00	1135.33	1451.97	1152.27	1500.00	1152.27	1515.00	1150.27	1521.00
GR	1150.6	1598.00	1161.57	1628.00	1161.57	1643.00				

NH	5	.045	557.5	.025	657.5	.035	1500	.025	1580	.045
NH	1625									

X1	30.0	13	657.50	1500.0	200.0	200.0	200.0	0.0	0.0	0
X3				657.50	1150	1500.0	1153			
GR	1161.6	505.00	1161.65	520.00	1149.15	557.50	1149.15	657.50	1135.42	692.39
GR	1132.5	952.00	1135.54	1451.64	1152.65	1500.00	1152.65	1515.00	1150.65	1521.00
GR	1150.9	1580.00	1161.84	1610.00	1161.84	1625.00				

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NH	5	.045	566.5	.025	658.06	.035	1500	.025	1580	.045
NH	1634.6									
X1	32.0	11	658.06	1500.0	200.0	200.0	200.0	0.0	0.0	0
X3				658.06	1150	1500.0	1152			
GR	1161.8	514.00	1161.86	529.00	1149.37	566.50	1149.37	658.06	1135.63	692.98
GR	1132.7	920.00	1135.75	1462.92	1148.11	1500.00	1148.91	1580.00	1162.11	1619.60
GR	1162.1	1634.60								

NH	5	.045	581.5	.025	656.17	.035	1500	.025	1580	.045
NH	1634.6									
X1	34.0	11	656.17	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3				656.17	1150	1500.00	1152			
GR	1162.0	529.00	1162.07	544.00	1149.57	581.50	1149.57	656.17	1135.85	691.45
GR	1132.9	902.00	1135.96	1466.01	1148.32	1500.00	1149.12	1580.00	1162.32	1619.60
GR	1162.3	1634.60								

NH	5	.045	609.5	.025	658.78	.035	1500	.025	1580	.045
NH	1634.6									
X1	36.0	11	658.78	1500.00	230.0	200.0	215.0	0.0	0.0	0
X3				658.78	1150	1500.00	1152			
GR	1162.3	557.00	1162.31	572.00	1149.81	609.50	1149.81	658.78	1136.09	699.94
GR	1133.1	894.00	1136.17	1462.89	1148.54	1500.00	1149.34	1580.00	1162.53	1619.57
GR	1162.5	1634.6								

NH	5	.045	619.27	.025	661.39	.035	1500	.025	1580	.045
NH	1634.6									
X1	38.0	11	661.39	1500.00	260.0	200.0	230.0	0.0	0.0	0
X3				661.39	1150	1500.00	1152			
GR	1162.5	568.00	1162.58	583.00	1150.49	619.27	1150.08	661.39	1136.37	697.57
GR	1133.3	892.00	1136.37	1462.86	1148.75	1500.00	1149.55	1580.00	1162.74	1619.57
GR	1162.7	1634.6								

NH	5	.045	647.78	.025	671.78	.035	1500	.025	1580	.045
NH	1654.6									
X1	40.0	11	671.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
X3				671.78	1151	1500.00	1152			
GR	1162.8	596.00	1162.85	611.00	1150.59	647.78	1150.35	671.78	1136.65	712.88
GR	1133.5	895.00	1136.58	1462.86	1148.96	1500.00	1149.76	1580.00	1162.95	1639.57
GR	1162.9	1654.6								

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NH	5	.045	649.78	.025	673.78	.035	1500	.025	1580	.045
NH	1636.8									
X1	42.0	11	673.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
X3			673.78	673.78	1151.3	1500.00	1152			
GR	1163.1	598.00	1163.12	613.00	1150.86	649.78	1150.62	673.78	1136.93	714.85
GR	1133.7	900.00	1136.79	1462.83	1149.18	1500.00	1149.24	1580.00	1163.16	1621.76
GR	1163.1	1636.8								

NH	5	.045	666.78	.025	690.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	44.0	11	690.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
X3			690.78	690.78	1151.6	1500.00	1151.6			
GR	1163.3	615.00	1163.39	630.00	1151.13	666.78	1150.89	690.78	1137.20	731.85
GR	1134.0	908.00	1137.00	1462.83	1149.39	1500.00	1150.19	1580.00	1163.37	1619.54
GR	1163.3	1634.5								

NH	5	.045	665.78	.025	689.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	46.0	11	689.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
X3			689.78	689.78	1152	1500.00	1151.2			
GR	1163.6	614.00	1163.66	629.00	1151.40	665.78	1151.16	689.78	1137.48	730.82
GR	1134.2	919.00	1137.21	1462.83	1149.60	1500.00	1150.40	1580.00	1163.58	1619.54
GR	1163.5	1634.5								

NH	5	.045	658.78	.025	682.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	48.0	11	682.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
X3			682.78	682.78	1152	1500.00	1150.8			
GR	1163.9	607.00	1163.93	622.00	1151.67	658.78	1151.43	682.78	1137.76	723.79
GR	1134.4	931.00	1137.42	1462.80	1149.82	1500.00	1150.62	1580.00	1163.79	1619.51
GR	1163.7	1634.5								

NH	5	.045	646.78	.025	670.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	50.0	11	670.78	1500.00	210.0	200.0	205.0	0.0	0.0	0
X3			670.78	670.78	1151.8	1500.00	1150.4			
GR	1164.1	595.00	1164.15	610.00	1151.89	646.78	1151.65	670.78	1137.99	711.76
GR	1134.6	951.00	1137.63	1462.80	1150.03	1500.00	1150.83	1580.00	1164.00	1619.51
GR	1164.0	1634.5								

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NH	5	.045	637.78	.025	661.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	52.0	11	661.78	1500.00	175.0	200.0	188.0	0.0	0.0	0
X3			661.78	661.78	1151.6	1500.00	1150.0			
GR	1164.3	586.00	1164.33	601.00	1152.07	637.78	1151.83	661.78	1138.17	702.76
GR	1134.8	981.00	1137.84	1462.80	1150.24	1500.00	1151.04	1580.00	1164.21	1619.51
GR	1164.2	1634.5								

NH	5	.045	630.78	.025	654.78	.035	1500	.025	1580	.045
NH	1634.5									

X1	54.0	11	654.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				654.78	1151.4	1500.00	1150			
GR	1164.5	579.00	1164.50	594.00	1152.24	630.78	1152.00	654.78	1138.34	695.76
GR	1135.0	1020.00	1138.05	1467.87	1150.46	1500.00	1151.26	1580.00	1164.42	1619.48
GR	1164.4	1634.5								

NH	5	.045	621.78	.025	645.78	.035	1500	.025	1580	.045
NH	1634.5									

X1	56.0	11	645.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				645.78	1151.2	1500.00	1150			
GR	1164.6	570.00	1164.67	585.00	1152.41	621.78	1152.17	645.78	1138.52	686.73
GR	1135.2	1065.00	1138.26	1462.77	1150.67	1500.00	1151.47	1580.00	1164.63	1619.48
GR	1164.6	1634.5								

NH	5	.045	614.78	.025	638.78	.035	1500	.025	1580	.045
NH	1634.5									

X1	58.0	11	638.78	1500.00	165.0	200.0	182.0	0.0	0.0	0
X3				638.78	1151.0	1500.00	1150.3			
GR	1164.8	563.00	1164.84	578.00	1152.58	614.78	1152.34	638.78	1138.69	679.73
GR	1135.4	1121.00	1138.47	1462.77	1150.88	1500.00	1151.68	1580.00	1164.84	1619.48
GR	1164.8	1634.5								

NH	5	.045	605.78	.025	629.78	.035	1500	.025	1580	.045
NH	1634.5									

X1	60.0	11	629.78	1500.00	170.0	200.0	185.0	0.0	0.0	0
X3				629.78	1151.0	1500.00	1150.6			
GR	1165.0	554.00	1165.01	569.00	1152.75	605.78	1152.51	629.78	1138.87	670.70
GR	1135.6	1180.00	1138.68	1462.77	1151.09	1500.00	1151.89	1580.00	1165.05	1619.48
GR	1165.0	1634.5								

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NH	5	.045	596.78	.025	620.78	.035	1500	.025	1580	.045
NH	1634.5									

X1	62.0	11	620.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				620.78	1151.5	1500.00	1151			
GR	1165.1	545.00	1165.18	560.00	1152.92	596.78	1152.68	620.78	1139.04	661.70
GR	1135.8	1230.00	1138.89	1462.74	1151.31	1500.00	1152.11	1580.00	1165.26	1619.45
GR	1165.2	1634.5								

NH	5	.045	588.78	.025	612.78	.035	1500	.025	1580	.045
NH	1634.5									

X1	64.0	11	612.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				612.78	1152	1500.00	1151.3			
GR	1165.3	537.00	1165.34	552.00	1153.08	588.78	1152.84	612.78	1139.22	647.88
GR	1136.0	1270.00	1139.09	1462.71	1151.52	1500.00	1152.32	1580.00	1165.47	1619.45
GR	1165.4	1634.5								

NH	5	.045	580.78	.025	604.78	.035	1500	.025	1580	.045
NH	1633.9									

X1	66.0	11	604.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
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X3				604.78	1152.5	1500.00	1151.6			
GR	1165.5	529.00	1165.51	544.00	1153.25	580.78	1153.01	604.78	1139.39	645.64
GR	1136.3	1300.00	1139.30	1462.71	1151.73	1500.00	1152.53	1580.00	1165.51	1618.94
GR	1165.5	1633.9								

NH	5	.045	573.78	.025	597.78	.035	1500	.025	1580	.045
NH	1634.4									

X1	68.0	11	597.78	1500.00	170.0	200.0	185.0	0.0	0.0	0
X3				597.78	1153	1500.00	1152			
GR	1165.6	522.00	1165.69	537.00	1153.43	573.78	1153.19	597.78	1139.57	638.64
GR	1136.5	1318.00	1139.51	1462.68	1151.95	1500.00	1152.75	1580.00	1165.89	1619.42
GR	1165.8	1634.4								

NH	5	.045	566.78	.025	590.78	.035	1500	.025	1580	.045
NH	1634.4									

X1	69.3	11	590.78	1500.00	85.0	130.0	108.0	0.0	0.0	0
X3	10			590.78	1153.2	1500.00	1152			0.0
GR	1165.7	515.00	1165.78	530.00	1153.52	566.78	1153.28	590.78	1139.66	631.64
GR	1136.6	1322.00	1139.65	1462.68	1152.09	1500.00	1152.89	1580.00	1166.03	1619.42
GR	1166.0	1634.4								

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SB	1.05	1.56	2.63	0.0	831.0	54.0	34820.0	5.0	1136.75	1136.65
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Rural Road bridge

NH	5	.045	565.78	.025	589.78	.035	1500	.025	1580	.045
NH	1634.4									

***** Rural Road bridge *****

X1	70.3	21	589.78	1500.00	85.0	100.0	92.0	0.0	0.0	0
X2	0.0	0.0	1	1172.28	1176.98	0.0	0	2.0	0.0	
X3				589.78	1153.4	1500.00	1152			
BT	-12	514.00	1176.98	1165.86	524.00	1177.02	1169.35	645.00	1178.49	1170.82
BT		766.00	1179.49	1171.79	887.00	1179.95	1172.28	1008.00	1179.95	1172.28
BT		1129.00	1179.46	1171.79	1250.00	1178.49	1371.00	1170.82	1177.02	1169.35
BT		1492.00	1175.07	1167.40	1612.00	1172.65	1164.98	1619.42	1172.50	1166.13
GR	1165.8	514.00	1165.78	524.00	1165.86	529.00	1153.60	565.78	1153.36	589.78
GR	1139.7	630.61	1139.69	645.00	1139.17	766.00	1138.64	887.00	1138.12	1008.00
GR	1137.6	1129.00	1137.07	1250.00	1136.75	1325.00	1137.76	1371.00	1139.75	1462.68
GR	1149.5	1492.00	1152.19	1500.00	1152.99	1580.00	1163.66	1612.00	1166.13	1619.42
GR	1166.1	1634.4								

NH	5	.045	557.78	.025	581.78	.035	1500	.025	1549	.045
NH	1604.4									

X1	72.0	11	581.78	1500.00	150.0	170.0	160.0	0.0	0.0	0
X3				581.78	1153.6	1500.00	1152			
GR	1166.0	506.00	1166.03	521.00	1153.77	557.78	1153.53	581.78	1139.91	622.64
GR	1136.9	1321.00	1139.93	1462.68	1152.37	1500.00	1152.86	1549.00	1166.31	1589.35
GR	1166.3	1604.4								

NH	5	.045	547.78	.025	571.78	.035	1500	.025	1524	.045
NH	1580.1									

X1	74.0	11	571.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				571.78	1153.8	1500.00	1152.5			
GR	1166.2	496.00	1166.26	511.00	1154.00	547.78	1153.76	571.78	1140.12	612.70
GR	1137.1	1315.00	1140.14	1462.65	1152.59	1500.00	1152.83	1524.00	1166.52	1565.07
GR	1166.5	1580.1								

NH	5	.045	532.78	.025	556.78	.035	1500	.025	1524	.045
NH	1580.1									

X1	76.0	11	556.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				556.78	1154	1500.00	1153			
GR	1166.4	481.00	1166.49	496.00	1154.23	532.78	1153.99	556.78	1140.33	597.76
GR	1137.3	1279.00	1140.35	1462.65	1152.80	1500.00	1153.04	1524.00	1166.73	1565.07
GR	1166.7	1580.1								

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NH	5	.045	508.75	.025	532.75	.035	1500	.025	1524	.045
NH	1580.1									

X1	78.0	11	532.75	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				532.75	1154.2	1500.00	1153.5			
GR	1166.7	457.00	1166.71	472.00	1154.46	508.75	1154.22	532.75	1140.54	573.79
GR	1137.5	1241.00	1140.56	1462.65	1153.01	1500.00	1153.25	1524.00	1166.94	1565.07
GR	1166.9	1580.1								

NH	5	.045	482.78	.025	506.78	.035	1500	.025	1524	.045
NH	1580.0									

X1	80.0	11	506.78	1500.00	165.0	200.0	182.0	0.0	0.0	0
X3				506.78	1154.4	1500.00	1154			
GR	1166.9	431.00	1166.95	446.00	1154.69	482.78	1154.45	506.78	1140.76	547.85
GR	1137.7	1194.00	1140.77	1462.62	1153.23	1500.00	1153.47	1524.00	1167.15	1565.04
GR	1167.1	1580.0								

NH	5	.045	447.78	.025	471.78	.035	1500	.025	1524	.045
NH	1580.0									

X1	82.0	11	471.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				471.78	1154.6	1500.00	1154.5			
GR	1167.1	396.00	1167.18	411.00	1154.92	447.78	1154.68	471.78	1140.97	512.91
GR	1137.9	1136.00	1140.98	1462.62	1153.44	1500.00	1153.68	1524.00	1167.36	1565.04
GR	1167.3	1580.0								

NH	5	.045	411.78	.025	435.78	.035	1500	.025	1524	.045
NH	1580.0									

X1	84.0	11	435.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				435.78	1154.8	1500.00	1155			
GR	1167.4	360.00	1167.41	375.00	1155.15	411.78	1154.91	435.78	1141.19	476.94
GR	1138.1	1088.00	1141.19	1462.62	1153.65	1500.00	1153.89	1524.00	1167.57	1565.04
GR	1167.5	1580.0								

NH	5	.045	364.78	.025	388.78	.035	1500	.025	1524	.045
NH	1580.0									

X1	86.0	11	388.78	1500.00	165.0	200.0	182.0	0.0	0.0	0
X3				388.78	1155	1500.00	1154.5			

1211111111

GR	1167.6	313.00	1167.64	328.00	1155.38	364.78	1155.14	388.78	1141.39	430.03
GR	1138.4	1040.00	1141.40	1462.59	1153.87	1500.00	1154.11	1524.00	1167.78	1565.01
GR	1167.7	1580.0								

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NH	5	.045	298.78	.025	322.78	.035	1500	.025	1524	.045
NH	1580.0									

X1	88.0	11	322.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
X3				322.78	1155	1500.00	1154			
GR	1167.8	247.00	1167.87	262.00	1155.61	298.78	1155.37	322.78	1141.60	364.09
GR	1138.6	1008.00	1141.60	1462.56	1154.08	1500.00	1154.32	1524.00	1167.99	1565.01
GR	1167.9	1580.0								

NH	5	.045	241	.025	265.78	.035	1500	.025	1524	.045
NH	1576.0									

X1	90.0	12	265.78	1500.00	155.0	200.0	178.0	0.0	0.0	0
X3				265.78	1155	1500.00	1154			
GR	1168.0	190.00	1168.07	205.00	1155.81	241.00	1155.57	265.78	1149.50	284.00
GR	1141.8	307.09	1138.81	980.00	1141.81	1462.56	1154.29	1500.00	1154.53	1524.00
GR	1168.2	1561.01	1168.20	1576.0						

NH	5	.045	191.78	.025	215.78	.035	1500	.025	1524	.045
NH	1577.0									

X1	92.0	11	215.78	1500.00	155.0	200.0	178.0	0.0	0.0	0
X3				215.78	1155	1500.00	1154			
GR	1168.2	140.00	1168.24	155.00	1155.98	191.78	1157.74	215.78	1142.01	262.97
GR	1139.0	960.00	1142.02	1459.53	1155.51	1500.00	1155.75	1524.00	1168.41	1561.98
GR	1168.4	1577.0								

NH	5	.045	144.75	.025	168.75	.035	1500	.025	1524	.045
NH	1576.1									

X1	94.0	12	168.75	1500.00	155.0	200.0	178.0	0.0	0.0	0
X3				168.75	1155	1500.00	1154			
GR	1168.4	93.00	1168.41	108.00	1156.16	144.75	1155.92	168.75	1142.21	185.88
GR	1141.9	282.00	1139.23	948.00	1142.23	1471.62	1154.72	1500.00	1154.96	1524.00
GR	1168.6	1561.05	1168.62	1576.1						

NH	5	.045	84.75	.025	150	.035	1500	.025	1524	.045
NH	1580.0									

X1	96.0	12	150.00	1500.00	225.0	200.0	212.0	0.0	0.0	0
X3				150.00	1155	1500.00	1154.5			
GR	1168.6	33.00	1168.66	48.00	1156.41	84.75	1156.17	150.00	1142.51	190.98
GR	1142.1	319.00	1139.44	939.00	1142.44	1462.53	1154.93	1500.00	1155.17	1524.00
GR	1168.8	1564.98	1168.83	1580.0						

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NH	3	.035	1500	.025	1524	.045	1580.0			
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X1	98.0	9	20.00	1500.00	290.0	200.0	245.0	0.0	0.0	0
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X3						1500.00	1155			
GR	1156.4	20.00	1142.89	60.80	1141.79	353.00	1139.65	920.00	1142.65	1462.50
GR	1155.1	1500.00	1155.39	1524.00	1169.04	1564.95	1169.04	1580.0		
NH	3	.035	1500	.025	1524	.045	1580.0			
X1	100.0	7	350.00	1500.00	310.0	200.0	255.0	0.0	0.0	0
X3						1500.00	1155.5			
GR	1142.5	350.00	1139.86	885.00	1142.86	1462.50	1155.36	1500.00	1155.60	1524.00
GR	1169.2	1564.95	1169.25	1580.0						

Section 102 was used as the downstream edge of the apron. This is the first cross-section upstream of the confluence with the Indian Bend Wash and is very close to the location of the apron which is also right next to the confluence.

NH	5	.045	460.41	.025	484.41	.035	1500	.025	1524	.045
NH	1580.0									
X1	102.0	11	484.41	1500.00	370.0	200.0	285.0	0.0	0.0	0
X3				484.41	1155	1500.00	1156			
GR	1169.4	407.91	1169.42	422.91	1156.92	460.41	1156.68	484.41	1143.15	525.00
GR	1140.0	853.00	1143.07	1462.50	1155.57	1500.00	1155.81	1524.00	1169.46	1564.95
GR	1169.4	1580.0								

UPSTREAM DAM
d.s. edge of apron

NC	.045	.045	.025	.3	.5					
X1	103.00	12	510	1474	1	1	1			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1141.8	532.5	1141.8	1451.5	1157	1474	1165	1474	1165	1484
GR	1169.5	1564.95	1169.4	1579.95						

d.s. edge of piers

X1	103.22	12	510	1474	22	22	22			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1143.3	532.5	1143.3	1451.5	1157	1474	1165	1474	1165	1484
GR	1169.5	1564.95	1169.4	1579.95						

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X1	103.28	30	510	1474	6	6	6			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1143.3	532.5	1143.3	741.5	1154	747.5	1166	747.5	1166	753.5
GR	1154	753.5	1143.3	759.5	1143.3	983	1154	989	1166	989
GR	1166	995	1154	995	1143.3	1001	1143.3	1224.5	1154	1230.5
GR	1166	1230.5	1166	1236.5	1154	1236.5	1143.3	1242.5	1143.3	1451.5
GR	1157	1474	1165	1474	1165	1484	1169.5	1564.9	1169.4	1579.9

X1	103.46	30	510	1474	18	18	18			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1143.3	532.5	1143.3	741.5	1154	747.5	1166	747.5	1166	753.5
GR	1154	753.5	1143.3	759.5	1143.3	983	1154	989	1166	989
GR	1166	995	1154	995	1143.3	1001	1143.3	1224.5	1154	1230.5
GR	1166	1230.5	1166	1236.5	1154	1236.5	1143.3	1242.5	1143.3	1451.5

12/18/96

GR	1157	1474	1165	1474	1165	1484	1169.5	1564.9	1169.4	1579.9
X1	103.52	12	510	1474	6	6	6			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1143.3	532.5	1143.3	1451.5	1157	1474	1165	1474	1165	1484
GR	1169.5	1564.95	1169.4	1579.95						

u.s. edge of apron

X1	103.80	12	510	1474	28	28	28			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1141.8	532.5	1141.8	1451.5	1157	1474	1165	1474	1165	1484
GR	1169.5	1564.95	1169.4	1579.95						

NC	.035	.035	.035	.1	.3					
X1	103.81	11	484.41	1500.00	1	1	1		.07	
GR	1169.4	407.91	1169.42	422.91	1156.92	460.41	1156.68	484.41	1143.15	525.00
GR	1140.0	853.00	1143.07	1462.50	1155.57	1500.00	1155.81	1524.00	1169.46	1564.95
GR	1169.4	1579.95								

X1	104.0	11	535.50	1500.00	178	118	148			
GR	1169.6	459.00	1169.62	474.00	1157.12	511.50	1156.88	535.50	1143.15	576.69
GR	1140.2	828.00	1143.28	1462.47	1155.79	1500.00	1156.03	1524.00	1169.67	1564.92
GR	1169.6	1579.92								

X1	106.0	11	531.50	1500.00	250.0	200.0	225.0	0.0	0.0	0
GR	1169.8	455.00	1169.87	470.00	1157.37	507.50	1157.13	531.50	1143.40	572.69
GR	1140.4	810.00	1143.49	1462.47	1156.00	1500.00	1156.14	1514.40	1169.88	1555.62
GR	1169.8	1570.62								

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X1	108.0	10	473.50	1500.00	250.0	200.0	225.0	0.0	0.0	0
GR	1170.1	397.00	1170.12	412.00	1157.62	449.50	1157.38	473.50	1143.65	514.69
GR	1140.7	795.00	1143.70	1462.02	1156.36	1500.00	1170.09	1541.19	1170.09	1556.19

X1	110.0	9	590.50	1500.00	255.0	200.0	228.0	0.0	0.0	0
GR	1170.3	514.00	1170.37	529.00	1157.87	566.50	1157.63	590.50	1143.91	631.66
GR	1140.9	790.00	1143.91	1420.83	1170.30	1500.00	1170.30	1515.00		

X1	112.0	9	606.50	1500.00	225.0	200.0	212.0	0.0	0.0	0
GR	1170.6	530.00	1170.60	545.00	1158.10	582.50	1157.86	606.50	1144.13	647.69
GR	1141.1	790.00	1144.12	1420.83	1170.51	1500.00	1170.51	1515.00		

X1	114.0	9	584.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
GR	1170.8	508.00	1170.80	523.00	1158.30	560.50	1158.06	584.50	1144.33	625.69
GR	1141.3	800.00	1144.32	1420.77	1170.73	1500.00	1170.73	1515.00		

X1	116.0	9	529.50	1500.00	205.0	200.0	202.0	0.0	0.0	0
GR	1171.0	453.00	1171.00	468.00	1158.50	505.50	1158.26	529.50	1144.54	570.66
GR	1141.5	820.00	1144.53	1420.77	1170.94	1500.00	1170.94	1515.00		

X1	118.0	9	474.50	1500.00	210.0	200.0	205.0	0.0	0.0	0
GR	1171.2	398.00	1171.21	413.00	1158.71	450.50	1158.47	474.50	1144.75	515.66
GR	1141.7	854.00	1144.74	1420.77	1171.15	1500.00	1171.15	1515.00		

X1	119.8	9	446.50	1500.00	180.0	200.0	190.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1171.3	370.00	1171.39	385.00	1158.89	422.50	1158.65	446.50	1144.95	487.60
GR	1141.9	525.00	1144.95	1420.74	1171.37	1500.00	1171.37	1515.00		

X1	120.42	9	446.22	1485.00	57.0	42.0	50.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1171.4	370.00	1171.45	385.00	1158.95	422.50	1158.71	446.22	1144.98	487.69
GR	1142.0	926.50	1145.00	1405.77	1171.41	1485.00	1171.41	1500.00		

Grade Control Str. No. 5

***** Grade Control Str. No. 5 *****

X1	120.5	9	443.50	1485.00	8.0	8.0	8.0	0.0	0.0	0
GR	1171.4	367.00	1171.46	382.00	1158.96	419.50	1158.72	443.50	1150.00	469.66
GR	1147.0	926.50	1150.00	1420.74	1171.42	1485.00	1171.42	1500.00		

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X1	122.0	9	441.50	1460.00	155.0	150.0	152.0	0.0	0.0	0
GR	1171.6	365.00	1171.61	380.00	1159.11	417.50	1158.87	441.50	1150.16	467.63
GR	1147.1	941.00	1150.15	1395.71	1171.58	1460.00	1171.58	1475.00		

X1	122.65	9	441.50	1460.00	65.0	65.0	65.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1171.6	365.00	1171.68	380.00	1159.18	417.50	1158.94	441.50	1150.22	490.27
GR	1147.2	952.00	1150.22	1395.71	1171.65	1460.00	1171.65	1475.00		

SB	1.05	1.56	2.63	0.0	798.0	66.0	24246.0	6.3	1147.31	1147.22
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McClintock Drive Bridge

***** McClintock Drive Bridge *****

X1	123.55	20	441.5	1460.00	90.0	90.0	90.0	0.0	0.0	0
X2	0.0	0.0	1	1180.61	1181.8	0.0	0	2.0	0.0	
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
BT	-11	316.00	1181.80	1174.13	436.00	1184.23	1176.56	554.00	1185.93	1178.26
BT		672.00	1187.37	1179.70	790.00	1188.15	1180.48	908.00	1188.28	1180.61
BT		1026.00	1188.15	1180.48	1144.00	1187.37	1179.70	1262.00	1185.93	1178.26
BT		1380.00	1184.23	1176.56	1500.00	1181.80	1174.13			
GR	1174.1	316.00	1171.77	371.00	1171.77	386.00	1159.27	423.50	1159.10	436.00
GR	1159.0	441.50	1150.31	500.09	1149.97	554.00	1149.22	672.00	1148.48	790.00
GR	1147.7	908.00	1147.31	975.00	1147.64	1026.00	1148.42	1144.00	1149.19	1262.00
GR	1149.9	1380.00	1150.31	1433.31	1171.75	1460.00	1171.75	1475.00	1174.13	1500.00

X1	124.0	9	436.50	1465.00	45.0	45.0	45.0	0.0	0.0	0
GR	1171.8	360.00	1171.81	375.00	1159.31	412.50	1159.07	436.50	1150.36	464.22
GR	1147.3	983.00	1150.35	1400.68	1171.79	1465.00	1171.79	1480.00		

X1	126.0	10	415.00	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

GR	1170.0	240.00	1168.00	272.00	1166.00	317.00	1164.00	348.00	1162.00	388.00
GR	1159.2	415.00	1150.56	441.13	1147.55	985.00	1150.55	1435.62	1172.01	1500.00
X1	128.0	8	402.00	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1172.0	242.00	1166.00	280.00	1164.00	377.00	1159.47	402.00	1150.76	428.13
GR	1147.7	1017.00	1150.75	1359.75	1170.00	1500.00				

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T1 RIO SALADO TOWN LAKE for TEMPE, AZ
T2 CH2M HILL Walker/Allen Sept. 1994
T3 RS-PROP3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		5							1120.10	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLOC	IBW	CHNIN	ITRACE
	2		-1							

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THIS RUN EXECUTED 01MAR96 16:18:20

HEC-2 WATER SURFACE PROFILES
Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

RS-PROP3

SUMMARY PRINTOUT

SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
10035.000	.00	.00	205000.00	1119.15	21.95	1097.20	11.84	18.99
10035.000	.00	.00	250000.00	1120.10	22.90	1097.20	13.64	23.52
10200.000	165.00	165.00	205000.00	1119.49	21.39	1098.10	11.75	18.46
10200.000	165.00	165.00	250000.00	1120.57	22.47	1098.10	13.45	22.39
10400.000	200.00	365.00	205000.00	1119.89	21.79	1098.10	11.66	17.91
10400.000	200.00	365.00	250000.00	1121.09	22.99	1098.10	13.27	21.29
10600.000	200.00	565.00	205000.00	1120.27	21.77	1098.50	11.62	17.75
10600.000	200.00	565.00	250000.00	1121.56	23.06	1098.50	13.14	20.71
10800.000	200.00	765.00	205000.00	1120.60	21.60	1099.00	11.75	18.40
10800.000	200.00	765.00	250000.00	1121.96	22.96	1099.00	13.24	21.18

LST 04/11/96

11000.000	200.00	965.00	205000.00	1121.07	21.57	1099.50	11.44	16.92
11000.000	200.00	965.00	250000.00	1122.54	23.04	1099.50	12.83	19.20
11200.000	200.00	1165.00	205000.00	1121.47	21.47	1100.00	11.26	15.95
11200.000	200.00	1165.00	250000.00	1123.01	23.01	1100.00	12.60	17.98
11400.000	200.00	1365.00	205000.00	1121.88	21.48	1100.40	11.00	14.94
11400.000	200.00	1365.00	250000.00	1123.50	23.10	1100.40	12.27	16.69
11600.000	200.00	1565.00	205000.00	1122.32	21.42	1100.90	10.55	13.12
11600.000	200.00	1565.00	250000.00	1124.02	23.12	1100.90	11.76	14.63
11800.000	200.00	1765.00	205000.00	1122.53	21.13	1101.40	10.83	14.33
11800.000	200.00	1765.00	250000.00	1124.25	22.85	1101.40	12.03	15.80
12000.000	200.00	1965.00	205000.00	1122.82	21.02	1101.80	10.82	14.23
12000.000	200.00	1965.00	250000.00	1124.58	22.78	1101.80	11.99	15.57

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
12100.000	100.00	2065.00	205000.00	1122.93	20.83	1102.10	10.97	14.81
12100.000	100.00	2065.00	250000.00	1124.70	22.60	1102.10	12.15	16.16
12200.000	100.00	2165.00	205000.00	1123.07	20.77	1102.30	11.00	14.93
12200.000	100.00	2165.00	250000.00	1124.86	22.56	1102.30	12.17	16.27
12400.000	200.00	2365.00	205000.00	1123.28	20.48	1102.80	11.43	16.26
12400.000	200.00	2365.00	250000.00	1125.07	22.27	1102.80	12.63	17.63
12600.000	200.00	2565.00	205000.00	1123.63	20.43	1103.20	11.35	15.71
12600.000	200.00	2565.00	250000.00	1125.46	22.26	1103.20	12.54	17.08
12800.000	200.00	2765.00	205000.00	1123.92	20.22	1103.70	11.44	16.24
12800.000	200.00	2765.00	250000.00	1125.79	22.09	1103.70	12.60	17.48
13000.000	200.00	2965.00	205000.00	1124.24	20.04	1104.20	11.51	16.45
13000.000	200.00	2965.00	250000.00	1126.12	21.92	1104.20	12.66	17.60
13200.000	200.00	3165.00	205000.00	1124.54	19.84	1104.70	11.64	17.08
13200.000	200.00	3165.00	250000.00	1126.44	21.74	1104.70	12.78	18.14
13400.000	200.00	3365.00	205000.00	1124.87	19.77	1105.10	11.69	17.29
13400.000	200.00	3365.00	250000.00	1126.80	21.70	1105.10	12.81	18.27
13600.000	200.00	3565.00	205000.00	1125.17	19.57	1105.60	11.92	18.27
13600.000	200.00	3565.00	250000.00	1127.11	21.51	1105.60	13.03	19.18
13800.000	200.00	3765.00	205000.00	1125.53	19.43	1106.10	11.94	18.50
13800.000	200.00	3765.00	250000.00	1127.49	21.39	1106.10	13.04	19.31
14000.000	200.00	3965.00	205000.00	1125.94	19.44	1106.50	11.82	18.06
14000.000	200.00	3965.00	250000.00	1127.95	21.45	1106.50	12.88	18.73
14200.000	200.00	4165.00	205000.00	1126.34	19.34	1107.00	11.74	18.05
14200.000	200.00	4165.00	250000.00	1128.37	21.37	1107.00	12.76	18.57
14400.000	200.00	4365.00	205000.00	1126.68	19.18	1107.50	11.88	18.46
14400.000	200.00	4365.00	250000.00	1128.72	21.22	1107.50	12.91	18.94
14665.000	265.00	4630.00	205000.00	1127.13	18.93	1108.20	12.09	19.17
14665.000	265.00	4630.00	250000.00	1129.18	20.98	1108.20	13.13	19.58

14785.000	120.00	4750.00	205000.00	1127.41	19.01	1108.40	12.00	19.07
14785.000	120.00	4750.00	250000.00	1129.48	21.08	1108.40	13.01	19.38
15000.000	215.00	4965.00	205000.00	1127.81	18.91	1108.90	12.05	19.61
15000.000	215.00	4965.00	250000.00	1129.90	21.00	1108.90	13.03	19.84
15200.000	200.00	5165.00	205000.00	1128.18	18.78	1109.40	12.14	20.10
15200.000	200.00	5165.00	250000.00	1130.28	20.88	1109.40	13.11	20.25

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
15400.000	200.00	5365.00	205000.00	1128.58	18.78	1109.80	12.17	19.92
15400.000	200.00	5365.00	250000.00	1130.67	20.87	1109.80	13.15	20.07
15586.000	186.00	5551.00	210000.00	1128.88	18.58	1110.30	12.62	21.75
15586.000	186.00	5551.00	250000.00	1131.03	20.73	1110.30	13.25	20.58
15710.000	124.00	5675.00	210000.00	1129.33	18.73	1110.60	12.52	21.20
15710.000	124.00	5675.00	250000.00	1131.51	20.91	1110.60	13.14	20.01
16000.000	290.00	5965.00	210000.00	1129.94	18.64	1111.30	12.55	21.85
16000.000	290.00	5965.00	250000.00	1132.10	20.80	1111.30	13.16	20.59
16200.000	200.00	6165.00	210000.00	1130.45	18.75	1111.70	12.36	20.92
16200.000	200.00	6165.00	250000.00	1132.57	20.87	1111.70	13.01	19.90
16400.000	200.00	6365.00	210000.00	1130.83	18.63	1112.20	12.53	21.76
16400.000	200.00	6365.00	250000.00	1132.93	20.73	1112.20	13.19	20.74
16600.000	200.00	6565.00	210000.00	1131.26	18.56	1112.70	12.56	21.97
16600.000	200.00	6565.00	250000.00	1133.33	20.63	1112.70	13.23	20.98
16800.000	200.00	6765.00	210000.00	1131.70	18.50	1113.20	12.58	22.16
16800.000	200.00	6765.00	250000.00	1133.74	20.54	1113.20	13.26	21.22
17000.000	200.00	6965.00	210000.00	1132.16	18.56	1113.60	12.51	21.80
17000.000	200.00	6965.00	250000.00	1134.18	20.58	1113.60	13.23	21.08
17200.000	200.00	7165.00	210000.00	1132.59	18.49	1114.10	12.56	22.08
17200.000	200.00	7165.00	250000.00	1134.59	20.49	1114.10	13.28	21.34
17400.000	200.00	7365.00	210000.00	1133.02	18.42	1114.60	12.62	22.15
17400.000	200.00	7365.00	250000.00	1135.00	20.40	1114.60	13.35	21.51
17600.000	200.00	7565.00	210000.00	1133.44	18.44	1115.00	12.70	22.28
17600.000	200.00	7565.00	250000.00	1135.40	20.40	1115.00	13.47	21.77
17800.000	200.00	7765.00	210000.00	1133.87	18.37	1115.50	12.77	22.62
17800.000	200.00	7765.00	250000.00	1135.81	20.31	1115.50	13.55	22.13
18000.000	200.00	7965.00	210000.00	1134.30	18.30	1116.00	12.84	23.02
18000.000	200.00	7965.00	250000.00	1136.24	20.24	1116.00	13.63	22.54
18200.000	200.00	8165.00	210000.00	1134.74	18.24	1116.50	12.94	23.46
18200.000	200.00	8165.00	250000.00	1136.66	20.16	1116.50	13.75	23.06
18400.000	200.00	8365.00	210000.00	1135.29	18.39	1116.90	12.72	22.47
18400.000	200.00	8365.00	250000.00	1137.22	20.32	1116.90	13.52	22.08
18600.000	200.00	8565.00	210000.00	1135.68	18.28	1117.40	13.00	23.44
18600.000	200.00	8565.00	250000.00	1137.57	20.17	1117.40	13.84	23.11

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
18800.000	200.00	8765.00	210000.00	1136.11	18.21	1117.90	13.15	24.32
18800.000	200.00	8765.00	250000.00	1138.00	20.10	1117.90	13.99	23.97
19000.000	200.00	8965.00	210000.00	1136.59	18.29	1118.30	13.18	24.25
19000.000	200.00	8965.00	250000.00	1138.46	20.16	1118.30	14.03	23.98
19200.000	200.00	9165.00	210000.00	1137.04	18.24	1118.80	13.30	24.78
19200.000	200.00	9165.00	250000.00	1138.91	20.11	1118.80	14.18	24.57
19400.000	200.00	9365.00	210000.00	1137.50	18.20	1119.30	13.45	25.40
19400.000	200.00	9365.00	250000.00	1139.35	20.05	1119.30	14.33	25.21
19600.000	200.00	9565.00	210000.00	1137.98	18.18	1119.80	13.59	25.97
19600.000	200.00	9565.00	250000.00	1139.82	20.02	1119.80	14.49	25.82
19800.000	200.00	9765.00	210000.00	1138.49	18.29	1120.20	13.60	25.79
19800.000	200.00	9765.00	250000.00	1140.32	20.12	1120.20	14.52	25.73
20000.000	200.00	9965.00	210000.00	1138.96	18.26	1120.70	13.77	26.47
20000.000	200.00	9965.00	250000.00	1140.78	20.08	1120.70	14.71	26.46
20200.000	200.00	10165.00	210000.00	1139.46	18.26	1121.20	13.91	27.03
20200.000	200.00	10165.00	250000.00	1141.27	20.07	1121.20	14.86	27.06
20400.000	200.00	10365.00	210000.00	1140.02	18.42	1121.60	13.83	26.26
20400.000	200.00	10365.00	250000.00	1141.83	20.23	1121.60	14.80	26.41
20600.000	200.00	10565.00	210000.00	1140.49	18.39	1122.10	14.07	27.36
20600.000	200.00	10565.00	250000.00	1142.29	20.19	1122.10	15.06	27.54
20782.000	178.00	10743.00	210000.00	1141.01	18.51	1122.50	14.00	27.27
20782.000	178.00	10743.00	250000.00	1142.84	20.34	1122.50	14.95	27.36
20800.000	18.00	10761.00	210000.00	1141.07	18.54	1122.53	13.98	27.17
20800.000	18.00	10761.00	250000.00	1142.89	20.36	1122.53	14.93	27.26
21000.000	200.00	10961.00	210000.00	1141.67	18.81	1122.86	13.82	25.27
21000.000	200.00	10961.00	250000.00	1143.47	20.61	1122.86	14.84	25.65
21050.000	50.00	11011.00	210000.00	1141.76	18.56	1123.20	13.99	26.29
21050.000	50.00	11011.00	250000.00	1143.56	20.36	1123.20	15.01	26.59
21150.000	100.00	11111.00	210000.00	1142.39	18.99	1123.40	13.63	24.18
21150.000	100.00	11111.00	250000.00	1144.31	20.91	1123.40	14.56	24.14
21200.000	50.00	11161.00	210000.00	1142.67	19.48	1123.19	13.27	22.08
21200.000	50.00	11161.00	250000.00	1144.60	21.41	1123.19	14.21	22.22
21400.000	200.00	11361.00	210000.00	1143.22	19.70	1123.52	13.01	21.59
21400.000	200.00	11361.00	250000.00	1145.20	21.68	1123.52	13.88	21.57

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
21600.000	200.00	11561.00	210000.00	1143.80	19.95	1123.85	12.65	19.97
21600.000	200.00	11561.00	250000.00	1145.79	21.94	1123.85	13.50	19.98

21800.000	200.00	11761.00	210000.00	1144.16	19.98	1124.18	12.78	20.38
21800.000	200.00	11761.00	250000.00	1146.15	21.97	1124.18	13.65	20.44
22000.000	200.00	11961.00	210000.00	1144.60	20.09	1124.51	12.72	20.04
22000.000	200.00	11961.00	250000.00	1146.59	22.08	1124.51	13.58	20.12
22200.000	200.00	12161.00	210000.00	1145.02	20.18	1124.84	12.66	19.79
22200.000	200.00	12161.00	250000.00	1147.01	22.17	1124.84	13.52	19.83
22400.000	200.00	12361.00	210000.00	1145.43	20.25	1125.18	12.62	19.56
22400.000	200.00	12361.00	250000.00	1147.42	22.24	1125.18	13.49	19.65
22600.000	200.00	12561.00	210000.00	1145.86	20.35	1125.51	12.51	19.01
22600.000	200.00	12561.00	250000.00	1147.86	22.35	1125.51	13.38	19.14
22800.000	200.00	12761.00	210000.00	1146.25	20.41	1125.84	12.48	18.88
22800.000	200.00	12761.00	250000.00	1148.26	22.42	1125.84	13.35	19.01
23000.000	200.00	12961.00	210000.00	1146.59	19.89	1126.70	12.66	19.71
23000.000	200.00	12961.00	250000.00	1148.59	21.89	1126.70	13.52	19.77
23200.000	200.00	13161.00	210000.00	1147.11	20.61	1126.50	12.33	18.11
23200.000	200.00	13161.00	250000.00	1149.13	22.63	1126.50	13.19	18.27
23400.000	200.00	13361.00	210000.00	1147.47	20.64	1126.83	12.32	18.06
23400.000	200.00	13361.00	250000.00	1149.49	22.66	1126.83	13.19	18.22
23600.000	200.00	13561.00	210000.00	1147.84	20.68	1127.16	12.32	18.01
23600.000	200.00	13561.00	250000.00	1149.86	22.70	1127.16	13.18	18.17
23800.000	200.00	13761.00	210000.00	1148.20	20.74	1127.46	12.29	17.90
23800.000	200.00	13761.00	250000.00	1150.23	22.77	1127.46	13.15	18.06
24000.000	200.00	13961.00	210000.00	1148.64	20.82	1127.82	12.07	16.86
24000.000	200.00	13961.00	250000.00	1150.68	22.86	1127.82	12.93	17.07
24200.000	200.00	14161.00	210000.00	1149.04	20.89	1128.15	11.92	16.19
24200.000	200.00	14161.00	250000.00	1151.08	22.93	1128.15	12.78	16.43
24400.000	200.00	14361.00	210000.00	1149.43	20.95	1128.48	11.72	15.15
24400.000	200.00	14361.00	250000.00	1151.48	23.00	1128.48	12.59	15.45
24600.000	200.00	14561.00	210000.00	1149.83	21.02	1128.81	11.45	14.38
24600.000	200.00	14561.00	250000.00	1151.91	23.10	1128.81	12.29	14.63
24744.000	144.00	14705.00	210000.00	1149.98	20.93	1129.05	11.69	14.15
24744.000	144.00	14705.00	250000.00	1152.05	23.00	1129.05	12.60	14.41

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
24841.000	97.00	14802.00	210000.00	1150.21	21.21	1129.00	11.42	13.17
24841.000	97.00	14802.00	250000.00	1152.28	23.28	1129.00	12.35	13.65
24871.000	30.00	14832.00	210000.00	1150.17	21.17	1129.00	11.85	7.63
24871.000	30.00	14832.00	250000.00	1152.23	23.23	1129.00	12.77	7.83
24906.000	35.00	14867.00	210000.00	1150.37	21.12	1129.25	11.47	6.82
24906.000	35.00	14867.00	250000.00	1152.44	23.19	1129.25	12.39	7.05
24907.000	1.00	14868.00	210000.00	1150.00	18.00	1132.00	13.39	11.39
24907.000	1.00	14868.00	250000.00	1152.06	20.06	1132.00	14.26	11.22

24957.000	11.00	14879.00	210000.00	1149.78	17.78	1132.00	14.47	15.54
24957.000	11.00	14879.00	250000.00	1151.83	19.83	1132.00	15.33	15.36
24957.000	39.00	14918.00	210000.00	1149.90	17.90	1132.00	14.36	15.20
24957.000	39.00	14918.00	250000.00	1151.95	19.95	1132.00	15.23	15.06
24968.000	11.00	14929.00	210000.00	1150.92	18.92	1132.00	12.53	17.87
24968.000	11.00	14929.00	250000.00	1153.04	21.04	1132.00	13.38	17.68
2.000	147.00	15076.00	210000.00	1151.17	19.17	1132.00	12.55	17.99
2.000	147.00	15076.00	250000.00	1153.35	21.35	1132.00	13.29	17.39
4.000	200.00	15276.00	210000.00	1151.55	19.55	1132.00	12.51	17.51
4.000	200.00	15276.00	250000.00	1153.74	21.74	1132.00	13.22	16.85
6.000	200.00	15476.00	210000.00	1151.74	19.74	1132.00	13.16	19.27
6.000	200.00	15476.00	250000.00	1153.94	21.94	1132.00	13.81	18.34
8.000	200.00	15676.00	210000.00	1152.48	20.48	1132.00	12.29	16.14
8.000	200.00	15676.00	250000.00	1154.67	22.67	1132.00	12.93	15.51
10.000	200.00	15876.00	210000.00	1152.93	20.93	1132.00	11.96	14.87
10.000	200.00	15876.00	250000.00	1155.13	23.13	1132.00	12.58	14.29
12.000	200.00	16076.00	210000.00	1153.31	21.31	1132.00	11.74	14.07
12.000	200.00	16076.00	250000.00	1155.53	23.53	1132.00	12.32	13.48
14.000	158.00	16234.00	210000.00	1153.64	21.64	1132.00	11.44	13.18
14.000	158.00	16234.00	250000.00	1155.86	23.86	1132.00	12.00	12.63
15.400	122.00	16356.00	210000.00	1153.63	21.63	1132.00	12.48	15.88
15.400	122.00	16356.00	250000.00	1155.87	23.87	1132.00	12.95	14.86
15.600	18.00	16374.00	215000.00	1154.58	22.58	1132.00	12.04	13.90
15.600	18.00	16374.00	250000.00	1156.82	24.82	1132.00	12.23	12.53
17.300	152.00	16526.00	215000.00	1155.24	23.24	1132.00	10.77	10.72
17.300	152.00	16526.00	250000.00	1157.37	25.37	1132.00	11.17	10.18

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
19.000	172.00	16698.00	215000.00	1155.41	23.41	1132.00	10.82	10.80
19.000	172.00	16698.00	250000.00	1157.50	25.50	1132.00	11.31	10.44
21.500	182.00	16880.00	215000.00	1155.81	23.81	1132.00	10.20	9.43
21.500	182.00	16880.00	250000.00	1157.89	25.89	1132.00	10.70	9.21
24.000	140.00	17020.00	215000.00	1155.69	23.69	1132.00	11.39	12.01
24.000	140.00	17020.00	250000.00	1157.76	25.76	1132.00	11.91	11.63
24.600	60.00	17080.00	215000.00	1156.10	24.10	1132.00	11.27	11.50
24.600	60.00	17080.00	250000.00	1158.80	26.80	1132.00	11.43	10.15
26.000	185.00	17265.00	215000.00	1156.32	24.22	1132.10	11.26	11.52
26.000	185.00	17265.00	250000.00	1159.00	26.90	1132.10	11.41	10.16
26.450	45.00	17310.00	215000.00	1156.87	24.77	1132.10	10.93	10.52
26.450	45.00	17310.00	250000.00	1159.51	27.41	1132.10	11.14	9.41
27.000	155.00	17465.00	215000.00	1157.02	24.82	1132.20	10.97	10.62
27.000	155.00	17465.00	250000.00	1159.65	27.45	1132.20	11.20	9.56

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28.000	160.00	17625.00	215000.00	1157.19	24.89	1132.30	10.95	10.61
28.000	160.00	17625.00	250000.00	1159.79	27.49	1132.30	11.21	9.59
30.000	200.00	17825.00	215000.00	1157.41	24.91	1132.50	10.95	10.59
30.000	200.00	17825.00	250000.00	1159.98	27.48	1132.50	11.23	9.62
32.000	200.00	18025.00	215000.00	1157.68	24.98	1132.70	10.77	10.10
32.000	200.00	18025.00	250000.00	1160.23	27.53	1132.70	11.08	9.27
34.000	200.00	18225.00	215000.00	1157.88	24.98	1132.90	10.77	10.07
34.000	200.00	18225.00	250000.00	1160.40	27.50	1132.90	11.10	9.31
36.000	215.00	18440.00	215000.00	1158.06	24.96	1133.10	10.92	10.42
36.000	215.00	18440.00	250000.00	1160.56	27.46	1133.10	11.29	9.69
38.000	230.00	18670.00	215000.00	1158.30	25.00	1133.30	10.93	10.41
38.000	230.00	18670.00	250000.00	1160.77	27.47	1133.30	11.32	9.73
40.000	230.00	18900.00	215000.00	1158.49	24.99	1133.50	11.16	10.90
40.000	230.00	18900.00	250000.00	1160.94	27.44	1133.50	11.58	10.23
42.000	230.00	19130.00	215000.00	1158.74	25.04	1133.70	11.17	10.89
42.000	230.00	19130.00	250000.00	1161.17	27.47	1133.70	11.60	10.25
44.000	230.00	19360.00	215000.00	1158.94	24.94	1134.00	11.40	11.39
44.000	230.00	19360.00	250000.00	1161.35	27.35	1134.00	11.85	10.74
46.000	230.00	19590.00	215000.00	1159.23	25.03	1134.20	11.31	11.15
46.000	230.00	19590.00	250000.00	1161.62	27.42	1134.20	11.77	10.56

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
48.000	230.00	19820.00	215000.00	1159.56	25.16	1134.40	11.12	10.68
48.000	230.00	19820.00	250000.00	1161.94	27.54	1134.40	11.58	10.16
50.000	205.00	20025.00	215000.00	1159.86	25.26	1134.60	10.88	10.17
50.000	205.00	20025.00	250000.00	1162.23	27.63	1134.60	11.35	9.69
52.000	188.00	20213.00	215000.00	1160.10	25.30	1134.80	10.74	9.87
52.000	188.00	20213.00	250000.00	1162.46	27.66	1134.80	11.20	9.42
54.000	180.00	20393.00	215000.00	1160.32	25.32	1135.00	10.62	9.63
54.000	180.00	20393.00	250000.00	1162.67	27.67	1135.00	11.09	9.21
56.000	180.00	20573.00	215000.00	1160.52	25.32	1135.20	10.53	9.48
56.000	180.00	20573.00	250000.00	1162.87	27.67	1135.20	11.00	9.08
58.000	182.00	20755.00	215000.00	1160.72	25.32	1135.40	10.45	9.32
58.000	182.00	20755.00	250000.00	1163.07	27.67	1135.40	10.91	8.94
60.000	185.00	20940.00	215000.00	1160.93	25.33	1135.60	10.34	9.12
60.000	185.00	20940.00	250000.00	1163.27	27.67	1135.60	10.80	8.75
62.000	180.00	21120.00	215000.00	1161.13	25.33	1135.80	10.23	8.93
62.000	180.00	21120.00	250000.00	1163.46	27.66	1135.80	10.70	8.58
64.000	180.00	21300.00	215000.00	1161.33	25.33	1136.00	10.12	8.70
64.000	180.00	21300.00	250000.00	1163.66	27.66	1136.00	10.58	8.37
66.000	180.00	21480.00	215000.00	1161.49	25.19	1136.30	10.08	8.71
66.000	180.00	21480.00	250000.00	1163.82	27.52	1136.30	10.54	8.36

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68.000	185.00	21665.00	215000.00	1161.68	25.18	1136.50	10.01	8.57
68.000	185.00	21665.00	250000.00	1164.00	27.50	1136.50	10.47	8.25
69.300	108.00	21773.00	215000.00	1161.80	25.20	1136.60	9.92	8.42
69.300	108.00	21773.00	250000.00	1164.12	27.52	1136.60	10.38	8.10
70.300	92.00	21865.00	215000.00	1161.99	25.24	1136.75	9.88	8.31
70.300	92.00	21865.00	250000.00	1164.32	27.57	1136.75	10.33	7.99
72.000	160.00	22025.00	215000.00	1162.11	25.21	1136.90	9.90	8.35
72.000	160.00	22025.00	250000.00	1164.43	27.53	1136.90	10.39	8.08
74.000	180.00	22205.00	215000.00	1162.26	25.16	1137.10	9.91	8.39
74.000	180.00	22205.00	250000.00	1164.57	27.47	1137.10	10.41	8.15
76.000	180.00	22385.00	215000.00	1162.45	25.15	1137.30	9.75	8.14
76.000	180.00	22385.00	250000.00	1164.77	27.47	1137.30	10.25	7.91
78.000	180.00	22565.00	215000.00	1162.68	25.18	1137.50	9.51	7.71
78.000	180.00	22565.00	250000.00	1164.99	27.49	1137.50	9.99	7.50

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
80.000	182.00	22747.00	215000.00	1162.89	25.19	1137.70	9.26	7.31
80.000	182.00	22747.00	250000.00	1165.21	27.51	1137.70	9.73	7.11
82.000	180.00	22927.00	215000.00	1163.12	25.22	1137.90	8.94	6.79
82.000	180.00	22927.00	250000.00	1165.44	27.54	1137.90	9.39	6.61
84.000	180.00	23107.00	215000.00	1163.32	25.22	1138.10	8.64	6.34
84.000	180.00	23107.00	250000.00	1165.65	27.55	1138.10	9.08	6.16
86.000	182.00	23289.00	215000.00	1163.54	25.14	1138.40	8.27	5.81
86.000	182.00	23289.00	250000.00	1165.88	27.48	1138.40	8.69	5.64
88.000	180.00	23469.00	215000.00	1163.77	25.17	1138.60	7.79	5.13
88.000	180.00	23469.00	250000.00	1166.12	27.52	1138.60	8.19	4.98
90.000	178.00	23647.00	215000.00	1163.94	25.13	1138.81	7.44	4.68
90.000	178.00	23647.00	250000.00	1166.30	27.49	1138.81	7.82	4.54
92.000	178.00	23825.00	215000.00	1164.08	25.08	1139.00	7.21	4.44
92.000	178.00	23825.00	250000.00	1166.44	27.44	1139.00	7.58	4.30
94.000	178.00	24003.00	215000.00	1164.24	25.01	1139.23	6.87	3.99
94.000	178.00	24003.00	250000.00	1166.60	27.37	1139.23	7.23	3.87
96.000	212.00	24215.00	215000.00	1164.33	24.89	1139.44	6.83	4.01
96.000	212.00	24215.00	250000.00	1166.70	27.26	1139.44	7.16	3.86
98.000	245.00	24460.00	215000.00	1164.54	24.89	1139.65	6.31	3.46
98.000	245.00	24460.00	250000.00	1166.91	27.26	1139.65	6.64	3.37
100.000	255.00	24715.00	215000.00	1164.37	24.51	1139.86	8.13	5.96
100.000	255.00	24715.00	250000.00	1166.70	26.84	1139.86	8.55	5.83
102.000	285.00	25000.00	215000.00	1164.32	24.32	1140.00	9.43	7.97
102.000	285.00	25000.00	250000.00	1166.64	26.64	1140.00	9.88	7.66
103.000	1.00	25001.00	215000.00	1164.21	22.41	1141.80	10.11	4.83
103.000	1.00	25001.00	250000.00	1166.50	24.70	1141.80	10.65	4.71

124.000	45.00	27327.00	215000.00	1167.30	20.00	1147.30	11.80	16.68
124.000	45.00	27327.00	250000.00	1169.57	22.27	1147.30	12.13	15.16

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
126.000	200.00	27527.00	215000.00	1167.97	20.42	1147.55	10.84	13.60
126.000	200.00	27527.00	250000.00	1170.26	22.71	1147.55	11.11	12.32
128.000	200.00	27727.00	215000.00	1168.18	20.48	1147.70	11.14	15.08
128.000	200.00	27727.00	250000.00	1170.45	22.75	1147.70	11.39	13.61

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRISW	EG	10*KS	VCH	AREA	.01K
10035.000	.00	.00	.00	1097.20	205000.00	1119.15	.00	1121.33	18.99	11.84	17314.04	47041.63
10035.000	.00	.00	.00	1097.20	250000.00	1120.10	.00	1122.99	23.52	13.64	18325.93	51551.83
10200.000	165.00	.00	.00	1098.10	205000.00	1119.49	.00	1121.64	18.46	11.75	17444.88	47711.19
10200.000	165.00	.00	.00	1098.10	250000.00	1120.57	.00	1123.38	22.39	13.45	18582.38	52836.02
10400.000	200.00	.00	.00	1098.10	205000.00	1119.89	.00	1122.01	17.91	11.66	17581.06	48435.23
10400.000	200.00	.00	.00	1098.10	250000.00	1121.09	.00	1123.82	21.29	13.27	18844.19	54175.57
10600.000	200.00	.00	.00	1098.50	205000.00	1120.27	.00	1122.36	17.75	11.62	17635.36	48652.58
10600.000	200.00	.00	.00	1098.50	250000.00	1121.56	.00	1124.25	20.71	13.14	19019.41	54933.42
10800.000	200.00	.00	.00	1099.00	205000.00	1120.60	.00	1122.74	18.40	11.75	17446.96	47787.39
10800.000	200.00	.00	.00	1099.00	250000.00	1121.96	.00	1124.68	21.18	13.24	18888.74	54325.15
11000.000	200.00	.00	.00	1099.50	205000.00	1121.07	.00	1123.10	16.92	11.44	17927.33	49843.67
11000.000	200.00	.00	.00	1099.50	250000.00	1122.54	.00	1125.10	19.20	12.83	19492.74	57052.39
11200.000	200.00	.00	.00	1100.00	205000.00	1121.47	.00	1123.44	15.95	11.26	18212.39	51329.78
11200.000	200.00	.00	.00	1100.00	250000.00	1123.01	.00	1125.48	17.98	12.60	19845.83	58956.00
11400.000	200.00	.00	.00	1100.40	205000.00	1121.88	.00	1123.76	14.94	11.00	18636.96	53043.06
11400.000	200.00	.00	.00	1100.40	250000.00	1123.50	.00	1125.83	16.69	12.27	20370.83	61191.97
11600.000	200.00	.00	.00	1100.90	205000.00	1122.32	.00	1124.05	13.12	10.55	19433.36	56593.99
11600.000	200.00	.00	.00	1100.90	250000.00	1124.02	.00	1126.17	14.63	11.76	21262.09	65364.76
11800.000	200.00	.00	.00	1101.40	205000.00	1122.53	.00	1124.35	14.33	10.83	18920.19	54160.89
11800.000	200.00	.00	.00	1101.40	250000.00	1124.25	.00	1126.50	15.80	12.03	20775.41	62897.62
12000.000	200.00	.00	.00	1101.80	205000.00	1122.82	.00	1124.64	14.23	10.82	18943.78	54346.35
12000.000	200.00	.00	.00	1101.80	250000.00	1124.58	.00	1126.82	15.57	11.99	20845.86	63364.71
12100.000	100.00	.00	.00	1102.10	205000.00	1122.93	.00	1124.80	14.81	10.97	18678.87	53266.39
12100.000	100.00	.00	.00	1102.10	250000.00	1124.70	.00	1126.99	16.16	12.15	20571.21	62184.84
12200.000	100.00	.00	.00	1102.30	205000.00	1123.07	.00	1124.95	14.93	11.00	18632.23	53059.09
12200.000	100.00	.00	.00	1102.30	250000.00	1124.86	.00	1127.16	16.27	12.17	20540.77	61981.58
12400.000	200.00	.00	.00	1102.80	205000.00	1123.28	.00	1125.31	16.26	11.43	17941.12	50831.39

12400.000	200.00	.00	.00	1102.80	250000.00	1125.07	.00	1127.55	17.63	12.63	19800.10	59534.25
12600.000	200.00	.00	.00	1103.20	205000.00	1123.63	.00	1125.63	15.71	11.35	18063.12	51726.26
12600.000	200.00	.00	.00	1103.20	250000.00	1125.46	.00	1127.90	17.08	12.54	19941.77	60483.92
12800.000	200.00	.00	.00	1103.70	205000.00	1123.92	.00	1125.96	16.24	11.44	17912.41	50876.70
12800.000	200.00	.00	.00	1103.70	250000.00	1125.79	.00	1128.25	17.48	12.60	19844.56	59790.97

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
13000.000	200.00	.00	.00	1104.20	205000.00	1124.24	.00	1126.29	16.45	11.51	17816.27	50549.89
13000.000	200.00	.00	.00	1104.20	250000.00	1126.12	.00	1128.61	17.60	12.66	19748.20	59594.11
13200.000	200.00	.00	.00	1104.70	205000.00	1124.54	.00	1126.64	17.08	11.64	17607.87	49603.33
13200.000	200.00	.00	.00	1104.70	250000.00	1126.44	.00	1128.98	18.14	12.78	19563.39	58705.64
13400.000	200.00	.00	.00	1105.10	205000.00	1124.87	.00	1126.99	17.29	11.69	17542.67	49296.23
13400.000	200.00	.00	.00	1105.10	250000.00	1126.80	.00	1129.35	18.27	12.81	19521.58	58483.78
13600.000	200.00	.00	.00	1105.60	205000.00	1125.17	.00	1127.37	18.27	11.92	17201.78	47965.30
13600.000	200.00	.00	.00	1105.60	250000.00	1127.11	.00	1129.75	19.18	13.03	19182.55	57081.55
13800.000	200.00	.00	.00	1106.10	205000.00	1125.53	.00	1127.74	18.50	11.94	17162.15	47656.91
13800.000	200.00	.00	.00	1106.10	250000.00	1127.49	.00	1130.14	19.31	13.04	19168.81	56892.21
14000.000	200.00	.00	.00	1106.50	205000.00	1125.94	.00	1128.11	18.06	11.82	17345.30	48235.90
14000.000	200.00	.00	.00	1106.50	250000.00	1127.95	.00	1130.52	18.73	12.88	19406.24	57766.50
14200.000	200.00	.00	.00	1107.00	205000.00	1126.34	.00	1128.48	18.05	11.74	17464.47	48255.09
14200.000	200.00	.00	.00	1107.00	250000.00	1128.37	.00	1130.90	18.57	12.76	19600.02	58012.52
14400.000	200.00	.00	.00	1107.50	205000.00	1126.68	.00	1128.87	18.46	11.88	17252.39	47718.95
14400.000	200.00	.00	.00	1107.50	250000.00	1128.72	.00	1131.31	18.94	12.91	19359.86	57449.71
14665.000	265.00	.00	.00	1108.20	205000.00	1127.13	.00	1129.40	19.17	12.09	16956.15	46820.70
14665.000	265.00	.00	.00	1108.20	250000.00	1129.18	.00	1131.86	19.58	13.13	19034.15	56499.83
14785.000	120.00	.00	.00	1108.40	205000.00	1127.41	.00	1129.64	19.07	12.00	17077.34	46947.11
14785.000	120.00	.00	.00	1108.40	250000.00	1129.48	.00	1132.11	19.38	13.01	19218.73	56788.22
15000.000	215.00	.00	.00	1108.90	205000.00	1127.81	.00	1130.06	19.61	12.05	17013.26	46296.07
15000.000	215.00	.00	.00	1108.90	250000.00	1129.90	.00	1132.53	19.84	13.03	19192.46	56126.17
15200.000	200.00	.00	.00	1109.40	205000.00	1128.18	.00	1130.47	20.10	12.14	16881.19	45722.00
15200.000	200.00	.00	.00	1109.40	250000.00	1130.28	.00	1132.95	20.25	13.11	19069.45	55553.70
15400.000	200.00	.00	.00	1109.80	205000.00	1128.58	.00	1130.87	19.92	12.17	16867.34	45931.11
15400.000	200.00	.00	.00	1109.80	250000.00	1130.67	.00	1133.35	20.07	13.15	19008.60	55799.24
15586.000	186.00	.00	.00	1110.30	210000.00	1128.88	.00	1131.35	21.75	12.62	16643.43	45027.13
15586.000	186.00	.00	.00	1110.30	250000.00	1131.03	.00	1133.75	20.58	13.25	18865.39	55112.51
15710.000	124.00	1145.40	1137.00	1110.60	210000.00	1129.33	.00	1131.76	21.20	12.52	16768.73	45610.55
15710.000	124.00	1145.40	1137.00	1110.60	250000.00	1131.51	.00	1134.20	20.01	13.14	19021.98	55885.12
16000.000	290.00	.00	.00	1111.30	210000.00	1129.94	.00	1132.39	21.85	12.55	16735.04	44923.11
16000.000	290.00	.00	.00	1111.30	250000.00	1132.10	.00	1134.79	20.59	13.16	18991.06	55090.95
16200.000	200.00	.00	.00	1111.70	210000.00	1130.45	.00	1132.82	20.92	12.36	16985.21	45912.25
16200.000	200.00	.00	.00	1111.70	250000.00	1132.57	.00	1135.20	19.90	13.01	19216.34	56043.00

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
16400.000	200.00	.00	.00	1112.20	210000.00	1130.83	.00	1133.27	21.76	12.53	16757.74	45023.44
16400.000	200.00	.00	.00	1112.20	250000.00	1132.93	.00	1135.63	20.74	13.19	18947.99	54895.29
16600.000	200.00	.00	.00	1112.70	210000.00	1131.26	.00	1133.71	21.97	12.56	16723.37	44798.88
16600.000	200.00	.00	.00	1112.70	250000.00	1133.33	.00	1136.05	20.98	13.23	18897.70	54576.89
16800.000	200.00	.00	.00	1113.20	210000.00	1131.70	.00	1134.15	22.16	12.58	16693.36	44606.77
16800.000	200.00	.00	.00	1113.20	250000.00	1133.74	.00	1136.48	21.22	13.26	18848.20	54266.41
17000.000	200.00	.00	.00	1113.60	210000.00	1132.16	.00	1134.59	21.80	12.51	16784.70	44972.02
17000.000	200.00	.00	.00	1113.60	250000.00	1134.18	.00	1136.90	21.08	13.23	18896.71	54455.88
17200.000	200.00	.00	.00	1114.10	210000.00	1132.59	.00	1135.04	22.08	12.56	16720.98	44686.38
17200.000	200.00	.00	.00	1114.10	250000.00	1134.59	.00	1137.33	21.34	13.28	18825.94	54115.81
17400.000	200.00	.00	.00	1114.60	210000.00	1133.02	.00	1135.49	22.15	12.62	16646.72	44621.04
17400.000	200.00	.00	.00	1114.60	250000.00	1135.00	.00	1137.77	21.51	13.35	18723.83	53897.84
17600.000	200.00	.00	.00	1115.00	210000.00	1133.44	.00	1135.94	22.28	12.70	16539.17	44493.38
17600.000	200.00	.00	.00	1115.00	250000.00	1135.40	.00	1138.22	21.77	13.47	18560.76	53585.91
17800.000	200.00	.00	.00	1115.50	210000.00	1133.87	.00	1136.40	22.62	12.77	16448.33	44153.70
17800.000	200.00	.00	.00	1115.50	250000.00	1135.81	.00	1138.66	22.13	13.55	18451.86	53146.78
18000.000	200.00	.00	.00	1116.00	210000.00	1134.30	.00	1136.87	23.02	12.84	16349.00	43767.79
18000.000	200.00	.00	.00	1116.00	250000.00	1136.24	.00	1139.12	22.54	13.63	18335.67	52658.93
18200.000	200.00	.00	.00	1116.50	210000.00	1134.74	.00	1137.34	23.46	12.94	16230.77	43355.22
18200.000	200.00	.00	.00	1116.50	250000.00	1136.66	.00	1139.59	23.06	13.75	18179.98	52057.16
18400.000	200.00	.00	.00	1116.90	210000.00	1135.29	.00	1137.81	22.47	12.72	16503.15	44298.94
18400.000	200.00	.00	.00	1116.90	250000.00	1137.22	.00	1140.05	22.08	13.52	18493.20	53206.84
18600.000	200.00	.00	.00	1117.40	210000.00	1135.68	.00	1138.30	23.44	13.00	16149.84	43371.72
18600.000	200.00	.00	.00	1117.40	250000.00	1137.57	.00	1140.55	23.11	13.84	18065.54	52006.34
18800.000	200.00	.00	.00	1117.90	210000.00	1136.11	.00	1138.80	24.32	13.15	15964.05	42585.39
18800.000	200.00	.00	.00	1117.90	250000.00	1138.00	.00	1141.04	23.97	13.99	17866.80	51062.20
19000.000	200.00	.00	.00	1118.30	210000.00	1136.59	.00	1139.29	24.25	13.18	15935.11	42642.48
19000.000	200.00	.00	.00	1118.30	250000.00	1138.46	.00	1141.52	23.98	14.03	17817.95	51051.14
19200.000	200.00	.00	.00	1118.80	210000.00	1137.04	.00	1139.79	24.78	13.30	15784.15	42184.29
19200.000	200.00	.00	.00	1118.80	250000.00	1138.91	.00	1142.03	24.57	14.18	17634.79	50437.01
19400.000	200.00	.00	.00	1119.30	210000.00	1137.50	.00	1140.31	25.40	13.45	15616.65	41671.58
19400.000	200.00	.00	.00	1119.30	250000.00	1139.35	.00	1142.55	25.21	14.33	17441.31	49790.45
19600.000	200.00	.00	.00	1119.80	210000.00	1137.98	.00	1140.84	25.97	13.59	15457.42	41209.75
19600.000	200.00	.00	.00	1119.80	250000.00	1139.82	.00	1143.08	25.82	14.49	17254.93	49196.83

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
19800.000	200.00	.00	.00	1120.20	210000.00	1138.49	.00	1141.36	25.79	13.60	15436.69	41352.24
19800.000	200.00	.00	.00	1120.20	250000.00	1140.32	.00	1143.60	25.73	14.52	17215.01	49287.45
20000.000	200.00	.00	.00	1120.70	210000.00	1138.96	.00	1141.91	26.47	13.77	15253.25	40820.09

20000.000	200.00	.00	.00	1120.70	250000.00	1140.78	.00	1144.14	26.46	14.71	16999.44	48598.35
20200.000	200.00	.00	.00	1121.20	210000.00	1139.46	.00	1142.46	27.03	13.91	15100.07	40393.95
20200.000	200.00	.00	.00	1121.20	250000.00	1141.27	.00	1144.70	27.06	14.86	16823.33	48056.65
20400.000	200.00	.00	.00	1121.60	210000.00	1140.02	.00	1142.99	26.26	13.83	15179.95	40982.48
20400.000	200.00	.00	.00	1121.60	250000.00	1141.83	.00	1145.24	26.41	14.80	16886.52	48651.10
20600.000	200.00	.00	.00	1122.10	210000.00	1140.49	.00	1143.56	27.36	14.07	14920.70	40149.63
20600.000	200.00	.00	.00	1122.10	250000.00	1142.29	.00	1145.81	27.54	15.06	16596.20	47638.41
20782.000	178.00	.00	.00	1122.50	210000.00	1141.01	.00	1144.05	27.27	14.00	15001.98	40210.82
20782.000	178.00	.00	.00	1122.50	250000.00	1142.84	.00	1146.31	27.36	14.95	16722.44	47798.66
20800.000	18.00	.00	.00	1122.53	210000.00	1141.07	.00	1144.10	27.17	13.98	15019.76	40286.84
20800.000	18.00	.00	.00	1122.53	250000.00	1142.89	.00	1146.36	27.26	14.93	16740.43	47880.39
21000.000	200.00	.00	.00	1122.86	210000.00	1141.67	.00	1144.63	25.27	13.82	15194.53	41777.93
21000.000	200.00	.00	.00	1122.86	250000.00	1143.47	.00	1146.89	25.65	14.84	16842.74	49361.51
21050.000	50.00	.00	.00	1123.20	210000.00	1141.76	.00	1144.80	26.29	13.99	15012.54	40959.05
21050.000	50.00	.00	.00	1123.20	250000.00	1143.56	.00	1147.06	26.59	15.01	16660.15	48485.48
21150.000	100.00	1157.00	1150.00	1123.40	210000.00	1142.39	.00	1145.27	24.18	13.63	15404.29	42706.17
21150.000	100.00	1157.00	1150.00	1123.40	250000.00	1144.31	.00	1147.60	24.14	14.56	17165.02	50883.74
21200.000	50.00	.00	.00	1123.19	210000.00	1142.67	.00	1145.40	22.08	13.27	15826.03	44691.22
21200.000	50.00	.00	.00	1123.19	250000.00	1144.60	.00	1147.74	22.22	14.21	17589.98	53032.29
21400.000	200.00	.00	.00	1123.52	210000.00	1143.22	.00	1145.85	21.59	13.01	16141.51	45198.77
21400.000	200.00	.00	.00	1123.52	250000.00	1145.20	.00	1148.19	21.57	13.88	18016.03	53826.82
21600.000	200.00	.00	.00	1123.85	210000.00	1143.80	.00	1146.28	19.97	12.65	16598.09	46990.68
21600.000	200.00	.00	.00	1123.85	250000.00	1145.79	.00	1148.62	19.98	13.50	18516.36	55928.22
21800.000	200.00	.00	.00	1124.18	210000.00	1144.16	.00	1146.70	20.38	12.78	16430.29	46514.70
21800.000	200.00	.00	.00	1124.18	250000.00	1146.15	.00	1149.04	20.44	13.65	18317.48	55296.83
22000.000	200.00	.00	.00	1124.51	210000.00	1144.60	.00	1147.11	20.04	12.72	16515.77	46914.17
22000.000	200.00	.00	.00	1124.51	250000.00	1146.59	.00	1149.45	20.12	13.58	18404.93	55736.80
22200.000	200.00	.00	.00	1124.84	210000.00	1145.02	.00	1147.51	19.79	12.66	16581.50	47210.70
22200.000	200.00	.00	.00	1124.84	250000.00	1147.01	.00	1149.85	19.83	13.52	18487.92	56139.25
22400.000	200.00	.00	.00	1125.18	210000.00	1145.43	.00	1147.90	19.56	12.62	16638.88	47483.84
22400.000	200.00	.00	.00	1125.18	250000.00	1147.42	.00	1150.25	19.65	13.49	18536.73	56393.70

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
22600.000	200.00	.00	.00	1125.51	210000.00	1145.86	.00	1148.29	19.01	12.51	16785.74	48162.19
22600.000	200.00	.00	.00	1125.51	250000.00	1147.86	.00	1150.64	19.14	13.38	18688.25	57141.89
22800.000	200.00	.00	.00	1125.84	210000.00	1146.25	.00	1148.67	18.88	12.48	16820.91	48336.20
22800.000	200.00	.00	.00	1125.84	250000.00	1148.26	.00	1151.02	19.01	13.35	18725.17	57340.77
23000.000	200.00	.00	.00	1126.70	210000.00	1146.59	.00	1149.08	19.71	12.66	16588.64	47296.00
23000.000	200.00	.00	.00	1126.70	250000.00	1148.59	.00	1151.43	19.77	13.52	18489.80	56227.63
23200.000	200.00	.00	.00	1126.50	210000.00	1147.11	.00	1149.47	18.11	12.33	17036.74	49351.04
23200.000	200.00	.00	.00	1126.50	250000.00	1149.13	.00	1151.83	18.27	13.19	18953.95	58492.00
23400.000	200.00	.00	.00	1126.83	210000.00	1147.47	.00	1149.83	18.06	12.32	17041.01	49421.91

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23400.000	200.00	.00	.00	1126.83	250000.00	1149.49	.00	1152.19	18.22	13.19	18956.61	58568.30
23600.000	200.00	.00	.00	1127.16	210000.00	1147.84	.00	1150.19	18.01	12.32	17050.60	49479.39
23600.000	200.00	.00	.00	1127.16	250000.00	1149.86	.00	1152.56	18.17	13.18	18968.96	58648.43
23800.000	200.00	.00	.00	1127.46	210000.00	1148.20	.00	1150.55	17.90	12.29	17082.91	49629.75
23800.000	200.00	.00	.00	1127.46	250000.00	1150.23	.00	1152.92	18.06	13.15	19005.46	58832.73
24000.000	200.00	.00	.00	1127.82	210000.00	1148.64	.00	1150.91	16.86	12.07	17396.88	51147.92
24000.000	200.00	.00	.00	1127.82	250000.00	1150.68	.00	1153.28	17.07	12.93	19330.05	60505.48
24200.000	200.00	.00	.00	1128.15	210000.00	1149.04	.00	1151.24	16.19	11.92	17613.73	52198.89
24200.000	200.00	.00	.00	1128.15	250000.00	1151.08	.00	1153.62	16.43	12.78	19556.60	61675.24
24400.000	200.00	.00	.00	1128.48	210000.00	1149.43	.00	1151.56	15.15	11.72	17913.87	53950.39
24400.000	200.00	.00	.00	1128.48	250000.00	1151.48	.00	1153.95	15.45	12.59	19851.09	63607.46
24600.000	200.00	.00	.00	1128.81	210000.00	1149.83	.00	1151.87	14.38	11.45	18340.16	55381.26
24600.000	200.00	.00	.00	1128.81	250000.00	1151.91	.00	1154.26	14.63	12.29	20348.70	65350.42
24744.000	144.00	.00	.00	1129.05	210000.00	1149.98	.00	1152.10	14.15	11.69	18121.68	55830.78
24744.000	144.00	.00	.00	1129.05	250000.00	1152.05	.00	1154.50	14.41	12.60	20081.05	65868.89
24841.000	97.00	.00	.00	1129.00	210000.00	1150.21	.00	1152.24	13.17	11.42	18388.84	57865.18
24841.000	97.00	.00	.00	1129.00	250000.00	1152.28	.00	1154.65	13.65	12.35	20247.88	67673.73
24871.000	30.00	.00	.00	1129.00	210000.00	1150.17	.00	1152.35	7.63	11.85	17718.67	76004.12
24871.000	30.00	.00	.00	1129.00	250000.00	1152.23	.00	1154.76	7.83	12.77	19573.62	89367.94
24906.000	35.00	.00	.00	1129.25	210000.00	1150.37	.00	1152.41	6.82	11.47	18304.16	80410.47
24906.000	35.00	.00	.00	1129.25	250000.00	1152.44	.00	1154.83	7.05	12.39	20171.98	94163.61
24907.000	1.00	.00	.00	1132.00	210000.00	1150.00	.00	1152.79	11.39	13.39	15678.21	62220.97
24907.000	1.00	.00	.00	1132.00	250000.00	1152.06	.00	1155.22	11.22	14.26	17532.28	74648.94
24918.000	11.00	.00	.00	1132.00	210000.00	1149.78	.00	1153.03	15.54	14.47	14516.70	53273.73
24918.000	11.00	.00	.00	1132.00	250000.00	1151.83	.00	1155.48	15.36	15.33	16306.44	63779.95

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
24957.000	39.00	.00	.00	1132.00	210000.00	1149.90	.00	1153.11	15.20	14.36	14620.46	53863.25
24957.000	39.00	.00	.00	1132.00	250000.00	1151.95	.00	1155.55	15.06	15.23	16412.51	64426.30
24968.000	11.00	.00	.00	1132.00	210000.00	1150.92	.00	1153.35	17.87	12.53	16775.87	49675.25
24968.000	11.00	.00	.00	1132.00	250000.00	1153.04	.00	1155.82	17.68	13.38	18745.82	59463.04
2.000	147.00	.00	.00	1132.00	210000.00	1151.17	.00	1153.62	17.99	12.55	16815.53	49508.24
2.000	147.00	.00	.00	1132.00	250000.00	1153.35	.00	1156.08	17.39	13.29	19012.86	59951.88
4.000	200.00	.00	.00	1132.00	210000.00	1151.55	.00	1153.98	17.51	12.51	16945.92	50187.39
4.000	200.00	.00	.00	1132.00	250000.00	1153.74	.00	1156.43	16.85	13.22	19268.02	60903.93
6.000	200.00	.00	.00	1132.00	210000.00	1151.74	.00	1154.42	19.27	13.16	16250.14	47843.83
6.000	200.00	.00	.00	1132.00	250000.00	1153.94	.00	1156.84	18.34	13.81	18645.38	58383.29
8.000	200.00	.00	.00	1132.00	210000.00	1152.48	.00	1154.80	16.14	12.29	17444.37	52276.28
8.000	200.00	.00	.00	1132.00	250000.00	1154.67	.00	1157.22	15.51	12.93	19926.85	63476.71
10.000	200.00	.00	.00	1132.00	210000.00	1152.93	.00	1155.13	14.87	11.96	17986.62	54462.28
10.000	200.00	.00	.00	1132.00	250000.00	1155.13	.00	1157.53	14.29	12.58	20593.22	66137.37
12.000	200.00	.00	.00	1132.00	210000.00	1153.31	.00	1155.42	14.07	11.74	18400.75	55986.07

12.000	200.00	.00	.00	1132.00	250000.00	1155.53	.00	1157.82	13.48	12.32	21133.72	68091.30
14.000	158.00	.00	.00	1132.00	210000.00	1153.64	.00	1155.65	13.18	11.44	18903.91	57834.40
14.000	158.00	.00	.00	1132.00	250000.00	1155.86	.00	1158.04	12.63	12.00	21754.76	70358.80
15.400	122.00	.00	.00	1132.00	210000.00	1153.63	.00	1156.02	15.88	12.48	17460.54	52701.36
15.400	122.00	.00	.00	1132.00	250000.00	1155.87	.00	1158.37	14.86	12.95	20470.25	64856.23
15.600	18.00	1165.00	1161.00	1132.00	215000.00	1154.58	.00	1156.78	13.90	12.04	18749.57	57669.77
15.600	18.00	1165.00	1161.00	1132.00	250000.00	1156.82	.00	1159.03	12.53	12.23	21780.87	70621.77
17.300	152.00	.00	.00	1132.00	215000.00	1155.24	.00	1157.01	10.72	10.77	20683.80	65660.64
17.300	152.00	.00	.00	1132.00	250000.00	1157.37	.00	1159.24	10.18	11.17	23420.03	78369.09
19.000	172.00	.00	.00	1132.00	215000.00	1155.41	.00	1157.20	10.80	10.82	20392.72	65423.53
19.000	172.00	.00	.00	1132.00	250000.00	1157.50	.00	1159.43	10.44	11.31	22817.56	77389.60
21.500	182.00	.00	.00	1132.00	215000.00	1155.81	.00	1157.40	9.43	10.20	21557.22	69999.36
21.500	182.00	.00	.00	1132.00	250000.00	1157.89	.00	1159.63	9.21	10.70	23985.20	82376.27
24.000	140.00	.00	.00	1132.00	215000.00	1155.69	.00	1157.67	12.01	11.39	19401.00	62032.32
24.000	140.00	.00	.00	1132.00	250000.00	1157.76	.00	1159.90	11.63	11.91	21668.04	73321.75
24.600	60.00	.00	.00	1132.00	215000.00	1156.10	.00	1158.03	11.50	11.27	19640.76	63392.30
24.600	60.00	.00	.00	1132.00	250000.00	1158.80	.00	1160.77	10.15	11.43	22594.28	78469.32
26.000	185.00	.00	.00	1132.10	215000.00	1156.32	.00	1158.24	11.52	11.26	19689.47	63346.20
26.000	185.00	.00	.00	1132.10	250000.00	1159.00	.00	1160.95	10.16	11.41	22644.94	78434.68

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
26.450	45.00	1176.14	1172.51	1132.10	215000.00	1156.87	.00	1158.67	10.52	10.93	20288.36	66291.66
26.450	45.00	1176.14	1172.51	1132.10	250000.00	1159.51	.00	1161.37	9.41	11.14	23214.83	81502.06
27.000	155.00	.00	.00	1132.20	215000.00	1157.02	.00	1158.84	10.62	10.97	20186.55	65965.13
27.000	155.00	.00	.00	1132.20	250000.00	1159.65	.00	1161.53	9.56	11.20	23062.57	80854.15
28.000	160.00	.00	.00	1132.30	215000.00	1157.19	.00	1159.01	10.61	10.95	20149.19	66020.73
28.000	160.00	.00	.00	1132.30	250000.00	1159.79	.00	1161.69	9.59	11.21	22990.37	80737.12
30.000	200.00	.00	.00	1132.50	215000.00	1157.41	.00	1159.23	10.59	10.95	20152.30	66073.98
30.000	200.00	.00	.00	1132.50	250000.00	1159.98	.00	1161.88	9.62	11.23	22915.08	80601.42
32.000	200.00	.00	.00	1132.70	215000.00	1157.68	.00	1159.44	10.10	10.77	20502.04	67654.40
32.000	200.00	.00	.00	1132.70	250000.00	1160.23	.00	1162.07	9.27	11.08	23222.94	82090.05
34.000	200.00	.00	.00	1132.90	215000.00	1157.88	.00	1159.64	10.07	10.77	20475.23	67744.48
34.000	200.00	.00	.00	1132.90	250000.00	1160.40	.00	1162.26	9.31	11.10	23134.43	81929.35
36.000	215.00	.00	.00	1133.10	215000.00	1158.06	.00	1159.88	10.42	10.92	20138.33	66600.98
36.000	215.00	.00	.00	1133.10	250000.00	1160.56	.00	1162.49	9.69	11.29	22700.30	80306.80
38.000	230.00	.00	.00	1133.30	215000.00	1158.30	.00	1160.12	10.41	10.93	20093.02	66638.02
38.000	230.00	.00	.00	1133.30	250000.00	1160.77	.00	1162.72	9.73	11.32	22611.20	80165.86
40.000	230.00	.00	.00	1133.50	215000.00	1158.49	.00	1160.39	10.90	11.16	19678.76	65133.73
40.000	230.00	.00	.00	1133.50	250000.00	1160.94	.00	1162.97	10.23	11.58	22132.56	78172.01
42.000	230.00	.00	.00	1133.70	215000.00	1158.74	.00	1160.64	10.89	11.17	19642.38	65153.38
42.000	230.00	.00	.00	1133.70	250000.00	1161.17	.00	1163.21	10.25	11.60	22045.99	78072.13
44.000	230.00	.00	.00	1134.00	215000.00	1158.94	.00	1160.92	11.39	11.40	19248.67	63719.10

44.000	230.00	.00	.00	1134.00	250000.00	1161.35	.00	1163.48	10.74	11.85	21583.42	76278.04
46.000	230.00	.00	.00	1134.20	215000.00	1159.23	.00	1161.18	11.15	11.31	19398.13	64398.11
46.000	230.00	.00	.00	1134.20	250000.00	1161.62	.00	1163.72	10.56	11.77	21719.23	76947.94
48.000	230.00	.00	.00	1134.40	215000.00	1159.56	.00	1161.44	10.68	11.12	19733.14	65775.57
48.000	230.00	.00	.00	1134.40	250000.00	1161.94	.00	1163.97	10.16	11.58	22060.52	78448.38
50.000	205.00	.00	.00	1134.60	215000.00	1159.86	.00	1161.66	10.17	10.88	20150.53	67426.32
50.000	205.00	.00	.00	1134.60	250000.00	1162.23	.00	1164.18	9.69	11.35	22500.44	80300.84
52.000	188.00	.00	.00	1134.80	215000.00	1160.10	.00	1161.85	9.87	10.74	20415.30	68446.73
52.000	188.00	.00	.00	1134.80	250000.00	1162.46	.00	1164.36	9.42	11.20	22779.33	81435.88
54.000	180.00	.00	.00	1135.00	215000.00	1160.32	.00	1162.03	9.63	10.62	20632.19	69296.52
54.000	180.00	.00	.00	1135.00	250000.00	1162.67	.00	1164.54	9.21	11.09	23006.48	82365.48
56.000	180.00	.00	.00	1135.20	215000.00	1160.52	.00	1162.21	9.48	10.53	20806.52	69832.88
56.000	180.00	.00	.00	1135.20	250000.00	1162.87	.00	1164.70	9.08	11.00	23196.60	82985.95

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRISW	EG	10*KS	VCH	AREA	.01K
58.000	182.00	.00	.00	1135.40	215000.00	1160.72	.00	1162.38	9.32	10.45	20971.70	70407.02
58.000	182.00	.00	.00	1135.40	250000.00	1163.07	.00	1164.87	8.94	10.91	23372.09	83623.44
60.000	185.00	.00	.00	1135.60	215000.00	1160.93	.00	1162.55	9.12	10.34	21192.46	71190.66
60.000	185.00	.00	.00	1135.60	250000.00	1163.27	.00	1165.04	8.75	10.80	23608.89	84507.38
62.000	180.00	.00	.00	1135.80	215000.00	1161.13	.00	1162.72	8.93	10.23	21406.72	71943.13
62.000	180.00	.00	.00	1135.80	250000.00	1163.46	.00	1165.20	8.58	10.70	23839.65	85360.63
64.000	180.00	.00	.00	1136.00	215000.00	1161.33	.00	1162.88	8.70	10.12	21648.21	72882.33
64.000	180.00	.00	.00	1136.00	250000.00	1163.66	.00	1165.35	8.37	10.58	24094.96	86400.48
66.000	180.00	.00	.00	1136.30	215000.00	1161.49	.00	1163.04	8.71	10.08	21713.42	72867.36
66.000	180.00	.00	.00	1136.30	250000.00	1163.82	.00	1165.51	8.36	10.54	24177.60	86447.72
68.000	185.00	.00	.00	1136.50	215000.00	1161.68	.00	1163.20	8.57	10.01	21874.95	73426.77
68.000	185.00	.00	.00	1136.50	250000.00	1164.00	.00	1165.66	8.25	10.47	24346.46	87051.48
69.300	108.00	.00	.00	1136.60	215000.00	1161.80	.00	1163.30	8.42	9.92	22059.37	74112.95
69.300	108.00	.00	.00	1136.60	250000.00	1164.12	.00	1165.75	8.10	10.38	24545.23	87832.23
70.300	92.00	1176.98	1172.28	1136.75	215000.00	1161.99	.00	1163.47	8.31	9.88	22159.93	74598.87
70.300	92.00	1176.98	1172.28	1136.75	250000.00	1164.32	.00	1165.94	7.99	10.33	24665.25	88461.90
72.000	160.00	.00	.00	1136.90	215000.00	1162.11	.00	1163.61	8.35	9.90	22045.71	74387.18
72.000	160.00	.00	.00	1136.90	250000.00	1164.43	.00	1166.08	8.08	10.39	24485.27	87930.35
74.000	180.00	.00	.00	1137.10	215000.00	1162.26	.00	1163.76	8.39	9.91	21985.24	74231.77
74.000	180.00	.00	.00	1137.10	250000.00	1164.57	.00	1166.23	8.15	10.41	24386.09	87588.33
76.000	180.00	.00	.00	1137.30	215000.00	1162.45	.00	1163.91	8.14	9.75	22323.91	75380.44
76.000	180.00	.00	.00	1137.30	250000.00	1164.77	.00	1166.38	7.91	10.25	24755.15	88914.16
78.000	180.00	.00	.00	1137.50	215000.00	1162.68	.00	1164.06	7.71	9.51	22896.65	77405.44
78.000	180.00	.00	.00	1137.50	250000.00	1164.99	.00	1166.52	7.50	9.99	25386.15	91288.05
80.000	182.00	.00	.00	1137.70	215000.00	1162.89	.00	1164.21	7.31	9.26	23502.29	79525.06
80.000	182.00	.00	.00	1137.70	250000.00	1165.21	.00	1166.66	7.11	9.73	26055.80	93786.93
82.000	180.00	.00	.00	1137.90	215000.00	1163.12	.00	1164.34	6.79	8.94	24337.75	82480.66

82.000	180.00	.00	.00	1137.90	250000.00	1165.44	.00	1166.80	6.61	9.39	26978.99	97269.27
84.000	180.00	.00	.00	1138.10	215000.00	1163.32	.00	1164.47	6.34	8.64	25174.40	85397.16
84.000	180.00	.00	.00	1138.10	250000.00	1165.65	.00	1166.92	6.16	9.08	27905.29	100716.90
86.000	182.00	.00	.00	1138.40	215000.00	1163.54	.00	1164.59	5.81	8.27	26277.41	89190.63
86.000	182.00	.00	.00	1138.40	250000.00	1165.88	.00	1167.04	5.64	8.69	29128.59	105235.20
88.000	180.00	.00	.00	1138.60	215000.00	1163.77	.00	1164.70	5.13	7.79	27886.54	94907.27
88.000	180.00	.00	.00	1138.60	250000.00	1166.12	.00	1167.15	4.98	8.19	30906.45	11989.00

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CR1WS	EG	10*KS	VCH	AREA	.01K
90.000	178.00	.00	.00	1138.81	215000.00	1163.94	.00	1164.80	4.68	7.44	29188.09	99414.65
90.000	178.00	.00	.00	1138.81	250000.00	1166.30	.00	1167.24	4.54	7.82	32343.43	117335.10
92.000	178.00	.00	.00	1139.00	215000.00	1164.08	.00	1164.88	4.44	7.21	30074.53	101999.30
92.000	178.00	.00	.00	1139.00	250000.00	1166.44	.00	1167.32	4.30	7.58	33352.09	120520.20
94.000	178.00	.00	.00	1139.23	215000.00	1164.24	.00	1164.96	3.99	6.87	31549.34	107691.90
94.000	178.00	.00	.00	1139.23	250000.00	1166.60	.00	1167.40	3.87	7.23	34943.59	127047.60
96.000	212.00	.00	.00	1139.44	215000.00	1164.33	.00	1165.05	4.01	6.83	31833.52	107380.50
96.000	212.00	.00	.00	1139.44	250000.00	1166.70	.00	1167.49	3.86	7.16	35382.19	127312.80
98.000	245.00	.00	.00	1139.65	215000.00	1164.54	.00	1165.15	3.46	6.31	34218.39	115564.50
98.000	245.00	.00	.00	1139.65	250000.00	1166.91	.00	1167.59	3.37	6.64	37857.07	136151.30
100.000	255.00	.00	.00	1139.86	215000.00	1164.37	.00	1165.39	5.96	8.13	26589.08	88081.02
100.000	255.00	.00	.00	1139.86	250000.00	1166.70	.00	1167.83	5.83	8.55	29402.81	103577.60
102.000	285.00	.00	.00	1140.00	215000.00	1164.32	.00	1165.69	7.97	9.43	23060.93	76143.92
102.000	285.00	.00	.00	1140.00	250000.00	1166.64	.00	1168.13	7.66	9.88	25651.44	90314.70
103.000	1.00	.00	.00	1141.80	215000.00	1164.21	.00	1165.80	4.83	10.11	21259.51	97788.69
103.000	1.00	.00	.00	1141.80	250000.00	1166.50	.00	1168.26	4.71	10.65	23542.16	115233.70
103.220	22.00	.00	.00	1143.30	215000.00	1164.09	.00	1165.94	6.18	10.89	19736.06	86498.66
103.220	22.00	.00	.00	1143.30	250000.00	1166.39	.00	1168.40	5.87	11.39	22010.74	103153.10
103.280	6.00	.00	.00	1143.30	215000.00	1164.04	.00	1166.00	7.62	11.25	19115.37	77869.67
103.280	6.00	.00	.00	1143.30	250000.00	1166.33	.00	1168.47	7.48	11.74	21348.42	91405.77
103.460	18.00	.00	.00	1143.30	215000.00	1164.05	.00	1166.02	7.61	11.24	19127.38	77946.28
103.460	18.00	.00	.00	1143.30	250000.00	1166.35	.00	1168.48	7.47	11.73	21360.64	91487.80
103.520	6.00	.00	.00	1143.30	215000.00	1164.25	.00	1166.06	6.03	10.81	19885.97	87578.10
103.520	6.00	.00	.00	1143.30	250000.00	1166.55	.00	1168.53	5.74	11.31	22175.78	104363.70
103.800	28.00	.00	.00	1141.80	215000.00	1164.64	.00	1166.16	4.54	9.92	21672.32	100915.50
103.800	28.00	.00	.00	1141.80	250000.00	1166.93	.00	1168.63	4.44	10.46	23992.15	118667.20
103.810	1.00	.00	.00	1140.07	215000.00	1164.87	.00	1166.19	7.44	9.24	23611.38	78840.46
103.810	1.00	.00	.00	1140.07	250000.00	1167.22	.00	1168.66	7.18	9.69	26241.11	93324.49
104.000	148.00	.00	.00	1140.20	215000.00	1164.88	.00	1166.35	8.41	9.78	22312.91	74154.87
104.000	148.00	.00	.00	1140.20	250000.00	1167.21	.00	1168.82	8.11	10.26	24805.03	87789.58
106.000	225.00	.00	.00	1140.40	215000.00	1165.07	.00	1166.54	8.41	9.78	22289.70	74151.35
106.000	225.00	.00	.00	1140.40	250000.00	1167.39	.00	1169.01	8.13	10.26	24756.66	87687.16
108.000	225.00	.00	.00	1140.70	215000.00	1165.43	.00	1166.73	7.38	9.20	23614.54	79134.49

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108.000 225.00 .00 .00 1140.70 250000.00 1167.76 .00 1169.20 7.15 9.67 26196.39 93471.59
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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRWS	EG	10*KS	VCH	AREA	.01K
110.000	228.00	.00	.00	1140.90	215000.00	1165.22	.00	1167.12	11.46	11.09	19540.65	63518.80
110.000	228.00	.00	.00	1140.90	250000.00	1167.51	.00	1169.59	11.12	11.62	21707.74	74973.43
112.000	212.00	.00	.00	1141.10	215000.00	1165.41	.00	1167.39	11.93	11.30	19167.17	62234.72
112.000	212.00	.00	.00	1141.10	250000.00	1167.69	.00	1169.86	11.60	11.85	21286.38	73411.59
114.000	200.00	.00	.00	1141.30	215000.00	1165.79	.00	1167.63	11.02	10.93	19825.46	64752.88
114.000	200.00	.00	.00	1141.30	250000.00	1168.06	.00	1170.09	10.74	11.47	21999.35	76295.49
116.000	202.00	.00	.00	1141.50	215000.00	1166.27	.00	1167.86	9.28	10.13	21373.14	70560.34
116.000	202.00	.00	.00	1141.50	250000.00	1168.57	.00	1170.32	9.06	10.64	23696.87	83061.95
118.000	205.00	.00	.00	1141.70	215000.00	1166.67	.00	1168.06	8.00	9.47	22853.17	76037.55
118.000	205.00	.00	.00	1141.70	250000.00	1168.98	.00	1170.51	7.81	9.96	25322.95	89461.01
119.800	190.00	.00	.00	1141.90	215000.00	1166.91	.00	1168.21	7.50	9.19	23545.89	78503.03
119.800	190.00	.00	.00	1141.90	250000.00	1169.23	.00	1170.67	7.33	9.66	26087.16	92361.10
120.420	50.00	.00	.00	1142.00	215000.00	1166.91	.00	1168.26	7.81	9.36	23128.73	76931.23
120.420	50.00	.00	.00	1142.00	250000.00	1169.23	.00	1170.72	7.63	9.83	25630.19	90533.85
* 120.500	8.00	.00	.00	1147.00	215000.00	1166.28	.00	1168.55	18.44	12.11	17885.36	50062.76
* 120.500	8.00	.00	.00	1147.00	250000.00	1168.64	.00	1170.99	16.30	12.34	20423.80	61917.10
122.000	152.00	.00	.00	1147.10	215000.00	1166.51	.00	1168.86	19.00	12.32	17574.39	49326.05
122.000	152.00	.00	.00	1147.10	250000.00	1168.82	.00	1171.27	16.95	12.60	20012.32	60719.36
122.650	65.00	.00	.00	1147.20	215000.00	1166.62	.00	1168.99	19.35	12.39	17476.82	48877.65
122.650	65.00	.00	.00	1147.20	250000.00	1168.91	.00	1171.39	17.26	12.67	19902.64	60177.20
123.550	90.00	1181.80	1180.61	1147.31	215000.00	1167.22	.00	1169.37	16.67	11.80	18340.48	52652.52
123.550	90.00	1181.80	1180.61	1147.31	250000.00	1169.50	.00	1171.77	15.10	12.14	20758.08	64337.27
124.000	45.00	.00	.00	1147.30	215000.00	1167.30	.00	1169.44	16.68	11.80	18367.07	52636.49
124.000	45.00	.00	.00	1147.30	250000.00	1169.57	.00	1171.84	15.16	12.13	20799.21	64215.75
126.000	200.00	.00	.00	1147.55	215000.00	1167.97	.00	1169.78	13.60	10.84	20148.14	58309.32
126.000	200.00	.00	.00	1147.55	250000.00	1170.26	.00	1172.15	12.32	11.11	22980.72	71233.49
128.000	200.00	.00	.00	1147.70	215000.00	1168.18	.00	1170.10	15.08	11.14	19593.66	55366.79
128.000	200.00	.00	.00	1147.70	250000.00	1170.45	.00	1172.44	13.61	11.39	22396.80	67769.59

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 SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
10035.000	205000.00	1119.15	.00	.00	.00	1062.88	.00
10035.000	250000.00	1120.10	.95	.00	.00	1067.50	.00
10200.000	205000.00	1119.49	.00	.34	.00	1059.42	165.00
10200.000	250000.00	1120.57	1.07	.47	.00	1064.18	165.00

10448111

10400.000	205000.00	1119.89	.00	.40	.00	1056.25	200.00
10400.000	250000.00	1121.09	1.19	.52	.00	1061.55	200.00
10600.000	205000.00	1120.27	.00	.37	.00	1058.06	200.00
10600.000	250000.00	1121.56	1.30	.48	.00	1064.80	200.00
10800.000	205000.00	1120.60	.00	.33	.00	1057.04	200.00
10800.000	250000.00	1121.96	1.36	.39	.00	1063.04	200.00
11000.000	205000.00	1121.07	.00	.48	.00	1062.37	200.00
11000.000	250000.00	1122.54	1.47	.59	.00	1068.90	200.00
11200.000	205000.00	1121.47	.00	.40	.00	1056.21	200.00
11200.000	250000.00	1123.01	1.54	.47	.00	1092.92	200.00
11400.000	205000.00	1121.88	.00	.41	.00	1066.61	200.00
11400.000	250000.00	1123.50	1.62	.48	.00	1074.62	200.00
11600.000	205000.00	1122.32	.00	.45	.00	1072.80	200.00
11600.000	250000.00	1124.02	1.70	.52	.00	1111.56	200.00
11800.000	205000.00	1122.53	.00	.21	.00	1072.30	200.00
11800.000	250000.00	1124.25	1.72	.23	.00	1082.06	200.00
12000.000	205000.00	1122.82	.00	.29	.00	1069.61	200.00
12000.000	250000.00	1124.58	1.76	.33	.00	1078.57	200.00
12100.000	205000.00	1122.93	.00	.11	.00	1064.35	100.00
12100.000	250000.00	1124.70	1.77	.12	.00	1073.42	100.00
12200.000	205000.00	1123.07	.00	.14	.00	1064.68	100.00
12200.000	250000.00	1124.86	1.79	.16	.00	1075.60	100.00
12400.000	205000.00	1123.28	.00	.21	.00	1032.16	200.00
12400.000	250000.00	1125.07	1.79	.22	.00	1041.33	200.00
12600.000	205000.00	1123.63	.00	.35	.00	1020.94	200.00
12600.000	250000.00	1125.46	1.83	.39	.00	1033.64	200.00
12800.000	205000.00	1123.92	.00	.30	.00	1025.09	200.00
12800.000	250000.00	1125.79	1.86	.33	.00	1039.10	200.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
13000.000	205000.00	1124.24	.00	.31	.00	1020.92	200.00
13000.000	250000.00	1126.12	1.88	.33	.00	1031.12	200.00
13200.000	205000.00	1124.54	.00	.30	.00	1019.93	200.00
13200.000	250000.00	1126.44	1.91	.32	.00	1030.19	200.00
13400.000	205000.00	1124.87	.00	.33	.00	1020.03	200.00
13400.000	250000.00	1126.80	1.93	.36	.00	1030.59	200.00
13600.000	205000.00	1125.17	.00	.30	.00	1011.96	200.00
13600.000	250000.00	1127.11	1.95	.31	.00	1023.09	200.00
13800.000	205000.00	1125.53	.00	.36	.00	1015.79	200.00
13800.000	250000.00	1127.49	1.97	.38	.00	1026.15	200.00
14000.000	205000.00	1125.94	.00	.42	.00	1024.30	200.00
14000.000	250000.00	1127.95	2.00	.45	.00	1034.12	200.00

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14200.000	205000.00	1126.34	.00	.39	.00	1042.02	200.00
14200.000	250000.00	1128.37	2.04	.43	.00	1054.24	200.00
14400.000	205000.00	1126.68	.00	.34	.00	1027.14	200.00
14400.000	250000.00	1128.72	2.04	.34	.00	1036.38	200.00
14665.000	205000.00	1127.13	.00	.46	.00	1011.32	265.00
14665.000	250000.00	1129.18	2.05	.47	.00	1017.40	265.00
14785.000	205000.00	1127.41	.00	.27	.00	1026.08	120.00
14785.000	250000.00	1129.48	2.08	.30	.00	1035.40	120.00
15000.000	205000.00	1127.81	.00	.40	.00	1038.70	215.00
15000.000	250000.00	1129.90	2.09	.42	.00	1051.21	215.00
15200.000	205000.00	1128.18	.00	.37	.00	1037.94	200.00
15200.000	250000.00	1130.28	2.10	.38	.00	1050.51	200.00
15400.000	205000.00	1128.58	.00	.39	.00	1025.11	200.00
15400.000	250000.00	1130.67	2.09	.39	.00	1034.34	200.00
15586.000	210000.00	1128.88	.00	.30	.00	1024.61	186.00
15586.000	250000.00	1131.03	2.15	.36	.00	1034.12	186.00
15710.000	210000.00	1129.33	.00	.45	.00	1024.03	124.00
15710.000	250000.00	1131.51	2.19	.49	.00	1033.90	124.00
16000.000	210000.00	1129.94	.00	.62	.00	1041.71	290.00
16000.000	250000.00	1132.10	2.16	.58	.00	1051.42	290.00
16200.000	210000.00	1130.45	.00	.51	.00	1046.74	200.00
16200.000	250000.00	1132.57	2.12	.47	.00	1055.80	200.00

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SECD	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
16400.000	210000.00	1130.83	.00	.38	.00	1040.65	200.00
16400.000	250000.00	1132.93	2.10	.35	.00	1049.95	200.00
16600.000	210000.00	1131.26	.00	.43	.00	1043.39	200.00
16600.000	250000.00	1133.33	2.07	.41	.00	1052.41	200.00
16800.000	210000.00	1131.70	.00	.44	.00	1045.50	200.00
16800.000	250000.00	1133.74	2.05	.41	.00	1054.61	200.00
17000.000	210000.00	1132.16	.00	.47	.00	1046.80	200.00
17000.000	250000.00	1134.18	2.02	.44	.00	1055.71	200.00
17200.000	210000.00	1132.59	.00	.43	.00	1046.95	200.00
17200.000	250000.00	1134.59	2.00	.41	.00	1055.83	200.00
17400.000	210000.00	1133.02	.00	.43	.00	1040.85	200.00
17400.000	250000.00	1135.00	1.98	.41	.00	1051.33	200.00
17600.000	210000.00	1133.44	.00	.42	.00	1027.01	200.00
17600.000	250000.00	1135.40	1.96	.40	.00	1035.89	200.00
17800.000	210000.00	1133.87	.00	.43	.00	1024.46	200.00
17800.000	250000.00	1135.81	1.95	.42	.00	1033.20	200.00
18000.000	210000.00	1134.30	.00	.43	.00	1022.68	200.00
18000.000	250000.00	1136.24	1.93	.42	.00	1031.43	200.00

18200.000	210000.00	1134.74	.00	.44	.00	1018.70	200.00
18200.000	250000.00	1136.66	1.91	.42	.00	1027.28	200.00
18400.000	210000.00	1135.29	.00	.55	.00	1030.74	200.00
18400.000	250000.00	1137.22	1.92	.56	.00	1040.20	200.00
18600.000	210000.00	1135.68	.00	.38	.00	1006.00	200.00
18600.000	250000.00	1137.57	1.90	.36	.00	1013.08	200.00
18800.000	210000.00	1136.11	.00	.43	.00	1003.91	200.00
18800.000	250000.00	1138.00	1.89	.42	.00	1012.43	200.00
19000.000	210000.00	1136.59	.00	.48	.00	997.26	200.00
19000.000	250000.00	1138.46	1.88	.47	.00	1005.75	200.00
19200.000	210000.00	1137.04	.00	.45	.00	989.39	200.00
19200.000	250000.00	1138.91	1.86	.44	.00	997.71	200.00
19400.000	210000.00	1137.50	.00	.46	.00	981.29	200.00
19400.000	250000.00	1139.35	1.85	.45	.00	989.65	200.00
19600.000	210000.00	1137.98	.00	.47	.00	972.57	200.00
19600.000	250000.00	1139.82	1.84	.46	.00	980.89	200.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
19800.000	210000.00	1138.49	.00	.51	.00	964.00	200.00
19800.000	250000.00	1140.32	1.83	.50	.00	972.21	200.00
20000.000	210000.00	1138.96	.00	.47	.00	954.09	200.00
20000.000	250000.00	1140.78	1.82	.46	.00	962.30	200.00
20200.000	210000.00	1139.46	.00	.49	.00	945.14	200.00
20200.000	250000.00	1141.27	1.82	.49	.00	953.57	200.00
20400.000	210000.00	1140.02	.00	.57	.00	938.60	200.00
20400.000	250000.00	1141.83	1.81	.56	.00	946.42	200.00
20600.000	210000.00	1140.49	.00	.46	.00	925.24	200.00
20600.000	250000.00	1142.29	1.80	.46	.00	933.35	200.00
20782.000	210000.00	1141.01	.00	.52	.00	936.07	178.00
20782.000	250000.00	1142.84	1.83	.55	.00	947.02	178.00
20800.000	210000.00	1141.07	.00	.06	.00	936.18	18.00
20800.000	250000.00	1142.89	1.83	.06	.00	947.13	18.00
21000.000	210000.00	1141.67	.00	.60	.00	911.45	200.00
21000.000	250000.00	1143.47	1.80	.57	.00	917.12	200.00
21050.000	210000.00	1141.76	.00	.09	.00	911.28	50.00
21050.000	250000.00	1143.56	1.80	.09	.00	916.99	50.00
21150.000	210000.00	1142.39	.00	.63	.00	912.64	100.00
21150.000	250000.00	1144.31	1.92	.75	.00	918.73	100.00
21200.000	210000.00	1142.67	.00	.28	.00	911.34	50.00
21200.000	250000.00	1144.60	1.93	.29	.00	917.12	50.00
21400.000	210000.00	1143.22	.00	.55	.00	943.06	200.00
21400.000	250000.00	1145.20	1.98	.60	.00	954.51	200.00

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21600.000	210000.00	1143.80	.00	.57	.00	956.78	200.00
21600.000	250000.00	1145.79	1.99	.59	.00	967.96	200.00
21800.000	210000.00	1144.16	.00	.37	.00	944.18	200.00
21800.000	250000.00	1146.15	1.99	.36	.00	955.41	200.00
22000.000	210000.00	1144.60	.00	.43	.00	944.25	200.00
22000.000	250000.00	1146.59	1.99	.44	.00	955.35	200.00
22200.000	210000.00	1145.02	.00	.42	.00	944.71	200.00
22200.000	250000.00	1147.01	2.00	.43	.00	955.79	200.00
22400.000	210000.00	1145.43	.00	.41	.00	944.64	200.00
22400.000	250000.00	1147.42	2.00	.41	.00	955.54	200.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
22600.000	210000.00	1145.86	.00	.43	.00	945.28	200.00
22600.000	250000.00	1147.86	2.00	.44	.00	956.07	200.00
22800.000	210000.00	1146.25	.00	.39	.00	945.05	200.00
22800.000	250000.00	1148.26	2.00	.39	.00	955.74	200.00
23000.000	210000.00	1146.59	.00	.34	.00	943.15	200.00
23000.000	250000.00	1148.59	2.00	.34	.00	953.72	200.00
23200.000	210000.00	1147.11	.00	.52	.00	945.63	200.00
23200.000	250000.00	1149.13	2.02	.53	.00	956.14	200.00
23400.000	210000.00	1147.47	.00	.36	.00	943.85	200.00
23400.000	250000.00	1149.49	2.02	.37	.00	954.26	200.00
23600.000	210000.00	1147.84	.00	.36	.00	943.48	200.00
23600.000	250000.00	1149.86	2.02	.37	.00	953.80	200.00
23800.000	210000.00	1148.20	.00	.37	.00	943.65	200.00
23800.000	250000.00	1150.23	2.03	.37	.00	953.88	200.00
24000.000	210000.00	1148.64	.00	.44	.00	943.77	200.00
24000.000	250000.00	1150.68	2.04	.45	.00	953.95	200.00
24200.000	210000.00	1149.04	.00	.39	.00	944.08	200.00
24200.000	250000.00	1151.08	2.05	.40	.00	954.19	200.00
24400.000	210000.00	1149.43	.00	.39	.00	938.85	200.00
24400.000	250000.00	1151.48	2.05	.40	.00	947.14	200.00
24600.000	210000.00	1149.83	.00	.40	.00	959.16	200.00
24600.000	250000.00	1151.91	2.08	.43	.00	969.57	200.00
24744.000	210000.00	1149.98	.00	.15	.00	943.36	144.00
24744.000	250000.00	1152.05	2.07	.13	.00	953.26	144.00
24841.000	210000.00	1150.21	.00	.23	.00	898.64	97.00
24841.000	250000.00	1152.28	2.06	.23	.00	901.00	97.00
24871.000	210000.00	1150.17	.00	-.05	.00	898.50	30.00
24871.000	250000.00	1152.23	2.06	-.05	.00	901.00	30.00
24906.000	210000.00	1150.37	.00	.20	.00	898.36	35.00
24906.000	250000.00	1152.44	2.07	.22	.00	901.00	35.00

24907.000	210000.00	1150.00	.00	-.37	.00	898.00	1.00
24907.000	250000.00	1152.06	2.06	-.39	.00	901.00	1.00
24918.000	210000.00	1149.78	.00	-.22	.00	869.70	11.00
24918.000	250000.00	1151.83	2.04	-.23	.00	879.48	11.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
24957.000	210000.00	1149.90	.00	.12	.00	870.41	39.00
24957.000	250000.00	1151.95	2.05	.12	.00	879.84	39.00
24968.000	210000.00	1150.92	.00	1.01	.00	918.63	11.00
24968.000	250000.00	1153.04	2.12	1.09	.00	938.64	11.00
2.000	210000.00	1151.17	.00	.26	.00	999.87	147.00
2.000	250000.00	1153.35	2.18	.31	.00	1011.81	147.00
4.000	210000.00	1151.55	.00	.38	.00	1042.12	200.00
4.000	250000.00	1153.74	2.19	.39	.00	1068.69	200.00
6.000	210000.00	1151.74	.00	.19	.00	1081.36	200.00
6.000	250000.00	1153.94	2.19	.19	.00	1105.03	200.00
8.000	210000.00	1152.48	.00	.73	.00	1120.92	200.00
8.000	250000.00	1154.67	2.19	.74	.00	1144.35	200.00
10.000	210000.00	1152.93	.00	.45	.00	1170.96	200.00
10.000	250000.00	1155.13	2.20	.46	.00	1193.88	200.00
12.000	210000.00	1153.31	.00	.38	.00	1222.64	200.00
12.000	250000.00	1155.53	2.22	.40	.00	1243.72	200.00
14.000	210000.00	1153.64	.00	.33	.00	1270.91	158.00
14.000	250000.00	1155.86	2.22	.34	.00	1292.66	158.00
15.400	210000.00	1153.63	.00	-.01	.00	1335.02	122.00
15.400	250000.00	1155.87	2.24	.00	.00	1355.17	122.00
15.600	215000.00	1154.58	.00	.95	.00	1344.53	18.00
15.600	250000.00	1156.82	2.24	.95	.00	1364.66	18.00
17.300	215000.00	1155.24	.00	.66	.00	1271.50	152.00
17.300	250000.00	1157.37	2.12	.55	.00	1304.82	152.00
19.000	215000.00	1155.41	.00	.17	.00	1153.37	172.00
19.000	250000.00	1157.50	2.09	.13	.00	1168.85	172.00
21.500	215000.00	1155.81	.00	.40	.00	1159.02	182.00
21.500	250000.00	1157.89	2.08	.40	.00	1174.11	182.00
24.000	215000.00	1155.69	.00	-.12	.00	1090.07	140.00
24.000	250000.00	1157.76	2.07	-.14	.00	1104.12	140.00
24.600	215000.00	1156.10	.00	.41	.00	1085.05	60.00
24.600	250000.00	1158.80	2.70	1.04	.00	1102.68	60.00
26.000	215000.00	1156.32	.00	.22	.00	1092.32	185.00
26.000	250000.00	1159.00	2.68	.20	.00	1110.00	185.00

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SECD	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
26.450	215000.00	1156.87	.00	.54	.00	1095.82	45.00
26.450	250000.00	1159.51	2.65	.52	.00	1113.21	45.00
27.000	215000.00	1157.02	.00	.15	.00	1089.85	155.00
27.000	250000.00	1159.65	2.63	.13	.00	1107.95	155.00
28.000	215000.00	1157.19	.00	.17	.00	1079.70	160.00
28.000	250000.00	1159.79	2.60	.15	.00	1098.59	160.00
30.000	215000.00	1157.41	.00	.22	.00	1061.26	200.00
30.000	250000.00	1159.98	2.58	.19	.00	1078.34	200.00
32.000	215000.00	1157.68	.00	.28	.00	1060.04	200.00
32.000	250000.00	1160.23	2.55	.25	.00	1078.06	200.00
34.000	215000.00	1157.88	.00	.20	.00	1045.60	200.00
34.000	250000.00	1160.40	2.52	.18	.00	1063.11	200.00
36.000	215000.00	1158.06	.00	.18	.00	1017.85	215.00
36.000	250000.00	1160.56	2.50	.16	.00	1034.84	215.00
38.000	215000.00	1158.30	.00	.23	.00	1007.37	230.00
38.000	250000.00	1160.77	2.47	.21	.00	1023.94	230.00
40.000	215000.00	1158.49	.00	.19	.00	990.75	230.00
40.000	250000.00	1160.94	2.45	.16	.00	1011.69	230.00
42.000	215000.00	1158.74	.00	.25	.00	978.54	230.00
42.000	250000.00	1161.17	2.43	.23	.00	995.23	230.00
44.000	215000.00	1158.94	.00	.20	.00	960.76	230.00
44.000	250000.00	1161.35	2.41	.18	.00	976.37	230.00
46.000	215000.00	1159.23	.00	.29	.00	962.68	230.00
46.000	250000.00	1161.62	2.39	.28	.00	977.87	230.00
48.000	215000.00	1159.56	.00	.33	.00	971.15	230.00
48.000	250000.00	1161.94	2.38	.31	.00	985.72	230.00
50.000	215000.00	1159.86	.00	.30	.00	984.21	205.00
50.000	250000.00	1162.23	2.37	.29	.00	998.43	205.00
52.000	215000.00	1160.10	.00	.24	.00	993.48	188.00
52.000	250000.00	1162.46	2.36	.23	.00	1007.66	188.00
54.000	215000.00	1160.32	.00	.22	.00	1000.61	180.00
54.000	250000.00	1162.67	2.36	.21	.00	1014.75	180.00
56.000	215000.00	1160.52	.00	.20	.00	1009.70	180.00
56.000	250000.00	1162.87	2.35	.20	.00	1023.80	180.00

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SECD	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
58.000	215000.00	1160.72	.00	.20	.00	1016.76	182.00
58.000	250000.00	1163.07	2.34	.19	.00	1030.83	182.00
60.000	215000.00	1160.93	.00	.21	.00	1025.88	185.00
60.000	250000.00	1163.27	2.34	.20	.00	1039.91	185.00

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62.000	215000.00	1161.13	.00	.20	.00	1034.90	180.00
62.000	250000.00	1163.46	2.33	.19	.00	1048.91	180.00
64.000	215000.00	1161.33	.00	.20	.00	1042.98	180.00
64.000	250000.00	1163.66	2.33	.19	.00	1056.96	180.00
66.000	215000.00	1161.49	.00	.17	.00	1050.79	180.00
66.000	250000.00	1163.82	2.33	.16	.00	1064.77	180.00
68.000	215000.00	1161.68	.00	.19	.00	1057.75	185.00
68.000	250000.00	1164.00	2.32	.18	.00	1071.68	185.00
69.300	215000.00	1161.80	.00	.12	.00	1064.78	108.00
69.300	250000.00	1164.12	2.32	.12	.00	1078.70	108.00
70.300	215000.00	1161.99	.00	.19	.00	1066.35	92.00
70.300	250000.00	1164.32	2.33	.20	.00	1080.36	92.00
72.000	215000.00	1162.11	.00	.12	.00	1044.04	160.00
72.000	250000.00	1164.43	2.32	.11	.00	1057.97	160.00
74.000	215000.00	1162.26	.00	.15	.00	1029.29	180.00
74.000	250000.00	1164.57	2.31	.14	.00	1043.19	180.00
76.000	215000.00	1162.45	.00	.20	.00	1044.13	180.00
76.000	250000.00	1164.77	2.31	.20	.00	1058.01	180.00
78.000	215000.00	1162.68	.00	.22	.00	1067.94	180.00
78.000	250000.00	1164.99	2.32	.23	.00	1081.97	180.00
80.000	215000.00	1162.89	.00	.21	.00	1093.57	182.00
80.000	250000.00	1165.21	2.32	.22	.00	1107.77	182.00
82.000	215000.00	1163.12	.00	.22	.00	1128.31	180.00
82.000	250000.00	1165.44	2.33	.23	.00	1142.71	180.00
84.000	215000.00	1163.32	.00	.21	.00	1163.91	180.00
84.000	250000.00	1165.65	2.33	.21	.00	1178.52	180.00
86.000	215000.00	1163.54	.00	.21	.00	1211.61	182.00
86.000	250000.00	1165.88	2.34	.22	.00	1225.85	182.00
88.000	215000.00	1163.77	.00	.23	.00	1278.03	180.00
88.000	250000.00	1166.12	2.35	.24	.00	1292.13	180.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
90.000	215000.00	1163.94	.00	.18	.00	1332.37	178.00
90.000	250000.00	1166.30	2.36	.18	.00	1345.67	178.00
92.000	215000.00	1164.08	.00	.14	.00	1381.51	178.00
92.000	250000.00	1166.44	2.36	.14	.00	1395.67	178.00
94.000	215000.00	1164.24	.00	.16	.00	1428.67	178.00
94.000	250000.00	1166.60	2.36	.16	.00	1442.19	178.00
96.000	215000.00	1164.33	.00	.10	.00	1490.52	212.00
96.000	250000.00	1166.70	2.37	.10	.00	1504.76	212.00
98.000	215000.00	1164.54	.00	.20	.00	1531.44	245.00
98.000	250000.00	1166.91	2.37	.20	.00	1538.55	245.00

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100.000	215000.00	1164.37	.00	-.17	.00	1200.39	255.00
100.000	250000.00	1166.70	2.34	-.20	.00	1207.43	255.00
102.000	215000.00	1164.32	.00	-.05	.00	1111.09	285.00
102.000	250000.00	1166.64	2.32	-.07	.00	1125.09	285.00
103.000	215000.00	1164.21	.00	-.11	.00	964.00	1.00
103.000	250000.00	1166.50	2.29	-.13	.00	1037.27	1.00
103.220	215000.00	1164.09	.00	-.12	.00	964.00	22.00
103.220	250000.00	1166.39	2.30	-.11	.00	1033.19	22.00
103.280	215000.00	1164.04	.00	-.06	.00	946.00	6.00
103.280	250000.00	1166.33	2.29	-.06	.00	1031.08	6.00
103.460	215000.00	1164.05	.00	.02	.00	946.00	18.00
103.460	250000.00	1166.35	2.29	.02	.00	1031.49	18.00
103.520	215000.00	1164.25	.00	.19	.00	964.00	6.00
103.520	250000.00	1166.55	2.30	.20	.00	1038.83	6.00
103.800	215000.00	1164.64	.00	.39	.00	964.00	28.00
103.800	250000.00	1166.93	2.30	.39	.00	1052.52	28.00
103.810	215000.00	1164.87	.00	.24	.00	1114.22	1.00
103.810	250000.00	1167.22	2.35	.28	.00	1128.29	1.00
104.000	215000.00	1164.88	.00	.01	.00	1062.33	148.00
104.000	250000.00	1167.21	2.33	-.01	.00	1076.31	148.00
106.000	215000.00	1165.07	.00	.19	.00	1056.74	225.00
106.000	250000.00	1167.39	2.32	.18	.00	1070.66	225.00
108.000	215000.00	1165.43	.00	.36	.00	1101.12	225.00
108.000	250000.00	1167.76	2.33	.37	.00	1115.10	225.00

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SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
110.000	215000.00	1165.22	.00	-.21	.00	940.31	228.00
110.000	250000.00	1167.51	2.29	-.25	.00	954.03	228.00
112.000	215000.00	1165.41	.00	.20	.00	924.18	212.00
112.000	250000.00	1167.69	2.27	.18	.00	937.84	212.00
114.000	215000.00	1165.79	.00	.37	.00	947.12	200.00
114.000	250000.00	1168.06	2.28	.38	.00	960.80	200.00
116.000	215000.00	1166.27	.00	.49	.00	1003.83	202.00
116.000	250000.00	1168.57	2.30	.51	.00	1017.62	202.00
118.000	215000.00	1166.67	.00	.40	.00	1059.94	205.00
118.000	250000.00	1168.98	2.32	.41	.00	1073.83	205.00
119.800	215000.00	1166.91	.00	.24	.00	1088.15	190.00
119.800	250000.00	1169.23	2.32	.24	.00	1102.07	190.00
120.420	215000.00	1166.91	.00	.01	.00	1072.88	50.00
120.420	250000.00	1169.23	2.32	.00	.00	1086.78	50.00
*	120.500	215000.00	1166.28	.00	-.63	1072.08	8.00
*	120.500	250000.00	1168.64	2.35	-.59	1086.19	8.00

122.000	215000.00	1166.51	.00	.23	.00	1049.49	152.00
122.000	250000.00	1168.82	2.31	.18	.00	1063.34	152.00
122.650	215000.00	1166.62	.00	.11	.00	1049.76	65.00
122.650	250000.00	1168.91	2.30	.09	.00	1063.53	65.00
123.550	215000.00	1167.22	.00	.60	.00	1054.70	90.00
123.550	250000.00	1169.50	2.28	.59	.00	1064.39	90.00
124.000	215000.00	1167.30	.00	.08	.00	1062.99	45.00
124.000	250000.00	1169.57	2.28	.08	.00	1076.63	45.00
126.000	215000.00	1167.97	.00	.68	.00	1215.30	200.00
126.000	250000.00	1170.26	2.29	.69	.00	1254.76	200.00
128.000	215000.00	1168.18	.00	.21	.00	1220.60	200.00
128.000	250000.00	1170.45	2.27	.19	.00	1248.20	200.00

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SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 120.500 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 120.500 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

1*****
 * HEC-2 WATER SURFACE PROFILES *
 * Version 4.6.2; May 1991 *
 * RUN DATE 01MAR96 TIME 15:50:50 *

 * U.S. ARMY CORPS OF ENGINEERS *
 * HYDROLOGIC ENGINEERING CENTER *
 * 609 SECOND STREET, SUITE D *
 * DAVIS, CALIFORNIA 95616-4687 *
 * (916) 756-1104 *

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X   X   XXXXXXX   XXXXX   XXXXX
X   X   X   X   X   X   X
X   X   X   X   X   X   X
XXXXXXXX XXXX   X   XXXXX   XXXXX
X   X   X   X   X   X   X
X   X   X   X   X   X   X
X   X   XXXXXXX   XXXXX   XXXXXXX

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THIS RUN EXECUTED 01MAR96 15:50:50

 HEC-2 WATER SURFACE PROFILES
 Version 4.6.2; May 1991

RIO SALADO - TOWN LAKE

COMBINED CRSS RUN RSSRP1.HC2 AND RSSRP2.HC2 WITHOUR OTHER MODIFICATIONS

Notes:

- see note at Priest Ave. Br.
- starting WSEL's on RC card at first cross-section

T1 RIO SALADO TOWN LAKE for TEMPE, AZ
 T2 CH2M HILL Walker/Allen Sept. 1994
 T3 RE-FEMA.HC2

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		4								
J2	NPROF	IPLLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1		-1					-6.0		
J3	VARIABLE CODES FOR SUMMARY PRINTOUT									
	38	39	66	43	1	8	42	26	5	

J5 LPRNT NUMSEC *****REQUESTED SECTION NUMBERS*****
 -10 -10

2014047201

NC 0.050 0.050 0.035 0.1 0.3
 QT 4 90000 155000 205000 250000

Begin ADOT Channelization

***** Begin ADOT Channelization *****

X1	10035	12	10020.0	11105.0	0.0	0.0	0.0	0.0	1000	0
RC	4	90000	1112.21	155000	1116.42	205000	1119.15	250000	1120.10	
GR	125.0	10000.	125.0	10010.	122.00	10020.	105.00	10056.	104.00	10340.
GR	100.00	10356.	97.20	10540.	100.00	10750.	105.00	10770.	105.00	11050.
GR	125.0	11105.	125.0	11150.						

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X1	10200	11	10025.0	11100.0	165.0	165.0	165.0	0.0	1000	0
GR	122.00	10000.	123.00	10025.	105.00	10065.	104.00	10355.	100.00	10365.
GR	98.10	10548.	100.00	10758.	105.00	10775.	105.00	11060.	123.00	11100.
GR	123.00	11150.								

X1	10400	11	10035.0	11103.0	200.0	200.0	200.0	0.0	1000	0
GR	122.00	10000.	122.00	10035.	105.00	10070.	105.00	10353.	100.00	10385.
GR	98.10	10548.	100.00	10758.	105.00	10775.	105.00	11060.	123.00	11103.
GR	123.00	11140.								

X1	10600	11	10025.0	11100.0	200.0	200.0	200.0	0.0	1000	0
GR	123.00	10000.	123.00	10025.	105.00	10068.	105.00	10362.	100.00	10392.
GR	98.50	10544.	100.00	10760.	105.00	10775.	106.00	11050.	124.00	11100.
GR	124.00	11130.								

X1	10800	11	10030.0	11100.0	200.0	200.0	200.0	0.0	1000	0
GR	123.00	10000.	123.00	10030.	105.00	10067.	106.00	10380.	100.00	10400.
GR	99.00	10540.	101.00	10780.	106.00	10800.	107.00	11060.	124.00	11100.
GR	124.00	11145.								

X1	11000	11	10022.0	11095.0	200.0	200.0	200.0	0.0	1000	0
GR	123.00	10000.	123.00	10022.	105.00	10065.	106.00	10392.	101.00	10418.
GR	99.50	10538.	101.00	10810.	106.00	10830.	107.00	11060.	124.00	11095.
GR	125.00	11195.								

X1	11200	12	10030.0	11100.0	200.0	200.0	200.0	0.0	1000	0
GR	123.00	10000.	123.00	10030.	106.00	10064.	106.00	10413.	100.00	10425.
GR	100.00	10538.	100.00	10815.	103.00	10821.	106.00	10875.	107.00	11055.
GR	126.00	11100.	126.00	11160.						

X1	11400	11	10030.0	11113.0	200.0	200.0	200.0	0.0	1000	0
GR	124.00	10000.	124.00	10030.	107.00	10064.	103.40	10405.	100.40	10411.
GR	100.40	10810.	103.40	10816.	108.00	10925.	108.00	11060.	126.00	11113.
GR	128.00	11195.								

X1	11600	12	10030.0	11122.0	200.0	200.0	200.0	0.0	1000	0
GR	124.00	10000.	124.00	10030.	108.00	10065.	103.90	10399.	100.90	10405.
GR	100.90	10805.	103.90	10811.	103.90	11060.	116.50	11080.	116.50	11089.

GR 127.50 11122. 127.50 11133.

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X1	11800	12	10035.0	11130.0	200.0	200.0	200.0	0.0	1000	0
GR	125.50	10000.	125.00	10035.	110.00	10075.	104.40	10386.	101.40	10392.
GR	101.40	10792.	104.40	10798.	104.40	11071.	116.90	11089.	116.90	11097.
GR	127.90	11130.	127.90	11141.						

X1	12000	12	10035.0	11130.0	200.0	200.0	200.0	0.0	1000	0
GR	127.60	10000.	127.00	10035.	110.00	10070.	104.80	10364.	101.80	10370.
GR	101.80	10770.	104.80	10776.	104.80	11070.	117.40	11089.	117.40	11097.
GR	128.40	11130.	128.40	11140.						

X1	12100	12	10035.0	11125.0	100.0	100.0	100.0	0.0	1000	0
GR	127.80	10000.	127.00	10035.	110.50	10070.	105.10	10347.	102.10	10353.
GR	102.10	10753.	105.10	10759.	105.10	11065.	117.60	11084.	117.60	11092.
GR	128.60	11125.	128.60	11136.						

X1	12200	12	10032.0	11123.0	100.0	100.0	100.0	0.0	1000	0
GR	128.00	10000.	126.00	10032.	110.00	10082.	105.30	10334.	102.30	10340.
GR	102.30	10740.	105.30	10746.	105.30	11063.	117.80	11082.	117.80	11090.
GR	128.80	11123.	128.80	11134.						

X1	12400	12	10047.0	11109.0	200.0	200.0	200.0	0.0	1000	0
GR	129.30	10000.	129.00	10047.	111.00	10085.	105.80	10308.	102.80	10314.
GR	102.80	10714.	105.80	10720.	105.80	11049.	118.20	11068.	118.20	11076.
GR	129.20	11109.	129.20	11119.						

X1	12600	14	10033.0	11097.0	200.0	200.0	200.0	0.0	1000	0
GR	130.00	10000.	130.00	10033.	118.60	10078.	118.60	10086.	106.20	10105.
GR	106.20	10281.	103.20	10287.	103.20	10687.	106.20	10693.	106.20	11038.
GR	118.60	11056.	118.60	11064.	129.60	11097.	129.60	11108.		

X1	12800	14	10055.0	11130.0	200.0	200.0	200.0	0.0	1000	0
GR	130.40	10000.	131.00	10055.	119.10	10108.	119.10	10116.	106.70	10135.
GR	106.70	10284.	103.70	10290.	103.70	10690.	106.70	10696.	106.70	11071.
GR	119.10	11089.	119.10	11097.	130.00	11130.	130.00	11141.		

X1	13000	14	10059.0	11115.0	200.0	200.0	200.0	0.0	1000	0
GR	132.00	10000.	131.00	10059.	119.40	10087.	119.40	10095.	107.20	10113.
GR	107.20	10244.	104.20	10250.	104.20	10650.	107.20	10656.	107.20	11055.
GR	119.50	11074.	119.50	11082.	130.50	11115.	130.50	11126.		

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X1	13200	14	10040.0	11092.0	200.0	200.0	200.0	0.0	1000	0
GR	131.00	10000.	130.00	10040.	119.90	10064.	119.90	10072.	107.70	10090.
GR	107.70	10194.	104.70	10200.	104.70	10600.	107.70	10606.	107.70	11032.
GR	119.90	11051.	119.90	11059.	130.90	11092.	130.90	11102.		

X1	13400	14	10040.0	11092.0	200.0	200.0	200.0	0.0	1000	0
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GR	131.00	10000.	130.00	10040.	120.30	10064.	120.30	10072.	108.10	10090.
GR	108.10	10172.	105.10	10178.	105.10	10578.	108.10	10584.	108.10	11032.
GR	120.30	11051.	120.30	11059.	131.30	11092.	131.30	11102.		

X1	13600	14	10042.0	11087.0	200.0	200.0	200.0	0.0	1000	0
GR	132.00	10000.	130.00	10042.	120.80	10067.	120.80	10075.	108.60	10093.
GR	108.60	10144.	105.60	10150.	105.60	10550.	108.60	10556.	108.60	11027.
GR	120.80	11046.	120.80	11054.	131.80	11087.	131.80	11097.		

X1	13800	14	10035.0	11081.0	200.0	200.0	200.0	0.0	1000	0
GR	132.50	10000.	130.00	10035.	121.20	10055.	121.20	10063.	109.10	10081.
GR	109.10	10114.	106.10	10120.	106.10	10520.	109.10	10526.	109.10	11022.
GR	121.20	11040.	121.20	11048.	132.20	11081.	132.20	11092.		

X1	14000	14	10033.0	11085.0	200.0	200.0	200.0	0.0	1000	0
GR	132.00	10000.	130.00	10033.	121.60	10049.	121.60	10057.	109.50	10075.
GR	109.50	10096.	106.50	10102.	106.50	10502.	109.50	10508.	109.50	11026.
GR	121.60	11044.	121.60	11052.	132.60	11085.	132.60	11096.		

X1	14200	14	10011.0	11093.0	200.0	200.0	200.0	0.0	1000	0
GR	133.00	10000.	133.00	10011.	122.00	10044.	122.00	10052.	110.00	10070.
GR	110.00	10091.	107.00	10097.	107.00	10497.	110.00	10503.	110.00	11034.
GR	122.00	11052.	122.00	11060.	133.00	11093.	133.00	11104.		

NC 0.0 0.0 0.0 0.3 0.5
Grade Control Str. No. 2

***** Grade Control Str. No. 2 *****

X1	14400	13	10027.0	11093.0	200.0	200.0	200.0	0.0	1000	0
GR	133.50	10000.	133.50	10027.	133.50	10035.	110.50	10070.	110.50	10086.
GR	107.50	10092.	107.50	10492.	110.50	10498.	110.50	11034.	122.50	11052.
GR	122.50	11060.	133.50	11093.	133.50	11104.				

NC 0.050 0.050 0.035 0.3 0.5

SR 153 Bridge (D/S limit)

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***** SR 153 Bridge (D/S limit) *****

X1	14665	10	10036.0	11068.0	265.0	265.0	265.0	0.0	1000	0
X3	0	0.0	0.0	10036.0	147.0	11068.0	147.0	0.0	0.0	
GR	134.10	10000.	134.10	10036.	111.20	10070.	111.20	10092.	108.20	10098.
GR	108.20	10498.	111.20	10504.	111.20	11034.	134.10	11068.	134.10	11103.

SR 153 Bridge (U/S limit)

***** SR 153 Bridge (U/S limit) *****

X1	14785	12	10011.0	11068.0	120.0	120.0	120.0	0.0	1000	0
GR	134.30	10000.	134.30	10011.	123.30	10044.	123.30	10052.	111.40	10070.
GR	111.40	10092.	108.40	10098.	108.40	10498.	111.40	10504.	111.40	11034.
GR	134.30	11068.	134.30	11103.						

NC 0.0 0.0 0.0 0.1 0.3

X1	15000	14	10011.0	11091.0	215.0	215.0	215.0	0.0	1000	0
GR	134.70	10000.	134.70	10011.	123.70	10044.	123.70	10052.	111.90	10070.
GR	111.90	10091.	108.90	10097.	108.90	10497.	111.90	10503.	111.90	11033.
GR	123.70	11050.	123.70	11058.	134.70	11091.	134.70	11102.		

NC 0.050 0.050 0.035 0.1 0.3

X1	15200	14	10011.0	11091.0	200.0	200.0	200.0	0.0	1000	0
GR	135.20	10000.	135.20	10011.	124.20	10044.	124.20	10052.	112.40	10070.
GR	112.40	10091.	109.40	10097.	109.40	10497.	112.40	10503.	112.40	11033.
GR	124.20	11050.	124.20	11058.	135.20	11091.	135.20	11102.		

X1	15400	12	10035.0	11091.0	200.0	200.0	200.0	0.0	1000	0
GR	135.60	10000.	135.60	10035.	112.80	10069.	112.80	10091.	109.80	10097.
GR	109.80	10497.	112.80	10503.	112.80	11033.	124.60	11051.	124.60	11059.
GR	135.60	11091.	135.60	11102.						

NC 0.050 0.050 0.035 0.3 0.5

QT 4 92000 157000 210000 250000

SR 143 Bridge (D/S limit)

***** SR 143 Bridge (D/S limit) *****

X1	15586	12	10035.0	11091.0	186.0	186.0	186.0	0.0	1000	0
X3	0	0.0	0.0	10035.0	145.4	11091.0	145.4	0.0	0.0	
GR	136.00	10000.	136.00	10035.	113.30	10069.	113.30	10091.	110.30	10097.
GR	110.30	10497.	113.30	10503.	113.30	11033.	125.00	11051.	125.00	11059.
GR	136.00	11091.	136.00	11102.						

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SB	1.05	1.56	2.6	200.0	963.0	48.0	26680.0	1.5	1110.50	1110.30
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SR 143 Bridge (U/S limit)

***** SR 143 Bridge (U/S limit) *****

X1	15710	12	10011.0	11066.0	124.0	124.0	124.0	0.0	1000	0
X2	0.0	0.0	1	1137.0	1145.4	0.0	0	2.00	0.0	
GR	136.10	10000.	136.20	10011.	125.20	10044.	125.20	10052.	113.60	10070.
GR	113.60	10091.	110.60	10097.	110.60	10497.	113.60	10503.	113.60	11032.
GR	136.20	11066.	136.20	11102.						

NC 0.0 0.0 0.0 0.1 0.3

X1	16000	16	10011.0	11084.0	290.0	290.0	290.0	0.0	1000	0
GR	136.90	10000.	136.90	10011.	125.90	10044.	125.90	10052.	114.30	10078.
GR	114.30	10089.	111.30	10095.	111.30	10495.	114.30	10501.	114.30	11032.
GR	125.90	11050.	125.90	11058.	122.90	11062.	122.90	11063.	136.90	11084.
GR	136.90	11098.								

NC 0.035 0.035 0.035 0.1 0.3

X1	16200	15	10020.0	11096.0	200.0	200.0	200.0	0.0	1000	0
GR	137.30	10000.	137.30	10012.	137.30	10020.	114.70	10081.	114.70	10109.

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GR	111.70	10115.	111.70	10515.	114.70	10521.	114.70	11043.	126.30	11061.
GR	126.30	11069.	123.30	11073.	123.30	11074.	137.30	11096.	137.30	11109.
X1	16400	16	10011.0	11083.0	200.0	200.0	200.0	0.0	1000	0
GR	137.70	10000.	137.70	10011.	126.70	10044.	126.70	10052.	115.20	10069.
GR	115.20	10102.	112.20	10108.	112.20	10508.	115.20	10514.	115.20	11031.
GR	126.70	11049.	126.70	11057.	123.70	11061.	123.70	11062.	138.30	11083.
GR	138.30	11098.								
X1	16600	16	10011.0	11085.0	200.0	200.0	200.0	0.0	1000	0
GR	138.10	10000.	138.10	10011.	127.10	10043.	127.10	10051.	115.70	10069.
GR	115.70	10124.	112.70	10130.	112.70	10530.	115.70	10536.	115.70	11033.
GR	127.10	11050.	127.10	11058.	124.10	11063.	124.10	11064.	138.70	11085.
GR	138.70	11099.								
X1	16800	16	10010.0	11087.0	200.0	200.0	200.0	0.0	1000	0
GR	138.60	10000.	138.60	10010.	127.60	10043.	127.60	10051.	116.20	10069.
GR	116.20	10157.	113.20	10163.	113.20	10563.	116.20	10569.	116.20	11035.
GR	127.60	11052.	127.60	11060.	124.60	11065.	124.60	11066.	139.20	11087.
GR	139.20	11101.								
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									PAGE	7
X1	17000	16	10011.0	11089.0	200.0	200.0	200.0	0.0	1000	0
GR	139.00	10000.	139.00	10011.	128.00	10044.	128.00	10052.	116.60	10069.
GR	116.60	10205.	113.60	10211.	113.60	10611.	116.60	10617.	116.60	11037.
GR	128.00	11054.	128.00	11062.	125.00	11067.	125.00	11068.	139.60	11089.
GR	139.60	11103.								
X1	17200	16	10011.0	11089.0	200.0	200.0	200.0	0.0	1000	0
GR	139.40	10000.	139.40	10011.	128.40	10044.	128.40	10052.	117.10	10069.
GR	117.10	10263.	114.10	10269.	114.10	10669.	117.10	10675.	117.10	11037.
GR	128.40	11054.	128.40	11062.	125.40	11067.	125.40	11068.	140.00	11089.
GR	140.00	11103.								
X1	17400	12	10010.0	11088.0	200.0	200.0	200.0	0.0	1000	0
GR	139.80	10000.	139.80	10010.	128.80	10043.	128.80	10051.	117.60	10068.
GR	117.60	10322.	114.60	10328.	114.60	10728.	117.60	10734.	117.60	11036.
GR	140.40	11088.	140.40	11102.						
X1	17600	12	10011.0	11070.0	200.0	200.0	200.0	0.0	1000	0
GR	140.30	10000.	140.30	10011.	129.30	10044.	129.30	10052.	118.00	10069.
GR	118.00	10382.	115.00	10388.	115.00	10788.	118.00	10794.	118.00	11035.
GR	140.90	11070.	140.90	11084.						
X1	17800	12	10011.0	11067.0	200.0	200.0	200.0	0.0	1000	0
GR	140.70	10000.	140.70	10011.	129.70	10044.	129.70	10052.	118.50	10068.
GR	118.50	10431.	115.50	10437.	115.50	10837.	118.50	10843.	118.50	11033.
GR	141.30	11067.	141.30	11081.						
X1	18000	12	10011.0	11065.0	200.0	200.0	200.0	0.0	1000	0
GR	141.00	10000.	141.00	10011.	130.10	10044.	130.10	10052.	119.00	10069.
GR	119.00	10485.	116.00	10491.	116.00	10891.	119.00	10897.	119.00	11031.
GR	141.70	11065.	141.70	11079.						

X1	18200	12	10011.0	11061.0	200.0	200.0	200.0	0.0	1000	0
GR	141.50	10000.	141.50	10011.	130.50	10044.	130.50	10052.	119.50	10069.
GR	119.50	10528.	116.50	10534.	116.50	10934.	119.50	10940.	119.50	11027.
GR	142.10	11061.	142.10	11075.						

X1	18400	10	10015.0	11080.0	200.0	200.0	200.0	0.0	1000	0
GR	142.00	10000.	142.00	10015.	119.90	10077.	119.90	10567.	116.90	10573.
GR	116.90	10973.	119.90	10979.	119.90	11032.	142.60	11080.	142.60	11090.

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X1	18600	10	10018.0	11050.0	200.0	200.0	200.0	0.0	1000	0
GR	142.40	10000.	142.40	10018.	120.40	10067.	120.40	10576.	117.40	10582.
GR	117.40	10982.	120.40	10988.	120.40	11016.	143.00	11050.	143.00	11063.

X1	18800	12	10011.0	11046.0	200.0	200.0	200.0	0.0	1000	0
GR	142.80	10000.	142.80	10011.	131.80	10044.	131.80	10052.	120.90	10069.
GR	120.90	10587.	117.90	10593.	117.90	10993.	120.90	10999.	120.90	11012.
GR	143.40	11046.	143.40	11060.						

X1	19000	12	10011.0	11039.0	200.0	200.0	200.0	0.0	1000	0
GR	143.20	10000.	143.20	10011.	132.20	10044.	132.20	10052.	121.30	10069.
GR	121.30	10586.	118.30	10592.	118.30	10992.	121.30	10998.	121.30	11005.
GR	143.80	11039.	143.80	11053.						

X1	19200	12	10011.0	11031.0	200.0	200.0	200.0	0.0	1000	0
GR	143.70	10000.	143.70	10011.	132.70	10044.	132.70	10052.	121.80	10068.
GR	121.80	10574.	118.80	10580.	118.80	10980.	121.80	10986.	121.80	10998.
GR	144.30	11031.	144.30	11045.						

X1	19400	12	10011.0	11023.0	200.0	200.0	200.0	0.0	1000	0
GR	144.10	10000.	144.10	10011.	133.10	10044.	133.10	10052.	122.30	10068.
GR	122.30	10555.	119.30	10561.	119.30	10961.	122.30	10967.	122.30	10989.
GR	144.70	11023.	144.70	11037.						

X1	19600	12	10011.0	11014.0	200.0	200.0	200.0	0.0	1000	0
GR	144.50	10000.	144.50	10011.	133.50	10044.	133.50	10052.	122.80	10068.
GR	122.80	10516.	119.80	10522.	119.80	10922.	122.80	10928.	122.80	10980.
GR	145.10	11014.	145.10	11028.						

X1	19800	12	10011.0	11005.0	200.0	200.0	200.0	0.0	1000	0
GR	145.00	10000.	145.00	10011.	134.00	10044.	134.00	10052.	123.20	10068.
GR	123.20	10480.	120.20	10486.	120.20	10886.	123.20	10892.	123.20	10972.
GR	145.60	11005.	145.60	11019.						

X1	20000	12	10010.0	10994.0	200.0	200.0	200.0	0.0	1000	0
GR	145.60	10000.	145.60	10010.	134.60	10043.	134.60	10051.	123.70	10068.
GR	123.70	10435.	120.70	10441.	120.70	10841.	123.70	10847.	123.70	10961.
GR	145.60	10994.	145.60	11008.						

X1	20200	12	10011.0	10987.0	200.0	200.0	200.0	0.0	1000	0
GR	146.10	10000.	146.10	10011.	135.10	10044.	135.10	10052.	124.20	10068.
GR	124.20	10382.	121.20	10388.	121.20	10788.	124.20	10794.	124.20	10951.

LCS

GR 146.10 10987. 146.10 11000.

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X1	20400	10	10020.0	10987.0	200.0	200.0	200.0	0.0	1000	0
GR	146.60	10000.	146.60	10020.	124.60	10066.	124.60	10325.	121.60	10331.
GR	121.60	10731.	124.60	10737.	124.60	10938.	146.60	10987.	146.60	11000.

X1	20600	12	10010.0	10965.0	200.0	200.0	200.0	0.0	1000	0
GR	147.10	10000.	147.10	10010.	136.10	10043.	136.10	10051.	125.10	10068.
GR	125.10	10276.	122.10	10282.	122.10	10682.	125.10	10688.	125.10	10932.
GR	147.10	10965.	147.10	10979.						

X1	20782	14	10012.0	10988.0	178.0	178.0	178.0	0.0	1000	0
GR	147.67	10000.	147.67	10012.	136.66	10045.	136.66	10053.	125.56	10069.
GR	125.56	10230.	122.50	10236.	122.50	10636.	125.56	10642.	125.56	10931.
GR	136.66	10947.	136.66	10955.	147.67	10988.	147.67	10999.		

Grade Control Str. No. 3

***** Grade Control Str. No. 3 *****

X1	20800	14	10012.0	10988.0	18.0	18.0	18.0	0.0	1000	0
GR	147.70	10000.	147.70	10012.	136.69	10045.	136.69	10053.	125.59	10069.
GR	125.59	10230.	122.53	10236.	122.53	10636.	125.59	10642.	125.59	10931.
GR	136.69	10947.	136.69	10955.	147.70	10988.	147.70	10999.		

X1	21000	10	10032.0	10964.0	200.0	200.0	200.0	0.0	1000	0
GR	148.20	10000.	148.20	10032.	125.94	10069.	125.94	10190.	122.86	10196.
GR	122.86	10596.	125.94	10602.	125.94	10931.	148.20	10964.	148.20	10999.

NC 0.050 0.050 0.035 0.3 0.5

Priest Bridge (D/S)

***** Priest Bridge (D/S) *****

X1	21050	10	10032.0	10964.0	50.0	50.0	50.0	0.0	1000	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	157.0	157.0	
GR	148.3	10000.0	148.3	10032.0	126.2	10069.0	126.2	10190.0	123.2	10196.0
GR	123.2	10596.0	126.2	10602.0	126.2	10931.0	148.3	10964.0	148.8	10999.0

SB	1.05	1.56	2.6	1000.0	861.8	42.0	24080.0	1.5	1123.4	1123.2
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Priest Bridge (U/S)

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***** Priest Bridge (U/S) *****

X1	21150	10	10032.0	10964.0	100.0	100.0	100.0	0.0	1000	0
X2	0.0	0.0	1	1150.0	1157.0	0.0	0	2.0	0.0	
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	157.0	157.0	
GR	148.5	10000.0	148.5	10032.0	126.4	10069.0	126.4	10190.0	123.4	10196.0
GR	123.4	10596.0	126.4	10602.0	126.4	10931.0	148.5	10964.0	148.5	10999.0

Note: the following change in contraction/expansion coefficients was not in the original file, RSSRP1.hc2, provided to CH2M HILL. When the coefficients are left here as 0.3/0.5, then the CWSEL at GC #4 in RSSRP1 does not match the starting water surface elevation in the file RSSRP2 which begins at GC #4. To make the two runs compatible and since between Priest Ave. and GC #4 there are not any drastic changes in the cross-section, the coefficients were reduced to 0.1/0.3 as shown below. A result of this, though, is that the CWSEL's in this run from Priest to GC #4 will not match those in RSSRP1.

NC			.1	.3						
X1	21200	10	10035.0	10965.0	50.0	50.0	50.0	0.0	1000	0
GR	148.90	10000.	148.90	10035.	126.20	10069.	126.20	10160.	123.19	10166.
GR	123.19	10566.	126.20	10572.	126.20	10931.	148.90	10965.	148.90	11000.
X1	21400	14	10011.0	10991.0	200.0	200.0	200.0	0.0	1000	0
GR	149.60	10000.	149.60	10011.	137.86	10045.	137.86	10053.	126.56	10070.
GR	126.56	10133.	123.52	10139.	123.52	10539.	126.56	10545.	126.56	10932.
GR	137.86	10949.	137.86	10957.	149.60	10991.	149.60	11002.		
X1	21600	10	10013.0	11006.0	200.0	200.0	200.0	0.0	1000	0
GR	150.00	10000.	150.00	10013.	126.91	10078.	126.91	10119.	123.85	10125.
GR	123.85	10525.	126.91	10531.	126.91	10940.	150.50	11006.	150.50	11017.
X1	21800	14	10011.0	10991.0	200.0	200.0	200.0	0.0	1000	0
GR	150.50	10000.	150.50	10011.	138.47	10045.	138.47	10053.	127.17	10070.
GR	127.17	10101.	124.18	10107.	124.18	10507.	127.17	10513.	127.17	10932.
GR	138.47	10949.	138.47	10957.	150.50	10991.	150.50	11002.		
X1	22000	14	10011.0	10991.0	200.0	200.0	200.0	0.0	1000	0
GR	151.00	10000.	151.00	10011.	138.82	10045.	138.82	10053.	127.52	10070.
GR	127.52	10104.	124.51	10110.	124.51	10510.	127.52	10516.	127.52	10932.
GR	138.82	10949.	138.82	10957.	151.00	10991.	151.00	11002.		
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X1	22200	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	151.40	10000.	151.40	10010.	139.08	10044.	139.08	10052.	127.88	10069.
GR	127.88	10123.	124.84	10129.	124.84	10529.	127.88	10535.	127.88	10931.
GR	139.08	10948.	139.08	10956.	151.40	10990.	151.40	11000.		
X1	22400	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	151.90	10000.	151.90	10010.	139.44	10044.	139.44	10052.	128.24	10069.
GR	128.24	10160.	125.18	10166.	125.18	10566.	128.24	10572.	128.24	10931.
GR	139.44	10948.	139.44	10956.	151.90	10990.	151.90	11000.		
X1	22600	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	152.30	10000.	152.30	10010.	139.69	10044.	139.69	10052.	128.49	10069.
GR	128.49	10205.	125.51	10211.	125.51	10611.	128.49	10617.	128.49	10931.
GR	139.69	10948.	139.69	10956.	152.30	10990.	152.30	11000.		
X1	22800	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	152.80	10000.	152.80	10010.	140.05	10044.	140.05	10052.	128.85	10069.

GR	128.85	10260.	125.84	10266.	125.84	10666.	128.85	10672.	128.85	10931.
GR	140.05	10948.	140.05	10956.	152.80	10990.	152.80	11000.		
X1	23000	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	153.20	10000.	153.20	10011.	140.30	10045.	140.30	10053.	129.20	10069.
GR	129.20	10325.	126.70	10331.	126.70	10731.	129.20	10737.	129.20	10931.
GR	140.30	10947.	140.30	10955.	153.20	10989.	153.20	11000.		
X1	23200	14	10010.0	10990.0	200.0	200.0	200.0	0.0	1000	0
GR	153.70	10000.	153.70	10010.	140.66	10044.	140.66	10052.	129.46	10069.
GR	129.46	10390.	126.50	10396.	126.50	10796.	129.46	10802.	129.46	10931.
GR	140.66	10948.	140.66	10956.	153.70	10990.	153.70	11000.		
X1	23400	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	154.10	10000.	154.10	10011.	140.92	10045.	140.92	10053.	129.82	10069.
GR	129.82	10440.	126.83	10446.	126.83	10846.	129.82	10852.	129.82	10931.
GR	140.92	10947.	140.92	10955.	154.10	10989.	154.10	11000.		
X1	23600	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	154.60	10000.	154.60	10011.	141.27	10045.	141.27	10053.	130.17	10069.
GR	130.17	10480.	127.16	10486.	127.16	10886.	130.17	10892.	130.17	10931.
GR	141.27	10947.	141.27	10955.	154.60	10989.	154.60	11000.		

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X1	23800	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	155.00	10000.	155.00	10011.	141.53	10045.	141.53	10053.	130.53	10069.
GR	130.53	10500.	127.46	10506.	127.46	10906.	130.53	10912.	130.53	10931.
GR	141.53	10947.	141.53	10955.	155.00	10989.	155.00	11000.		
X1	24000	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	155.50	10000.	155.50	10011.	141.88	10045.	141.88	10053.	130.40	10069.
GR	130.40	10510.	127.82	10516.	127.82	10916.	130.40	10922.	130.40	10931.
GR	141.88	10947.	141.88	10955.	155.50	10989.	155.50	11000.		
X1	24200	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	155.90	10000.	155.90	10011.	142.14	10045.	142.14	10053.	130.40	10069.
GR	130.40	10507.	128.15	10513.	128.15	10913.	130.40	10919.	130.40	10931.
GR	142.14	10947.	142.14	10955.	155.90	10989.	155.90	11000.		
X1	24400	10	10014.0	10981.0	200.0	200.0	200.0	0.0	1000	0
GR	156.40	10000.	156.40	10014.	130.40	10066.	130.40	10487.	128.48	10493.
GR	128.48	10893.	130.40	10899.	130.40	10928.	156.40	10981.	156.40	10994.
X1	24600	10	10010.0	11004.0	200.0	200.0	200.0	0.0	1000	0
GR	156.80	10000.	156.80	10010.	130.40	10076.	130.40	10465.	128.81	10471.
GR	128.81	10871.	130.40	10877.	130.40	10938.	156.80	11004.	156.80	11019.
X1	24800	14	10011.0	10989.0	200.0	200.0	200.0	0.0	1000	0
GR	157.30	10000.	157.30	10011.	143.11	10045.	143.11	10053.	130.40	10069.
GR	130.40	10410.	129.14	10416.	129.14	10816.	130.40	10822.	130.40	10931.
GR	143.11	10947.	143.11	10955.	157.30	10989.	157.30	11000.		

Here is the seam between the two FEMA runs RSSRP1.hc2 and RSSRP2.hc2.

NC 0.050 0.050 0.035 0.1 0.3

Grade Control Str. No. 4

***** Grade Control Str. No. 4 *****

X1	0.0	12	581.5	1500.00	155.0	155.0	155.0	0.0	0.0	0
GR	1154.7	505.00	1154.60	520.00	1142.10	557.50	1141.86	581.5	1132.40	609.88
GR	1129.4	1022.00	1132.40	1454.7	1147.50	1500.00	1147.65	1515.00	1147.50	1517.00
GR	1157.7	1548.00	1157.85	1563.00						

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X1	2.0	13	598.50	1500.00	120.0	200.0	160.0	0.0	0.0	0
GR	1154.9	522.00	1154.91	573.00	1142.40	574.50	1142.40	598.50	1132.53	626.94
GR	1129.6	1082.00	1132.61	1454.55	1147.83	1500.00	1147.83	1515.00	1145.83	1521.00
GR	1145.8	1568.00	1155.04	1594.00	1155.04	1609.00				

X1	4.0	13	611.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
GR	1155.4	535.00	1155.41	550.00	1142.90	587.50	1142.90	611.50	1132.74	640.63
GR	1129.8	1141.00	1132.82	1454.34	1148.17	1500.00	1148.32	1515.00	1146.17	1521.00
GR	1146.1	1611.00	1155.44	1639.00	1155.44	1654.00				

X1	6.0	13	621.50	1515.00	200.0	200.0	200.0	0.0	0.0	0
GR	1155.9	545.00	1155.91	560.00	1143.40	597.50	1143.40	621.50	1132.96	651.29
GR	1130.0	1190.00	1133.03	1413.59	1148.50	1460.00	1148.50	1515.00	1146.50	1521.00
GR	1146.5	1660.00	1155.83	1686.00	1155.83	1701.00				

X1	8.0	13	629.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
GR	1156.4	553.00	1156.41	568.00	1143.90	605.50	1143.66	629.50	1133.50	659.98
GR	1130.2	1225.00	1133.50	1454.01	1148.83	1500.00	1148.83	1515.00	1146.83	1521.00
GR	1147.7	1701.83	1156.22	1730.00	1156.22	1745.00				

X1	10.0	13	627.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
GR	1156.9	551.00	1156.91	566.00	1144.40	603.50	1144.40	627.50	1133.38	658.64
GR	1130.4	1247.00	1133.45	1453.86	1149.17	1500.00	1149.17	1515.00	1147.17	1521.00
GR	1148.3	1748.00	1156.63	1777.00	1156.63	1792.00				

X1	12.0	13	623.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
GR	1157.4	547.00	1157.41	562.00	1144.90	599.50	1144.90	623.50	1133.60	655.15
GR	1130.6	1255.00	1133.66	1453.65	1149.50	1500.00	1149.50	1515.00	1147.50	1521.00
GR	1148.8	1796.00	1157.04	1822.00	1157.04	1837.00				

X1	14.0	13	611.43	1500.00	115.0	200.0	158.0	0.0	0.0	0
GR	1157.6	535.31	1157.69	550.24	1145.19	587.55	1145.19	611.43	1133.72	643.13
GR	1130.8	1243.75	1133.86	1452.09	1149.83	1500.00	1149.83	1507.43	1147.83	1513.40
GR	1149.4	1830.74	1157.47	1859.66	1157.47	1874.58				

NC 0.0 0.0 0.0 0.3 0.5

X1	15.4	13	599.49	1420.00	85.0	160.0	122.0	0.0	0.0	0
GR	1157.9	523.37	1157.90	538.30	1145.40	575.61	1145.40	599.49	1133.81	630.71
GR	1131.0	1233.8	1134.03	1371.79	1150.10	1420.00	1150.10	1515.00	1148.10	1521.00
GR	1149.9	1886.52	1157.79	1911.32	1157.79	1926.32				

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QT	4	93000	160000	215000	250000						
SB	1.48	1.56	2.67	1388.0	816.0	72.0	29800.0	10.7	1131.58	1131.55	

SPRR bridge U/S

***** SPRR bridge U/S *****

X1	15.6	13	598.49	1420.00	15.0	20.0	18.0	0.0	0.0	0
X2	0.0	0.0	1	1161.0	1165.0	0.0	0	2.0	0.0	
GR	1158.9	522.38	1157.94	537.30	1145.44	574.61	1145.44	598.49	1133.83	629.75
GR	1131.0	1232.81	1134.05	1371.76	1150.13	1420.00	1150.13	1515.00	1148.13	1521.00
GR	1149.9	1886.52	1157.79	1911.40	1157.79	1926.32				

NC	0.0	0.0	0.0	0.1	0.3					
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X1	17.3	13	602.29	1500.00	155.0	150.0	152.0	0.0	0.0	0
GR	1158.3	525.95	1158.33	540.92	1145.83	578.34	1145.83	602.29	1133.99	634.21
GR	1131.2	1229.54	1134.21	1450.17	1150.38	1500.00	1150.38	1515.00	1148.57	1521.00
GR	1150.0	1790.00	1160.04	1880.00	1160.04	2050.00				

Old Ash Bridge alignment

***** Old Ash Bridge alignment *****

X1	19.0	13	602.90	1500.00	180.0	165.0	172.0	0.0	0.0	0
GR	1158.9	526.47	1158.99	541.46	1146.49	578.42	1146.49	602.90	1134.19	636.64
GR	1131.3	1218.78	1134.38	1450.88	1150.66	1500.00	1150.66	1515.00	1148.66	1521.00
GR	1149.5	1698.30	1160.47	1726.27	1160.47	1741.26				

X1	21.5	13	557.48	1500.00	90.0	275.0	182.0	0.0	0.0	0
GR	1159.4	483.50	1159.48	498.01	1146.98	534.27	1146.98	557.48	1134.28	590.08
GR	1131.6	1142.03	1134.67	1450.65	1151.12	1500.00	1151.12	1515.00	1149.12	1521.00
GR	1149.8	1658.02	1160.79	1688.10	1160.79	1702.60				

X1	24.0	13	522.05	1371.00	50.0	230.0	140.0	0.0	0.0	0
GR	1159.7	405.82	1159.76	419.53	1147.26	453.80	1147.26	522.05	1134.34	551.50
GR	1131.9	1031.91	1134.91	1327.70	1151.50	1371.00	1151.50	1386.00	1149.50	1392.00
GR	1150.1	1511.75	1160.90	1541.00	1160.90	1556.00				

Mill Avenue bridge

***** Mill Avenue bridge *****

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X1	24.6	13	530.00	1501.65	60.0	60.0	60.0	0.0	0.0	0
RC	7	40000.0	1141.84	93000.0	1147.51	135000.0	1151.04	160000.0	1152.84	215000.0
RC	1156.1	250000.0	1158.80	296000.0	1162.00					
X2	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0	
GR	1160.0	402.16	1160.09	415.87	1147.59	450.15	1147.59	530.00	1134.40	560.00
GR	1131.9	1021.85	1134.97	1327.65	1151.62	1370.00	1151.62	1385.00	1149.62	1391.00
GR	1150.1	1501.65	1161.06	1530.00	1161.06	1545.00				

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NC	0.035	0.035	0.0	0.0	0.0					
X1	26.0	13	587.86	1428.00	230.0	140.0	185.0	0.0	0.0	0
GR	1160.9	442.68	1160.90	456.96	1148.40	492.66	1148.40	587.86	1134.65	620.48
GR	1132.1	1024.35	1135.12	1382.59	1151.88	1428.00	1151.88	1442.28	1149.88	1447.99
GR	1150.3	1550.00	1161.16	1580.32	1161.16	1594.60				

SB	1.11	1.56	2.67	1040.0	760.0	85.0	30000.0	5.2	1132.12	1132.22
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Second Mill Avenue bridge

***** Second Mill Avenue bridge *****

X1	26.45	13	587.86	1428.00	45.0	45.0	45.0	0.0	0.0	0
X2	0.0	0.0	1	1172.51	1176.14	0.0	0	2.0	0.0	
GR	1160.9	442.68	1160.90	456.96	1148.40	492.66	1148.40	587.86	1134.65	620.48
GR	1132.1	1024.35	1135.12	1382.59	1151.88	1428.00	1151.88	1442.28	1149.88	1447.99
GR	1150.3	1550.00	1161.22	1580.32	1161.22	1594.60				

X1	27.0	13	648.59	1491.00	255.0	55.0	155.0	0.0	0.0	0
GR	1161.2	497.00	1161.22	511.91	1148.72	549.19	1148.72	648.59	1134.97	683.18
GR	1132.2	1034.75	1135.22	1443.40	1152.08	1491.00	1152.08	1505.91	1150.08	1511.87
GR	1150.5	1601.21	1161.29	1631.00	1161.29	1646.00				

X1	28.0	13	654.50	1500.00	220.0	100.0	160.0	0.0	0.0	0
GR	1161.4	502.00	1161.44	517.00	1148.94	554.50	1148.94	654.50	1135.20	689.57
GR	1132.3	999.00	1135.33	1451.97	1152.27	1500.00	1152.27	1515.00	1150.27	1521.00
GR	1150.6	1598.00	1161.57	1628.00	1161.57	1643.00				

X1	30.0	13	657.50	1500.0	200.0	200.0	200.0	0.0	0.0	0
GR	1161.6	505.00	1161.65	520.00	1149.15	557.50	1149.15	657.50	1135.42	692.39
GR	1132.5	952.00	1135.54	1451.64	1152.65	1500.00	1152.65	1515.00	1150.65	1521.00
GR	1150.9	1580.00	1161.84	1610.00	1161.84	1625.00				

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X1	32.0	11	658.06	1500.0	200.0	200.0	200.0	0.0	0.0	0
GR	1161.8	514.00	1161.86	529.00	1149.37	566.50	1149.37	658.06	1135.63	692.98
GR	1132.7	920.00	1135.75	1462.92	1148.11	1500.00	1148.91	1580.00	1162.11	1619.60
GR	1162.1	1634.60								

X1	34.0	11	656.17	1500.00	200.0	200.0	200.0	0.0	0.0	0
GR	1162.0	529.00	1162.07	544.00	1149.57	581.50	1149.57	656.17	1135.85	691.45
GR	1132.9	902.00	1135.96	1466.01	1148.32	1500.00	1149.12	1580.00	1162.32	1619.60
GR	1162.3	1634.60								

X1	36.0	11	658.78	1500.00	230.0	200.0	215.0	0.0	0.0	0
GR	1162.3	557.00	1162.31	572.00	1149.81	609.50	1149.81	658.78	1136.09	699.94
GR	1133.1	894.00	1136.17	1462.89	1148.54	1500.00	1149.34	1580.00	1162.53	1619.57
GR	1162.5	1634.57								

X1	38.0	11	661.39	1500.00	260.0	200.0	230.0	0.0	0.0	0
GR	1162.5	568.00	1162.58	583.00	1150.49	619.27	1150.08	661.39	1136.37	697.57
GR	1133.3	892.00	1136.37	1462.86	1148.75	1500.00	1149.55	1580.00	1162.74	1619.57

GR	1162.7	1634.57								
X1	40.0	11	671.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
GR	1162.8	596.00	1162.85	611.00	1150.59	647.78	1150.35	671.78	1136.65	712.88
GR	1133.5	895.00	1136.58	1462.86	1148.96	1500.00	1149.76	1580.00	1162.95	1639.57
GR	1162.9	1654.57								
X1	42.0	11	673.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
GR	1163.1	598.00	1163.12	613.00	1150.86	649.78	1150.62	673.78	1136.93	714.85
GR	1133.7	900.00	1136.79	1462.83	1149.18	1500.00	1149.24	1580.00	1163.16	1621.76
GR	1163.1	1636.76								
X1	44.0	11	690.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
GR	1163.3	615.00	1163.39	630.00	1151.13	666.78	1150.89	690.78	1137.20	731.85
GR	1134.0	908.00	1137.00	1462.83	1149.39	1500.00	1150.19	1580.00	1163.37	1619.54
GR	1163.3	1634.54								
X1	46.0	11	689.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
GR	1163.6	614.00	1163.66	629.00	1151.40	665.78	1151.16	689.78	1137.48	730.82
GR	1134.2	919.00	1137.21	1462.83	1149.60	1500.00	1150.40	1580.00	1163.58	1619.54
GR	1163.5	1634.54								
1										
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X1	48.0	11	682.78	1500.00	260.0	200.0	230.0	0.0	0.0	0
GR	1163.9	607.00	1163.93	622.00	1151.67	658.78	1151.43	682.78	1137.76	723.79
GR	1134.4	931.00	1137.42	1462.80	1149.82	1500.00	1150.62	1580.00	1163.79	1619.51
GR	1163.7	1634.51								
X1	50.0	11	670.78	1500.00	210.0	200.0	205.0	0.0	0.0	0
GR	1164.1	595.00	1164.15	610.00	1151.89	646.78	1151.65	670.78	1137.99	711.76
GR	1134.6	951.00	1137.63	1462.80	1150.03	1500.00	1150.83	1580.00	1164.00	1619.51
GR	1164.0	1634.51								
X1	52.0	11	661.78	1500.00	175.0	200.0	188.0	0.0	0.0	0
GR	1164.3	586.00	1164.33	601.00	1152.07	637.78	1151.83	661.78	1138.17	702.76
GR	1134.8	981.00	1137.84	1462.80	1150.24	1500.00	1151.04	1580.00	1164.21	1619.51
GR	1164.2	1634.51								
X1	54.0	11	654.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1164.5	579.00	1164.50	594.00	1152.24	630.78	1152.00	654.78	1138.34	695.76
GR	1135.0	1020.00	1138.05	1467.87	1150.46	1500.00	1151.26	1580.00	1164.42	1619.48
GR	1164.4	1634.48								
X1	56.0	11	645.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1164.6	570.00	1164.67	585.00	1152.41	621.78	1152.17	645.78	1138.52	686.73
GR	1135.2	1065.00	1138.26	1462.77	1150.67	1500.00	1151.47	1580.00	1164.63	1619.48
GR	1164.6	1634.48								
X1	58.0	11	638.78	1500.00	165.0	200.0	182.0	0.0	0.0	0
GR	1164.8	563.00	1164.84	578.00	1152.58	614.78	1152.34	638.78	1138.69	679.73
GR	1135.4	1121.00	1138.47	1462.77	1150.88	1500.00	1151.68	1580.00	1164.84	1619.48
GR	1164.8	1634.48								

X1	60.0	11	629.78	1500.00	170.0	200.0	185.0	0.0	0.0	0
GR	1165.0	554.00	1165.01	569.00	1152.75	605.78	1152.51	629.78	1138.87	670.70
GR	1135.6	1180.00	1138.68	1462.77	1151.09	1500.00	1151.89	1580.00	1165.05	1619.48
GR	1165.0	1634.48								

X1	62.0	11	620.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1165.1	545.00	1165.18	560.00	1152.92	596.78	1152.68	620.78	1139.04	661.70
GR	1135.8	1230.00	1138.89	1462.74	1151.31	1500.00	1152.11	1580.00	1165.26	1619.45
GR	1165.2	1634.45								

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X1	64.0	11	612.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1165.3	537.00	1165.34	552.00	1153.08	588.78	1152.84	612.78	1139.22	647.88
GR	1136.0	1270.00	1139.09	1462.71	1151.52	1500.00	1152.32	1580.00	1165.47	1619.45
GR	1165.4	1634.45								

X1	66.0	11	604.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1165.5	529.00	1165.51	544.00	1153.25	580.78	1153.01	604.78	1139.39	645.64
GR	1136.3	1300.00	1139.30	1462.71	1151.73	1500.00	1152.53	1580.00	1165.51	1618.94
GR	1165.5	1633.94								

X1	68.0	11	597.78	1500.00	170.0	200.0	185.0	0.0	0.0	0
GR	1165.6	522.00	1165.69	537.00	1153.43	573.78	1153.19	597.78	1139.57	638.64
GR	1136.5	1318.00	1139.51	1462.68	1151.95	1500.00	1152.75	1580.00	1165.89	1619.42
GR	1165.8	1634.42								

X1	69.3	11	590.78	1500.00	85.0	130.0	108.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1165.7	515.00	1165.78	530.00	1153.52	566.78	1153.28	590.78	1139.66	631.64
GR	1136.6	1322.00	1139.65	1462.68	1152.09	1500.00	1152.89	1580.00	1166.03	1619.42
GR	1166.0	1634.42								

SB	1.05	1.56	2.63	0.0	831.0	54.0	34820.0	5.0	1136.75	1136.65
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Rural Road bridge

***** Rural Road bridge *****

X1	70.3	21	589.78	1500.00	85.0	100.0	92.0	0.0	0.0	0
X2	0.0	0.0	1	1172.28	1176.98	0.0	0	2.0	0.0	
BT	-12	514.00	1176.98	1165.86	524.00	1177.02	1169.35	645.00	1178.49	1170.82
BT		766.00	1179.49	1171.79	887.00	1179.95	1172.28	1008.00	1179.95	1172.28
BT		1129.00	1179.46	1171.79	1250.00	1178.49	1170.82	1371.00	1177.02	1169.35
BT		1492.00	1175.07	1167.40	1612.00	1172.65	1164.98	1619.42	1172.50	1166.13
GR	1165.8	514.00	1165.78	524.00	1165.86	529.00	1153.60	565.78	1153.36	589.78
GR	1139.7	630.61	1139.69	645.00	1139.17	766.00	1138.64	887.00	1138.12	1008.00
GR	1137.6	1129.00	1137.07	1250.00	1136.75	1325.00	1137.76	1371.00	1139.75	1462.68
GR	1149.5	1492.00	1152.19	1500.00	1152.99	1580.00	1163.66	1612.00	1166.13	1619.42
GR	1166.1	1634.42								

X1	72.0	11	581.78	1500.00	150.0	170.0	160.0	0.0	0.0	0
GR	1166.0	506.00	1166.03	521.00	1153.77	557.78	1153.53	581.78	1139.91	622.64
GR	1136.9	1321.00	1139.93	1462.68	1152.37	1500.00	1152.86	1549.00	1166.31	1589.35
GR	1166.3	1604.35								

X1	74.0	11	571.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1166.2	496.00	1166.26	511.00	1154.00	547.78	1153.76	571.78	1140.12	612.70
GR	1137.1	1315.00	1140.14	1462.65	1152.59	1500.00	1152.83	1524.00	1166.52	1565.07
GR	1166.5	1580.07								

X1	76.0	11	556.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1166.4	481.00	1166.49	496.00	1154.23	532.78	1153.99	556.78	1140.33	597.76
GR	1137.3	1279.00	1140.35	1462.65	1152.80	1500.00	1153.04	1524.00	1166.73	1565.07
GR	1166.7	1580.07								

X1	78.0	11	532.75	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1166.7	457.00	1166.71	472.00	1154.46	508.75	1154.22	532.75	1140.54	573.79
GR	1137.5	1241.00	1140.56	1462.65	1153.01	1500.00	1153.25	1524.00	1166.94	1565.07
GR	1166.9	1580.07								

X1	80.0	11	506.78	1500.00	165.0	200.0	182.0	0.0	0.0	0
GR	1166.9	431.00	1166.95	446.00	1154.69	482.78	1154.45	506.78	1140.76	547.85
GR	1137.7	1194.00	1140.77	1462.62	1153.23	1500.00	1153.47	1524.00	1167.15	1565.04
GR	1167.1	1580.04								

X1	82.0	11	471.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1167.1	396.00	1167.18	411.00	1154.92	447.78	1154.68	471.78	1140.97	512.91
GR	1137.9	1136.00	1140.98	1462.62	1153.44	1500.00	1153.68	1524.00	1167.36	1565.04
GR	1167.3	1580.04								

X1	84.0	11	435.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1167.4	360.00	1167.41	375.00	1155.15	411.78	1154.91	435.78	1141.19	476.94
GR	1138.1	1088.00	1141.19	1462.62	1153.65	1500.00	1153.89	1524.00	1167.57	1565.04
GR	1167.5	1580.04								

X1	86.0	11	388.78	1500.00	165.0	200.0	182.0	0.0	0.0	0
GR	1167.6	313.00	1167.64	328.00	1155.38	364.78	1155.14	388.78	1141.39	430.03
GR	1138.4	1040.00	1141.40	1462.59	1153.87	1500.00	1154.11	1524.00	1167.78	1565.01
GR	1167.7	1580.01								

X1	88.0	11	322.78	1500.00	160.0	200.0	180.0	0.0	0.0	0
GR	1167.8	247.00	1167.87	262.00	1155.61	298.78	1155.37	322.78	1141.60	364.09
GR	1138.6	1008.00	1141.60	1462.56	1154.08	1500.00	1154.32	1524.00	1167.99	1565.01
GR	1167.9	1580.01								

X1	90.0	12	265.78	1500.00	155.0	200.0	178.0	0.0	0.0	0
GR	1168.0	190.00	1168.07	205.00	1155.81	241.00	1155.57	265.78	1149.50	284.00
GR	1141.8	307.09	1138.81	980.00	1141.81	1462.56	1154.29	1500.00	1154.53	1524.00
GR	1168.2	1561.01	1168.20	1576.01						

X1	92.0	11	215.78	1500.00	155.0	200.0	178.0	0.0	0.0	0
GR	1168.2	140.00	1168.24	155.00	1155.98	191.78	1157.74	215.78	1142.01	262.97
GR	1139.0	960.00	1142.02	1459.53	1155.51	1500.00	1155.75	1524.00	1168.41	1561.98

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GR	1168.4	1576.98								
X1	94.0	12	168.75	1500.00	155.0	200.0	178.0	0.0	0.0	0
GR	1168.4	93.00	1168.41	108.00	1156.16	144.75	1155.92	168.75	1142.21	185.88
GR	1141.9	282.00	1139.23	948.00	1142.23	1471.62	1154.72	1500.00	1154.96	1524.00
GR	1168.6	1561.05	1168.62	1576.05						
X1	96.0	12	150.00	1500.00	225.0	200.0	212.0	0.0	0.0	0
GR	1168.6	33.00	1168.66	48.00	1156.41	84.75	1156.17	150.00	1142.51	190.98
GR	1142.1	319.00	1139.44	939.00	1142.44	1462.53	1154.93	1500.00	1155.17	1524.00
GR	1168.8	1564.98	1168.83	1579.98						
X1	98.0	9	20.00	1500.00	290.0	200.0	245.0	0.0	0.0	0
GR	1156.4	20.00	1142.89	60.80	1141.79	353.00	1139.65	920.00	1142.65	1462.50
GR	1155.1	1500.00	1155.39	1524.00	1169.04	1564.95	1169.04	1579.95		
X1	100.0	7	350.00	1500.00	310.0	200.0	255.0	0.0	0.0	0
GR	1142.5	350.00	1139.86	885.00	1142.86	1462.50	1155.36	1500.00	1155.60	1524.00
GR	1169.2	1564.95	1169.25	1579.95						
X1	102.0	11	484.41	1500.00	370.0	200.0	285.0	0.0	0.0	0
GR	1169.4	407.91	1169.42	422.91	1156.92	460.41	1156.68	484.41	1143.15	525.00
GR	1140.0	853.00	1143.07	1462.50	1155.57	1500.00	1155.81	1524.00	1169.46	1564.95
GR	1169.4	1579.95								
X1	104.0	11	535.50	1500.00	260.0	200.0	230.0	0.0	0.0	0
GR	1169.6	459.00	1169.62	474.00	1157.12	511.50	1156.88	535.50	1143.15	576.69
GR	1140.2	828.00	1143.28	1462.47	1155.79	1500.00	1156.03	1524.00	1169.67	1564.92
GR	1169.6	1579.92								
X1	106.0	11	531.50	1500.00	250.0	200.0	225.0	0.0	0.0	0
GR	1169.8	455.00	1169.87	470.00	1157.37	507.50	1157.13	531.50	1143.40	572.69
GR	1140.4	810.00	1143.49	1462.47	1156.00	1500.00	1156.14	1514.40	1169.88	1555.62
GR	1169.8	1570.62								

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X1	108.0	10	473.50	1500.00	250.0	200.0	225.0	0.0	0.0	0
GR	1170.1	397.00	1170.12	412.00	1157.62	449.50	1157.38	473.50	1143.65	514.69
GR	1140.7	795.00	1143.70	1462.02	1156.36	1500.00	1170.09	1541.19	1170.09	1556.19
X1	110.0	9	590.50	1500.00	255.0	200.0	228.0	0.0	0.0	0
GR	1170.3	514.00	1170.37	529.00	1157.87	566.50	1157.63	590.50	1143.91	631.66
GR	1140.9	790.00	1143.91	1420.83	1170.30	1500.00	1170.30	1515.00		
X1	112.0	9	606.50	1500.00	225.0	200.0	212.0	0.0	0.0	0
GR	1170.6	530.00	1170.60	545.00	1158.10	582.50	1157.86	606.50	1144.13	647.69
GR	1141.1	790.00	1144.12	1420.83	1170.51	1500.00	1170.51	1515.00		
X1	114.0	9	584.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
GR	1170.8	508.00	1170.80	523.00	1158.30	560.50	1158.06	584.50	1144.33	625.69
GR	1141.3	800.00	1144.32	1420.77	1170.73	1500.00	1170.73	1515.00		

X1	116.0	9	529.50	1500.00	205.0	200.0	202.0	0.0	0.0	0
GR	1171.0	453.00	1171.00	468.00	1158.50	505.50	1158.26	529.50	1144.54	570.66
GR	1141.5	820.00	1144.53	1420.77	1170.94	1500.00	1170.94	1515.00		

X1	118.0	9	474.50	1500.00	210.0	200.0	205.0	0.0	0.0	0
GR	1171.2	398.00	1171.21	413.00	1158.71	450.50	1158.47	474.50	1144.75	515.66
GR	1141.7	854.00	1144.74	1420.77	1171.15	1500.00	1171.15	1515.00		

X1	119.8	9	446.50	1500.00	180.0	200.0	190.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1171.3	370.00	1171.39	385.00	1158.89	422.50	1158.65	446.50	1144.95	487.60
GR	1141.9	525.00	1144.95	1420.74	1171.37	1500.00	1171.37	1515.00		

X1	120.42	9	446.22	1485.00	57.0	42.0	50.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1171.4	370.00	1171.45	385.00	1158.95	422.50	1158.71	446.22	1144.98	487.69
GR	1142.0	926.50	1145.00	1405.77	1171.41	1485.00	1171.41	1500.00		

Grade Control Str. No. 5

***** Grade Control Str. No. 5 *****

X1	120.5	9	443.50	1485.00	8.0	8.0	8.0	0.0	0.0	0
GR	1171.4	367.00	1171.46	382.00	1158.96	419.50	1158.72	443.50	1150.00	469.66
GR	1147.0	926.50	1150.00	1420.74	1171.42	1485.00	1171.42	1500.00		

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X1	122.0	9	441.50	1460.00	155.0	150.0	152.0	0.0	0.0	0
GR	1171.6	365.00	1171.61	380.00	1159.11	417.50	1158.87	441.50	1150.16	467.63
GR	1147.1	941.00	1150.15	1395.71	1171.58	1460.00	1171.58	1475.00		

X1	122.65	9	441.50	1460.00	65.0	65.0	65.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1171.6	365.00	1171.68	380.00	1159.18	417.50	1158.94	441.50	1150.22	490.27
GR	1147.2	952.00	1150.22	1395.71	1171.65	1460.00	1171.65	1475.00		

SB	1.05	1.56	2.63	0.0	798.0	66.0	24246.0	6.3	1147.31	1147.22
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McClintock Drive Bridge

***** McClintock Drive Bridge *****

X1	123.55	20	441.5	1460.00	90.0	90.0	90.0	0.0	0.0	0
X2	0.0	0.0	1	1180.61	1181.8	0.0	0	2.0	0.0	
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
BT	-11	316.00	1181.80	1174.13	436.00	1184.23	1176.56	554.00	1185.93	1178.26
BT		672.00	1187.37	1179.70	790.00	1188.15	1180.48	908.00	1188.28	1180.61
BT		1026.00	1188.15	1180.48	1144.00	1187.37	1179.70	1262.00	1185.93	1178.26
BT		1380.00	1184.23	1176.56	1500.00	1181.80	1174.13			
GR	1174.1	316.00	1171.77	371.00	1171.77	386.00	1159.27	423.50	1159.10	436.00
GR	1159.0	441.50	1150.31	500.09	1149.97	554.00	1149.22	672.00	1148.48	790.00
GR	1147.7	908.00	1147.31	975.00	1147.64	1026.00	1148.42	1144.00	1149.19	1262.00
GR	1149.9	1380.00	1150.31	1433.31	1171.75	1460.00	1171.75	1475.00	1174.13	1500.00

X1	124.0	9	436.50	1465.00	45.0	45.0	45.0	0.0	0.0	0
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GR	1171.8	360.00	1171.81	375.00	1159.31	412.50	1159.07	436.50	1150.36	464.22
GR	1147.3	983.00	1150.35	1400.68	1171.79	1465.00	1171.79	1480.00		
X1	126.0	10	415.00	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1170.0	240.00	1168.00	272.00	1166.00	317.00	1164.00	348.00	1162.00	388.00
GR	1159.2	415.00	1150.56	441.13	1147.55	985.00	1150.55	1435.62	1172.01	1500.00
X1	128.0	8	402.00	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1172.0	242.00	1166.00	280.00	1164.00	377.00	1159.47	402.00	1150.76	428.13
GR	1147.7	1017.00	1150.75	1359.75	1170.00	1500.00				

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T1 RIO SALADO TOWN LAKE for TEMPE, AZ
T2 CH2M HILL Walker/Allen Sept. 1994
T3 RE-FEMA.HC2

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		5								
J2	NPROF	IPLT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1					-6.0		

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THIS RUN EXECUTED 01MAR96 15:50:54

HEC-2 WATER SURFACE PROFILES
Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

RE-FEMA.HC2
SUMMARY PRINTOUT

SECTNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
10035.000	.00	.00	205000.00	1119.15	21.95	1097.20	11.84	18.99
10035.000	.00	.00	250000.00	1120.10	22.90	1097.20	13.64	23.52
10200.000	165.00	165.00	205000.00	1119.49	21.39	1098.10	11.75	18.46
10200.000	165.00	165.00	250000.00	1120.57	22.47	1098.10	13.45	22.39
10400.000	200.00	365.00	205000.00	1119.89	21.79	1098.10	11.66	17.91
10400.000	200.00	365.00	250000.00	1121.09	22.99	1098.10	13.27	21.29

10148191

10600.000	200.00	565.00	205000.00	1120.27	21.77	1098.50	11.62	17.75
10600.000	200.00	565.00	250000.00	1121.56	23.06	1098.50	13.14	20.71
10800.000	200.00	765.00	205000.00	1120.60	21.60	1099.00	11.75	18.40
10800.000	200.00	765.00	250000.00	1121.96	22.96	1099.00	13.24	21.18
11000.000	200.00	965.00	205000.00	1121.07	21.57	1099.50	11.44	16.92
11000.000	200.00	965.00	250000.00	1122.54	23.04	1099.50	12.83	19.20
11200.000	200.00	1165.00	205000.00	1121.47	21.47	1100.00	11.26	15.95
11200.000	200.00	1165.00	250000.00	1123.01	23.01	1100.00	12.60	17.98
11400.000	200.00	1365.00	205000.00	1121.88	21.48	1100.40	11.00	14.94
11400.000	200.00	1365.00	250000.00	1123.50	23.10	1100.40	12.27	16.69
11600.000	200.00	1565.00	205000.00	1122.32	21.42	1100.90	10.55	13.12
11600.000	200.00	1565.00	250000.00	1124.02	23.12	1100.90	11.76	14.63
11800.000	200.00	1765.00	205000.00	1122.53	21.13	1101.40	10.83	14.33
11800.000	200.00	1765.00	250000.00	1124.25	22.85	1101.40	12.03	15.80
12000.000	200.00	1965.00	205000.00	1122.82	21.02	1101.80	10.82	14.23
12000.000	200.00	1965.00	250000.00	1124.58	22.78	1101.80	11.99	15.57

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
12100.000	100.00	2065.00	205000.00	1122.93	20.83	1102.10	10.97	14.81
12100.000	100.00	2065.00	250000.00	1124.70	22.60	1102.10	12.15	16.16
12200.000	100.00	2165.00	205000.00	1123.07	20.77	1102.30	11.00	14.93
12200.000	100.00	2165.00	250000.00	1124.86	22.56	1102.30	12.17	16.27
12400.000	200.00	2365.00	205000.00	1123.28	20.48	1102.80	11.43	16.26
12400.000	200.00	2365.00	250000.00	1125.07	22.27	1102.80	12.63	17.63
12600.000	200.00	2565.00	205000.00	1123.63	20.43	1103.20	11.35	15.71
12600.000	200.00	2565.00	250000.00	1125.46	22.26	1103.20	12.54	17.08
12800.000	200.00	2765.00	205000.00	1123.92	20.22	1103.70	11.44	16.24
12800.000	200.00	2765.00	250000.00	1125.79	22.09	1103.70	12.60	17.48
13000.000	200.00	2965.00	205000.00	1124.24	20.04	1104.20	11.51	16.45
13000.000	200.00	2965.00	250000.00	1126.12	21.92	1104.20	12.66	17.60
13200.000	200.00	3165.00	205000.00	1124.54	19.84	1104.70	11.64	17.08
13200.000	200.00	3165.00	250000.00	1126.44	21.74	1104.70	12.78	18.14
13400.000	200.00	3365.00	205000.00	1124.87	19.77	1105.10	11.69	17.29
13400.000	200.00	3365.00	250000.00	1126.80	21.70	1105.10	12.81	18.27
13600.000	200.00	3565.00	205000.00	1125.17	19.57	1105.60	11.92	18.27
13600.000	200.00	3565.00	250000.00	1127.11	21.51	1105.60	13.03	19.18
13800.000	200.00	3765.00	205000.00	1125.53	19.43	1106.10	11.94	18.50
13800.000	200.00	3765.00	250000.00	1127.49	21.39	1106.10	13.04	19.31
14000.000	200.00	3965.00	205000.00	1125.94	19.44	1106.50	11.82	18.06
14000.000	200.00	3965.00	250000.00	1127.95	21.45	1106.50	12.88	18.73
14200.000	200.00	4165.00	205000.00	1126.34	19.34	1107.00	11.74	18.05
14200.000	200.00	4165.00	250000.00	1128.37	21.37	1107.00	12.76	18.57

14400.000	200.00	4365.00	205000.00	1126.68	19.18	1107.50	11.88	18.46
14400.000	200.00	4365.00	250000.00	1128.72	21.22	1107.50	12.91	18.94
14665.000	265.00	4630.00	205000.00	1127.13	18.93	1108.20	12.09	19.17
14665.000	265.00	4630.00	250000.00	1129.18	20.98	1108.20	13.13	19.58
14785.000	120.00	4750.00	205000.00	1127.41	19.01	1108.40	12.00	19.07
14785.000	120.00	4750.00	250000.00	1129.48	21.08	1108.40	13.01	19.38
15000.000	215.00	4965.00	205000.00	1127.81	18.91	1108.90	12.05	19.61
15000.000	215.00	4965.00	250000.00	1129.90	21.00	1108.90	13.03	19.84
15200.000	200.00	5165.00	205000.00	1128.18	18.78	1109.40	12.14	20.10
15200.000	200.00	5165.00	250000.00	1130.28	20.88	1109.40	13.11	20.25

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
15400.000	200.00	5365.00	205000.00	1128.58	18.78	1109.80	12.17	19.92
15400.000	200.00	5365.00	250000.00	1130.67	20.87	1109.80	13.15	20.07
15586.000	186.00	5551.00	210000.00	1128.88	18.58	1110.30	12.62	21.75
15586.000	186.00	5551.00	250000.00	1131.03	20.73	1110.30	13.25	20.58
15710.000	124.00	5675.00	210000.00	1129.33	18.73	1110.60	12.52	21.20
15710.000	124.00	5675.00	250000.00	1131.51	20.91	1110.60	13.14	20.01
16000.000	290.00	5965.00	210000.00	1129.94	18.64	1111.30	12.55	21.85
16000.000	290.00	5965.00	250000.00	1132.10	20.80	1111.30	13.16	20.59
16200.000	200.00	6165.00	210000.00	1130.45	18.75	1111.70	12.36	20.92
16200.000	200.00	6165.00	250000.00	1132.57	20.87	1111.70	13.01	19.90
16400.000	200.00	6365.00	210000.00	1130.83	18.63	1112.20	12.53	21.76
16400.000	200.00	6365.00	250000.00	1132.93	20.73	1112.20	13.19	20.74
16600.000	200.00	6565.00	210000.00	1131.26	18.56	1112.70	12.56	21.97
16600.000	200.00	6565.00	250000.00	1133.33	20.63	1112.70	13.23	20.98
16800.000	200.00	6765.00	210000.00	1131.70	18.50	1113.20	12.58	22.16
16800.000	200.00	6765.00	250000.00	1133.74	20.54	1113.20	13.26	21.22
17000.000	200.00	6965.00	210000.00	1132.16	18.56	1113.60	12.51	21.80
17000.000	200.00	6965.00	250000.00	1134.18	20.58	1113.60	13.23	21.08
17200.000	200.00	7165.00	210000.00	1132.59	18.49	1114.10	12.56	22.08
17200.000	200.00	7165.00	250000.00	1134.59	20.49	1114.10	13.28	21.34
17400.000	200.00	7365.00	210000.00	1133.02	18.42	1114.60	12.62	22.15
17400.000	200.00	7365.00	250000.00	1135.00	20.40	1114.60	13.35	21.51
17600.000	200.00	7565.00	210000.00	1133.44	18.44	1115.00	12.70	22.28
17600.000	200.00	7565.00	250000.00	1135.40	20.40	1115.00	13.47	21.77
17800.000	200.00	7765.00	210000.00	1133.87	18.37	1115.50	12.77	22.62
17800.000	200.00	7765.00	250000.00	1135.81	20.31	1115.50	13.55	22.13
18000.000	200.00	7965.00	210000.00	1134.30	18.30	1116.00	12.84	23.02
18000.000	200.00	7965.00	250000.00	1136.24	20.24	1116.00	13.63	22.54
18200.000	200.00	8165.00	210000.00	1134.74	18.24	1116.50	12.94	23.46
18200.000	200.00	8165.00	250000.00	1136.66	20.16	1116.50	13.75	23.06

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18400.000	200.00	8365.00	210000.00	1135.29	18.39	1116.90	12.72	22.47
18400.000	200.00	8365.00	250000.00	1137.22	20.32	1116.90	13.52	22.08
18600.000	200.00	8565.00	210000.00	1135.68	18.28	1117.40	13.00	23.44
18600.000	200.00	8565.00	250000.00	1137.57	20.17	1117.40	13.84	23.11

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
18800.000	200.00	8765.00	210000.00	1136.11	18.21	1117.90	13.15	24.32
18800.000	200.00	8765.00	250000.00	1138.00	20.10	1117.90	13.99	23.97
19000.000	200.00	8965.00	210000.00	1136.59	18.29	1118.30	13.18	24.25
19000.000	200.00	8965.00	250000.00	1138.46	20.16	1118.30	14.03	23.98
19200.000	200.00	9165.00	210000.00	1137.04	18.24	1118.80	13.30	24.78
19200.000	200.00	9165.00	250000.00	1138.91	20.11	1118.80	14.18	24.57
19400.000	200.00	9365.00	210000.00	1137.50	18.20	1119.30	13.45	25.40
19400.000	200.00	9365.00	250000.00	1139.35	20.05	1119.30	14.33	25.21
19600.000	200.00	9565.00	210000.00	1137.98	18.18	1119.80	13.59	25.97
19600.000	200.00	9565.00	250000.00	1139.82	20.02	1119.80	14.49	25.82
19800.000	200.00	9765.00	210000.00	1138.49	18.29	1120.20	13.60	25.79
19800.000	200.00	9765.00	250000.00	1140.32	20.12	1120.20	14.52	25.73
20000.000	200.00	9965.00	210000.00	1138.96	18.26	1120.70	13.77	26.47
20000.000	200.00	9965.00	250000.00	1140.78	20.08	1120.70	14.71	26.46
20200.000	200.00	10165.00	210000.00	1139.46	18.26	1121.20	13.91	27.03
20200.000	200.00	10165.00	250000.00	1141.27	20.07	1121.20	14.86	27.06
20400.000	200.00	10365.00	210000.00	1140.02	18.42	1121.60	13.83	26.26
20400.000	200.00	10365.00	250000.00	1141.83	20.23	1121.60	14.80	26.41
20600.000	200.00	10565.00	210000.00	1140.49	18.39	1122.10	14.07	27.36
20600.000	200.00	10565.00	250000.00	1142.29	20.19	1122.10	15.06	27.54
20782.000	178.00	10743.00	210000.00	1141.01	18.51	1122.50	14.00	27.27
20782.000	178.00	10743.00	250000.00	1142.84	20.34	1122.50	14.95	27.36
20800.000	18.00	10761.00	210000.00	1141.07	18.54	1122.53	13.98	27.17
20800.000	18.00	10761.00	250000.00	1142.89	20.36	1122.53	14.93	27.26
21000.000	200.00	10961.00	210000.00	1141.67	18.81	1122.86	13.82	25.27
21000.000	200.00	10961.00	250000.00	1143.47	20.61	1122.86	14.84	25.65
21050.000	50.00	11011.00	210000.00	1141.76	18.56	1123.20	13.99	26.29
21050.000	50.00	11011.00	250000.00	1143.56	20.36	1123.20	15.01	26.59
21150.000	100.00	11111.00	210000.00	1142.39	18.99	1123.40	13.63	24.18
21150.000	100.00	11111.00	250000.00	1144.31	20.91	1123.40	14.56	24.14
21200.000	50.00	11161.00	210000.00	1142.67	19.48	1123.19	13.27	22.08
21200.000	50.00	11161.00	250000.00	1144.60	21.41	1123.19	14.21	22.22
21400.000	200.00	11361.00	210000.00	1143.22	19.70	1123.52	13.01	21.59
21400.000	200.00	11361.00	250000.00	1145.20	21.68	1123.52	13.88	21.57

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
21600.000	200.00	11561.00	210000.00	1143.80	19.95	1123.85	12.65	19.97
21600.000	200.00	11561.00	250000.00	1145.79	21.94	1123.85	13.50	19.98
21800.000	200.00	11761.00	210000.00	1144.16	19.98	1124.18	12.78	20.38
21800.000	200.00	11761.00	250000.00	1146.15	21.97	1124.18	13.65	20.44
22000.000	200.00	11961.00	210000.00	1144.60	20.09	1124.51	12.72	20.04
22000.000	200.00	11961.00	250000.00	1146.59	22.08	1124.51	13.58	20.12
22200.000	200.00	12161.00	210000.00	1145.02	20.18	1124.84	12.66	19.79
22200.000	200.00	12161.00	250000.00	1147.01	22.17	1124.84	13.52	19.83
22400.000	200.00	12361.00	210000.00	1145.43	20.25	1125.18	12.62	19.56
22400.000	200.00	12361.00	250000.00	1147.42	22.24	1125.18	13.49	19.65
22600.000	200.00	12561.00	210000.00	1145.86	20.35	1125.51	12.51	19.01
22600.000	200.00	12561.00	250000.00	1147.86	22.35	1125.51	13.38	19.14
22800.000	200.00	12761.00	210000.00	1146.25	20.41	1125.84	12.48	18.88
22800.000	200.00	12761.00	250000.00	1148.26	22.42	1125.84	13.35	19.01
23000.000	200.00	12961.00	210000.00	1146.59	19.89	1126.70	12.66	19.71
23000.000	200.00	12961.00	250000.00	1148.59	21.89	1126.70	13.52	19.77
23200.000	200.00	13161.00	210000.00	1147.11	20.61	1126.50	12.33	18.11
23200.000	200.00	13161.00	250000.00	1149.13	22.63	1126.50	13.19	18.27
23400.000	200.00	13361.00	210000.00	1147.47	20.64	1126.83	12.32	18.06
23400.000	200.00	13361.00	250000.00	1149.49	22.66	1126.83	13.19	18.22
23600.000	200.00	13561.00	210000.00	1147.84	20.68	1127.16	12.32	18.01
23600.000	200.00	13561.00	250000.00	1149.86	22.70	1127.16	13.18	18.17
23800.000	200.00	13761.00	210000.00	1148.20	20.74	1127.46	12.29	17.90
23800.000	200.00	13761.00	250000.00	1150.23	22.77	1127.46	13.15	18.06
24000.000	200.00	13961.00	210000.00	1148.64	20.82	1127.82	12.07	16.86
24000.000	200.00	13961.00	250000.00	1150.68	22.86	1127.82	12.93	17.07
24200.000	200.00	14161.00	210000.00	1149.04	20.89	1128.15	11.92	16.19
24200.000	200.00	14161.00	250000.00	1151.08	22.93	1128.15	12.78	16.43
24400.000	200.00	14361.00	210000.00	1149.43	20.95	1128.48	11.72	15.15
24400.000	200.00	14361.00	250000.00	1151.48	23.00	1128.48	12.59	15.45
24600.000	200.00	14561.00	210000.00	1149.83	21.02	1128.81	11.45	14.38
24600.000	200.00	14561.00	250000.00	1151.91	23.10	1128.81	12.29	14.63
24800.000	200.00	14761.00	210000.00	1150.09	20.95	1129.14	11.58	14.67
24800.000	200.00	14761.00	250000.00	1152.17	23.03	1129.14	12.43	14.96

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
.000	155.00	14916.00	210000.00	1150.19	20.79	1129.40	12.18	16.73
.000	155.00	14916.00	250000.00	1152.27	22.87	1129.40	13.01	16.58
2.000	160.00	15076.00	210000.00	1150.41	20.81	1129.60	12.37	17.23
2.000	160.00	15076.00	250000.00	1152.49	22.90	1129.60	13.19	17.02

4.000	200.00	15276.00	210000.00	1150.75	20.95	1129.80	12.42	17.24
4.000	200.00	15276.00	250000.00	1152.84	23.04	1129.80	13.22	16.99
6.000	200.00	15476.00	210000.00	1150.96	20.96	1130.00	13.03	20.53
6.000	200.00	15476.00	250000.00	1153.06	23.06	1130.00	13.76	19.69
8.000	200.00	15676.00	210000.00	1151.59	21.39	1130.20	12.45	17.04
8.000	200.00	15676.00	250000.00	1153.67	23.47	1130.20	13.22	16.73
10.000	200.00	15876.00	210000.00	1152.05	21.65	1130.40	12.15	15.80
10.000	200.00	15876.00	250000.00	1154.15	23.75	1130.40	12.89	15.52
12.000	200.00	16076.00	210000.00	1152.44	21.84	1130.60	11.96	15.13
12.000	200.00	16076.00	250000.00	1154.56	23.96	1130.60	12.67	14.83
14.000	158.00	16234.00	210000.00	1152.78	21.98	1130.80	11.69	14.32
14.000	158.00	16234.00	250000.00	1154.91	24.11	1130.80	12.38	14.00
15.400	122.00	16356.00	210000.00	1152.78	21.78	1131.00	12.74	17.27
15.400	122.00	16356.00	250000.00	1154.91	23.91	1131.00	13.40	16.62
15.600	18.00	16374.00	215000.00	1153.81	22.81	1131.00	12.27	14.96
15.600	18.00	16374.00	250000.00	1156.00	25.00	1131.00	12.62	13.83
17.300	152.00	16526.00	215000.00	1154.45	23.25	1131.20	11.08	11.81
17.300	152.00	16526.00	250000.00	1156.57	25.37	1131.20	11.55	11.29
19.000	172.00	16698.00	215000.00	1154.63	23.33	1131.30	11.15	11.96
19.000	172.00	16698.00	250000.00	1156.72	25.42	1131.30	11.69	11.58
21.500	182.00	16880.00	215000.00	1155.04	23.44	1131.60	10.56	10.57
21.500	182.00	16880.00	250000.00	1157.13	25.53	1131.60	11.10	10.31
24.000	140.00	17020.00	215000.00	1154.91	23.01	1131.90	11.85	13.64
24.000	140.00	17020.00	250000.00	1156.97	25.07	1131.90	12.43	13.24
24.600	60.00	17080.00	215000.00	1156.10	24.20	1131.90	10.96	12.47
24.600	60.00	17080.00	250000.00	1158.80	26.90	1131.90	11.16	10.92
26.000	185.00	17265.00	215000.00	1156.28	24.18	1132.10	11.22	11.47
26.000	185.00	17265.00	250000.00	1158.96	26.86	1132.10	11.43	10.20
26.450	45.00	17310.00	215000.00	1156.81	24.71	1132.10	10.92	10.52
26.450	45.00	17310.00	250000.00	1159.48	27.38	1132.10	11.16	9.47

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
27.000	155.00	17465.00	215000.00	1156.97	24.77	1132.20	10.93	10.57
27.000	155.00	17465.00	250000.00	1159.62	27.42	1132.20	11.19	9.54
28.000	160.00	17625.00	215000.00	1157.15	24.85	1132.30	10.91	10.51
28.000	160.00	17625.00	250000.00	1159.77	27.47	1132.30	11.18	9.53
30.000	200.00	17825.00	215000.00	1157.34	24.84	1132.50	10.99	10.70
30.000	200.00	17825.00	250000.00	1159.93	27.43	1132.50	11.30	9.77
32.000	200.00	18025.00	215000.00	1157.64	24.94	1132.70	10.74	10.00
32.000	200.00	18025.00	250000.00	1160.21	27.51	1132.70	11.08	9.22
34.000	200.00	18225.00	215000.00	1157.84	24.94	1132.90	10.75	10.01
34.000	200.00	18225.00	250000.00	1160.38	27.48	1132.90	11.11	9.27

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36.000	215.00	18440.00	215000.00	1158.02	24.92	1133.10	10.90	10.36
36.000	215.00	18440.00	250000.00	1160.54	27.44	1133.10	11.29	9.65
38.000	230.00	18670.00	215000.00	1158.25	24.95	1133.30	10.93	10.37
38.000	230.00	18670.00	250000.00	1160.75	27.45	1133.30	11.33	9.70
40.000	230.00	18900.00	215000.00	1158.44	24.94	1133.50	11.13	10.81
40.000	230.00	18900.00	250000.00	1160.92	27.42	1133.50	11.55	10.14
42.000	230.00	19130.00	215000.00	1158.69	24.99	1133.70	11.13	10.80
42.000	230.00	19130.00	250000.00	1161.14	27.44	1133.70	11.57	10.17
44.000	230.00	19360.00	215000.00	1158.87	24.87	1134.00	11.43	11.44
44.000	230.00	19360.00	250000.00	1161.31	27.31	1134.00	11.88	10.79
46.000	230.00	19590.00	215000.00	1159.15	24.95	1134.20	11.38	11.30
46.000	230.00	19590.00	250000.00	1161.57	27.37	1134.20	11.85	10.72
48.000	230.00	19820.00	215000.00	1159.46	25.06	1134.40	11.24	10.96
48.000	230.00	19820.00	250000.00	1161.86	27.46	1134.40	11.71	10.41
50.000	205.00	20025.00	215000.00	1159.76	25.16	1134.60	11.03	10.50
50.000	205.00	20025.00	250000.00	1162.15	27.55	1134.60	11.51	10.00
52.000	188.00	20213.00	215000.00	1160.00	25.20	1134.80	10.89	10.21
52.000	188.00	20213.00	250000.00	1162.39	27.59	1134.80	11.37	9.74
54.000	180.00	20393.00	215000.00	1160.23	25.23	1135.00	10.77	9.94
54.000	180.00	20393.00	250000.00	1162.61	27.61	1135.00	11.25	9.51
56.000	180.00	20573.00	215000.00	1160.44	25.24	1135.20	10.67	9.78
56.000	180.00	20573.00	250000.00	1162.81	27.61	1135.20	11.15	9.36
58.000	182.00	20755.00	215000.00	1160.65	25.25	1135.40	10.58	9.60
58.000	182.00	20755.00	250000.00	1163.02	27.62	1135.40	11.06	9.20

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
60.000	185.00	20940.00	215000.00	1160.87	25.27	1135.60	10.47	9.38
60.000	185.00	20940.00	250000.00	1163.23	27.63	1135.60	10.94	9.00
62.000	180.00	21120.00	215000.00	1161.07	25.27	1135.80	10.35	9.17
62.000	180.00	21120.00	250000.00	1163.43	27.63	1135.80	10.83	8.81
64.000	180.00	21300.00	215000.00	1161.28	25.28	1136.00	10.23	8.93
64.000	180.00	21300.00	250000.00	1163.63	27.63	1136.00	10.71	8.59
66.000	180.00	21480.00	215000.00	1161.45	25.15	1136.30	10.20	8.93
66.000	180.00	21480.00	250000.00	1163.80	27.50	1136.30	10.67	8.57
68.000	185.00	21665.00	215000.00	1161.64	25.14	1136.50	10.12	8.78
68.000	185.00	21665.00	250000.00	1163.98	27.48	1136.50	10.59	8.44
69.300	108.00	21773.00	215000.00	1161.76	25.16	1136.60	10.03	8.61
69.300	108.00	21773.00	250000.00	1164.10	27.50	1136.60	10.50	8.29
70.300	92.00	21865.00	215000.00	1161.96	25.21	1136.75	9.98	8.49
70.300	92.00	21865.00	250000.00	1164.31	27.56	1136.75	10.45	8.17
72.000	160.00	22025.00	215000.00	1162.09	25.19	1136.90	9.97	8.49
72.000	160.00	22025.00	250000.00	1164.43	27.53	1136.90	10.46	8.20

74.000	180.00	22205.00	215000.00	1162.24	25.14	1137.10	9.95	8.47
74.000	180.00	22205.00	250000.00	1164.58	27.48	1137.10	10.45	8.21
76.000	180.00	22385.00	215000.00	1162.44	25.14	1137.30	9.79	8.20
76.000	180.00	22385.00	250000.00	1164.78	27.48	1137.30	10.29	7.95
78.000	180.00	22565.00	215000.00	1162.67	25.17	1137.50	9.54	7.76
78.000	180.00	22565.00	250000.00	1165.01	27.51	1137.50	10.02	7.53
80.000	182.00	22747.00	215000.00	1162.89	25.19	1137.70	9.28	7.34
80.000	182.00	22747.00	250000.00	1165.23	27.53	1137.70	9.75	7.12
82.000	180.00	22927.00	215000.00	1163.12	25.22	1137.90	8.95	6.81
82.000	180.00	22927.00	250000.00	1165.46	27.56	1137.90	9.41	6.61
84.000	180.00	23107.00	215000.00	1163.33	25.23	1138.10	8.65	6.34
84.000	180.00	23107.00	250000.00	1165.68	27.58	1138.10	9.09	6.15
86.000	182.00	23289.00	215000.00	1163.54	25.14	1138.40	8.29	5.83
86.000	182.00	23289.00	250000.00	1165.90	27.50	1138.40	8.71	5.65
88.000	180.00	23469.00	215000.00	1163.77	25.17	1138.60	7.81	5.16
88.000	180.00	23469.00	250000.00	1166.14	27.54	1138.60	8.21	5.00
90.000	178.00	23647.00	215000.00	1163.95	25.14	1138.81	7.46	4.70
90.000	178.00	23647.00	250000.00	1166.32	27.51	1138.81	7.83	4.56

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
92.000	178.00	23825.00	215000.00	1164.08	25.08	1139.00	7.23	4.46
92.000	178.00	23825.00	250000.00	1166.46	27.46	1139.00	7.59	4.31
94.000	178.00	24003.00	215000.00	1164.24	25.01	1139.23	6.89	4.00
94.000	178.00	24003.00	250000.00	1166.62	27.39	1139.23	7.24	3.88
96.000	212.00	24215.00	215000.00	1164.33	24.89	1139.44	6.86	4.04
96.000	212.00	24215.00	250000.00	1166.72	27.28	1139.44	7.19	3.89
98.000	245.00	24460.00	215000.00	1164.54	24.89	1139.65	6.32	3.44
98.000	245.00	24460.00	250000.00	1166.93	27.28	1139.65	6.64	3.34
100.000	255.00	24715.00	215000.00	1164.37	24.51	1139.86	8.14	5.83
100.000	255.00	24715.00	250000.00	1166.73	26.87	1139.86	8.56	5.67
102.000	285.00	25000.00	215000.00	1164.32	24.32	1140.00	9.45	8.01
102.000	285.00	25000.00	250000.00	1166.65	26.65	1140.00	9.90	7.69
104.000	230.00	25230.00	215000.00	1164.40	24.20	1140.20	10.01	9.05
104.000	230.00	25230.00	250000.00	1166.71	26.51	1140.20	10.48	8.69
106.000	225.00	25455.00	215000.00	1164.60	24.20	1140.40	9.99	9.03
106.000	225.00	25455.00	250000.00	1166.91	26.51	1140.40	10.47	8.69
108.000	225.00	25680.00	215000.00	1164.99	24.29	1140.70	9.39	7.89
108.000	225.00	25680.00	250000.00	1167.30	26.60	1140.70	9.85	7.62
110.000	228.00	25908.00	215000.00	1164.77	23.87	1140.90	11.33	12.27
110.000	228.00	25908.00	250000.00	1167.04	26.14	1140.90	11.86	11.87
112.000	212.00	26120.00	215000.00	1164.99	23.89	1141.10	11.54	12.75
112.000	212.00	26120.00	250000.00	1167.24	26.14	1141.10	12.09	12.35

114.000	200.00	26320.00	215000.00	1165.39	24.08	1141.30	11.14	11.72
114.000	200.00	26320.00	250000.00	1167.64	26.34	1141.30	11.68	11.39
116.000	202.00	26522.00	215000.00	1165.90	24.40	1141.50	10.31	9.82
116.000	202.00	26522.00	250000.00	1168.18	26.68	1141.50	10.82	9.56
118.000	205.00	26727.00	215000.00	1166.32	24.62	1141.70	9.63	8.42
118.000	205.00	26727.00	250000.00	1168.61	26.91	1141.70	10.11	8.21
119.800	190.00	26917.00	215000.00	1166.57	24.67	1141.90	9.34	7.88
119.800	190.00	26917.00	250000.00	1168.86	26.96	1141.90	9.81	7.69
120.420	50.00	26967.00	215000.00	1166.57	24.57	1142.00	9.51	8.21
120.420	50.00	26967.00	250000.00	1168.87	26.87	1142.00	9.99	8.01
* 120.500	8.00	26975.00	215000.00	1165.90	18.90	1147.00	12.39	19.85
* 120.500	8.00	26975.00	250000.00	1168.24	21.24	1147.00	12.61	17.46

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SECNO	XLCH	CUMDS	Q	CWSEL	DEPTH	ELMIN	VCH	10*KS
122.000	152.00	27127.00	215000.00	1166.15	19.05	1147.10	12.59	20.35
122.000	152.00	27127.00	250000.00	1168.44	21.34	1147.10	12.86	18.12
122.650	65.00	27192.00	215000.00	1166.27	19.07	1147.20	12.66	20.70
122.650	65.00	27192.00	250000.00	1168.54	21.34	1147.20	12.93	18.41
123.550	90.00	27282.00	215000.00	1166.93	19.62	1147.31	12.00	17.61
123.550	90.00	27282.00	250000.00	1169.18	21.87	1147.31	12.34	15.93
124.000	45.00	27327.00	215000.00	1167.01	19.71	1147.30	11.99	17.60
124.000	45.00	27327.00	250000.00	1169.26	21.96	1147.30	12.33	15.98
126.000	200.00	27527.00	215000.00	1167.72	20.17	1147.55	10.99	14.24
126.000	200.00	27527.00	250000.00	1169.98	22.43	1147.55	11.28	12.92
128.000	200.00	27727.00	215000.00	1167.94	20.24	1147.70	11.31	15.77
128.000	200.00	27727.00	250000.00	1170.18	22.48	1147.70	11.56	14.28

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SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 120.500 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 120.500 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

**Appendix D: Degradation Depth as Limited by
Bed Armoring Computations**



Depth of Degradation Limited by Armoring

Project: RIO SALADO

By: D. Dust/H. Allen

Depth of Channel Bed Armoring due to Flows of
Different Return Periods

Date: March, 1996

Project #: 111253

Procedures and Equations from:

Computing Degradation and Local Scour, BuRec report, 1984
- Shield's criteria

Technical Data Notebook (TDN) for
Salt River Channelization Floodplain Delineation Study, SPRR Bridge to McClintock Dr. Bridge, Nov. 1993

Scour Depth, $y_d = y_a((1/p_c)-1)$

y_d = depth of scour, ft.

y_a = depth of armor layer, ft

= Constant * D_a , D_a is the diameter of the armor material

- the constant is the number of layers of D_a -sized rock that make up the armor layer

p_c = Fraction of original bed material larger (coarser) than D_a

$D_a = ((SF * \tau_{max}) / (5360 * n^2))^{1.5}$ (derivation in TDN)

D_a is in feet. Multiply by 304.8 to convert to millimeters.

SF = Safety Factor = 1.5 for Q100

$\tau_{max} = \gamma_w * \text{depth} * \text{EGL slope}$, lb/ft²

$\gamma_w = 62.4$ lb/ft³

depth = max. depth of water

EGL slope from the HEC-2 output

n = Manning's n for channel

Input data from HEC-2 output RS96GSC.O



Depth of Degradation Limited by Armoring

Project: RIO SALADO
 Depth of Channel Bed Armoring due to Flows of
 Different Return Periods

By: D. Dust/H. Allen
 Date: March, 1996
 Project #: 111253

Constants

Safety Factor, FS = 1.5
 Channel n = 0.035
 $\gamma_w = 62.4$ lb/ft³
 # of D_a diameters for armor layer thickness, $y_a = 3$

Grain-Size Distribution (reversed for calculations)

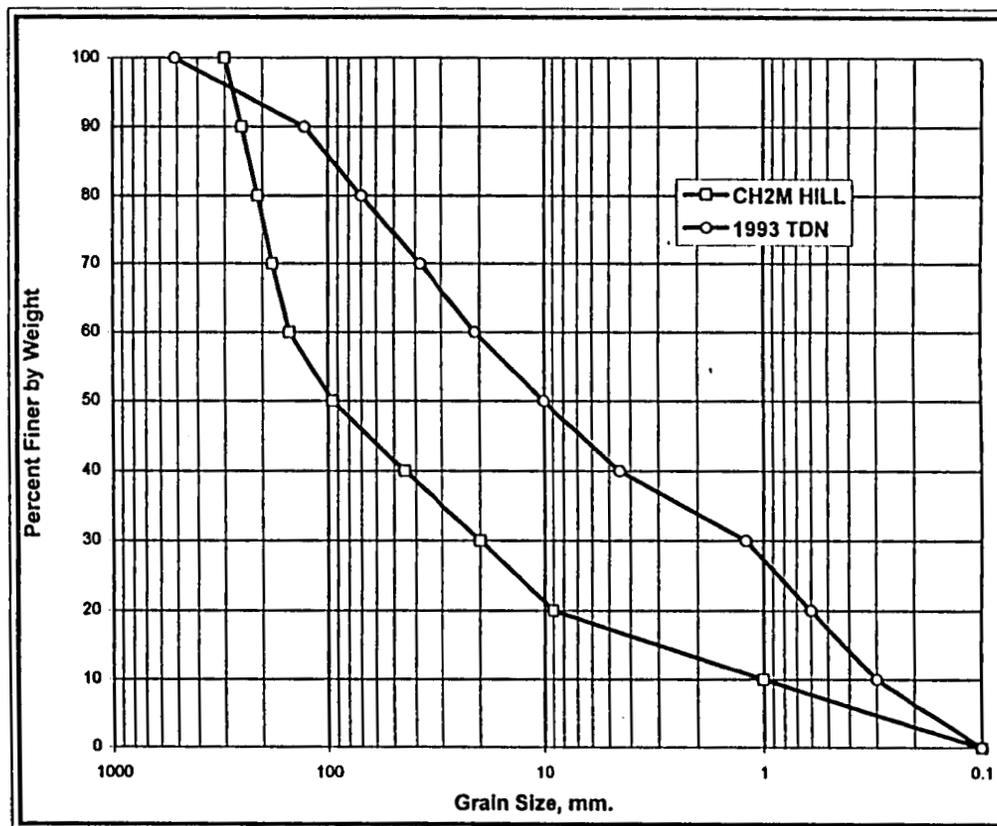
Grain Size, mm.	% Finer	Fraction Finer	Fraction Coarser
0.1	0	0	1
1	10	0.1	0.9
9	20	0.2	0.8
20	30	0.3	0.7
45	40	0.4	0.6
95	50	0.5	0.5
150	60	0.6	0.4
180	70	0.7	0.3
210	80	0.8	0.2
250	90	0.9	0.1
300	100	1	0

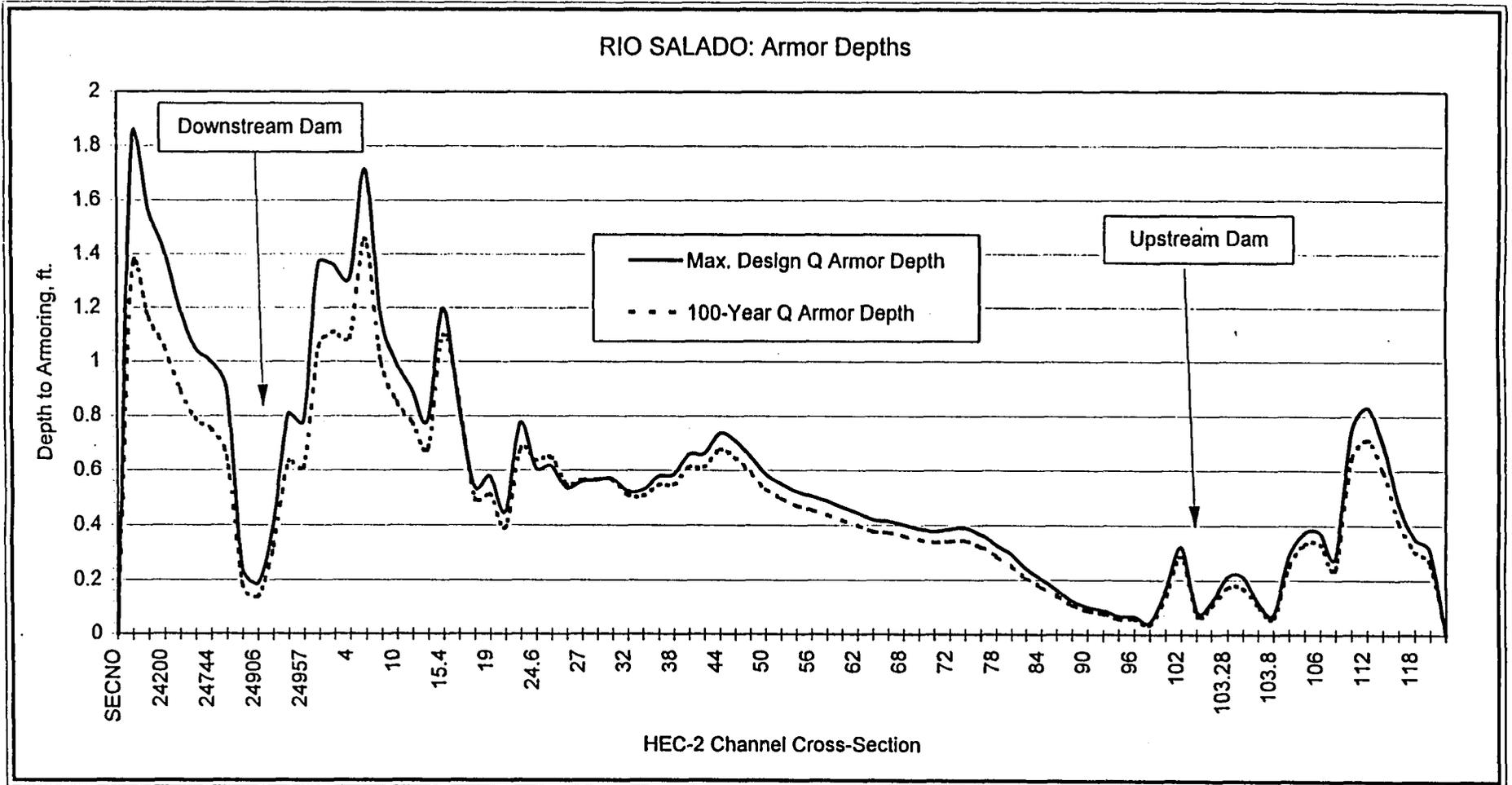
Distributions:

	CH2M HILL	1993 TDN
0.1	0.1	0.1
1	0.3	0.3
9	0.6	0.6
20	1.2	1.2
45	4.5	4.5
95	10	10
150	21	21
180	38	38
210	70	70
250	128	128
300	512	512

Hydrology

Discharge, cfs	Return Period, years
215000	100
250000	SPF





CH2M Hill grain-size distribution

SECNO	Discharge, cfs	depth, ft.	HEC-2 EGL, 10*KS		τmax	Da, mm.	check	lower	upper	fraction coarser	100-Year Q Armor Depth ft.	Max. Design Q Armor Depth ft.	
			bound diameter, mm.	lower bound fraction				bound diameter mm.	upper bound fraction				
1	23800	210000	20.74	17.9	0.001790	2.32	117.3	95.0	0.5	150.0	0.4	0.46	1.4
2	24000	210000	20.82	16.86	0.001686	2.19	107.9	95.0	0.5	150.0	0.4	0.48	1.2
3	24200	210000	20.89	16.19	0.001619	2.11	102.0	95.0	0.5	150.0	0.4	0.49	1.1
4	24400	210000	20.95	15.15	0.001515	1.98	92.8	45.0	0.6	95.0	0.5	0.50	0.9
5	24600	210000	21.02	14.38	0.001438	1.89	86.2	45.0	0.6	95.0	0.5	0.52	0.8
6	24744	210000	20.93	14.15	0.001415	1.85	83.6	45.0	0.6	95.0	0.5	0.52	0.8
7	24841	210000	21.21	13.17	0.001317	1.74	76.6	45.0	0.6	95.0	0.5	0.54	0.7
8	24871	210000	21.17	7.63	0.000763	1.01	33.7	20.0	0.7	45.0	0.6	0.65	0.2
9	24906	210000	21.12	6.82	0.000682	0.90	28.4	20.0	0.7	45.0	0.6	0.67	0.1
10	24907	210000	18	11.39	0.001139	1.28	48.2	45.0	0.6	95.0	0.5	0.59	0.3
11	24918	210000	17.78	15.54	0.001554	1.72	75.3	45.0	0.6	95.0	0.5	0.54	0.6
12	24957	210000	17.9	15.2	0.001520	1.70	73.6	45.0	0.6	95.0	0.5	0.54	0.6
13	24968	210000	18.92	17.87	0.001787	2.11	102.0	95.0	0.5	150.0	0.4	0.49	1.1
14	2	210000	19.17	17.99	0.001799	2.15	105.1	95.0	0.5	150.0	0.4	0.48	1.1
15	4	210000	19.55	17.51	0.001751	2.14	103.9	95.0	0.5	150.0	0.4	0.48	1.1
16	6	210000	19.74	19.27	0.001927	2.37	121.7	95.0	0.5	150.0	0.4	0.45	1.5
17	8	210000	20.48	16.14	0.001614	2.06	98.6	95.0	0.5	150.0	0.4	0.49	1.0
18	10	210000	20.93	14.87	0.001487	1.94	90.1	45.0	0.6	95.0	0.5	0.51	0.9
19	12	210000	21.31	14.07	0.001407	1.87	85.2	45.0	0.6	95.0	0.5	0.52	0.8
20	14	210000	21.64	13.18	0.001318	1.78	79.0	45.0	0.6	95.0	0.5	0.53	0.7
21	15.4	210000	21.63	15.88	0.001588	2.14	104.4	95.0	0.5	150.0	0.4	0.48	1.1
22	15.6	215000	22.58	13.9	0.001390	1.96	91.2	45.0	0.6	95.0	0.5	0.51	0.9
23	17.3	215000	23.24	10.72	0.001072	1.55	64.5	45.0	0.6	95.0	0.5	0.56	0.5
24	19	215000	23.41	10.8	0.001080	1.58	66.0	45.0	0.6	95.0	0.5	0.56	0.5
25	21.5	215000	23.81	9.43	0.000943	1.40	55.2	45.0	0.6	95.0	0.5	0.58	0.4
26	24	215000	23.69	12.01	0.001201	1.78	78.7	45.0	0.6	95.0	0.5	0.53	0.7
27	24.6	215000	24.1	11.5	0.001150	1.73	75.7	45.0	0.6	95.0	0.5	0.54	0.6
28	26	215000	24.22	11.52	0.001152	1.74	76.5	45.0	0.6	95.0	0.5	0.54	0.6
29	26.45	215000	24.77	10.52	0.001052	1.63	69.0	45.0	0.6	95.0	0.5	0.55	0.6
30	27	215000	24.82	10.62	0.001062	1.64	70.2	45.0	0.6	95.0	0.5	0.55	0.6
31	28	215000	24.89	10.61	0.001061	1.65	70.4	45.0	0.6	95.0	0.5	0.55	0.6
32	30	215000	24.91	10.59	0.001059	1.65	70.3	45.0	0.6	95.0	0.5	0.55	0.6
33	32	215000	24.98	10.1	0.001010	1.57	65.7	45.0	0.6	95.0	0.5	0.56	0.5
34	34	215000	24.98	10.07	0.001007	1.57	65.5	45.0	0.6	95.0	0.5	0.56	0.5
35	36	215000	24.96	10.42	0.001042	1.62	68.8	45.0	0.6	95.0	0.5	0.55	0.5
36	38	215000	25	10.41	0.001041	1.62	68.9	45.0	0.6	95.0	0.5	0.55	0.5

CH2M Hill grain-size distribution

SECNO	Discharge, cfs	depth, ft.	HEC-2		Da, mm.	check	lower	upper	fraction coarser	100-Year	Max.		
			EGL, 10*KS	EGL Slope			bound diameter, mm.	lower bound fraction		bound diameter mm.	upper bound fraction	Q Armor Depth ft.	Design Q Armor Depth ft.
37	40	215000	24.99	10.9	0.001090	1.70	73.8	45.0	0.6	95.0	0.5	0.54	0.6
38	42	215000	25.04	10.89	0.001089	1.70	73.9	45.0	0.6	95.0	0.5	0.54	0.6
39	44	215000	24.94	11.39	0.001139	1.77	78.5	45.0	0.6	95.0	0.5	0.53	0.7
40	46	215000	25.03	11.15	0.001115	1.74	76.5	45.0	0.6	95.0	0.5	0.54	0.6
41	48	215000	25.16	10.68	0.001068	1.68	72.3	45.0	0.6	95.0	0.5	0.55	0.6
42	50	215000	25.26	10.17	0.001017	1.60	67.5	45.0	0.6	95.0	0.5	0.55	0.5
43	52	215000	25.3	9.87	0.000987	1.56	64.7	45.0	0.6	95.0	0.5	0.56	0.5
44	54	215000	25.32	9.63	0.000963	1.52	62.5	45.0	0.6	95.0	0.5	0.57	0.5
45	56	215000	25.32	9.48	0.000948	1.50	61.0	45.0	0.6	95.0	0.5	0.57	0.5
46	58	215000	25.32	9.32	0.000932	1.47	59.5	45.0	0.6	95.0	0.5	0.57	0.4
47	60	215000	25.33	9.12	0.000912	1.44	57.6	45.0	0.6	95.0	0.5	0.57	0.4
48	62	215000	25.33	8.93	0.000893	1.41	55.8	45.0	0.6	95.0	0.5	0.58	0.4
49	64	215000	25.33	8.7	0.000870	1.38	53.7	45.0	0.6	95.0	0.5	0.58	0.4
50	66	215000	25.19	8.71	0.000871	1.37	53.3	45.0	0.6	95.0	0.5	0.58	0.4
51	68	215000	25.18	8.57	0.000857	1.35	52.0	45.0	0.6	95.0	0.5	0.59	0.4
52	69.3	215000	25.2	8.42	0.000842	1.32	50.7	45.0	0.6	95.0	0.5	0.59	0.3
53	70.3	215000	25.24	8.31	0.000831	1.31	49.8	45.0	0.6	95.0	0.5	0.59	0.3
54	72	215000	25.21	8.35	0.000835	1.31	50.1	45.0	0.6	95.0	0.5	0.59	0.3
55	74	215000	25.16	8.39	0.000839	1.32	50.3	45.0	0.6	95.0	0.5	0.59	0.3
56	76	215000	25.15	8.14	0.000814	1.28	48.1	45.0	0.6	95.0	0.5	0.59	0.3
57	78	215000	25.18	7.71	0.000771	1.21	44.4	20.0	0.7	45.0	0.6	0.60	0.3
58	80	215000	25.19	7.31	0.000731	1.15	41.0	20.0	0.7	45.0	0.6	0.62	0.3
59	82	215000	25.22	6.79	0.000679	1.07	36.8	20.0	0.7	45.0	0.6	0.63	0.2
60	84	215000	25.22	6.34	0.000634	1.00	33.2	20.0	0.7	45.0	0.6	0.65	0.2
61	86	215000	25.14	5.81	0.000581	0.91	29.0	20.0	0.7	45.0	0.6	0.66	0.1
62	88	215000	25.17	5.13	0.000513	0.81	24.1	20.0	0.7	45.0	0.6	0.68	0.1
63	90	215000	25.13	4.68	0.000468	0.73	20.9	20.0	0.7	45.0	0.6	0.70	0.1
64	92	215000	25.08	4.44	0.000444	0.69	19.3	9.0	0.8	20.0	0.7	0.71	0.1
65	94	215000	25.01	3.99	0.000399	0.62	16.4	9.0	0.8	20.0	0.7	0.73	0.1
66	96	215000	24.89	4.01	0.000401	0.62	16.4	9.0	0.8	20.0	0.7	0.73	0.1
67	98	215000	24.89	3.46	0.000346	0.54	13.1	9.0	0.8	20.0	0.7	0.76	0.0
68	100	215000	24.51	5.96	0.000596	0.91	29.0	20.0	0.7	45.0	0.6	0.66	0.1
69	102	215000	24.32	7.97	0.000797	1.21	44.3	20.0	0.7	45.0	0.6	0.60	0.3
70	103	215000	22.41	4.83	0.000483	0.68	18.5	9.0	0.8	20.0	0.7	0.71	0.1
71	103.22	215000	20.79	6.18	0.000618	0.80	23.9	20.0	0.7	45.0	0.6	0.68	0.1
72	103.28	215000	20.74	7.62	0.000762	0.99	32.6	20.0	0.7	45.0	0.6	0.65	0.2
73	103.46	215000	20.75	7.61	0.000761	0.99	32.6	20.0	0.7	45.0	0.6	0.65	0.2

CH2M Hill grain-size distribution

SECNO	Discharge, cfs	depth, ft.	HEC-2		Da, mm.	check	lower	upper		fraction coarser	100-Year	Max.		
			EGL, 10*KS	EGL Slope			bound diameter, mm.	lower bound fraction	bound diameter mm.		upper bound fraction	Q Armor Depth ft.	Design Q Armor Depth ft.	
74	103.52	215000	20.95	6.03	0.000603	0.79	23.3	20.0	0.7	45.0	0.6	0.69	0.1	
75	103.8	215000	22.84	4.54	0.000454	0.65	17.3	9.0	0.8	20.0	0.7	0.72	0.1	
76	103.81	215000	24.8	7.44	0.000744	1.15	41.1	20.0	0.7	45.0	0.6	0.62	0.3	
77	104	215000	24.68	8.41	0.000841	1.30	49.1	45.0	0.6	95.0	0.5	0.59	0.3	
78	106	215000	24.67	8.41	0.000841	1.29	49.0	45.0	0.6	95.0	0.5	0.59	0.3	
79	108	215000	24.73	7.38	0.000738	1.14	40.4	20.0	0.7	45.0	0.6	0.62	0.2	
80	110	215000	24.32	11.46	0.001146	1.74	76.3	45.0	0.6	95.0	0.5	0.54	0.6	
81	112	215000	24.31	11.93	0.001193	1.81	81.0	45.0	0.6	95.0	0.5	0.53	0.7	
82	114	215000	24.49	11.02	0.001102	1.68	72.7	45.0	0.6	95.0	0.5	0.54	0.6	
83	116	215000	24.77	9.28	0.000928	1.43	57.2	45.0	0.6	95.0	0.5	0.58	0.4	
84	118	215000	24.97	8	0.000800	1.25	46.3	45.0	0.6	95.0	0.5	0.60	0.3	
85	119.8	215000	25.01	7.5	0.000750	1.17	42.1	20.0	0.7	45.0	0.6	0.61	0.3	
1	23800	250000	22.77	18.06	0.001806	2.57	136.8	95.0	0.5	150.0	0.4	0.42		1.8
2	24000	250000	22.86	17.07	0.001707	2.43	126.5	95.0	0.5	150.0	0.4	0.44		1.6
3	24200	250000	22.93	16.43	0.001643	2.35	120.0	95.0	0.5	150.0	0.4	0.45		1.4
4	24400	250000	23	15.45	0.001545	2.22	109.9	95.0	0.5	150.0	0.4	0.47		1.2
5	24600	250000	23.1	14.63	0.001463	2.11	101.9	95.0	0.5	150.0	0.4	0.49		1.1
6	24744	250000	23	14.41	0.001441	2.07	99.0	95.0	0.5	150.0	0.4	0.49		1.0
7	24841	250000	23.28	13.65	0.001365	1.98	92.9	45.0	0.6	95.0	0.5	0.50		0.9
8	24871	250000	23.23	7.83	0.000783	1.13	40.2	20.0	0.7	45.0	0.6	0.62		0.2
9	24906	250000	23.19	7.05	0.000705	1.02	34.3	20.0	0.7	45.0	0.6	0.64		0.2
10	24907	250000	20.06	11.22	0.001122	1.40	55.4	45.0	0.6	95.0	0.5	0.58		0.4
11	24918	250000	19.83	15.36	0.001536	1.90	87.2	45.0	0.6	95.0	0.5	0.52		0.8
12	24957	250000	19.95	15.06	0.001506	1.87	85.4	45.0	0.6	95.0	0.5	0.52		0.8
13	24968	250000	21.04	17.68	0.001768	2.32	117.7	95.0	0.5	150.0	0.4	0.46		1.4
14	2	250000	21.35	17.39	0.001739	2.32	117.4	95.0	0.5	150.0	0.4	0.46		1.4
15	4	250000	21.74	16.85	0.001685	2.29	115.0	95.0	0.5	150.0	0.4	0.46		1.3
16	6	250000	21.94	18.34	0.001834	2.51	132.4	95.0	0.5	150.0	0.4	0.43		1.7
17	8	250000	22.67	15.51	0.001551	2.19	108.2	95.0	0.5	150.0	0.4	0.48		1.2
18	10	250000	23.13	14.29	0.001429	2.06	98.6	95.0	0.5	150.0	0.4	0.49		1.0
19	12	250000	23.53	13.48	0.001348	1.98	92.7	45.0	0.6	95.0	0.5	0.50		0.9
20	14	250000	23.86	12.63	0.001263	1.88	85.8	45.0	0.6	95.0	0.5	0.52		0.8
21	15.4	250000	23.87	14.86	0.001486	2.21	109.6	95.0	0.5	150.0	0.4	0.47		1.2
22	15.6	250000	24.82	12.53	0.001253	1.94	90.0	45.0	0.6	95.0	0.5	0.51		0.9
23	17.3	250000	25.37	10.18	0.001018	1.61	68.1	45.0	0.6	95.0	0.5	0.55		0.5

CH2M Hill grain-size distribution

SECNO	Discharge, cfs	depth, ft.	HEC-2		Da, mm.	check	lower	upper		fraction coarser	100-Year	Max.	
			EGL, 10*KS	EGL Slope			bound diameter, mm.	lower bound fraction	bound diameter mm.		upper bound fraction	Q Armor Depth ft.	Design Q Armor Depth ft.
24	19	250000	25.5	10.44	0.001044	1.66	71.3	45.0	0.6	95.0	0.5	0.55	0.6
25	21.5	250000	25.89	9.21	0.000921	1.49	60.4	45.0	0.6	95.0	0.5	0.57	0.4
26	24	250000	25.76	11.63	0.001163	1.87	85.1	45.0	0.6	95.0	0.5	0.52	0.8
27	24.6	250000	26.8	10.15	0.001015	1.70	73.6	45.0	0.6	95.0	0.5	0.54	0.6
28	26	250000	26.9	10.16	0.001016	1.71	74.1	45.0	0.6	95.0	0.5	0.54	0.6
29	26.45	250000	27.41	9.41	0.000941	1.61	68.0	45.0	0.6	95.0	0.5	0.55	0.5
30	27	250000	27.45	9.56	0.000956	1.64	69.7	45.0	0.6	95.0	0.5	0.55	0.6
31	28	250000	27.49	9.59	0.000959	1.65	70.2	45.0	0.6	95.0	0.5	0.55	0.6
32	30	250000	27.48	9.62	0.000962	1.65	70.5	45.0	0.6	95.0	0.5	0.55	0.6
33	32	250000	27.53	9.27	0.000927	1.59	66.9	45.0	0.6	95.0	0.5	0.56	0.5
34	34	250000	27.5	9.31	0.000931	1.60	67.2	45.0	0.6	95.0	0.5	0.56	0.5
35	36	250000	27.46	9.69	0.000969	1.66	71.2	45.0	0.6	95.0	0.5	0.55	0.6
36	38	250000	27.47	9.73	0.000973	1.67	71.7	45.0	0.6	95.0	0.5	0.55	0.6
37	40	250000	27.44	10.23	0.001023	1.75	77.2	45.0	0.6	95.0	0.5	0.54	0.7
38	42	250000	27.47	10.25	0.001025	1.76	77.5	45.0	0.6	95.0	0.5	0.53	0.7
39	44	250000	27.35	10.74	0.001074	1.83	82.6	45.0	0.6	95.0	0.5	0.52	0.7
40	46	250000	27.42	10.56	0.001056	1.81	80.8	45.0	0.6	95.0	0.5	0.53	0.7
41	48	250000	27.54	10.16	0.001016	1.75	76.8	45.0	0.6	95.0	0.5	0.54	0.7
42	50	250000	27.63	9.69	0.000969	1.67	71.9	45.0	0.6	95.0	0.5	0.55	0.6
43	52	250000	27.66	9.42	0.000942	1.63	69.0	45.0	0.6	95.0	0.5	0.55	0.6
44	54	250000	27.67	9.21	0.000921	1.59	66.7	45.0	0.6	95.0	0.5	0.56	0.5
45	56	250000	27.67	9.08	0.000908	1.57	65.3	45.0	0.6	95.0	0.5	0.56	0.5
46	58	250000	27.67	8.94	0.000894	1.54	63.8	45.0	0.6	95.0	0.5	0.56	0.5
47	60	250000	27.67	8.75	0.000875	1.51	61.8	45.0	0.6	95.0	0.5	0.57	0.5
48	62	250000	27.66	8.58	0.000858	1.48	60.0	45.0	0.6	95.0	0.5	0.57	0.4
49	64	250000	27.66	8.37	0.000837	1.44	57.8	45.0	0.6	95.0	0.5	0.57	0.4
50	66	250000	27.52	8.36	0.000836	1.44	57.2	45.0	0.6	95.0	0.5	0.58	0.4
51	68	250000	27.5	8.25	0.000825	1.42	56.1	45.0	0.6	95.0	0.5	0.58	0.4
52	69.3	250000	27.52	8.1	0.000810	1.39	54.6	45.0	0.6	95.0	0.5	0.58	0.4
53	70.3	250000	27.57	7.99	0.000799	1.37	53.6	45.0	0.6	95.0	0.5	0.58	0.4
54	72	250000	27.53	8.08	0.000808	1.39	54.4	45.0	0.6	95.0	0.5	0.58	0.4
55	74	250000	27.47	8.15	0.000815	1.40	55.0	45.0	0.6	95.0	0.5	0.58	0.4
56	76	250000	27.47	7.91	0.000791	1.36	52.5	45.0	0.6	95.0	0.5	0.58	0.4
57	78	250000	27.49	7.5	0.000750	1.29	48.6	45.0	0.6	95.0	0.5	0.59	0.3
58	80	250000	27.51	7.11	0.000711	1.22	44.9	20.0	0.7	45.0	0.6	0.60	0.3
59	82	250000	27.54	6.61	0.000661	1.14	40.3	20.0	0.7	45.0	0.6	0.62	0.2
60	84	250000	27.55	6.16	0.000616	1.06	36.3	20.0	0.7	45.0	0.6	0.63	0.2

CH2M Hill grain-size distribution

SECNO	Discharge, cfs	depth, ft.	HEC-2		Da, mm.	check	lower	upper		fraction coarser	100-Year	Max.	
			EGL, 10*KS	EGL Slope			bound diameter, mm.	lower bound fraction	bound diameter mm.		upper bound fraction	Q Armor Depth ft.	Design Q Armor Depth ft.
61	86	250000	27.48	5.64	0.000564	0.97	31.7	20.0	0.7	45.0	0.6	0.65	0.2
62	88	250000	27.52	4.98	0.000498	0.86	26.3	20.0	0.7	45.0	0.6	0.67	0.1
63	90	250000	27.49	4.54	0.000454	0.78	22.9	20.0	0.7	45.0	0.6	0.69	0.1
64	92	250000	27.44	4.3	0.000430	0.74	21.0	20.0	0.7	45.0	0.6	0.70	0.1
65	94	250000	27.37	3.87	0.000387	0.66	17.9	9.0	0.8	20.0	0.7	0.72	0.1
66	96	250000	27.26	3.86	0.000386	0.66	17.7	9.0	0.8	20.0	0.7	0.72	0.1
67	98	250000	27.26	3.37	0.000337	0.57	14.4	9.0	0.8	20.0	0.7	0.75	0.0
68	100	250000	26.84	5.83	0.000583	0.98	32.1	20.0	0.7	45.0	0.6	0.65	0.2
69	102	250000	26.64	7.66	0.000766	1.27	47.8	45.0	0.6	95.0	0.5	0.59	0.3
70	103	250000	24.7	4.71	0.000471	0.73	20.6	20.0	0.7	45.0	0.6	0.70	0.1
71	103.22	250000	23.09	5.87	0.000587	0.85	25.9	20.0	0.7	45.0	0.6	0.68	0.1
72	103.28	250000	23.03	7.48	0.000748	1.07	37.1	20.0	0.7	45.0	0.6	0.63	0.2
73	103.46	250000	23.05	7.47	0.000747	1.07	37.1	20.0	0.7	45.0	0.6	0.63	0.2
74	103.52	250000	23.25	5.74	0.000574	0.83	25.3	20.0	0.7	45.0	0.6	0.68	0.1
75	103.8	250000	25.13	4.44	0.000444	0.70	19.3	9.0	0.8	20.0	0.7	0.71	0.1
76	103.81	250000	27.15	7.18	0.000718	1.22	44.6	20.0	0.7	45.0	0.6	0.60	0.3
77	104	250000	27.01	8.11	0.000811	1.37	53.2	45.0	0.6	95.0	0.5	0.58	0.4
78	106	250000	26.99	8.13	0.000813	1.37	53.3	45.0	0.6	95.0	0.5	0.58	0.4
79	108	250000	27.06	7.15	0.000715	1.21	44.1	20.0	0.7	45.0	0.6	0.60	0.3
80	110	250000	26.61	11.12	0.001112	1.85	83.5	45.0	0.6	95.0	0.5	0.52	0.7
81	112	250000	26.59	11.6	0.001160	1.92	88.9	45.0	0.6	95.0	0.5	0.51	0.8
82	114	250000	26.76	10.74	0.001074	1.79	79.9	45.0	0.6	95.0	0.5	0.53	0.7
83	116	250000	27.07	9.06	0.000906	1.53	63.0	45.0	0.6	95.0	0.5	0.56	0.5
84	118	250000	27.28	7.81	0.000781	1.33	51.0	45.0	0.6	95.0	0.5	0.59	0.4
85	119.8	250000	27.33	7.33	0.000733	1.25	46.5	45.0	0.6	95.0	0.5	0.60	0.3

**Appendix E: Local Scour Computations for
Cut-off Walls at the Dam Structures**

Project: RIO SALADO

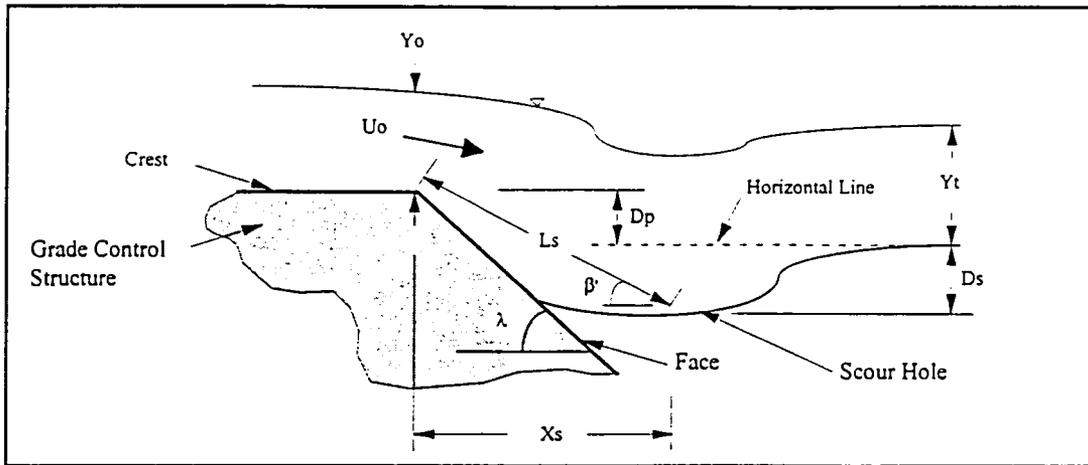
By: H. Allen

Scour downstream of the apron below the d-s

Date: March, 1996

dam using CH2M Hill D50 + Q100 HEC-2

Project #: 111253



Equations from "Scour Downstream of Grade-Control Structures", N. E. Bormann and P. Y. Julien, J. of Hydraulic Engineering, Vol. 117, No. 5

Data from HEC-2 output RS96GSC.O, cross-sections 24866 and 24871
100-year flood

INPUT:

Constants

Gravitational Accel., $g = 32.2 \text{ ft/s}^2$
 Diffusion Coeff., $C_d = 1.8$
 Local Friction Equ.:
 Exponent $x = 0.5$
 Coefficient $B = 2.0$

Water/Flow

Jet Thickness, $Y_o = 17.06 \text{ ft.}$
 Jet Velocity, $U_o = 14.94 \text{ ft./s.}$
 Tailwater Depth, $Y_t = 21.27 \text{ ft.}$

Channel Material

Specific Gravity, $G_s = 2.65$
 Submerged angle of repose, $\phi = 25 \text{ degrees}$
 Effective diameter, $d_s^{(1)} = 95 \text{ mm.}$

Structure

Drop Height, $D_p = 3.5 \text{ ft.}$ (see note 2)
 Face Angle, $\lambda = 90 \text{ degrees}$

CALCULATIONS:

Jet Angle Near Bed, $\beta' = \frac{0.395}{22.6} \text{ radians}$
 (= 22.6 degrees)
 Diffused Length of Jet, $L_s = 32.8 \text{ ft.}$
 Scour Length, $X_s = 30.3 \text{ ft.}$
 Equilibrium Scour Depth, $D_s = 9.1 \text{ ft.}$

Notes

- (1) N. Bormann recommends using D84 if armoring can occur, otherwise D50 is often used.
- (2) Drop = difference between lip of apron and channel invert (ELMIN) after degradation.

Project: RIO SALADO

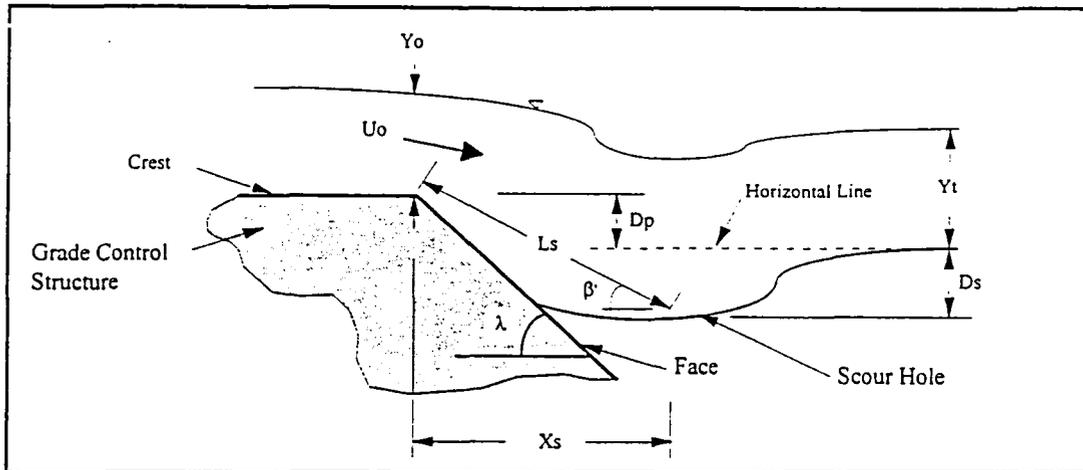
By: H. Allen

Scour downstream of the apron below the d-s

Date: March, 1996

dam using CH2M Hill D50 + Max. Des. Q HEC-2

Project #: 111253



Equations from "Scour Downstream of Grade-Control Structures", N. E. Bormann and P. Y. Julien, J. of Hydraulic Engineering, Vol. 117, No. 5

Data from HEC-2 output RS96GSC.O, cross-sections 24866 and 24871

Maximum Design Discharge

INPUT:

Constants

Gravitational Accel., $g = 32.2 \text{ ft/s}^2$

Diffusion Coeff., $C_d = 1.8$

Local Friction Equ.:

Exponent $x = 0.5$

Coefficient $B = 2.0$

Water/Flow

Jet Thickness, $Y_o = 19.11 \text{ ft.}$

Jet Velocity, $U_o = 15.74 \text{ ft./s.}$

Tailwater Depth, $Y_t = 23.35 \text{ ft.}$

Channel Material

Specific Gravity, $G_s = 2.65$

Submerged angle of repose, $\phi = 25 \text{ degrees}$

Effective diameter, $d_s^{(1)} = 95 \text{ mm.}$

Structure

Drop Height, $D_p = 3.5 \text{ ft. (see note 2)}$

Face Angle, $\lambda = 90 \text{ degrees}$

CALCULATIONS:

Jet Angle Near Bed, $\beta' = 0.390 \text{ radians}$

(= 22.3 degrees)

Diffused Length of Jet, $L_s = 38.3 \text{ ft.}$

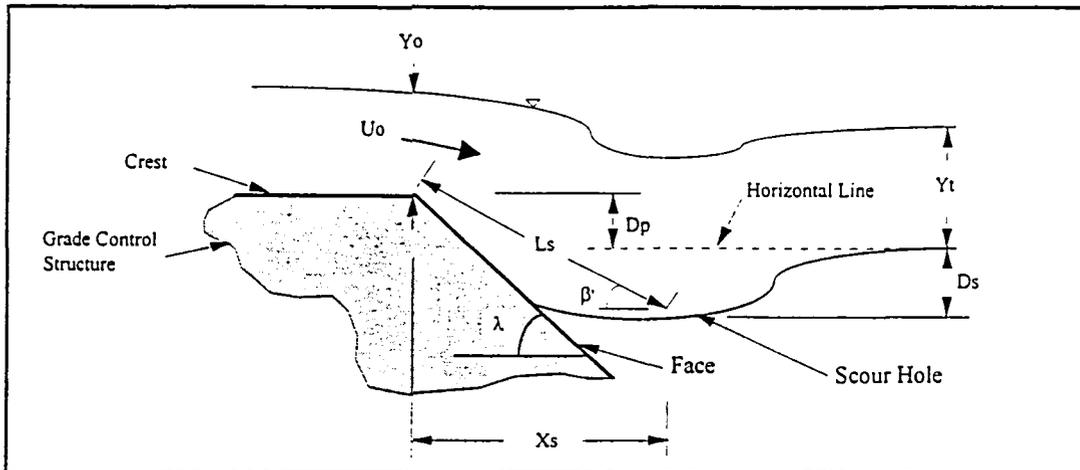
Scour Length, $X_s = 35.4 \text{ ft.}$

Equilibrium Scour Depth, $D_s = 11.1 \text{ ft.}$

Notes:

(1) N. Bormann recommends using D84 if armoring can occur, otherwise D50 is often used.

(2) Drop = difference between lip of apron and channel invert (ELMIN) after degradation.



Equations from "Scour Downstream of Grade-Control Structures", N. E. Bormann and P. Y. Julien, J. of Hydraulic Engineering, Vol. 117, No. 5

Data from HEC-2 output RS96GSC.O, cross-sections 102.0 and 103.0
100-year flood

INPUT:

Constants

Gravitational Accel., $g = 32.2 \text{ ft/s}^2$
 Diffusion Coeff., $C_d = 1.8$
 Local Friction Equ.:
 Exponent $x = 0.5$
 Coefficient $B = 2.0$

Water/Flow

Jet Thickness, $Y_o = 20.62 \text{ ft.}$
 Jet Velocity, $U_o = 11.00 \text{ ft./s.}$
 Tailwater Depth, $Y_t = 25.23 \text{ ft.}$

Channel Material

Specific Gravity, $G_s = 2.65$
 Submerged angle of repose, $\phi = 25 \text{ degrees}$
 Effective diameter, $d_s^{(1)} = 95 \text{ mm.}$

Structure

Drop Height, $D_p = 4.3 \text{ ft.}$ (see note 2)
 Face Angle, $\lambda = 90 \text{ degrees}$

CALCULATIONS:

Jet Angle Near Bed, $\beta' = \frac{0.413}{23.7} \text{ radians}$
 (= $\frac{23.7}{23.7} \text{ degrees}$)
 Diffused Length of Jet, $L_s = \frac{22.2}{22.2} \text{ ft.}$
 Scour Length, $X_s = \frac{20.4}{20.4} \text{ ft.}$
 Equilibrium Scour Depth, $D_s = \frac{4.6}{4.6} \text{ ft.}$

Notes:

- (1) N. Bormann recommends using D84 if armoring can occur, otherwise D50 is often used
- (2) Drop = 2.5 feet from general scour + 1.8 feet difference between lip of apron and channel invert (ELMIN) prior to scour

Project: RIO SALADO

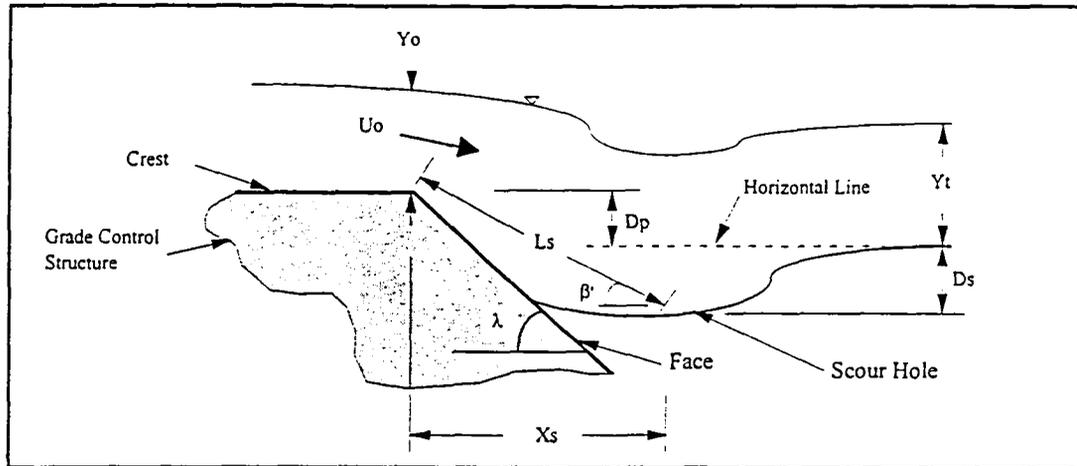
By: H. Allen

Scour downstream of the apron below the u-s

Date: March, 1996

dam using CH2M Hill D50 + Max. Des. Q HEC-2

Project #: 111253



Equations from "Scour Downstream of Grade-Control Structures", N. E. Bormann and P. Y. Julien, J. of Hydraulic Engineering, Vol. 117, No. 5

Data from HEC-2 output RS96GSC.O, cross-sections 102.0 and 103.0
Maximum Design Discharge

INPUT:

Constants

Gravitational Accel., $g = 32.2 \text{ ft/s}^2$
Diffusion Coeff., $C_d = 1.8$

Local Friction Equ.:

Exponent $x = 0.5$
Coefficient $B = 2.0$

Water/Flow

Jet Thickness, $Y_o = 23.06 \text{ ft.}$
Jet Velocity, $U_o = 11.42 \text{ ft./s.}$
Tailwater Depth, $Y_t = 27.68 \text{ ft.}$

Channel Material

Specific Gravity, $G_s = 2.65$
Submerged angle of repose, $\phi = 25 \text{ degrees}$
Effective diameter, $d_s^{(1)} = 95 \text{ mm.}$

Structure

Drop Height, $D_p = 4.3 \text{ ft.}$ (see note 2)
Face Angle, $\lambda = 90 \text{ degrees}$

CALCULATIONS:

Jet Angle Near Bed, $\beta' = 0.409 \text{ radians}$
(= $\frac{23.4}{58}$ degrees)
Diffused Length of Jet, $L_s = 25.3 \text{ ft.}$
Scour Length, $X_s = 23.2 \text{ ft.}$
Equilibrium Scour Depth, $D_s = 5.8 \text{ ft.}$

Notes:

- (1) N. Bormann recommends using D84 if armoring can occur, otherwise D50 is often used
- (2) Drop = 2.5 feet from general scour + 1.3 feet difference between lip of apron and channel invert (ELMIN) prior to scour

SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
24841.000	210000.00	1146.73	21.23	11.41	14802.00	1125.50
24841.000	250000.00	1148.80	23.30	12.33	14802.00	1125.50
24866.000	210000.00	1146.77	21.27	11.39	14827.00	1125.50
24866.000	250000.00	1148.85	23.35	12.31	14827.00	1125.50
24871.000	210000.00	1146.06	17.06	14.94	14832.00	1129.00
24871.000	250000.00	1148.11	19.11	15.74	14832.00	1129.00
24906.000	210000.00	1146.64	17.39	14.02	14867.00	1129.25
24906.000	250000.00	1148.69	19.44	14.87	14867.00	1129.25
* 24907.000	210000.00	1145.75	13.75	17.66	14868.00	1132.00
24907.000	250000.00	1147.85	15.85	18.18	14868.00	1132.00
24918.000	210000.00	1145.12	13.12	19.95	14879.00	1132.00
24918.000	250000.00	1147.26	15.26	20.26	14879.00	1132.00

drop

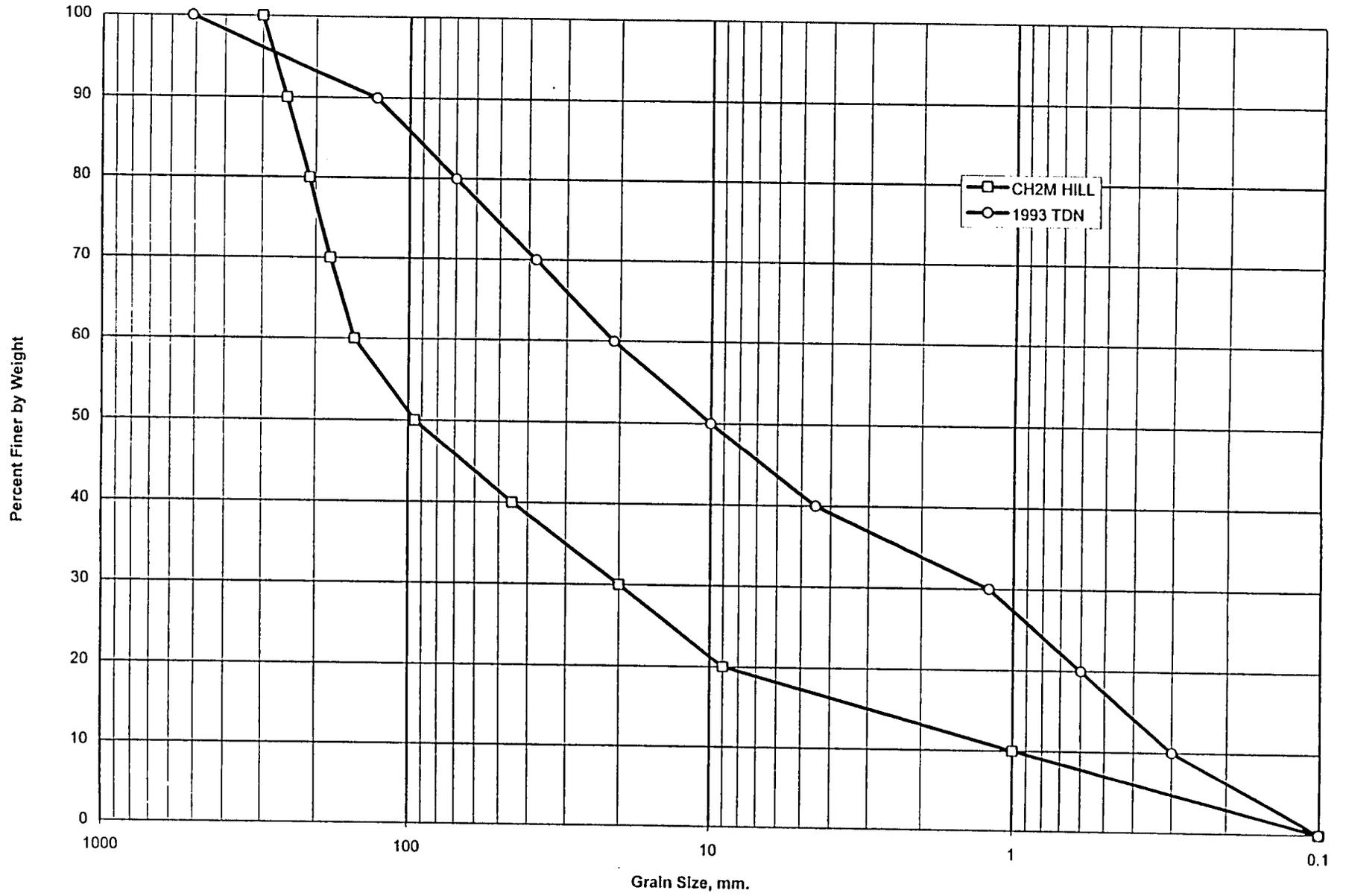
u-s dam

rs96gsc.o

			<u>D</u>	<u>V</u>		<u>ELMIN</u>
96.000	215000.00	1162.76	25.82	6.59	24215.00	1136.94
96.000	250000.00	1165.26	28.32	6.89	24215.00	1136.94
98.000	215000.00	1162.94	25.79	6.08	24460.00	1137.15
98.000	250000.00	1165.44	28.29	6.39	24460.00	1137.15
100.000	215000.00	1162.78	25.42	7.83	24715.00	1137.36
100.000	250000.00	1165.25	27.89	8.23	24715.00	1137.36
102.000	215000.00	1162.73	25.23	9.08	25000.00	1137.50
102.000	250000.00	1165.18	27.68	9.50	25000.00	1137.50
103.000	215000.00	1162.42	20.62	11.00	25001.00	1141.80
103.000	250000.00	1164.86	23.06	11.42	25001.00	1141.80
103.220	215000.00	1162.27	18.97	11.96	25023.00	1143.30
103.220	250000.00	1164.71	21.41	12.30	25023.00	1143.30
103.280	215000.00	1162.20	18.90	12.37	25029.00	1143.30
103.280	250000.00	1164.64	21.34	12.70	25029.00	1143.30

drop

Sheet1 Chart 2




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*****
* HEC-2 WATER SURFACE PROFILES *
* *
* Version 4.6.2; May 1991 *
* *
* RUN DATE 01MAR96 TIME 11:46:24 *
*****

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*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET, SUITE D *
* DAVIS, CALIFORNIA 95616-4687 *
* (916) 756-1104 *
*****

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1 01MAR96 11:46:24

PAGE 1

THIS RUN EXECUTED 01MAR96 11:46:24

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*****
HEC-2 WATER SURFACE PROFILES
Version 4.6.2; May 1991
*****

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RIO SALADO - TOWN LAKE MARCH, 1996

SIMULATING GENERAL SCOUR TO ARMORING IN THE CHANNEL:

- 1) dropped channel bed 3.5 feet from d-s end of run up to section 46
 - 2) dropped channel bed 2.5 feet upstream of section 46
- the difference in drops was transitioned over several x-sec's

PROPOSED DEVELOPMENT OF SALT RIVER FOR TOWN LAKE

Downstream dam: at section Grade Control Structure #4:
sections 24871 to 24968
3 piers w/0.5H:1V side slopes, 6 ft. topwidth, 16' high
includes concrete USBR TYPE II stilling basin
Foundation elevation = 1132

Upstream dam: at section 103.00
3 piers w/0.5H:1V side slopes, 6 ft. topwidth, 6' high
includes concrete apron
Foundation elevation = 1143.33

Sediment deposition at elev. 1132 upstream of downstream dam

Overbank Development:

Placed on top of CSA
Manning's n: walkways = 0.025
landscaped slopes = 0.045
Elevations from landscape plans

Notes:

- this run was created by combining the CRSS runs: RSSRP1.hc2 and RSSRP2.hc2
- The seam is at GC #4

- see note at Priest Ave. Br.
- starting WSEL's on RC card at first cross-section
- these cross-section were set up with the left and right banks defined by looking upstream

T1 RIO SALADO TOWN LAKE for TEMPE, AZ
 T2 CH2M HILL Walker/Allen Sept. 1994
 T3 RS96GSC.HC2

J1 ICHECK INQ NINV IDIR STRT METRIC HVINS Q WSEL FQ
 1 01MAR96 4 205000 1119.15
 11:46:24

PAGE 2

J2 NPROF IPLOT PRFVS XSECV XSECH FN ALLDC IBW CHNIM ITRACE
 1 -1

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38 43 1 8 26 66 42

J5 LPRNT NUMSEC *****REQUESTED SECTION NUMBERS*****

-10

NC 0.050 0.050 0.035 0.1 0.3
 QT 4 90000 155000 205000 250000

Begin ADOT Channelization

***** Begin ADOT Channelization *****

X1	10035	12	10020.0	11105.0	0.0	0.0	0.0	0.0	996.5	0
RC	4	90000	1112.21	155000	1116.42	205000	1119.15	250000	1120.10	
GR	125.0	10000.	125.0	10010.	122.00	10020.	105.00	10056.	104.00	10340.
GR	100.00	10356.	97.20	10540.	100.00	10750.	105.00	10770.	105.00	11050.
GR	125.0	11105.	125.0	11150.						
X1	10200	11	10025.0	11100.0	165.0	165.0	165.0	0.0	996.5	0
GR	122.00	10000.	123.00	10025.	105.00	10065.	104.00	10355.	100.00	10365.
GR	98.10	10548.	100.00	10758.	105.00	10775.	105.00	11060.	123.00	11100.
GR	123.00	11150.								
X1	10400	11	10035.0	11103.0	200.0	200.0	200.0	0.0	996.5	0
GR	122.00	10000.	122.00	10035.	105.00	10070.	105.00	10353.	100.00	10385.
GR	98.10	10548.	100.00	10758.	105.00	10775.	105.00	11060.	123.00	11103.
GR	123.00	11140.								
X1	10600	11	10025.0	11100.0	200.0	200.0	200.0	0.0	996.5	0
GR	123.00	10000.	123.00	10025.	105.00	10068.	105.00	10362.	100.00	10392.
GR	98.50	10544.	100.00	10760.	105.00	10775.	106.00	11050.	124.00	11100.
GR	124.00	11130.								

X1	10800	11	10030.0	11100.0	200.0	200.0	200.0	0.0	996.5	0
GR	123.00	10000.	123.00	10030.	105.00	10067.	106.00	10380.	100.00	10400.
GR	99.00	10540.	101.00	10780.	106.00	10800.	107.00	11060.	124.00	11100.
GR	124.00	11145.								

1 01MAR96 11:46:24 PAGE 3

X1	11000	11	10022.0	11095.0	200.0	200.0	200.0	0.0	996.5	0
GR	123.00	10000.	123.00	10022.	105.00	10065.	106.00	10392.	101.00	10418.
GR	99.50	10538.	101.00	10810.	106.00	10830.	107.00	11060.	124.00	11095.
GR	125.00	11195.								

X1	11200	12	10030.0	11100.0	200.0	200.0	200.0	0.0	996.5	0
GR	123.00	10000.	123.00	10030.	106.00	10064.	106.00	10413.	100.00	10425.
GR	100.00	10538.	100.00	10815.	103.00	10821.	106.00	10875.	107.00	11055.
GR	126.00	11100.	126.00	11160.						

X1	11400	11	10030.0	11113.0	200.0	200.0	200.0	0.0	996.5	0
GR	124.00	10000.	124.00	10030.	107.00	10064.	103.40	10405.	100.40	10411.
GR	100.40	10810.	103.40	10816.	108.00	10925.	108.00	11060.	126.00	11113.
GR	128.00	11195.								

X1	11600	12	10030.0	11122.0	200.0	200.0	200.0	0.0	996.5	0
GR	124.00	10000.	124.00	10030.	108.00	10065.	103.90	10399.	100.90	10405.
GR	100.90	10805.	103.90	10811.	103.90	11060.	116.50	11080.	116.50	11089.
GR	127.50	11122.	127.50	11133.						

X1	11800	12	10035.0	11130.0	200.0	200.0	200.0	0.0	996.5	0
GR	125.50	10000.	125.00	10035.	110.00	10075.	104.40	10386.	101.40	10392.
GR	101.40	10792.	104.40	10798.	104.40	11071.	116.90	11089.	116.90	11097.
GR	127.90	11130.	127.90	11141.						

X1	12000	12	10035.0	11130.0	200.0	200.0	200.0	0.0	996.5	0
GR	127.60	10000.	127.00	10035.	110.00	10070.	104.80	10364.	101.80	10370.
GR	101.80	10770.	104.80	10776.	104.80	11070.	117.40	11089.	117.40	11097.
GR	128.40	11130.	128.40	11140.						

X1	12100	12	10035.0	11125.0	100.0	100.0	100.0	0.0	996.5	0
GR	127.80	10000.	127.00	10035.	110.50	10070.	105.10	10347.	102.10	10353.
GR	102.10	10753.	105.10	10759.	105.10	11065.	117.60	11084.	117.60	11092.
GR	128.60	11125.	128.60	11136.						

X1	12200	12	10032.0	11123.0	100.0	100.0	100.0	0.0	996.5	0
GR	128.00	10000.	126.00	10032.	110.00	10082.	105.30	10334.	102.30	10340.
GR	102.30	10740.	105.30	10746.	105.30	11063.	117.80	11082.	117.80	11090.
GR	128.80	11123.	128.80	11134.						

1 01MAR96 11:46:24 PAGE 4

X1	12400	12	10047.0	11109.0	200.0	200.0	200.0	0.0	996.5	0
GR	129.30	10000.	129.00	10047.	111.00	10085.	105.80	10308.	102.80	10314.
GR	102.80	10714.	105.80	10720.	105.80	11049.	118.20	11068.	118.20	11076.
GR	129.20	11109.	129.20	11119.						

X1	12600	14	10033.0	11097.0	200.0	200.0	200.0	0.0	996.5	0
GR	130.00	10000.	130.00	10033.	118.60	10078.	118.60	10086.	106.20	10105.
GR	106.20	10281.	103.20	10287.	103.20	10687.	106.20	10693.	106.20	11038.
GR	118.60	11056.	118.60	11064.	129.60	11097.	129.60	11108.		
X1	12800	14	10055.0	11130.0	200.0	200.0	200.0	0.0	996.5	0
GR	130.40	10000.	131.00	10055.	119.10	10108.	119.10	10116.	106.70	10135.
GR	106.70	10284.	103.70	10290.	103.70	10690.	106.70	10696.	106.70	11071.
GR	119.10	11089.	119.10	11097.	130.00	11130.	130.00	11141.		
X1	13000	14	10059.0	11115.0	200.0	200.0	200.0	0.0	996.5	0
GR	132.00	10000.	131.00	10059.	119.40	10087.	119.40	10095.	107.20	10113.
GR	107.20	10244.	104.20	10250.	104.20	10650.	107.20	10656.	107.20	11055.
GR	119.50	11074.	119.50	11082.	130.50	11115.	130.50	11126.		
X1	13200	14	10040.0	11092.0	200.0	200.0	200.0	0.0	996.5	0
GR	131.00	10000.	130.00	10040.	119.90	10064.	119.90	10072.	107.70	10090.
GR	107.70	10194.	104.70	10200.	104.70	10600.	107.70	10606.	107.70	11032.
GR	119.90	11051.	119.90	11059.	130.90	11092.	130.90	11102.		
X1	13400	14	10040.0	11092.0	200.0	200.0	200.0	0.0	996.5	0
GR	131.00	10000.	130.00	10040.	120.30	10064.	120.30	10072.	108.10	10090.
GR	108.10	10172.	105.10	10178.	105.10	10578.	108.10	10584.	108.10	11032.
GR	120.30	11051.	120.30	11059.	131.30	11092.	131.30	11102.		
X1	13600	14	10042.0	11087.0	200.0	200.0	200.0	0.0	996.5	0
GR	132.00	10000.	130.00	10042.	120.80	10067.	120.80	10075.	108.60	10093.
GR	108.60	10144.	105.60	10150.	105.60	10550.	108.60	10556.	108.60	11027.
GR	120.80	11046.	120.80	11054.	131.80	11087.	131.80	11097.		
X1	13800	14	10035.0	11081.0	200.0	200.0	200.0	0.0	996.5	0
GR	132.50	10000.	130.00	10035.	121.20	10055.	121.20	10063.	109.10	10081.
GR	109.10	10114.	106.10	10120.	106.10	10520.	109.10	10526.	109.10	11022.
GR	121.20	11040.	121.20	11048.	132.20	11081.	132.20	11092.		

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01MAR96 11:46:24

PAGE 5

X1	14000	14	10033.0	11085.0	200.0	200.0	200.0	0.0	996.5	0
GR	132.00	10000.	130.00	10033.	121.60	10049.	121.60	10057.	109.50	10075.
GR	109.50	10096.	106.50	10102.	106.50	10502.	109.50	10508.	109.50	11026.
GR	121.60	11044.	121.60	11052.	132.60	11085.	132.60	11096.		
X1	14200	14	10011.0	11093.0	200.0	200.0	200.0	0.0	996.5	0
GR	133.00	10000.	133.00	10011.	122.00	10044.	122.00	10052.	110.00	10070.
GR	110.00	10091.	107.00	10097.	107.00	10497.	110.00	10503.	110.00	11034.
GR	122.00	11052.	122.00	11060.	133.00	11093.	133.00	11104.		

NC 0.0 0.0 0.0 0.3 0.5

Grade Control Str. No. 2

***** Grade Control Str. No. 2 *****

LOCAL PRINT

X1	14400	13	10027.0	11093.0	200.0	200.0	200.0	0.0	996.5	0
GR	133.50	10000.	133.50	10027.	133.50	10035.	110.50	10070.	110.50	10086.
GR	107.50	10092.	107.50	10492.	110.50	10498.	110.50	11034.	122.50	11052.
GR	122.50	11060.	133.50	11093.	133.50	11104.				

NC 0.050 0.050 0.035 0.3 0.5

SR 153 Bridge (D/S limit)

***** SR 153 Bridge (D/S limit) *****

X1	14665	10	10036.0	11068.0	265.0	265.0	265.0	0.0	996.5	0
X3	0	0.0	0.0	10036.0	147.0	11068.0	147.0	0.0	0.0	
GR	134.10	10000.	134.10	10036.	111.20	10070.	111.20	10092.	108.20	10098.
GR	108.20	10498.	111.20	10504.	111.20	11034.	134.10	11068.	134.10	11103.

SR 153 Bridge (U/S limit)

***** SR 153 Bridge (U/S limit) *****

X1	14785	12	10011.0	11068.0	120.0	120.0	120.0	0.0	996.5	0
GR	134.30	10000.	134.30	10011.	123.30	10044.	123.30	10052.	111.40	10070.
GR	111.40	10092.	108.40	10098.	108.40	10498.	111.40	10504.	111.40	11034.
GR	134.30	11068.	134.30	11103.						

NC 0.0 0.0 0.0 0.1 0.3

X1	15000	14	10011.0	11091.0	215.0	215.0	215.0	0.0	996.5	0
GR	134.70	10000.	134.70	10011.	123.70	10044.	123.70	10052.	111.90	10070.
GR	111.90	10091.	108.90	10097.	108.90	10497.	111.90	10503.	111.90	11033.
GR	123.70	11050.	123.70	11058.	134.70	11091.	134.70	11102.		

1 01MAR96 11:46:24 PAGE 6

NC 0.050 0.050 0.035 0.1 0.3

X1	15200	14	10011.0	11091.0	200.0	200.0	200.0	0.0	996.5	0
GR	135.20	10000.	135.20	10011.	124.20	10044.	124.20	10052.	112.40	10070.
GR	112.40	10091.	109.40	10097.	109.40	10497.	112.40	10503.	112.40	11033.
GR	124.20	11050.	124.20	11058.	135.20	11091.	135.20	11102.		

X1	15400	12	10035.0	11091.0	200.0	200.0	200.0	0.0	996.5	0
GR	135.60	10000.	135.60	10035.	112.80	10069.	112.80	10091.	109.80	10097.
GR	109.80	10497.	112.80	10503.	112.80	11033.	124.60	11051.	124.60	11059.
GR	135.60	11091.	135.60	11102.						

NC 0.050 0.050 0.035 0.3 0.5

QT 4 92000 157000 210000 250000

SR 143 Bridge (D/S limit)

***** SR 143 Bridge (D/S limit) *****

X1	15586	12	10035.0	11091.0	186.0	186.0	186.0	0.0	996.5	0
X3	0	0.0	0.0	10035.0	145.4	11091.0	145.4	0.0	0.0	
GR	136.00	10000.	136.00	10035.	113.30	10069.	113.30	10091.	110.30	10097.
GR	110.30	10497.	113.30	10503.	113.30	11033.	125.00	11051.	125.00	11059.

1211887 LS

GR	136.00	11091.	136.00	11102.						
SB	1.05	1.56	2.6	200.0	963.0	48.0	26680.0	1.5	1110.50	1110.30

SR 143 Bridge (U/S limit)

***** SR 143 Bridge (U/S limit) *****

X1	15710	12	10011.0	11066.0	124.0	124.0	124.0	0.0	996.5	0
X2	0.0	0.0	1	1137.0	1145.4	0.0	0	2.00	0.0	
GR	136.10	10000.	136.20	10011.	125.20	10044.	125.20	10052.	113.60	10070.
GR	113.60	10091.	110.60	10097.	110.60	10497.	113.60	10503.	113.60	11032.
GR	136.20	11066.	136.20	11102.						

NC	0.0	0.0	0.0	0.1	0.3					
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X1	16000	16	10011.0	11084.0	290.0	290.0	290.0	0.0	996.5	0
GR	136.90	10000.	136.90	10011.	125.90	10044.	125.90	10052.	114.30	10078.
GR	114.30	10089.	111.30	10095.	111.30	10495.	114.30	10501.	114.30	11032.
GR	125.90	11050.	125.90	11058.	122.90	11062.	122.90	11063.	136.90	11084.
GR	136.90	11098.								

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NC	0.035	0.035	0.035	0.1	0.3					
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X1	16200	15	10020.0	11096.0	200.0	200.0	200.0	0.0	996.5	0
GR	137.30	10000.	137.30	10012.	137.30	10020.	114.70	10081.	114.70	10109.
GR	111.70	10115.	111.70	10515.	114.70	10521.	114.70	11043.	126.30	11061.
GR	126.30	11069.	123.30	11073.	123.30	11074.	137.30	11096.	137.30	11109.

X1	16400	16	10011.0	11083.0	200.0	200.0	200.0	0.0	996.5	0
GR	137.70	10000.	137.70	10011.	126.70	10044.	126.70	10052.	115.20	10069.
GR	115.20	10102.	112.20	10108.	112.20	10508.	115.20	10514.	115.20	11031.
GR	126.70	11049.	126.70	11057.	123.70	11061.	123.70	11062.	138.30	11083.
GR	138.30	11098.								

X1	16600	16	10011.0	11085.0	200.0	200.0	200.0	0.0	996.5	0
GR	138.10	10000.	138.10	10011.	127.10	10043.	127.10	10051.	115.70	10069.
GR	115.70	10124.	112.70	10130.	112.70	10530.	115.70	10536.	115.70	11033.
GR	127.10	11050.	127.10	11058.	124.10	11063.	124.10	11064.	138.70	11085.
GR	138.70	11099.								

X1	16800	16	10010.0	11087.0	200.0	200.0	200.0	0.0	996.5	0
GR	138.60	10000.	138.60	10010.	127.60	10043.	127.60	10051.	116.20	10069.
GR	116.20	10157.	113.20	10163.	113.20	10563.	116.20	10569.	116.20	11035.
GR	127.60	11052.	127.60	11060.	124.60	11065.	124.60	11066.	139.20	11087.
GR	139.20	11101.								

X1	17000	16	10011.0	11089.0	200.0	200.0	200.0	0.0	996.5	0
GR	139.00	10000.	139.00	10011.	128.00	10044.	128.00	10052.	116.60	10069.
GR	116.60	10205.	113.60	10211.	113.60	10611.	116.60	10617.	116.60	11037.
GR	128.00	11054.	128.00	11062.	125.00	11067.	125.00	11068.	139.60	11089.
GR	139.60	11103.								

X1	17200	16	10011.0	11089.0	200.0	200.0	200.0	0.0	996.5	0
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GR	139.40	10000.	139.40	10011.	128.40	10044.	128.40	10052.	117.10	10069.
GR	117.10	10263.	114.10	10269.	114.10	10669.	117.10	10675.	117.10	11037.
GR	128.40	11054.	128.40	11062.	125.40	11067.	125.40	11068.	140.00	11089.
GR	140.00	11103.								

X1	17400	12	10010.0	11088.0	200.0	200.0	200.0	0.0	996.5	0
GR	139.80	10000.	139.80	10010.	128.80	10043.	128.80	10051.	117.60	10068.
GR	117.60	10322.	114.60	10328.	114.60	10728.	117.60	10734.	117.60	11036.
GR	140.40	11088.	140.40	11102.						

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X1	17600	12	10011.0	11070.0	200.0	200.0	200.0	0.0	996.5	0
GR	140.30	10000.	140.30	10011.	129.30	10044.	129.30	10052.	118.00	10069.
GR	118.00	10382.	115.00	10388.	115.00	10788.	118.00	10794.	118.00	11035.
GR	140.90	11070.	140.90	11084.						

X1	17800	12	10011.0	11067.0	200.0	200.0	200.0	0.0	996.5	0
GR	140.70	10000.	140.70	10011.	129.70	10044.	129.70	10052.	118.50	10068.
GR	118.50	10431.	115.50	10437.	115.50	10837.	118.50	10843.	118.50	11033.
GR	141.30	11067.	141.30	11081.						

X1	18000	12	10011.0	11065.0	200.0	200.0	200.0	0.0	996.5	0
GR	141.00	10000.	141.00	10011.	130.10	10044.	130.10	10052.	119.00	10069.
GR	119.00	10485.	116.00	10491.	116.00	10891.	119.00	10897.	119.00	11031.
GR	141.70	11065.	141.70	11079.						

X1	18200	12	10011.0	11061.0	200.0	200.0	200.0	0.0	996.5	0
GR	141.50	10000.	141.50	10011.	130.50	10044.	130.50	10052.	119.50	10069.
GR	119.50	10528.	116.50	10534.	116.50	10934.	119.50	10940.	119.50	11027.
GR	142.10	11061.	142.10	11075.						

X1	18400	10	10015.0	11080.0	200.0	200.0	200.0	0.0	996.5	0
GR	142.00	10000.	142.00	10015.	119.90	10077.	119.90	10567.	116.90	10573.
GR	116.90	10973.	119.90	10979.	119.90	11032.	142.60	11080.	142.60	11090.

X1	18600	10	10018.0	11050.0	200.0	200.0	200.0	0.0	996.5	0
GR	142.40	10000.	142.40	10018.	120.40	10067.	120.40	10576.	117.40	10582.
GR	117.40	10982.	120.40	10988.	120.40	11016.	143.00	11050.	143.00	11063.

X1	18800	12	10011.0	11046.0	200.0	200.0	200.0	0.0	996.5	0
GR	142.80	10000.	142.80	10011.	131.80	10044.	131.80	10052.	120.90	10069.
GR	120.90	10587.	117.90	10593.	117.90	10993.	120.90	10999.	120.90	11012.
GR	143.40	11046.	143.40	11060.						

X1	19000	12	10011.0	11039.0	200.0	200.0	200.0	0.0	996.5	0
GR	143.20	10000.	143.20	10011.	132.20	10044.	132.20	10052.	121.30	10069.
GR	121.30	10586.	118.30	10592.	118.30	10992.	121.30	10998.	121.30	11005.
GR	143.80	11039.	143.80	11053.						

X1	19200	12	10011.0	11031.0	200.0	200.0	200.0	0.0	996.5	0
GR	143.70	10000.	143.70	10011.	132.70	10044.	132.70	10052.	121.80	10068.
GR	121.80	10574.	118.80	10580.	118.80	10980.	121.80	10986.	121.80	10998.
GR	144.30	11031.	144.30	11045.						

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X1	19400	12	10011.0	11023.0	200.0	200.0	200.0	0.0	996.5	0
GR	144.10	10000.	144.10	10011.	133.10	10044.	133.10	10052.	122.30	10068.
GR	122.30	10555.	119.30	10561.	119.30	10961.	122.30	10967.	122.30	10989.
GR	144.70	11023.	144.70	11037.						
X1	19600	12	10011.0	11014.0	200.0	200.0	200.0	0.0	996.5	0
GR	144.50	10000.	144.50	10011.	133.50	10044.	133.50	10052.	122.80	10068.
GR	122.80	10516.	119.80	10522.	119.80	10922.	122.80	10928.	122.80	10980.
GR	145.10	11014.	145.10	11028.						
X1	19800	12	10011.0	11005.0	200.0	200.0	200.0	0.0	996.5	0
GR	145.00	10000.	145.00	10011.	134.00	10044.	134.00	10052.	123.20	10068.
GR	123.20	10480.	120.20	10486.	120.20	10886.	123.20	10892.	123.20	10972.
GR	145.60	11005.	145.60	11019.						
X1	20000	12	10010.0	10994.0	200.0	200.0	200.0	0.0	996.5	0
GR	145.60	10000.	145.60	10010.	134.60	10043.	134.60	10051.	123.70	10068.
GR	123.70	10435.	120.70	10441.	120.70	10841.	123.70	10847.	123.70	10961.
GR	145.60	10994.	145.60	11008.						
X1	20200	12	10011.0	10987.0	200.0	200.0	200.0	0.0	996.5	0
GR	146.10	10000.	146.10	10011.	135.10	10044.	135.10	10052.	124.20	10068.
GR	124.20	10382.	121.20	10388.	121.20	10788.	124.20	10794.	124.20	10951.
GR	146.10	10987.	146.10	11000.						
X1	20400	10	10020.0	10987.0	200.0	200.0	200.0	0.0	996.5	0
GR	146.60	10000.	146.60	10020.	124.60	10066.	124.60	10325.	121.60	10331.
GR	121.60	10731.	124.60	10737.	124.60	10938.	146.60	10987.	146.60	11000.
X1	20600	12	10010.0	10965.0	200.0	200.0	200.0	0.0	996.5	0
GR	147.10	10000.	147.10	10010.	136.10	10043.	136.10	10051.	125.10	10068.
GR	125.10	10276.	122.10	10282.	122.10	10682.	125.10	10688.	125.10	10932.
GR	147.10	10965.	147.10	10979.						
X1	20782	14	10012.0	10988.0	178.0	178.0	178.0	0.0	996.5	0
GR	147.67	10000.	147.67	10012.	136.66	10045.	136.66	10053.	125.56	10069.
GR	125.56	10230.	122.50	10236.	122.50	10636.	125.56	10642.	125.56	10931.
GR	136.66	10947.	136.66	10955.	147.67	10988.	147.67	10999.		

Grade Control Str. No. 3

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***** Grade Control Str. No. 3 *****

X1	20800	14	10012.0	10988.0	18.0	18.0	18.0	0.0	996.5	0
GR	147.70	10000.	147.70	10012.	136.69	10045.	136.69	10053.	125.59	10069.
GR	125.59	10230.	122.53	10236.	122.53	10636.	125.59	10642.	125.59	10931.
GR	136.69	10947.	136.69	10955.	147.70	10988.	147.70	10999.		

X1	21000	10	10032.0	10964.0	200.0	200.0	200.0	0.0	996.5	0
GR	148.20	10000.	148.20	10032.	125.94	10069.	125.94	10190.	122.86	10196.
GR	122.86	10596.	125.94	10602.	125.94	10931.	148.20	10964.	148.20	10999.

NC 0.050 0.050 0.035 0.3 0.5

Priest Bridge (D/S)

***** Priest Bridge (D/S) *****

X1	21050	10	10032.0	10964.0	50.0	50.0	50.0	0.0	996.5	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	157.0	157.0	
GR	148.3	10000.0	148.3	10032.0	126.2	10069.0	126.2	10190.0	123.2	10196.0
GR	123.2	10596.0	126.2	10602.0	126.2	10931.0	148.3	10964.0	148.8	10999.0

SB 1.05 1.56 2.6 1000.0 861.8 42.0 24080.0 1.5 1123.4 1123.2

Priest Bridge (U/S)

***** Priest Bridge (U/S) *****

X1	21150	10	10032.0	10964.0	100.0	100.0	100.0	0.0	996.5	0
X2	0.0	0.0	1	1150.0	1157.0	0.0	0	2.0	0.0	
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	157.0	157.0	
GR	148.5	10000.0	148.5	10032.0	126.4	10069.0	126.4	10190.0	123.4	10196.0
GR	123.4	10596.0	126.4	10602.0	126.4	10931.0	148.5	10964.0	148.5	10999.0

Note: the following change in contraction/expansion coefficients was not in the original file, RSSRP1.hc2, provided to CH2M HILL. When the coefficients are left here as 0.3/0.5, then the CWSEL at GC #4 in RSSRP1 does not match the starting water surface elevation in the file RSSRP2 which begins at GC #4. To make the two runs compatible and since between Priest Ave. and GC #4 there are not any drastic changes in the cross-section, the coefficients were reduced to 0.1/0.3 as shown below. A result of this, though, is that the CWSEL's in this run from Priest to GC #4 will not match those in RSSRP1.

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NC			.1	.3						
X1	21200	10	10035.0	10965.0	50.0	50.0	50.0	0.0	996.5	0
GR	148.90	10000.	148.90	10035.	126.20	10069.	126.20	10160.	123.19	10166.
GR	123.19	10566.	126.20	10572.	126.20	10931.	148.90	10965.	148.90	11000.
X1	21400	14	10011.0	10991.0	200.0	200.0	200.0	0.0	996.5	0
GR	149.60	10000.	149.60	10011.	137.86	10045.	137.86	10053.	126.56	10070.
GR	126.56	10133.	123.52	10139.	123.52	10539.	126.56	10545.	126.56	10932.
GR	137.86	10949.	137.86	10957.	149.60	10991.	149.60	11002.		
X1	21600	10	10013.0	11006.0	200.0	200.0	200.0	0.0	996.5	0
GR	150.00	10000.	150.00	10013.	126.91	10078.	126.91	10119.	123.85	10125.
GR	123.85	10525.	126.91	10531.	126.91	10940.	150.50	11006.	150.50	11017.
X1	21800	14	10011.0	10991.0	200.0	200.0	200.0	0.0	996.5	0
GR	150.50	10000.	150.50	10011.	138.47	10045.	138.47	10053.	127.17	10070.
GR	127.17	10101.	124.18	10107.	124.18	10507.	127.17	10513.	127.17	10932.

GR	138.47	10949.	138.47	10957.	150.50	10991.	150.50	11002.		
X1	22000	14	10011.0	10991.0	200.0	200.0	200.0	0.0	996.5	0
GR	151.00	10000.	151.00	10011.	138.82	10045.	138.82	10053.	127.52	10070.
GR	127.52	10104.	124.51	10110.	124.51	10510.	127.52	10516.	127.52	10932.
GR	138.82	10949.	138.82	10957.	151.00	10991.	151.00	11002.		
X1	22200	14	10010.0	10990.0	200.0	200.0	200.0	0.0	996.5	0
GR	151.40	10000.	151.40	10010.	139.08	10044.	139.08	10052.	127.88	10069.
GR	127.88	10123.	124.84	10129.	124.84	10529.	127.88	10535.	127.88	10931.
GR	139.08	10948.	139.08	10956.	151.40	10990.	151.40	11000.		
X1	22400	14	10010.0	10990.0	200.0	200.0	200.0	0.0	996.5	0
GR	151.90	10000.	151.90	10010.	139.44	10044.	139.44	10052.	128.24	10069.
GR	128.24	10160.	125.18	10166.	125.18	10566.	128.24	10572.	128.24	10931.
GR	139.44	10948.	139.44	10956.	151.90	10990.	151.90	11000.		
X1	22600	14	10010.0	10990.0	200.0	200.0	200.0	0.0	996.5	0
GR	152.30	10000.	152.30	10010.	139.69	10044.	139.69	10052.	128.49	10069.
GR	128.49	10205.	125.51	10211.	125.51	10611.	128.49	10617.	128.49	10931.
GR	139.69	10948.	139.69	10956.	152.30	10990.	152.30	11000.		

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X1	22800	14	10010.0	10990.0	200.0	200.0	200.0	0.0	996.5	0
GR	152.80	10000.	152.80	10010.	140.05	10044.	140.05	10052.	128.85	10069.
GR	128.85	10260.	125.84	10266.	125.84	10666.	128.85	10672.	128.85	10931.
GR	140.05	10948.	140.05	10956.	152.80	10990.	152.80	11000.		
X1	23000	14	10011.0	10989.0	200.0	200.0	200.0	0.0	996.5	0
GR	153.20	10000.	153.20	10011.	140.30	10045.	140.30	10053.	129.20	10069.
GR	129.20	10325.	126.70	10331.	126.70	10731.	129.20	10737.	129.20	10931.
GR	140.30	10947.	140.30	10955.	153.20	10989.	153.20	11000.		
X1	23200	14	10010.0	10990.0	200.0	200.0	200.0	0.0	996.5	0
GR	153.70	10000.	153.70	10010.	140.66	10044.	140.66	10052.	129.46	10069.
GR	129.46	10390.	126.50	10396.	126.50	10796.	129.46	10802.	129.46	10931.
GR	140.66	10948.	140.66	10956.	153.70	10990.	153.70	11000.		
X1	23400	14	10011.0	10989.0	200.0	200.0	200.0	0.0	996.5	0
GR	154.10	10000.	154.10	10011.	140.92	10045.	140.92	10053.	129.82	10069.
GR	129.82	10440.	126.83	10446.	126.83	10846.	129.82	10852.	129.82	10931.
GR	140.92	10947.	140.92	10955.	154.10	10989.	154.10	11000.		
X1	23600	14	10011.0	10989.0	200.0	200.0	200.0	0.0	996.5	0
GR	154.60	10000.	154.60	10011.	141.27	10045.	141.27	10053.	130.17	10069.
GR	130.17	10480.	127.16	10486.	127.16	10886.	130.17	10892.	130.17	10931.
GR	141.27	10947.	141.27	10955.	154.60	10989.	154.60	11000.		
X1	23800	14	10011.0	10989.0	200.0	200.0	200.0	0.0	996.5	0
GR	155.00	10000.	155.00	10011.	141.53	10045.	141.53	10053.	130.53	10069.
GR	130.53	10500.	127.46	10506.	127.46	10906.	130.53	10912.	130.53	10931.
GR	141.53	10947.	141.53	10955.	155.00	10989.	155.00	11000.		

X1	24000	14	10011.0	10989.0	200.0	200.0	200.0	0.0	996.5	0
GR	155.50	10000.	155.50	10011.	141.88	10045.	141.88	10053.	130.40	10069.
GR	130.40	10510.	127.82	10516.	127.82	10916.	130.40	10922.	130.40	10931.
GR	141.88	10947.	141.88	10955.	155.50	10989.	155.50	11000.		
X1	24200	14	10011.0	10989.0	200.0	200.0	200.0	0.0	996.5	0
GR	155.90	10000.	155.90	10011.	142.14	10045.	142.14	10053.	130.40	10069.
GR	130.40	10507.	128.15	10513.	128.15	10913.	130.40	10919.	130.40	10931.
GR	142.14	10947.	142.14	10955.	155.90	10989.	155.90	11000.		

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X1	24400	10	10014.0	10981.0	200.0	200.0	200.0	0.0	996.5	0
GR	156.40	10000.	156.40	10014.	130.40	10066.	130.40	10487.	128.48	10493.
GR	128.48	10893.	130.40	10899.	130.40	10928.	156.40	10981.	156.40	10994.

X1	24600	10	10010.0	11004.0	200.0	200.0	200.0	0.0	996.5	0
GR	156.80	10000.	156.80	10010.	130.40	10076.	130.40	10465.	128.81	10471.
GR	128.81	10871.	130.40	10877.	130.40	10938.	156.80	11004.	156.80	11019.

X1	24744	14	10053.0	10947.0	144	144	144		996.41	0
GR	157.30	10000.	157.30	10011.	143.11	10045.	143.11	10053.	130.40	10069.
GR	130.40	10410.	129.14	10416.	129.14	10816.	130.40	10822.	130.40	10931.
GR	143.11	10947.	143.11	10955.	157.30	10989.	157.30	11000.		

X1	24841	8	10050	10951	97	97	97		-3.5	
GR	1158	10000	1158	10050	1151	10050	1129.0	10083	1129.0	10918
GR	1151	10951	1158	10951	1158	11000				

X1	24866	8	10050	10951	25	25	25		-3.5	
GR	1158	10000	1158	10050	1151	10050	1129.0	10083	1129.0	10918
GR	1151	10951	1158	10951	1158	11000				

NC .025 .3 .5

BEGINNING OF DOWNSTREAM DAM
d.s. edge of USBR Type II Stilling basin
D/S ground elevation & sill elevation @ 1129.
top of thrust block elevation at 1130.5: 50% of area between elev's
1129.0 & 1130.5 has been blocked out in the GR-DATA to represent the
thrust blocks

X1	24871	12	10050	10951	5	5	5			
GR	1158	10000	1158	10050	1151	10050	1129.0	10083	1129.	10291.
GR	1130.5	10291.1	1130.5	10708.9	1129.	10709.	1129.0	10918	1151	10951
GR	1158	10951	1158	11000						

u/s limit of stilling basin

X1	24906	8	10050	10951	35	35	35		0.25	
GR	1158	10000	1158	10050	1151	10050	1129.0	10083	1129.0	10918
GR	1151	10951	1158	10951	1158	11000				

d.s. edge of foundation

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X1	24907	8	10050	10951	1	1	1			
GR	1160	10000	1160	10050	1151	10050	1132	10078.5	1132	10922.5
GR	1151	10951	1160	10951	1160	11000				

Dam cross section with piers

X1	24918	26	10050	10951	11	11	11			
GR	1160	10000	1160	10050	1151	10050	1132	10078.5	1132	10261
GR	1153	10271.5	1163	10271.5	1163	10277.5	1153	10277.5	1132	10288
GR	1132	10487	1153	10497.5	1163	10497.5	1163	10503.5	1153	10503.5
GR	1132	10514	1132	10713	1153	10723.5	1163	10723.5	1163	10729.5
GR	1153	10729.5	1132	10740	1132	10922.5	1151	10951	1160	10951
GR	1160	11000								

Dam cross section with piers

***** Grade Control Str. No. 4 *****

X1	24957				39	39	39			
NH	5	.045	10045	.025	10053	.035	10947	.025	10955	.045
NH	11000									

river channel section u/s of dam
flow area ineffective below 1132.0: blocked out with X3-CARD data

X1	24968	14	10053.0	10947.0	11	11	11		996.41	0
X3		1132	10053	10947	1150	10947	1150			
GR	157.30	10000.	157.30	10011.	143.11	10045.	143.11	10053.	130.40	10069.
GR	130.40	10410.	129.14	10416.	129.14	10816.	130.40	10822.	130.40	10931.
GR	143.11	10947.	143.11	10955.	157.30	10989.	157.30	11000.		

NC				.1	.3					
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Here is the seam between the two FEMA runs RSSRP1.hc2 and RSSRP2.hc2.
Grade Control Str. No. 4 now under the d/s dam

NH	5	.045	574.5	.025	598.5	.035	1500	.025	1568	.045
NH	1609									
X1	2.0	13	598.50	1500.00	107.0	187.0	147.0	0.0	-3.5	0
X3		1132	598.50	1500.00	1150	1500.00	1150			
GR	1154.9	522.00	1154.91	573.00	1142.40	574.50	1142.40	598.50	1132.53	626.94
GR	1129.6	1082.00	1132.61	1454.55	1147.83	1500.00	1147.83	1515.00	1145.83	1521.00
GR	1145.8	1568.00	1155.04	1594.00	1155.04	1609.00				

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NH	5	.045	587.5	.025	611.5	.035	1500	.025	1611	.045
NH	1654									
X1	4.0	13	611.50	1500.00	200.0	200.0	200.0	0.0	-3.5	0
X3		1132	611.50	1500.00	1150	1500.00	1150			
GR	1155.4	535.00	1155.41	550.00	1142.90	587.50	1142.90	611.50	1132.74	640.63
GR	1129.8	1141.00	1132.82	1454.34	1148.17	1500.00	1148.32	1515.00	1146.17	1521.00

GR	1146.1	1611.00	1155.44	1639.00	1155.44	1654.00				
NH	5	.045	597.5	.025	621.5	.035	1460	.025	1660	.045
NH	1701									
X1	6.0	13	621.50	1460.00	200.0	200.0	200.0	0.0	-3.5	0
X3		1132		621.50	1150	1460.00	1150			
GR	1155.9	545.00	1155.91	560.00	1143.40	597.50	1143.40	621.50	1132.96	651.29
GR	1130.0	1190.00	1133.03	1413.59	1148.50	1460.00	1148.50	1515.00	1146.50	1521.00
GR	1146.5	1660.00	1155.83	1686.00	1155.83	1701.00				
NH	5	.045	605.5	.025	629.5	.035	1500	.025	1701.83	.045
NH	1745									
X1	8.0	13	629.50	1500.00	200.0	200.0	200.0	0.0	-3.5	0
X3		1132		629.50	1150	1500.00	1150.4			
GR	1156.4	553.00	1156.41	568.00	1143.90	605.50	1143.66	629.50	1133.50	659.98
GR	1130.2	1225.00	1133.50	1454.01	1148.83	1500.00	1148.83	1515.00	1146.83	1521.00
GR	1147.7	1701.83	1156.22	1730.00	1156.22	1745.00				
NH	5	.045	603.5	.025	627.5	.035	1500	.025	1748	.045
NH	1792									
X1	10.0	13	627.50	1500.00	200.0	200.0	200.0	0.0	-3.5	0
X3		1132		627.50	1150	1500.00	1150.8			
GR	1156.9	551.00	1156.91	566.00	1144.40	603.50	1144.40	627.50	1133.38	658.64
GR	1130.4	1247.00	1133.45	1453.86	1149.17	1500.00	1149.17	1515.00	1147.17	1521.00
GR	1148.3	1748.00	1156.63	1777.00	1156.63	1792.00				
NH	5	.045	599.5	.025	623.5	.035	1500	.025	1796	.045
NH	1837									
X1	12.0	13	623.50	1500.00	200.0	200.0	200.0	0.0	-3.5	0
X3		1132		623.50	1150	1500.00	1151.2			
GR	1157.4	547.00	1157.41	562.00	1144.90	599.50	1144.90	623.50	1133.60	655.15
GR	1130.6	1255.00	1133.66	1453.65	1149.50	1500.00	1149.50	1515.00	1147.50	1521.00
GR	1148.8	1796.00	1157.04	1822.00	1157.04	1837.00				
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NH	5	.045	587.55	.025	611.43	.035	1500	.025	1830.74	.045
NH	1874.6									
X1	14.0	13	611.43	1500.00	115.0	200.0	158.0	0.0	-3.5	0
X3		1132		611.43	1150	1500.00	1151.6			
GR	1157.6	535.31	1157.69	550.24	1145.19	587.55	1145.19	611.43	1133.72	643.13
GR	1130.8	1243.75	1133.86	1452.09	1149.83	1500.00	1149.83	1507.43	1147.83	1513.40
GR	1149.4	1830.74	1157.47	1859.66	1157.47	1874.6				
NC				0.3	0.5					
NH	5	.045	575.61	.025	599.49	.035	1420	.025	1886.52	.045
NH	1926.3									
X1	15.4	13	599.49	1420.00	85.0	160.0	122.0	0.0	-3.5	0
X3		1132		599.49	1150	1420.00	1152			
GR	1157.9	523.37	1157.90	538.30	1145.40	575.61	1145.40	599.49	1133.81	630.71
GR	1131.0	1233.8	1134.03	1371.79	1150.10	1420.00	1150.10	1515.00	1148.10	1521.00

GR	1149.9	1886.52	1157.79	1911.32	1157.79	1926.3				
QT	4	93000	160000	215000	250000					
SB	1.48	1.56	2.67	1388.0	816.0	72.0	29800.0	10.7	1131.58	1131.55

SPRR bridge U/S

NH	5	.045	574.61	.025	598.49	.035	1420	.025	1886.52	.045
NH	1926.3									

***** SPRR bridge U/S *****

X1	15.6	13	598.49	1420.00	15.0	20.0	18.0	0.0	-3.5	0
X2	0.0	0.0	1	1161.0	1165.0	0.0	0	2.0	0.0	
X3		1132		598.49	1150	1420.00	1152			
GR	1158.9	522.38	1157.94	537.30	1145.44	574.61	1145.44	598.49	1133.83	629.75
GR	1131.0	1232.81	1134.05	1371.76	1150.13	1420.00	1150.13	1515.00	1148.13	1521.00
GR	1149.9	1886.52	1157.79	1911.40	1157.79	1926.3				

NC				0.1	0.3					
NH	5	.045	578.34	.025	602.29	.035	1500	.025	1790	.045
NH	2050									
X1	17.3	13	602.29	1500.00	155.0	150.0	152.0	0.0	-3.5	0
X3		1132		602.29	1150	1500.00	1152			
GR	1158.3	525.95	1158.33	540.92	1145.83	578.34	1145.83	602.29	1133.99	634.21
GR	1131.2	1229.54	1134.21	1450.17	1150.38	1500.00	1150.38	1515.00	1148.57	1521.00
GR	1150.0	1790.00	1160.04	1880.00	1160.04	2050.00				

Old Ash Bridge alignment

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NH	5	.045	578.42	.025	602.9	.035	1500	.025	1698.3	.045
NH	1741.3									

***** Old Ash Bridge alignment *****

X1	19.0	13	602.90	1500.00	180.0	165.0	172.0	0.0	-3.5	0
X3		1132		602.90	1150	1500.00	1152			
GR	1158.9	526.47	1158.99	541.46	1146.49	578.42	1146.49	602.90	1134.19	636.64
GR	1131.3	1218.78	1134.38	1450.88	1150.66	1500.00	1150.66	1515.00	1148.66	1521.00
GR	1149.5	1698.30	1160.47	1726.27	1160.47	1741.3				

NH	5	.045	534.27	.025	557.48	.035	1500	.025	1658.02	.045
NH	1702.6									

X1	21.5	13	557.48	1500.00	90.0	275.0	182.0	0.0	-3.5	0
X3		1132		557.48	1150	1500.00	1152			
GR	1159.4	483.50	1159.48	498.01	1146.98	534.27	1146.98	557.48	1134.28	590.08
GR	1131.6	1142.03	1134.67	1450.65	1151.12	1500.00	1151.12	1515.00	1149.12	1521.00
GR	1149.8	1658.02	1160.79	1688.10	1160.79	1702.60				

NH	5	.045	453.8	.025	522.05	.035	1371	.025	1511.75	.045
NH	1556									

X1	24.0	13	522.05	1371.00	50.0	230.0	140.0	0.0	-3.5	0
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X3		1132		522.05		1150	1371.00		1152		
GR	1159.7	405.82	1159.76	419.53	1147.26	453.80	1147.26	522.05	1134.34	551.50	
GR	1131.9	1031.91	1134.91	1327.70	1151.50	1371.00	1151.50	1386.00	1149.50	1392.00	
GR	1150.1	1511.75	1160.90	1541.00	1160.90	1556.00					

Mill Avenue bridge

NH	5	.045	450.15	.025	530	.035	1370	.025	1501.65	.045	
NH	1545										

***** Mill Avenue bridge *****

X1	24.6	13	530.00	1370	60.0	60.0	60.0	0.0	-3.5	0	
RC	7	40000.0	1141.84	93000.0	1147.51	135000.0	1151.04	160000.0	1152.84	215000.0	
RC	1156.1	250000.0	1158.80	296000.0	1162.00						
X2	0.0	0.0	0	0.0	0.0	0.0	0	0.0	0.0		
X3		1132		530.00		1150		1370		1152	
GR	1160.0	402.16	1160.09	415.87	1147.59	450.15	1147.59	530.00	1134.40	560.00	
GR	1131.9	1021.85	1134.97	1327.65	1151.62	1370.00	1151.62	1385.00	1149.62	1391.00	
GR	1150.1	1501.65	1161.06	1530.00	1161.06	1545.00					

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NC	0.035	0.035									
NH	5	.045	492.66	.025	587.86	.035	1428	.025	1550	.045	
NH	1594.6										

X1	26.0	13	587.86	1428.00	230.0	140.0	185.0	0.0	-3.5	0	
X3		1132		587.86		1150	1428.00		1152		
GR	1160.9	442.68	1160.90	456.96	1148.40	492.66	1148.40	587.86	1134.65	620.48	
GR	1132.1	1024.35	1135.12	1382.59	1151.88	1428.00	1151.88	1442.28	1149.88	1447.99	
GR	1150.3	1550.00	1161.16	1580.32	1161.16	1594.60					

SB	1.11	1.56	2.67	1040.0	760.0	85.0	30000.0	5.2	1132.12	1132.22	
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Second Mill Avenue bridge

NH	5	.045	492.66	.025	587.86	.035	1428	.025	1550	.045	
NH	1594.6										

***** Second Mill Avenue bridge *****

X1	26.45	13	587.86	1428.00	45.0	45.0	45.0	0.0	-3.5	0	
X2	0.0	0.0	1	1172.51	1176.14	0.0	0	2.0	0.0		
X3		1132		587.86		1150	1428.00		1152		
GR	1160.9	442.68	1160.90	456.96	1148.40	492.66	1148.40	587.86	1134.65	620.48	
GR	1132.1	1024.35	1135.12	1382.59	1151.88	1428.00	1151.88	1442.28	1149.88	1447.99	
GR	1150.3	1550.00	1161.22	1580.32	1161.22	1594.60					

NH	5	.045	549.19	.025	648.59	.035	1491	.025	1601.21	.045	
NH	1646										

X1	27.0	13	648.59	1491.00	255.0	55.0	155.0	0.0	-3.5	0	
X3		1132		648.59		1150	1491.00		1153		
GR	1161.2	497.00	1161.22	511.91	1148.72	549.19	1148.72	648.59	1134.97	683.18	
GR	1132.2	1034.75	1135.22	1443.40	1152.08	1491.00	1152.08	1505.91	1150.08	1511.87	
GR	1150.5	1601.21	1161.29	1631.00	1161.29	1646.00					

NH	5	.045	554.5	.025	654.5	.035	1500	.025	1598	.045
NH	1643									
X1	28.0	13	654.50	1500.00	220.0	100.0	160.0	0.0	-3.5	0
X3		1132		654.50	1150	1500.00	1154			
GR	1161.4	502.00	1161.44	517.00	1148.94	554.50	1148.94	654.50	1135.20	689.57
GR	1132.3	999.00	1135.33	1451.97	1152.27	1500.00	1152.27	1515.00	1150.27	1521.00
GR	1150.6	1598.00	1161.57	1628.00	1161.57	1643.00				

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NH	5	.045	557.5	.025	657.5	.035	1500	.025	1580	.045
NH	1625									
X1	30.0	13	657.50	1500.0	200.0	200.0	200.0	0.0	-3.5	0
X3		1132		657.50	1150	1500.0	1153			
GR	1161.6	505.00	1161.65	520.00	1149.15	557.50	1149.15	657.50	1135.42	692.39
GR	1132.5	952.00	1135.54	1451.64	1152.65	1500.00	1152.65	1515.00	1150.65	1521.00
GR	1150.9	1580.00	1161.84	1610.00	1161.84	1625.00				

NH	5	.045	566.5	.025	658.06	.035	1500	.025	1580	.045
NH	1634.6									
X1	32.0	11	658.06	1500.0	200.0	200.0	200.0	0.0	-3.5	0
X3		1132		658.06	1150	1500.0	1152			
GR	1161.8	514.00	1161.86	529.00	1149.37	566.50	1149.37	658.06	1135.63	692.98
GR	1132.7	920.00	1135.75	1462.92	1148.11	1500.00	1148.91	1580.00	1162.11	1619.60
GR	1162.1	1634.60								

NH	5	.045	581.5	.025	656.17	.035	1500	.025	1580	.045
NH	1634.6									
X1	34.0	11	656.17	1500.00	200.0	200.0	200.0	0.0	-3.5	0
X3		1132		656.17	1150	1500.00	1152			
GR	1162.0	529.00	1162.07	544.00	1149.57	581.50	1149.57	656.17	1135.85	691.45
GR	1132.9	902.00	1135.96	1466.01	1148.32	1500.00	1149.12	1580.00	1162.32	1619.60
GR	1162.3	1634.60								

NH	5	.045	609.5	.025	658.78	.035	1500	.025	1580	.045
NH	1634.6									
X1	36.0	11	658.78	1500.00	230.0	200.0	215.0	0.0	-3.5	0
X3		1132		658.78	1150	1500.00	1152			
GR	1162.3	557.00	1162.31	572.00	1149.81	609.50	1149.81	658.78	1136.09	699.94
GR	1133.1	894.00	1136.17	1462.89	1148.54	1500.00	1149.34	1580.00	1162.53	1619.57
GR	1162.5	1634.6								

NH	5	.045	619.27	.025	661.39	.035	1500	.025	1580	.045
NH	1634.6									
X1	38.0	11	661.39	1500.00	260.0	200.0	230.0	0.0	-3.5	0
X3		1132		661.39	1150	1500.00	1152			
GR	1162.5	568.00	1162.58	583.00	1150.49	619.27	1150.08	661.39	1136.37	697.57
GR	1133.3	892.00	1136.37	1462.86	1148.75	1500.00	1149.55	1580.00	1162.74	1619.57
GR	1162.7	1634.6								

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NH	5	.045	647.78	.025	671.78	.035	1500	.025	1580	.045
NH	1654.6									
X1	40.0	11	671.78	1500.00	260.0	200.0	230.0	0.0	-3.5	0
X3		1132		671.78	1151	1500.00	1152			
GR	1162.8	596.00	1162.85	611.00	1150.59	647.78	1150.35	671.78	1136.65	712.88
GR	1133.5	895.00	1136.58	1462.86	1148.96	1500.00	1149.76	1580.00	1162.95	1639.57
GR	1162.9	1654.6								

NH	5	.045	649.78	.025	673.78	.035	1500	.025	1580	.045
NH	1636.8									
X1	42.0	11	673.78	1500.00	260.0	200.0	230.0	0.0	-3.5	0
X3		1132		673.78	1151.3	1500.00	1152			
GR	1163.1	598.00	1163.12	613.00	1150.86	649.78	1150.62	673.78	1136.93	714.85
GR	1133.7	900.00	1136.79	1462.83	1149.18	1500.00	1149.24	1580.00	1163.16	1621.76
GR	1163.1	1636.8								

NH	5	.045	666.78	.025	690.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	44.0	11	690.78	1500.00	260.0	200.0	230.0	0.0	-3.5	0
X3		1132		690.78	1151.6	1500.00	1151.6			
GR	1163.3	615.00	1163.39	630.00	1151.13	666.78	1150.89	690.78	1137.20	731.85
GR	1134.0	908.00	1137.00	1462.83	1149.39	1500.00	1150.19	1580.00	1163.37	1619.54
GR	1163.3	1634.5								

NH	5	.045	665.78	.025	689.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	46.0	11	689.78	1500.00	260.0	200.0	230.0	0.0	-3.5	0
X3		1132		689.78	1152	1500.00	1151.2			
GR	1163.6	614.00	1163.66	629.00	1151.40	665.78	1151.16	689.78	1137.48	730.82
GR	1134.2	919.00	1137.21	1462.83	1149.60	1500.00	1150.40	1580.00	1163.58	1619.54
GR	1163.5	1634.5								

NH	5	.045	658.78	.025	682.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	48.0	11	682.78	1500.00	260.0	200.0	230.0	0.0	-3.25	0
X3		1132		682.78	1152	1500.00	1150.8			
GR	1163.9	607.00	1163.93	622.00	1151.67	658.78	1151.43	682.78	1137.76	723.79
GR	1134.4	931.00	1137.42	1462.80	1149.82	1500.00	1150.62	1580.00	1163.79	1619.51
GR	1163.7	1634.5								

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NH	5	.045	646.78	.025	670.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	50.0	11	670.78	1500.00	210.0	200.0	205.0	0.0	-3.0	0
X3		1132		670.78	1151.8	1500.00	1150.4			
GR	1164.1	595.00	1164.15	610.00	1151.89	646.78	1151.65	670.78	1137.99	711.76
GR	1134.6	951.00	1137.63	1462.80	1150.03	1500.00	1150.83	1580.00	1164.00	1619.51
GR	1164.0	1634.5								

NH	5	.045	637.78	.025	661.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	52.0	11	661.78	1500.00	175.0	200.0	188.0	0.0	-2.75	0
X3		1132	661.78	661.78	1151.6	1500.00	1150.0			
GR	1164.3	586.00	1164.33	601.00	1152.07	637.78	1151.83	661.78	1138.17	702.76
GR	1134.8	981.00	1137.84	1462.80	1150.24	1500.00	1151.04	1580.00	1164.21	1619.51
GR	1164.2	1634.5								

NH	5	.045	630.78	.025	654.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	54.0	11	654.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3		1132	654.78	654.78	1151.4	1500.00	1150			
GR	1164.5	579.00	1164.50	594.00	1152.24	630.78	1152.00	654.78	1138.34	695.76
GR	1135.0	1020.00	1138.05	1467.87	1150.46	1500.00	1151.26	1580.00	1164.42	1619.48
GR	1164.4	1634.5								

NH	5	.045	621.78	.025	645.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	56.0	11	645.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3		1132	645.78	645.78	1151.2	1500.00	1150			
GR	1164.6	570.00	1164.67	585.00	1152.41	621.78	1152.17	645.78	1138.52	686.73
GR	1135.2	1065.00	1138.26	1462.77	1150.67	1500.00	1151.47	1580.00	1164.63	1619.48
GR	1164.6	1634.5								

NH	5	.045	614.78	.025	638.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	58.0	11	638.78	1500.00	165.0	200.0	182.0	0.0	-2.5	0
X3		1132	638.78	638.78	1151.0	1500.00	1150.3			
GR	1164.8	563.00	1164.84	578.00	1152.58	614.78	1152.34	638.78	1138.69	679.73
GR	1135.4	1121.00	1138.47	1462.77	1150.88	1500.00	1151.68	1580.00	1164.84	1619.48
GR	1164.8	1634.5								

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NH	5	.045	605.78	.025	629.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	60.0	11	629.78	1500.00	170.0	200.0	185.0	0.0	-2.5	0
X3		1132	629.78	629.78	1151.0	1500.00	1150.6			
GR	1165.0	554.00	1165.01	569.00	1152.75	605.78	1152.51	629.78	1138.87	670.70
GR	1135.6	1180.00	1138.68	1462.77	1151.09	1500.00	1151.89	1580.00	1165.05	1619.48
GR	1165.0	1634.5								

NH	5	.045	596.78	.025	620.78	.035	1500	.025	1580	.045
NH	1634.5									
X1	62.0	11	620.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3		1132	620.78	620.78	1151.5	1500.00	1151			
GR	1165.1	545.00	1165.18	560.00	1152.92	596.78	1152.68	620.78	1139.04	661.70
GR	1135.8	1230.00	1138.89	1462.74	1151.31	1500.00	1152.11	1580.00	1165.26	1619.45
GR	1165.2	1634.5								

NH	5	.045	588.78	.025	612.78	.035	1500	.025	1580	.045
NH	1634.5									

UNIT

X1	64.0	11	612.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3		1132		612.78	1152	1500.00	1151.3			
GR	1165.3	537.00	1165.34	552.00	1153.08	588.78	1152.84	612.78	1139.22	647.88
GR	1136.0	1270.00	1139.09	1462.71	1151.52	1500.00	1152.32	1580.00	1165.47	1619.45
GR	1165.4	1634.5								

NH	5	.045	580.78	.025	604.78	.035	1500	.025	1580	.045
NH	1633.9									

X1	66.0	11	604.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3		1132		604.78	1152.5	1500.00	1151.6			
GR	1165.5	529.00	1165.51	544.00	1153.25	580.78	1153.01	604.78	1139.39	645.64
GR	1136.3	1300.00	1139.30	1462.71	1151.73	1500.00	1152.53	1580.00	1165.51	1618.94
GR	1165.5	1633.9								

NH	5	.045	573.78	.025	597.78	.035	1500	.025	1580	.045
NH	1634.4									

X1	68.0	11	597.78	1500.00	170.0	200.0	185.0	0.0	-2.5	0
X3		1132		597.78	1153	1500.00	1152			
GR	1165.6	522.00	1165.69	537.00	1153.43	573.78	1153.19	597.78	1139.57	638.64
GR	1136.5	1318.00	1139.51	1462.68	1151.95	1500.00	1152.75	1580.00	1165.89	1619.42
GR	1165.8	1634.4								

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NH	5	.045	566.78	.025	590.78	.035	1500	.025	1580	.045
NH	1634.4									

X1	69.3	11	590.78	1500.00	85.0	130.0	108.0	0.0	-2.5	0
X3	10	1132		590.78	1153.2	1500.00	1152			0.0
GR	1165.7	515.00	1165.78	530.00	1153.52	566.78	1153.28	590.78	1139.66	631.64
GR	1136.6	1322.00	1139.65	1462.68	1152.09	1500.00	1152.89	1580.00	1166.03	1619.42
GR	1166.0	1634.4								

SB	1.05	1.56	2.63	0.0	831.0	54.0	34820.0	5.0	1136.75	1136.65
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Rural Road bridge

NH	5	.045	565.78	.025	589.78	.035	1500	.025	1580	.045
NH	1634.4									

***** Rural Road bridge *****

X1	70.3	21	589.78	1500.00	85.0	100.0	92.0	0.0	-2.5	0
X2	0.0	0.0	1	1172.28	1176.98	0.0	0	2.0	0.0	
X3				589.78	1153.4	1500.00	1152			
BT	-12	514.00	1176.98	1165.86	524.00	1177.02	1169.35	645.00	1178.49	1170.82
BT		766.00	1179.49	1171.79	887.00	1179.95	1172.28	1008.00	1179.95	1172.28
BT		1129.00	1179.46	1171.79	1250.00	1178.49	1170.82	1371.00	1177.02	1169.35
BT		1492.00	1175.07	1167.40	1612.00	1172.65	1164.98	1619.42	1172.50	1166.13
GR	1165.8	514.00	1165.78	524.00	1165.86	529.00	1153.60	565.78	1153.36	589.78
GR	1139.7	630.61	1139.69	645.00	1139.17	766.00	1138.64	887.00	1138.12	1008.00
GR	1137.6	1129.00	1137.07	1250.00	1136.75	1325.00	1137.76	1371.00	1139.75	1462.68
GR	1149.5	1492.00	1152.19	1500.00	1152.99	1580.00	1163.66	1612.00	1166.13	1619.42
GR	1166.1	1634.4								

NH	5	.045	557.78	.025	581.78	.035	1500	.025	1549	.045
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NH	1604.4									
X1	72.0	11	581.78	1500.00	150.0	170.0	160.0	0.0	-2.5	0
X3				581.78	1153.6	1500.00	1152			
GR	1166.0	506.00	1166.03	521.00	1153.77	557.78	1153.53	581.78	1139.91	622.64
GR	1136.9	1321.00	1139.93	1462.68	1152.37	1500.00	1152.86	1549.00	1166.31	1589.35
GR	1166.3	1604.4								

NH	5	.045	547.78	.025	571.78	.035	1500	.025	1524	.045
NH	1580.1									
X1	74.0	11	571.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3				571.78	1153.8	1500.00	1152.5			
GR	1166.2	496.00	1166.26	511.00	1154.00	547.78	1153.76	571.78	1140.12	612.70
GR	1137.1	1315.00	1140.14	1462.65	1152.59	1500.00	1152.83	1524.00	1166.52	1565.07
GR	1166.5	1580.1								

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NH	5	.045	532.78	.025	556.78	.035	1500	.025	1524	.045
NH	1580.1									
X1	76.0	11	556.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3				556.78	1154	1500.00	1153			
GR	1166.4	481.00	1166.49	496.00	1154.23	532.78	1153.99	556.78	1140.33	597.76
GR	1137.3	1279.00	1140.35	1462.65	1152.80	1500.00	1153.04	1524.00	1166.73	1565.07
GR	1166.7	1580.1								

NH	5	.045	508.75	.025	532.75	.035	1500	.025	1524	.045
NH	1580.1									
X1	78.0	11	532.75	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3				532.75	1154.2	1500.00	1153.5			
GR	1166.7	457.00	1166.71	472.00	1154.46	508.75	1154.22	532.75	1140.54	573.79
GR	1137.5	1241.00	1140.56	1462.65	1153.01	1500.00	1153.25	1524.00	1166.94	1565.07
GR	1166.9	1580.1								

NH	5	.045	482.78	.025	506.78	.035	1500	.025	1524	.045
NH	1580.0									
X1	80.0	11	506.78	1500.00	165.0	200.0	182.0	0.0	-2.5	0
X3				506.78	1154.4	1500.00	1154			
GR	1166.9	431.00	1166.95	446.00	1154.69	482.78	1154.45	506.78	1140.76	547.85
GR	1137.7	1194.00	1140.77	1462.62	1153.23	1500.00	1153.47	1524.00	1167.15	1565.04
GR	1167.1	1580.0								

NH	5	.045	447.78	.025	471.78	.035	1500	.025	1524	.045
NH	1580.0									
X1	82.0	11	471.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3				471.78	1154.6	1500.00	1154.5			
GR	1167.1	396.00	1167.18	411.00	1154.92	447.78	1154.68	471.78	1140.97	512.91
GR	1137.9	1136.00	1140.98	1462.62	1153.44	1500.00	1153.68	1524.00	1167.36	1565.04
GR	1167.3	1580.0								

NH	5	.045	411.78	.025	435.78	.035	1500	.025	1524	.045
NH	1580.0									

X1	84.0	11	435.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3				435.78	1154.8	1500.00	1155			
GR	1167.4	360.00	1167.41	375.00	1155.15	411.78	1154.91	435.78	1141.19	476.94
GR	1138.1	1088.00	1141.19	1462.62	1153.65	1500.00	1153.89	1524.00	1167.57	1565.04
GR	1167.5	1580.0								

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NH	5	.045	364.78	.025	388.78	.035	1500	.025	1524	.045
NH	1580.0									

X1	86.0	11	388.78	1500.00	165.0	200.0	182.0	0.0	-2.5	0
X3				388.78	1155	1500.00	1154.5			
GR	1167.6	313.00	1167.64	328.00	1155.38	364.78	1155.14	388.78	1141.39	430.03
GR	1138.4	1040.00	1141.40	1462.59	1153.87	1500.00	1154.11	1524.00	1167.78	1565.01
GR	1167.7	1580.0								

NH	5	.045	298.78	.025	322.78	.035	1500	.025	1524	.045
NH	1580.0									

X1	88.0	11	322.78	1500.00	160.0	200.0	180.0	0.0	-2.5	0
X3				322.78	1155	1500.00	1154			
GR	1167.8	247.00	1167.87	262.00	1155.61	298.78	1155.37	322.78	1141.60	364.09
GR	1138.6	1008.00	1141.60	1462.56	1154.08	1500.00	1154.32	1524.00	1167.99	1565.01
GR	1167.9	1580.0								

NH	5	.045	241	.025	265.78	.035	1500	.025	1524	.045
NH	1576.0									

X1	90.0	12	265.78	1500.00	155.0	200.0	178.0	0.0	-2.5	0
X3				265.78	1155	1500.00	1154			
GR	1168.0	190.00	1168.07	205.00	1155.81	241.00	1155.57	265.78	1149.50	284.00
GR	1141.8	307.09	1138.81	980.00	1141.81	1462.56	1154.29	1500.00	1154.53	1524.00
GR	1168.2	1561.01	1168.20	1576.0						

NH	5	.045	191.78	.025	215.78	.035	1500	.025	1524	.045
NH	1577.0									

X1	92.0	11	215.78	1500.00	155.0	200.0	178.0	0.0	-2.5	0
X3				215.78	1155	1500.00	1154			
GR	1168.2	140.00	1168.24	155.00	1155.98	191.78	1157.74	215.78	1142.01	262.97
GR	1139.0	960.00	1142.02	1459.53	1155.51	1500.00	1155.75	1524.00	1168.41	1561.98
GR	1168.4	1577.0								

NH	5	.045	144.75	.025	168.75	.035	1500	.025	1524	.045
NH	1576.1									

X1	94.0	12	168.75	1500.00	155.0	200.0	178.0	0.0	-2.5	0
X3				168.75	1155	1500.00	1154			
GR	1168.4	93.00	1168.41	108.00	1156.16	144.75	1155.92	168.75	1142.21	185.88
GR	1141.9	282.00	1139.23	948.00	1142.23	1471.62	1154.72	1500.00	1154.96	1524.00
GR	1168.6	1561.05	1168.62	1576.1						

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NH	5	.045	84.75	.025	150	.035	1500	.025	1524	.045
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NH	1580.0									
X1	96.0	12	150.00	1500.00	225.0	200.0	212.0	0.0	-2.5	0
X3				150.00	1155	1500.00	1154.5			
GR	1168.6	33.00	1168.66	48.00	1156.41	84.75	1156.17	150.00	1142.51	190.98
GR	1142.1	319.00	1139.44	939.00	1142.44	1462.53	1154.93	1500.00	1155.17	1524.00
GR	1168.8	1564.98	1168.83	1580.0						

NH	3	.035	1500	.025	1524	.045	1580.0			
X1	98.0	9	20.00	1500.00	290.0	200.0	245.0	0.0	-2.5	0
X3						1500.00	1155			
GR	1156.4	20.00	1142.89	60.80	1141.79	353.00	1139.65	920.00	1142.65	1462.50
GR	1155.1	1500.00	1155.39	1524.00	1169.04	1564.95	1169.04	1580.0		

NH	3	.035	1500	.025	1524	.045	1580.0			
X1	100.0	7	350.00	1500.00	310.0	200.0	255.0	0.0	-2.5	0
X3						1500.00	1155.5			
GR	1142.5	350.00	1139.86	885.00	1142.86	1462.50	1155.36	1500.00	1155.60	1524.00
GR	1169.2	1564.95	1169.25	1580.0						

Section 102 was used as the downstream edge of the apron. This is the first cross-section upstream of the confluence with the Indian Bend Wash and is very close to the location of the apron which is also right next to the confluence.

NH	5	.045	460.41	.025	484.41	.035	1500	.025	1524	.045
NH	1580.0									
X1	102.0	11	484.41	1500.00	370.0	200.0	285.0	0.0	-2.5	0
X3				484.41	1155	1500.00	1156			
GR	1169.4	407.91	1169.42	422.91	1156.92	460.41	1156.68	484.41	1143.15	525.00
GR	1140.0	853.00	1143.07	1462.50	1155.57	1500.00	1155.81	1524.00	1169.46	1564.95
GR	1169.4	1580.0								

UPSTREAM DAM
d.s.edge of apron

NC	.045	.045	.025	.3	.5					
X1	103.00	12	510	1474	1	1	1			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1141.8	532.5	1141.8	1451.5	1157	1474	1165	1474	1165	1484
GR	1169.5	1564.95	1169.4	1579.95						

d.s. edge of piers

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X1	103.22	12	510	1474	22	22	22			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1143.3	532.5	1143.3	1451.5	1157	1474	1165	1474	1165	1484
GR	1169.5	1564.95	1169.4	1579.95						

X1	103.28	30	510	1474	6	6	6			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1143.3	532.5	1143.3	741.5	1154	747.5	1166	747.5	1166	753.5

GR	1154	753.5	1143.3	759.5	1143.3	983	1154	989	1166	989
GR	1166	995	1154	995	1143.3	1001	1143.3	1224.5	1154	1230.5
GR	1166	1230.5	1166	1236.5	1154	1236.5	1143.3	1242.5	1143.3	1451.5
GR	1157	1474	1165	1474	1165	1484	1169.5	1564.9	1169.4	1579.9

X1	103.46	30	510	1474	18	18	18			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1143.3	532.5	1143.3	741.5	1154	747.5	1166	747.5	1166	753.5
GR	1154	753.5	1143.3	759.5	1143.3	983	1154	989	1166	989
GR	1166	995	1154	995	1143.3	1001	1143.3	1224.5	1154	1230.5
GR	1166	1230.5	1166	1236.5	1154	1236.5	1143.3	1242.5	1143.3	1451.5
GR	1157	1474	1165	1474	1165	1484	1169.5	1564.9	1169.4	1579.9

X1	103.52	12	510	1474	6	6	6			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1143.3	532.5	1143.3	1451.5	1157	1474	1165	1474	1165	1484
GR	1169.5	1564.95	1169.4	1579.95						

u.s. edge of apron

X1	103.80	12	510	1474	28	28	28			
GR	1169.4	407.91	1169.42	422.91	1165	500	1165	510	1157	510
GR	1141.8	532.5	1141.8	1451.5	1157	1474	1165	1474	1165	1484
GR	1169.5	1564.95	1169.4	1579.95						

HC	.035	.035	.035	.1	.3					
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X1	103.81	11	484.41	1500.00	1	1	1	.07		
GR	1169.4	407.91	1169.42	422.91	1156.92	460.41	1156.68	484.41	1143.15	525.00
GR	1140.0	853.00	1143.07	1462.50	1155.57	1500.00	1155.81	1524.00	1169.46	1564.95
GR	1169.4	1579.95								

X1	104.0	11	535.50	1500.00	178	118	148			
GR	1169.6	459.00	1169.62	474.00	1157.12	511.50	1156.88	535.50	1143.15	576.69
GR	1140.2	828.00	1143.28	1462.47	1155.79	1500.00	1156.03	1524.00	1169.67	1564.92
GR	1169.6	1579.92								

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X1	106.0	11	531.50	1500.00	250.0	200.0	225.0	0.0	0.0	0
GR	1169.8	455.00	1169.87	470.00	1157.37	507.50	1157.13	531.50	1143.40	572.69
GR	1140.4	810.00	1143.49	1462.47	1156.00	1500.00	1156.14	1514.40	1169.88	1555.62
GR	1169.8	1570.62								

X1	108.0	10	473.50	1500.00	250.0	200.0	225.0	0.0	0.0	0
GR	1170.1	397.00	1170.12	412.00	1157.62	449.50	1157.38	473.50	1143.65	514.69
GR	1140.7	795.00	1143.70	1462.02	1156.36	1500.00	1170.09	1541.19	1170.09	1556.19

X1	110.0	9	590.50	1500.00	255.0	200.0	228.0	0.0	0.0	0
GR	1170.3	514.00	1170.37	529.00	1157.87	566.50	1157.63	590.50	1143.91	631.66
GR	1140.9	790.00	1143.91	1420.83	1170.30	1500.00	1170.30	1515.00		

X1	112.0	9	606.50	1500.00	225.0	200.0	212.0	0.0	0.0	0
GR	1170.6	530.00	1170.60	545.00	1158.10	582.50	1157.86	606.50	1144.13	647.69
GR	1141.1	790.00	1144.12	1420.83	1170.51	1500.00	1170.51	1515.00		

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X1	114.0	9	584.50	1500.00	200.0	200.0	200.0	0.0	0.0	0
GR	1170.8	508.00	1170.80	523.00	1158.30	560.50	1158.06	584.50	1144.33	625.69
GR	1141.3	800.00	1144.32	1420.77	1170.73	1500.00	1170.73	1515.00		
X1	116.0	9	529.50	1500.00	205.0	200.0	202.0	0.0	0.0	0
GR	1171.0	453.00	1171.00	468.00	1158.50	505.50	1158.26	529.50	1144.54	570.66
GR	1141.5	820.00	1144.53	1420.77	1170.94	1500.00	1170.94	1515.00		
X1	118.0	9	474.50	1500.00	210.0	200.0	205.0	0.0	0.0	0
GR	1171.2	398.00	1171.21	413.00	1158.71	450.50	1158.47	474.50	1144.75	515.66
GR	1141.7	854.00	1144.74	1420.77	1171.15	1500.00	1171.15	1515.00		
X1	119.8	9	446.50	1500.00	180.0	200.0	190.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
GR	1171.3	370.00	1171.39	385.00	1158.89	422.50	1158.65	446.50	1144.95	487.60
GR	1141.9	525.00	1144.95	1420.74	1171.37	1500.00	1171.37	1515.00		
X1	120.42	9	446.22	1485.00	57.0	42.0	50.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
GR	1171.4	370.00	1171.45	385.00	1158.95	422.50	1158.71	446.22	1144.98	487.69
GR	1142.0	926.50	1145.00	1405.77	1171.41	1485.00	1171.41	1500.00		

Grade Control Str. No. 5

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***** Grade Control Str. No. 5 *****

X1	120.5	9	443.50	1485.00	8.0	8.0	8.0	0.0	0.0	0
GR	1171.4	367.00	1171.46	382.00	1158.96	419.50	1158.72	443.50	1150.00	469.66
GR	1147.0	926.50	1150.00	1420.74	1171.42	1485.00	1171.42	1500.00		
X1	122.0	9	441.50	1460.00	155.0	150.0	152.0	0.0	0.0	0
GR	1171.6	365.00	1171.61	380.00	1159.11	417.50	1158.87	441.50	1150.16	467.63
GR	1147.1	941.00	1150.15	1395.71	1171.58	1460.00	1171.58	1475.00		
X1	122.65	9	441.50	1460.00	65.0	65.0	65.0	0.0	0.0	0
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
GR	1171.6	365.00	1171.68	380.00	1159.18	417.50	1158.94	441.50	1150.22	490.27
GR	1147.2	952.00	1150.22	1395.71	1171.65	1460.00	1171.65	1475.00		
SB	1.05	1.56	2.63	0.0	798.0	66.0	24246.0	6.3	1147.31	1147.22

McClintock Drive Bridge

***** McClintock Drive Bridge *****

X1	123.55	20	441.5	1460.00	90.0	90.0	90.0	0.0	0.0	0
X2	0.0	0.0	1	1180.61	1181.8	0.0	0	2.0	0.0	
X3	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
BT	-11	316.00	1181.80	1174.13	436.00	1184.23	1176.56	554.00	1185.93	1178.26
BT		672.00	1187.37	1179.70	790.00	1188.15	1180.48	908.00	1188.28	1180.61
BT		1026.00	1188.15	1180.48	1144.00	1187.37	1179.70	1262.00	1185.93	1178.26
BT		1380.00	1184.23	1176.56	1500.00	1181.80	1174.13			
GR	1174.1	316.00	1171.77	371.00	1171.77	386.00	1159.27	423.50	1159.10	436.00

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GR	1159.0	441.50	1150.31	500.09	1149.97	554.00	1149.22	672.00	1148.48	790.00
GR	1147.7	908.00	1147.31	975.00	1147.64	1026.00	1148.42	1144.00	1149.19	1262.00
GR	1149.9	1380.00	1150.31	1433.31	1171.75	1460.00	1171.75	1475.00	1174.13	1500.00
X1	124.0	9	436.50	1465.00	45.0	45.0	45.0	0.0	0.0	0
GR	1171.8	360.00	1171.81	375.00	1159.31	412.50	1159.07	436.50	1150.36	464.22
GR	1147.3	983.00	1150.35	1400.68	1171.79	1465.00	1171.79	1480.00		
X1	126.0	10	415.00	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1170.0	240.00	1168.00	272.00	1166.00	317.00	1164.00	348.00	1162.00	388.00
GR	1159.2	415.00	1150.56	441.13	1147.55	985.00	1150.55	1435.62	1172.01	1500.00
X1	128.0	8	402.00	1500.00	200.0	200.0	200.0	0.0	0.0	0
X3	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
GR	1172.0	242.00	1166.00	280.00	1164.00	377.00	1159.47	402.00	1150.76	428.13
GR	1147.7	1017.00	1150.75	1359.75	1170.00	1500.00				

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T1 RIO SALADO TOWN LAKE for TEMPE, AZ
T2 CH2M HILL Walker/Allen Sept. 1994
T3 RS96GSC.HC2

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		5							1120.10	
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

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THIS RUN EXECUTED 01MAR96 11:46:27

HEC-2 WATER SURFACE PROFILES
Version 4.6.2; May 1991

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

RS96GSC.HC2

SUMMARY PRINTOUT

SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
10035.000	205000.00	1119.15	25.45	9.73	.00	1093.70
10035.000	250000.00	1120.10	26.40	11.32	.00	1093.70

10200.000	205000.00	1119.31	24.71	9.77	165.00	1094.60
10200.000	250000.00	1120.31	25.71	11.33	165.00	1094.60
10400.000	205000.00	1119.51	24.91	9.81	365.00	1094.60
10400.000	250000.00	1120.56	25.96	11.35	365.00	1094.60
10600.000	205000.00	1119.70	24.70	9.87	565.00	1095.00
10600.000	250000.00	1120.81	25.81	11.38	565.00	1095.00
10800.000	205000.00	1119.88	24.38	10.05	765.00	1095.50
10800.000	250000.00	1121.03	25.53	11.55	765.00	1095.50
11000.000	205000.00	1120.14	24.14	9.92	965.00	1096.00
11000.000	250000.00	1121.37	25.37	11.37	965.00	1096.00
11200.000	205000.00	1120.36	23.86	9.88	1165.00	1096.50
11200.000	250000.00	1121.65	25.15	11.30	1165.00	1096.50
11400.000	205000.00	1120.61	23.71	9.75	1365.00	1096.90
11400.000	250000.00	1121.97	25.07	11.11	1365.00	1096.90
11600.000	205000.00	1120.90	23.50	9.46	1565.00	1097.40
11600.000	250000.00	1122.33	24.93	10.76	1565.00	1097.40
11800.000	205000.00	1121.04	23.14	9.72	1765.00	1097.90
11800.000	250000.00	1122.50	24.60	11.03	1765.00	1097.90
12000.000	205000.00	1121.23	22.93	9.76	1965.00	1098.30
12000.000	250000.00	1122.73	24.43	11.05	1965.00	1098.30

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
12100.000	205000.00	1121.31	22.71	9.91	2065.00	1098.60
12100.000	250000.00	1122.81	24.21	11.21	2065.00	1098.60
12200.000	205000.00	1121.40	22.60	9.95	2165.00	1098.80
12200.000	250000.00	1122.93	24.13	11.24	2165.00	1098.80
12400.000	205000.00	1121.54	22.24	10.37	2365.00	1099.30
12400.000	250000.00	1123.08	23.78	11.70	2365.00	1099.30
12600.000	205000.00	1121.77	22.07	10.38	2565.00	1099.70
12600.000	250000.00	1123.36	23.66	11.69	2565.00	1099.70
12800.000	205000.00	1121.99	21.79	10.50	2765.00	1100.20
12800.000	250000.00	1123.61	23.41	11.78	2765.00	1100.20
13000.000	205000.00	1122.22	21.52	10.60	2965.00	1100.70
13000.000	250000.00	1123.87	23.17	11.88	2965.00	1100.70
13200.000	205000.00	1122.44	21.24	10.77	3165.00	1101.20
13200.000	250000.00	1124.13	22.93	12.03	3165.00	1101.20
13400.000	205000.00	1122.69	21.09	10.85	3365.00	1101.60
13400.000	250000.00	1124.41	22.81	12.09	3365.00	1101.60
13600.000	205000.00	1122.91	20.81	11.10	3565.00	1102.10
13600.000	250000.00	1124.66	22.56	12.34	3565.00	1102.10
13800.000	205000.00	1123.19	20.59	11.17	3765.00	1102.60
13800.000	250000.00	1124.97	22.37	12.39	3765.00	1102.60

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14000.000	205000.00	1123.50	20.50	11.12	3965.00	1103.00
14000.000	250000.00	1125.33	22.33	12.30	3965.00	1103.00
14200.000	205000.00	1123.81	20.31	11.09	4165.00	1103.50
14200.000	250000.00	1125.69	22.19	12.22	4165.00	1103.50
14400.000	205000.00	1124.09	20.09	11.27	4365.00	1104.00
14400.000	250000.00	1125.98	21.98	12.40	4365.00	1104.00
14665.000	205000.00	1124.47	19.77	11.52	4630.00	1104.70
14665.000	250000.00	1126.39	21.69	12.66	4630.00	1104.70
14785.000	205000.00	1124.69	19.79	11.46	4750.00	1104.90
14785.000	250000.00	1126.64	21.74	12.56	4750.00	1104.90
15000.000	205000.00	1125.03	19.63	11.54	4965.00	1105.40
15000.000	250000.00	1127.01	21.61	12.60	4965.00	1105.40
15200.000	205000.00	1125.35	19.45	11.67	5165.00	1105.90
15200.000	250000.00	1127.34	21.44	12.72	5165.00	1105.90

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
15400.000	205000.00	1125.68	19.38	11.73	5365.00	1106.30
15400.000	250000.00	1127.69	21.39	12.79	5365.00	1106.30
15586.000	210000.00	1125.94	19.14	12.19	5551.00	1106.80
15586.000	250000.00	1128.01	21.21	12.91	5551.00	1106.80
15710.000	210000.00	1126.40	19.30	12.10	5675.00	1107.10
15710.000	250000.00	1128.52	21.42	12.79	5675.00	1107.10
16000.000	210000.00	1126.94	19.14	12.17	5965.00	1107.80
16000.000	250000.00	1129.04	21.24	12.85	5965.00	1107.80
16200.000	210000.00	1127.39	19.19	12.04	6165.00	1108.20
16200.000	250000.00	1129.47	21.27	12.73	6165.00	1108.20
16400.000	210000.00	1127.73	19.03	12.23	6365.00	1108.70
16400.000	250000.00	1129.79	21.09	12.93	6365.00	1108.70
16600.000	210000.00	1128.12	18.92	12.28	6565.00	1109.20
16600.000	250000.00	1130.17	20.97	12.98	6565.00	1109.20
16800.000	210000.00	1128.52	18.82	12.33	6765.00	1109.70
16800.000	250000.00	1130.55	20.85	13.04	6765.00	1109.70
17000.000	210000.00	1128.94	18.84	12.30	6965.00	1110.10
17000.000	250000.00	1130.96	20.86	13.03	6965.00	1110.10
17200.000	210000.00	1129.34	18.74	12.36	7165.00	1110.60
17200.000	250000.00	1131.34	20.74	13.09	7165.00	1110.60
17400.000	210000.00	1129.74	18.65	12.44	7365.00	1111.10
17400.000	250000.00	1131.73	20.63	13.19	7365.00	1111.10
17600.000	210000.00	1130.14	18.64	12.54	7565.00	1111.50
17600.000	250000.00	1132.11	20.61	13.31	7565.00	1111.50
17800.000	210000.00	1130.55	18.55	12.62	7765.00	1112.00
17800.000	250000.00	1132.50	20.50	13.41	7765.00	1112.00

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18000.000	210000.00	1130.97	18.47	12.71	7965.00	1112.50
18000.000	250000.00	1132.91	20.41	13.50	7965.00	1112.50
18200.000	210000.00	1131.39	18.39	12.83	8165.00	1113.00
18200.000	250000.00	1133.31	20.31	13.63	8165.00	1113.00
18400.000	210000.00	1131.92	18.52	12.62	8365.00	1113.40
18400.000	250000.00	1133.85	20.45	13.42	8365.00	1113.40
18600.000	210000.00	1132.29	18.39	12.91	8565.00	1113.90
18600.000	250000.00	1134.20	20.30	13.74	8565.00	1113.90

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
18800.000	210000.00	1132.71	18.31	13.07	8765.00	1114.40
18800.000	250000.00	1134.61	20.21	13.90	8765.00	1114.40
19000.000	210000.00	1133.18	18.38	13.10	8965.00	1114.80
19000.000	250000.00	1135.07	20.27	13.95	8965.00	1114.80
19200.000	210000.00	1133.62	18.32	13.24	9165.00	1115.30
19200.000	250000.00	1135.50	20.20	14.10	9165.00	1115.30
19400.000	210000.00	1134.07	18.27	13.39	9365.00	1115.80
19400.000	250000.00	1135.94	20.14	14.27	9365.00	1115.80
19600.000	210000.00	1134.54	18.24	13.53	9565.00	1116.30
19600.000	250000.00	1136.39	20.09	14.43	9565.00	1116.30
19800.000	210000.00	1135.04	18.34	13.56	9765.00	1116.70
19800.000	250000.00	1136.89	20.19	14.47	9765.00	1116.70
20000.000	210000.00	1135.51	18.31	13.73	9965.00	1117.20
20000.000	250000.00	1137.34	20.14	14.66	9965.00	1117.20
20200.000	210000.00	1136.00	18.30	13.87	10165.00	1117.70
20200.000	250000.00	1137.82	20.12	14.82	10165.00	1117.70
20400.000	210000.00	1136.56	18.46	13.80	10365.00	1118.10
20400.000	250000.00	1138.37	20.27	14.77	10365.00	1118.10
20600.000	210000.00	1137.02	18.42	14.05	10565.00	1118.60
20600.000	250000.00	1138.83	20.23	15.03	10565.00	1118.60
20782.000	210000.00	1137.53	18.53	13.98	10743.00	1119.00
20782.000	250000.00	1139.37	20.37	14.92	10743.00	1119.00
20800.000	210000.00	1137.59	18.56	13.96	10761.00	1119.03
20800.000	250000.00	1139.42	20.39	14.91	10761.00	1119.03
21000.000	210000.00	1138.19	18.83	13.80	10961.00	1119.36
21000.000	250000.00	1139.99	20.63	14.82	10961.00	1119.36
21050.000	210000.00	1138.28	18.58	13.97	11011.00	1119.70
21050.000	250000.00	1140.09	20.39	14.99	11011.00	1119.70
21150.000	210000.00	1139.02	19.12	13.52	11111.00	1119.90
21150.000	250000.00	1140.96	21.06	14.45	11111.00	1119.90
21200.000	210000.00	1139.29	19.60	13.17	11161.00	1119.69
21200.000	250000.00	1141.24	21.55	14.11	11161.00	1119.69

21400.000	210000.00	1139.83	19.81	12.93	11361.00	1120.02
21400.000	250000.00	1141.82	21.80	13.79	11361.00	1120.02

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
21600.000	210000.00	1140.39	20.04	12.58	11561.00	1120.35
21600.000	250000.00	1142.39	22.04	13.43	11561.00	1120.35
21800.000	210000.00	1140.75	20.07	12.72	11761.00	1120.68
21800.000	250000.00	1142.75	22.07	13.58	11761.00	1120.68
22000.000	210000.00	1141.17	20.16	12.66	11961.00	1121.01
22000.000	250000.00	1143.17	22.16	13.52	11961.00	1121.01
22200.000	210000.00	1141.59	20.25	12.61	12161.00	1121.34
22200.000	250000.00	1143.59	22.25	13.48	12161.00	1121.34
22400.000	210000.00	1141.99	20.31	12.58	12361.00	1121.68
22400.000	250000.00	1144.00	22.32	13.44	12361.00	1121.68
22600.000	210000.00	1142.42	20.41	12.47	12561.00	1122.01
22600.000	250000.00	1144.43	22.42	13.33	12561.00	1122.01
22800.000	210000.00	1142.80	20.46	12.45	12761.00	1122.34
22800.000	250000.00	1144.82	22.48	13.31	12761.00	1122.34
23000.000	210000.00	1143.14	19.94	12.63	12961.00	1123.20
23000.000	250000.00	1145.15	21.95	13.48	12961.00	1123.20
23200.000	210000.00	1143.65	20.65	12.30	13161.00	1123.00
23200.000	250000.00	1145.68	22.68	13.16	13161.00	1123.00
23400.000	210000.00	1144.01	20.68	12.30	13361.00	1123.33
23400.000	250000.00	1146.04	22.71	13.16	13361.00	1123.33
23600.000	210000.00	1144.37	20.71	12.29	13561.00	1123.66
23600.000	250000.00	1146.40	22.74	13.15	13561.00	1123.66
23800.000	210000.00	1144.74	20.78	12.27	13761.00	1123.96
23800.000	250000.00	1146.77	22.81	13.13	13761.00	1123.96
24000.000	210000.00	1145.17	20.85	12.05	13961.00	1124.32
24000.000	250000.00	1147.22	22.90	12.91	13961.00	1124.32
24200.000	210000.00	1145.56	20.91	11.91	14161.00	1124.65
24200.000	250000.00	1147.61	22.96	12.76	14161.00	1124.65
24400.000	210000.00	1145.95	20.97	11.71	14361.00	1124.98
24400.000	250000.00	1148.01	23.03	12.58	14361.00	1124.98
24600.000	210000.00	1146.35	21.04	11.44	14561.00	1125.31
24600.000	250000.00	1148.44	23.13	12.27	14561.00	1125.31
24744.000	210000.00	1146.50	20.95	11.68	14705.00	1125.55
24744.000	250000.00	1148.57	23.02	12.58	14705.00	1125.55

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
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1214PRINT

24841.000	210000.00	1146.73	21.23	11.41	14802.00	1125.50
24841.000	250000.00	1148.80	23.30	12.33	14802.00	1125.50
24866.000	210000.00	1146.77	21.27	11.39	14827.00	1125.50
24866.000	250000.00	1148.85	23.35	12.31	14827.00	1125.50
24871.000	210000.00	1146.06	17.06	14.94	14832.00	1129.00
24871.000	250000.00	1148.11	19.11	15.74	14832.00	1129.00
24906.000	210000.00	1146.64	17.39	14.02	14867.00	1129.25
24906.000	250000.00	1148.69	19.44	14.87	14867.00	1129.25
* 24907.000	210000.00	1145.75	13.75	17.66	14868.00	1132.00
24907.000	250000.00	1147.85	15.85	18.18	14868.00	1132.00
24918.000	210000.00	1145.12	13.12	19.95	14879.00	1132.00
24918.000	250000.00	1147.26	15.26	20.26	14879.00	1132.00
24957.000	210000.00	1147.94	15.94	16.25	14918.00	1132.00
24957.000	250000.00	1149.33	17.33	17.70	14918.00	1132.00
24968.000	210000.00	1149.71	17.71	13.32	14929.00	1132.00
24968.000	250000.00	1151.50	19.50	14.39	14929.00	1132.00
2.000	210000.00	1150.13	18.13	13.08	15076.00	1132.00
2.000	250000.00	1152.00	20.00	14.05	15076.00	1132.00
4.000	210000.00	1150.60	18.60	12.95	15276.00	1132.00
4.000	250000.00	1152.50	20.50	13.86	15276.00	1132.00
6.000	210000.00	1150.83	18.83	13.57	15476.00	1132.00
6.000	250000.00	1152.74	20.74	14.46	15476.00	1132.00
8.000	210000.00	1151.71	19.71	12.45	15676.00	1132.00
8.000	250000.00	1153.69	21.69	13.26	15676.00	1132.00
10.000	210000.00	1152.17	20.17	12.13	15876.00	1132.00
10.000	250000.00	1154.18	22.18	12.90	15876.00	1132.00
12.000	210000.00	1152.59	20.59	11.82	16076.00	1132.00
12.000	250000.00	1154.63	22.63	12.55	16076.00	1132.00
14.000	210000.00	1152.95	20.95	11.46	16234.00	1132.00
14.000	250000.00	1155.01	23.01	12.16	16234.00	1132.00
15.400	210000.00	1152.94	20.94	12.47	16356.00	1132.00
15.400	250000.00	1155.00	23.00	13.14	16356.00	1132.00
15.600	215000.00	1153.93	21.93	12.03	16374.00	1132.00
15.600	250000.00	1156.04	24.04	12.34	16374.00	1132.00

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
17.300	215000.00	1154.63	22.63	10.66	16526.00	1132.00
17.300	250000.00	1156.66	24.66	11.13	16526.00	1132.00
19.000	215000.00	1154.81	22.81	10.63	16698.00	1132.00
19.000	250000.00	1156.81	24.81	11.18	16698.00	1132.00
21.500	215000.00	1155.22	23.22	9.94	16880.00	1132.00
21.500	250000.00	1157.22	25.22	10.50	16880.00	1132.00

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24.000	215000.00	1155.11	23.11	11.03	17020.00	1132.00
24.000	250000.00	1157.10	25.10	11.62	17020.00	1132.00
24.600	215000.00	1156.10	24.10	10.60	17080.00	1132.00
24.600	250000.00	1158.80	26.80	10.83	17080.00	1132.00
26.000	215000.00	1156.31	24.31	10.50	17265.00	1132.00
26.000	250000.00	1158.99	26.99	10.74	17265.00	1132.00
26.450	215000.00	1156.74	24.74	10.27	17310.00	1132.00
26.450	250000.00	1159.41	27.41	10.53	17310.00	1132.00
27.000	215000.00	1156.88	24.88	10.25	17465.00	1132.00
27.000	250000.00	1159.53	27.53	10.53	17465.00	1132.00
28.000	215000.00	1157.03	25.03	10.19	17625.00	1132.00
28.000	250000.00	1159.66	27.66	10.50	17625.00	1132.00
30.000	215000.00	1157.22	25.22	10.13	17825.00	1132.00
30.000	250000.00	1159.83	27.83	10.46	17825.00	1132.00
32.000	215000.00	1157.45	25.45	9.94	18025.00	1132.00
32.000	250000.00	1160.04	28.04	10.29	18025.00	1132.00
34.000	215000.00	1157.61	25.61	9.89	18225.00	1132.00
34.000	250000.00	1160.19	28.19	10.26	18225.00	1132.00
36.000	215000.00	1157.76	25.76	9.95	18440.00	1132.00
36.000	250000.00	1160.32	28.32	10.37	18440.00	1132.00
38.000	215000.00	1157.94	25.94	9.94	18670.00	1132.00
38.000	250000.00	1160.48	28.48	10.36	18670.00	1132.00
40.000	215000.00	1158.08	26.08	10.11	18900.00	1132.00
40.000	250000.00	1160.61	28.61	10.56	18900.00	1132.00
42.000	215000.00	1158.26	26.26	10.10	19130.00	1132.00
42.000	250000.00	1160.78	28.78	10.56	19130.00	1132.00
44.000	215000.00	1158.40	26.40	10.29	19360.00	1132.00
44.000	250000.00	1160.91	28.91	10.76	19360.00	1132.00

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
46.000	215000.00	1158.60	26.60	10.22	19590.00	1132.00
46.000	250000.00	1161.11	29.11	10.70	19590.00	1132.00
48.000	215000.00	1158.81	26.81	10.15	19820.00	1132.00
48.000	250000.00	1161.31	29.31	10.63	19820.00	1132.00
50.000	215000.00	1159.01	27.01	10.05	20025.00	1132.00
50.000	250000.00	1161.50	29.50	10.51	20025.00	1132.00
52.000	215000.00	1159.17	27.12	10.01	20213.00	1132.05
52.000	250000.00	1161.66	29.61	10.47	20213.00	1132.05
54.000	215000.00	1159.31	26.81	10.02	20393.00	1132.50
54.000	250000.00	1161.80	29.30	10.47	20393.00	1132.50
56.000	215000.00	1159.48	26.78	9.93	20573.00	1132.70
56.000	250000.00	1161.96	29.26	10.37	20573.00	1132.70

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58.000	215000.00	1159.64	26.74	9.87	20755.00	1132.90
58.000	250000.00	1162.12	29.22	10.31	20755.00	1132.90
60.000	215000.00	1159.81	26.71	9.78	20940.00	1133.10
60.000	250000.00	1162.29	29.19	10.22	20940.00	1133.10
62.000	215000.00	1159.97	26.67	9.72	21120.00	1133.30
62.000	250000.00	1162.44	29.14	10.15	21120.00	1133.30
64.000	215000.00	1160.13	26.63	9.63	21300.00	1133.50
64.000	250000.00	1162.60	29.10	10.07	21300.00	1133.50
66.000	215000.00	1160.27	26.47	9.62	21480.00	1133.80
66.000	250000.00	1162.73	28.93	10.05	21480.00	1133.80
68.000	215000.00	1160.41	26.41	9.58	21665.00	1134.00
68.000	250000.00	1162.87	28.87	10.01	21665.00	1134.00
69.300	215000.00	1160.52	26.42	9.50	21773.00	1134.10
69.300	250000.00	1162.98	28.88	9.93	21773.00	1134.10
70.300	215000.00	1160.69	26.44	9.46	21865.00	1134.25
70.300	250000.00	1163.16	28.91	9.88	21865.00	1134.25
72.000	215000.00	1160.80	26.40	9.47	22025.00	1134.40
72.000	250000.00	1163.25	28.85	9.92	22025.00	1134.40
74.000	215000.00	1160.92	26.32	9.47	22205.00	1134.60
74.000	250000.00	1163.37	28.77	9.94	22205.00	1134.60
76.000	215000.00	1161.09	26.29	9.34	22385.00	1134.80
76.000	250000.00	1163.54	28.74	9.81	22385.00	1134.80

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
78.000	215000.00	1161.28	26.28	9.11	22565.00	1135.00
78.000	250000.00	1163.73	28.73	9.57	22565.00	1135.00
80.000	215000.00	1161.47	26.27	8.88	22747.00	1135.20
80.000	250000.00	1163.93	28.73	9.33	22747.00	1135.20
82.000	215000.00	1161.67	26.27	8.58	22927.00	1135.40
82.000	250000.00	1164.13	28.73	9.01	22927.00	1135.40
84.000	215000.00	1161.85	26.25	8.30	23107.00	1135.60
84.000	250000.00	1164.32	28.72	8.72	23107.00	1135.60
86.000	215000.00	1162.04	26.14	7.96	23289.00	1135.90
86.000	250000.00	1164.52	28.62	8.35	23289.00	1135.90
88.000	215000.00	1162.25	26.15	7.50	23469.00	1136.10
88.000	250000.00	1164.73	28.63	7.87	23469.00	1136.10
90.000	215000.00	1162.41	26.10	7.16	23647.00	1136.31
90.000	250000.00	1164.90	28.59	7.51	23647.00	1136.31
92.000	215000.00	1162.54	26.04	6.93	23825.00	1136.50
92.000	250000.00	1165.03	28.53	7.27	23825.00	1136.50
94.000	215000.00	1162.67	25.94	6.62	24003.00	1136.73
94.000	250000.00	1165.17	28.44	6.95	24003.00	1136.73

96.000	215000.00	1162.76	25.82	6.59	24215.00	1136.94
96.000	250000.00	1165.26	28.32	6.89	24215.00	1136.94
98.000	215000.00	1162.94	25.79	6.08	24460.00	1137.15
98.000	250000.00	1165.44	28.29	6.39	24460.00	1137.15
100.000	215000.00	1162.78	25.42	7.83	24715.00	1137.36
100.000	250000.00	1165.25	27.89	8.23	24715.00	1137.36
102.000	215000.00	1162.73	25.23	9.08	25000.00	1137.50
102.000	250000.00	1165.18	27.68	9.50	25000.00	1137.50
103.000	215000.00	1162.42	20.62	11.00	25001.00	1141.80
103.000	250000.00	1164.86	23.06	11.42	25001.00	1141.80
103.220	215000.00	1162.27	18.97	11.96	25023.00	1143.30
103.220	250000.00	1164.71	21.41	12.30	25023.00	1143.30
103.280	215000.00	1162.20	18.90	12.37	25029.00	1143.30
103.280	250000.00	1164.64	21.34	12.70	25029.00	1143.30
103.460	215000.00	1162.22	18.92	12.36	25047.00	1143.30
103.460	250000.00	1164.66	21.36	12.69	25047.00	1143.30

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
103.520	215000.00	1162.49	19.19	11.82	25053.00	1143.30
103.520	250000.00	1164.92	21.62	12.17	25053.00	1143.30
103.800	215000.00	1163.03	21.23	10.68	25081.00	1141.80
103.800	250000.00	1165.43	23.63	11.14	25081.00	1141.80
103.810	215000.00	1163.30	23.23	9.96	25082.00	1140.07
103.810	250000.00	1165.75	25.68	10.33	25082.00	1140.07
104.000	215000.00	1163.32	23.12	10.54	25230.00	1140.20
104.000	250000.00	1165.75	25.55	10.93	25230.00	1140.20
106.000	215000.00	1163.57	23.17	10.50	25455.00	1140.40
106.000	250000.00	1165.98	25.58	10.91	25455.00	1140.40
108.000	215000.00	1164.02	23.32	9.83	25680.00	1140.70
108.000	250000.00	1166.42	25.72	10.23	25680.00	1140.70
110.000	215000.00	1163.79	22.89	11.89	25908.00	1140.90
110.000	250000.00	1166.15	25.25	12.35	25908.00	1140.90
112.000	215000.00	1164.05	22.95	12.09	26120.00	1141.10
112.000	250000.00	1166.38	25.28	12.57	26120.00	1141.10
114.000	215000.00	1164.52	23.22	11.62	26320.00	1141.30
114.000	250000.00	1166.84	25.54	12.10	26320.00	1141.30
116.000	215000.00	1165.11	23.61	10.71	26522.00	1141.50
116.000	250000.00	1167.44	25.94	11.18	26522.00	1141.50
118.000	215000.00	1165.58	23.88	9.97	26727.00	1141.70
118.000	250000.00	1167.92	26.22	10.42	26727.00	1141.70
119.800	215000.00	1165.86	23.96	9.65	26917.00	1141.90
119.800	250000.00	1168.20	26.30	10.09	26917.00	1141.90

120.420	215000.00	1165.87	23.87	9.83	26967.00	1142.00	
120.420	250000.00	1168.20	26.20	10.27	26967.00	1142.00	
*	120.500	215000.00	1165.09	18.09	13.03	26975.00	1147.00
*	120.500	250000.00	1167.49	20.49	13.13	26975.00	1147.00
122.000	215000.00	1165.40	18.30	13.19	27127.00	1147.10	
122.000	250000.00	1167.73	20.63	13.36	27127.00	1147.10	
122.650	215000.00	1165.54	18.34	13.24	27192.00	1147.20	
122.650	250000.00	1167.85	20.65	13.43	27192.00	1147.20	
123.550	215000.00	1166.34	19.03	12.42	27282.00	1147.31	
123.550	250000.00	1168.60	21.29	12.72	27282.00	1147.31	

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SECNO	Q	CWSEL	DEPTH	VCH	CUMDS	ELMIN
124.000	215000.00	1166.44	19.14	12.41	27327.00	1147.30
124.000	250000.00	1168.69	21.39	12.70	27327.00	1147.30
126.000	215000.00	1167.23	19.68	11.32	27527.00	1147.55
126.000	250000.00	1169.48	21.93	11.59	27527.00	1147.55
128.000	215000.00	1167.48	19.78	11.63	27727.00	1147.70
128.000	250000.00	1169.70	22.00	11.87	27727.00	1147.70

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SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 24907.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 120.500 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
 WARNING SECNO= 120.500 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE